SUBSISTENCE OF COPYRIGHT:
A SYSTEMATIC APPROACH
IN THE CONTEXT OF COMPUTER PROGRAMS
ON THE INTERNET.

by

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LIST OF ABBREVIATIONS

Bainbridge   Bainbridge, D., *Software Copyright Law,* Butterworths, 3rd ed., 1997.

Bainbridge, 4th ed. Bainbridge, D., *Software Copyright Law,* Butterworths, 4rd ed., 1999.

Bently and Sherman   Bently, L. and Sherman, B., *Intellectual Property Law,* Oxford University Press, 2001

Bently and Sherman, 2nd ed.   Bently, L. and Sherman, B., *Intellectual Property Law,* Oxford Higher Education, 2nd ed., 2004

Campbell   Campbell, D. (ed.), *International Intellectual Property Law. European Jurisdictions,* John Wiley & Sons, 1995.

Castells, Vol. I   Castells, M., *The Information Age: Economy, Society and Culture. Volume I: The Rise of the Network Society*, Blackwell Publishing, 2nd ed., 2000.

Castells, Vol. II   Castells, M., *The Information* Age*: Economy, Society and Culture. Volume II: The Power of Identity,* Blackwell Publishing, 2nd ed., 2004.

Castells, Vol. III   Castells, M., *The Information* Age*: Economy, Society and Culture. Volume III: End of Millennium*, Blackwell Publishing, 2nd ed., 2000.

Copinger   Garnett, K., Rayner James, J., Davies, G., *Copinger and Skone James on Copyright,* Sweet & Maxwell, 14th ed., 1998.

Copinger, 13th ed.   Skone James, E., Mummary, J., Garnett, K., Rayner James, J., *Copinger and Skone James on Copyright,* Sweet & Maxwell, 13th ed., 1991.

Cornish   Cornish, W., *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights,* Sweet & Maxwell, 3rd ed., 1996.

Cornish, 4th ed.   Cornish, W., *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights,* Sweet & Maxwell, 4th ed., 1999.

Cornish and Llewelyn   Cornish, W., and Llewelyn, D., *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights,* Sweet & Maxwell, 5th ed., 2003.

Craig and de Búrca   Craig, P., and de Búrca, G., *EU Law: Text, Cases, and Materials*, Oxford University Press, 3rd ed., 2003.

Dommering and Hugenholtz   Dommering, E., and Hugenholtz, P., (eds.), *Protecting Works of Fact,* Kluwer, 1991.

Edwards and Waelde   Edwards, L., and Waelde, C., *Law and the Internet. Regulating Cyberspace,* Hart Publishing, 1997.

Edwards and Waelde, 2nd ed. Edwards, L., and Waelde, C., *Law and the Internet. A Framework for Electronic Commerce,* Hart Publishing 2000.

Hansen Hansen, H., (ed.), *International Intellectual Property Law and Policy. Vol 4.,* Juris Publishing, 2000.

Holyoak and Torremans Torremans, P., and Holyoak, J., *Holyoak and Torremans Intellectual Property Law,* Butterworths, 2nd ed., 1998.

Hugenholtz Hugenholtz, P., (ed.), *The Future of Copyright in a Digital Environment,* Kluwer, 1996.

Kabel and Mom Kabel, J., and Mom, G., *Intellectual Property and Information Law. Essays inHonour of Herman Cohen Jehoram,* Kluwer, 1998.

Laddie et al Laddie, H., Prescott, P., and Vitoria, M., *The Modern Law of Copyright and Designs,* Butterworths, 2nd ed., 1995.

Laddie et al, 3rd ed. Laddie, H., Prescott, P., Vitoria, M., Speck, A., and Lane, L., *The Modern Law of Copyright and Designs,* Butterworths, 3rd ed., 2000.

Lai Lai, S., *The Copyright Protection of Computer Software in the United Kingdom,* Hart Publishing, 2000.

Lehmann and Tapper Lehmann, M., and Tapper, C., (eds.), *A Handbook of European Software Law,* Clarendon Press, 1993.

Lloyd Lloyd, I., *Information Technology Law,* Butterworths, 2nd ed., 1997.

Lloyd, 3rd ed. Lloyd, I., *Information Technology Law,* Butterworths, 3rd ed., 2000.

Lucas and Lucas Lucas, A., and Lucas, H., *Traité de la propriété littéraire et artistique,* Litec, 1994.

Nimmer Nimmer, M., *Nimmer on Copyright: A Treatise on the Law of Literary, Musical and Artistic Property, and the Protection of Ideas,* Mattew Bender, 1997.

Nimmer and Geller Nimmer, M., and Geller, P., *International Copyright Law and Practice,* Mattew Bender, 1988.

Reed Reed, C.(ed.), *Computer Law,* Blackstone Press, 3rd ed., 1996.

Reed, 4th ed. Reed, C., and Angel, J., (eds.), *Computer Law,* Blackstone Press, 4th ed., 2000.

Reed, 5th ed. Reed, C., and Angel, J., (eds.), *Computer Law,* Oxford University Press, 5th ed., 2003.

Ricketson Ricketson, S., *The Berne Convention for the Protection of Literary and Artistic Works: 1886-1986,* Kluwer, 1987.

Sherman and Bently   Sherman, B. and Bently, L., *The Making of Modern Intellectual Property Law. The British Experience, 1760-1911*, Cambridge University Press, 1999.

Stamatoudi and Torremans   Stamatoudi, I., and Torremans, P., *Copyright in the New Digital Environment: The Need to Redesign Copyright,* Sweet & Maxwell, 2000.

Sterling   Sterling, J. A. L., *World Copyright Law. Protection of Authors' Works, Performances, Phonograms, Films, Video, Broadcasts and Published Editions in National, International and Regional Law,* Sweet & Maxwell, 1998.

Sterling, 2nd ed.   Sterling, J. A. L., *World Copyright Law. Protection of Authors' Works, Performances, Phonograms, Films, Video, Broadcasts and Published Editions in National, International and Regional Law,* Sweet & Maxwell, 2nd ed., 2003.

Torremans   Torremans, P., *Holyoak and Torremans Intellectual Property Law,* Butterworths, 3rd ed., 2001.

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CHAPTER 1.

INTRODUCTION: GROUNDS FOR THE SYSTEMATIC APPROACH.

1.1. The space-time of the discourse: justifications and contexts.

In our exploration of the realm of copyright we set out from the premise that, to a certain extent, 'unlike the other areas of intellectual property law, copyright law remains pre-modern'[1]. This characteristic stems from the key role played by metaphysical issues ('concerning the nature and limits of intangible property'[2]) in demarcating the protected subject matter and might be viewed as a two-edged sword.

On the one hand, the 'old-world' character of copyright could be construed as an anachronism in new contexts. Such new areas may embrace varied notions and phenomena, whether they are considered modern, e.g. software or the encompassing generality of modern intellectual property law[3], or post-modern, e.g. cyberspace or its present-day pre-incarnation, the Internet.

On the other hand, the metaphysics involved lends itself to distilling the essence of the archetypal stories of copyright. These narratives have developed along the lines of the investigation of the nature and structure of relevant entities as well as the formation of, and justification for, the basic concepts and seminal ideas that have evolved to shape the mentality of contemporary copyright[4].

The cumulative effect of calling into question the doctrinal fitness of current copyright law and calling into play the bare bones of copyright lore prompts a thorough re-examination of the rudiments of what is protected.

Historically, many of the ingredients of what later matured into the modern system of copyright had been prepared by the last quarter of the eighteenth century[5]. Then the letter and spirit of the law in this field went through a gestation period. It is noteworthy that during that era the outlined metaphysical element, calling for

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[1] Sherman and Bently, at 192.
[2] Ibid.. See also ibid., at 19.
[3] See further Cornish and Llewelyn, at 3-4.
[4] See also Sherman and Bently, at 43, 51.
[5] See Laddie et al, at para. 2.7. See also Bugbee, B., *Genesis of American Patent and Copyright Law,* Public Affairs Press, 1967, at 49-50.

conceptual coherence, abstract paradigms and general terms, was still overshadowed by a growing amorphous body of subject-specific *post hoc* enactments[6].

Admittedly, the age of chaos was brought to an end by the Copyright Act 1911[7] which can also be regarded as a legislative watershed in intellectual property law in general. Given that the metaphysical dimension of copyright is defined with reference to related identities (the intangible, framework of creation, area of law, subject matter of protection, creator/author, etc.), it could not be surprising that not only did copyright law take on its identity as an abstract model of protection but also (modern) IP law was transformed into a distinct entity and an entrenched part of the legal tradition[8].

While the abstract pattern of copyright emerged in its nascent form in the 1850s or thereabouts[9], in 1911 it was finally rationalised and enshrined as a forward-looking area. At the same time, it was specified to embrace new protected categories[10]. Furthermore, by solving the problem of trans-media reproduction, that was intrinsic to the manufacture-orientated, industry-specific and largely format-based old law, the abstract reasoning was reflected in the context of infringement as distinct from subsistence of copyright. More specifically, reproduction in a different medium could no longer provide an escape route[11]. This schema might allow the metamorphosis of the subject matter to be traced in the realm of copyright infringement. It could also strengthen or re-emphasise certain connections and distinctions between copyright species. Such transformations and correlations ultimately point to a common denominator clothed in abstract terms. In a nutshell, the modern law of copyright has been revolving around the concept of work and its retinue of constructs, including originality, substantiality, part, nature of labour, and domain. It is this conceptual constellation that provides a focus for this study[12].

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[6] See Laddie et al, at paras. 2.12 ('by the beginning of the twentieth century there were some 20 pieces of copyright legislation'), 4.102; Sherman and Bently, at 2, 6, 73, 119, 122, 134.
[7] The Act came into force on 1 July 1912.
[8] See further Sherman and Bently, at 19, 24, 26, 35, 38, 129.
[9] See Sherman and Bently, at 6, 119.
[10] See further Bently and Sherman, at 29; Copinger, at para. 2-26; Laddie et al, at para, 2.12. See also s. 35, the Copyright Act 1911.
[11] See ss. 1 (2) (listing the elements of 'copyright' construed as the sole right to do certain acts thus laying the groundwork for infringement inquiries), 2, the Copyright Act 1911. Cf. *Chabot v Davies* [1936-1945] MCC 56; *Hanfstaengl v Empire Palace* [1894] 2 Ch 1. See further Laddie et al, at paras. 2.7, 2.12, 2.77. See also s. 17 (2), CDPA.
[12] See further subs-s 2.2.1, 2.6.2, 4.1, 4.2.2, below. It is worth reminding that the general requirement of originality and the formula 'substantial part' were statutorily introduced and framed virtually in their current form in the 1911 Act. (See s. 1 (1), (2), the Copyright Act 1911.) However, these notions and

It is almost a truism that abstract language (utilised along legislative, doctrinal and conceptual lines) is susceptible of interpretations, abstract structures (such as those mediating the above terminology) are capable of being specified and embodied in sundry material forms, and open-ended categories are amenable to being extended to new entities. It might appear that copyright law is flexible enough to easily accommodate new subject matter. Nonetheless, the other side of the 'metaphysical' coin is that the advent of a new form of creativity poses questions of essence. Accordingly, lengthy discussions are inevitable, particularly, in terms of renegotiating the boundaries of the property subsumed within the fluid remit of copyright. The upshot of this is that this area of IP law is 'constantly caught out by new forms of subject matter'[13]. At the same time, even digitisation did not change the fundamentals of copyright.[14]

It is to be borne in mind here that copyright law since its formative years has been tied up with technological developments[15] which ultimately make up the principal source of new subject matter. Almost by definition, technological quantum leaps, ranging from printing to computing, result in or pave the way for new types of intellectual labour, and transform or facilitate the existing ones. As an established pattern, such changes find resonance in British copyright law[16]. In this connection, 'we must treat technology seriously'[17] and interpolate the relevant aspects of its idiom into the discourse. Through this prism, the present work deals with a number of software related issues.

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the term 'work' did not appear out of the blue. (See, for instance, s. 19, the Copyright Act 1842.) In accordance with the Statute of Anne and the Copyright Act 1842, the old law 'fuelled by the needs of individual industries' (Laddie et al, at 4.104) primarily rested on the expression 'book'. See s. 2, the Copyright Act 1842. See also *Bach v Longman* (1777) 2 Cowp 623. See further Bently and Sherman, at 53. It might be maintained that 'book' copyright dealt with what nowadays could be viewed as literary, dramatic, musical and, up to a point, artistic work. It did not, nevertheless, extend to performing right as opposed to 'copyright' narrowly read as the sole right of making physical copies. See s. 2, the Copyright Act 1842. See further Copinger, at paras. 2-18, 2-21; Laddie et al, at paras. 4.102 to 4.105, 4.111, 4.112.

[13] Sherman and Bently, at 193. See also ibid., at 58.

[14] See Fitzpatrick, S., "Copyright Imbalance: US and Australian Responses to the WIPO Digital Copyright Treaty" [2000] EIPR 214, at 218.

[15] See further Bannister, J., "Is Copyright Coping with the Electronic Age?" (1996) 4 Australian Law Librarian 11, at 13; Copinger, at paras. 2-06, 2-08; Fitzpatrick, S., "Copyright Imbalance: US and Australian Responses to the WIPO Digital Copyright Treaty" [2000] EIPR 214, at 218.

[16] See further Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 190.

[17] Castells, Vol. I, at 4.

Computer programs represent a modern phenomenon and one of the most 'exotic' species of copyright works. The case of this relatively newly discovered/created type[18] can be a litmus test for the effectiveness, conceptual soundness, and consistency of copyright protection in general.

It is not infrequently maintained that if a piece of creative effort is perceived as manifesting an industrial or utilitarian character and lacking in communicative qualities, it can be further interpreted as bordering on the unprotectable by copyright[19]. In this respect, computer programs can be analysed in delimiting the ambit of copyright law and testing its conceptual flexibility[20]. In line with the categorial structure of copyright law, the same analytical pathway leads to discerning the fringes of the literary domain which is arguably the oldest area in the field[21]. Moreover, the categorisation of computer programs as literary works[22] is reflective of the internal arrangement, or rather the correlative genus/species framework, of literary copyright[23]. Within this matrix, knowledge drawn from anatomising specific features of software can be used in fleshing out the general construct of literary work.

When the 'beast' of copyright was still suffering from its (seemingly perpetual) teething problems at the edge of its pre-modern 'habitat', the House of Lords yielded to legal positivism[24] in describing copyright as 'altogether an artificial right, not naturally and necessarily arising out of the social rules that ought to prevail among mankind assembled in communities'[25], and as 'a creature of the municipal laws of each country'[26].

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[18] As to the creative or mimetic nature of IP law, see Sherman and Bently, at 57-58.

[19] See, for instance, Drexl, J., *What is Protected in a Computer Program? Copyright Protection in the USA and Europe,* Weinheim, 1994, at 9, 11; Ricketson, at 897-899. Cf. Laddie et al, at para. 2.31; Ricketson, at 867; Torremans, at 5-6.

[20] See further subs-s 2.6.1, 4.3.2.B.a, 4.3.2.B.b, below.

[21] See also Copinger, at paras. 2-07 to 2-17. Incidentally, the legendary literary property debate was, probably, the first attempt to rationalise property protection for intellectual labour. The dispute sprung from the problems of the book trade in Britain in the second half of the eighteenth century. The main topic was the status of common law literary property. As such, literary property as 'a wholly immaterial property in text' or 'property in books and engravings' and as an artistic area was juxtaposed with 'technical property' or property in machines. See further Rose, M., "The Author in Court: *Pope v Curll* (1741)" (1992) 10 Cardozo Arts and Entertainment LR 493; Sherman and Bently, at 10-13, 17, 39-44.

[22] See subs. 1.3, below. See also Bently and Sherman, at 57.

[23] See further subs-s 2.6.2, 4.2.2, 4.2.3.C, 4.3, below.

[24] See Austin, J., *The Province of Jurisprudence Determined*, Cambridge University Press, 5th ed., 1995, at 13; Dworkin, R., *Law's Empire*, Hart Publishing, 1998, at 33; Hart, H., *The Concept of Law,* Oxford University Press, 2d ed., 1997, at 1, 6-8, 185.

[25] *Jefferys v Boosey* (1854) 4 HLC 815, at 937.

[26] Ibid.. See further Cornish, at 299.

In our world of questionable territoriality, the clash of ideas lurking behind this generalisation might surface in the margin of 'feralised' (that is here, non-copyright) laws celebrated in the virtual world and thus take on an unexpected and paradoxical topicality. In specific contexts, the role of territoriality in copyright law may be impugned only after the relevant doctrinal borderlines are clearly drawn. The present study is set in the realm of copyright subsistence which forms the foundation of the complex edifice of copyright. This stratum of copyright law is detached from immediate balances of interests and Zeitgeist peculiarities to a greater degree than such meta-subsistence areas as infringement, limitations and exceptions.[27] According to the Copyright, Designs and Patents Act 1988, copyright subsists (that is, exists) in certain descriptions of work.[28] Within this matrix, the notion of work lies at the epicentre of copyright subsistence investigations. At the same time, the concept of subsistence is a complex sphere embracing a number of issues which hinge on the criteria for deciding whether a work attracts copyright.[29] In this study, such terms as protectability by copyright and copyrightability are generally used as synonymous with subsistence of copyright. Along these lines, 'protectable' and 'copyrightable' are read as 'capable of being copyright'.[30] Incidentally, the term 'copyrightable' understood as 'susceptible of copyright protection' is used extensively in American copyright narrative.[31] It is noteworthy that, pursuant to the Berne Convention Implementation Act of 1988, US copyright law was brought into conformity with the standards of the Berne Convention, including the absence of formalities.[32] In this connection, the word copyrightability in any of its incarnations does not connote references to registration and can be employed in other jurisdictions.

During the last decade of the twentieth century copyright law rapidly developed along its international (global and regional) dimensions.[33] Further materialisation of this inner dynamic in the shape of European initiatives and directives crossed the

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[27] See also Bently and Sherman, 2nd ed., at 176 ('the evidential nature of the infringement inquiry'); Ricketson, S., "The Boundaries of Copyright: Its Proper Limitations and Exceptions: International Conventions and Treaties" [1999] IPQ 56, at 61.

[28] See s. 1 (1), CDPA. See also Bently and Sherman, 2nd ed., at 56.

[29] See Cornish and Llewelyn, at para. 10-03. See also See further Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 35-36, 44-45.

[30] See Laddie et al, at para. 2.15.

[31] See further Nimmer, at 2-6, 2-13, 2-28, 2-29.

[32] See further ibid., at §§ 1.01[B][2], 1.12[A], 7.02[C], 7.05.

[33] See also Copinger, at para. 24-01.

threshold of the new millennium.[34] The rationale behind EC copyright law, that is a regional model, differs from that of international treaties, that is the global model of which the Berne Convention is the cornerstone. The underlying borderlines are particularly clear in terms of tackling territoriality.[35] Under the Berne paradigm, which nowadays effectively extends to both the copyright provisions of the TRIPs Agreement and the WIPO Copyright Treaty,[36] the ideal of 'complete common copyright code' is tempered with the principle of national treatment.[37] At the same time, harmonisation is the name of the game in the Community law.[38]

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[34] To date, there have been adopted nine directives affecting the scope and enforcement of copyright and related rights: Council Directive 91/250/EEC of 14 May 1991 on the legal protection of Computer programs [1991] OJ L122, 17.05.1991, at 42-46 (hereinafter 'the Software Directive'); Council Directive 92/100/EEC of 19 November 1992 on rental right and lending right and on certain rights related to copyright in the field of intellectual property [1992] OJ L346, 27.11.1992, at 61-66; Council Directive 93/83/EEC of 27 September 1993 on the coordination of certain rules concerning copyright and rights related to copyright applicable to satellite broadcasting and cable retransmission [1993] OJ L248, 6.10.1993, at 15-21; Council Directive 93/98/EEC of 29 October 1993 harmonizing the term of protection of copyright and certain related rights [1993] OJ L290, 24.11.93, at 9-13 (hereinafter 'the Duration Directive'); Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases [1996] OJ L077, 27.03.96, at 20-28 (hereinafter 'the Database Directive'); Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on electronic commerce') [2000] OJ L178, 17.07.2000, at 1-16; Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society [2001] OJ L167, 22.06.2001, at 10-19 (hereinafter 'the Copyright Directive'); Directive 2001/84/EC of the European Parliament and of the Council of 27 September 2001 on the resale right for the benefit of the author of an original work of art [2001] OJ L272, 13.10.2001, at 32-36; Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights [2004] OJ L157, 30.04.2004, at 45-86. See further Bently and Sherman, 2nd ed., at 43-52, 58, 318. See also subs-s 2.5.3.D., 3.2.2., below.
[35] See also Cornish and Llewelyn, at para. 9-25.
[36] The 1994 TRIPs Agreement contextualised intellectual property rights. See further Bently and Sherman, at 7. Incidentally, countries which sign on to TRIPs become members of the Berne Union. See further Fitzpatrick., S., "Prospects of Further Copyright Harmonisation?" [2003] EIPR 215, at 221. The 1996 WIPO Copyright Treaty 'reincorporated the Berne-plus elements of TRIPs into an exlusively intellectual property environment, as well as adding new TRIPs-plus elements'. (Bently and Sherman, at 8.) The 1996 WIPO Performers and Phonograms Treaty, dealing with the rights of audio permormers and sound recording producers, also embodies this 'Berne++' formula. See ibid.. See further Copinger, at paras. 24-12, 24-72 to 24-85, 24-125 to 24-156; Cornish and Llewelyn, at paras. 9-31, 9-36. See also subs-s 1.3., 3.1., below.
[37] Se further Bently and Sherman, at 5; Copinger, at 24-07, 24-13. See also Cornish and Llewelyn, at 9-25, 10-36; Vaver., D., 'The National Treatment Requirements of the Berne and Universal Copyright Conventions" (1986) 17 IIC 577. In a sense, the conventional minima reflect a compromise between the 'complete code' and the national treatment. See also Bently and Sherman, at 35; Copinger, at para. 24-72; Sherman and Bently, at 120.
[38] At the same time, 'there are many situations where the directives tolerate a level of difference between the laws of member states.' (Bently and Sherman, 2nd ed., at 45.) Regarding the issue of harmonisation, see further Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 251; Bently and Sherman, 2nd ed., at 11, 18-20, 43-46. See also Recitals 3, 4, 6, 9, Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society [2001] OJ L167/10 (hereinafter "the Copyright Directive"). See also Bonofacio, M., "The Information Society and the Harmonisation of Copyright and Related Rights: (Over)stretching the Legal Basis of Article 95 (100A)?" [1999] Legal

The above developments at the global and regional levels have been accompanied by such activities as negotiations and implementation which in turn, almost routinely, activate the third spatial dimension of copyright, the national or domestic one.[39] On this basis, the general doctrine of British copyright law can further crystallise.

These trends echo the internalised international stimuli, the representational objectives, and potentially the creative outcome of the process of self-understanding that British copyright underwent in the first half of the nineteenth century when new narratives emerged in the context of bilateral copyright agreements.[40]

An 'approximation of laws' was, of course, part of the task at that time.[41] The current version of harmonisation centres upon the issues of new technologies.[42] The advent of new technological and cultural phenomena, such as the Internet and the Web, coinciding with what might grow into a new crystallisation of copyright can make particularly timely an attempt to rethink the paradigm of copyright law.

Realistically, hybrid forms of protection and other doctrinal impurities are inevitable at the time of international pressure and horse-trading between interest groups and legal regimes.[43] However, changes thus made or envisaged should be analytically purified, that is re-examined within the frame of reference of domestic law to minimise possible conceptual losses.[44]

To prevent doctrinal chaos, the domestic system of copyright should be taken as a point of departure in any related discourse on the subject of change. For these purposes, British copyright law should be restituted to its proper frame of reference in the form of an archetypal or ideal paradigm.[45] 'Ideal' is construed here as conceptual, capable of transcending particular political agendas, 'most suitable' as contextualised, and conforming absolutely to the underlying theory.

Otherwise, the law may find itself in a cart-before-the-horse situation where, say, simplification of the system of protection precedes a comprehensive account of such, or the role of territoriality is questioned before the existing doctrinal borderlines are

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Issues of European Integration 1 (hereinafter 'Bonofacio'); Fitzpatrick, S., "Prospects of Future Copyright Harmonisation?" [2003] EIPR 215; Vinje, T., "Should We Begin Digging Copyright's Grave?" [2000] EIPR 551, at 551-552, 558. See also *EMI Electrola GMbH v Patricia Im-und Export*, Case 341/87 [1989] ECR 79; *Warner Bros v Christiansen*, Case 158/86 [1988] ECR 2605.
[39] See further Sherman and Bently, at 120, 122, 126. See also subs-s 2.4.1., 2.5.3.C., below.
[40] See further Sherman and Bently, at 120, 129. See also Ricketson, at 25, 27.
[41] See Sherman and Bently, at 115-116.
[42] See Bently and Sherman, at 41.
[43] See ibid., at 41-42.
[44] See also subs-s 2.5.3., 3.3., 4.2.1., 4.3.2.B., below.
[45] See further subs. 5.4., below. See also Sherman and Bently, at 127.

clearly drawn. In this connection, it is necessary to press for justified timing of changes and justified sequences of conceptual events. This order of things can be illustrated with references to doctrinal or analytical reasoning which proceeds from copyright subsistence to meta-subsistence as alluded to above in this section. This temporal dimension is indispensable for building, understanding or transforming a system of copyright. On these lines, the nature of conceptions and phenomena should be understood before they can be adapted to 'new challenges' such as those facing copyright in the Information Society[46]. The resultant understanding, in turn, determines the ways and fruits of such an adaptation and enables a researcher to accurately perceive new environments.

1.2. System, logic, and coherence.

As indicated above, this study responds to the present-day doctrinal need for a systematic review of the field[47] to pave the way for an ideal British paradigm of copyright subsistence that would yield up the nature of copyright[48]. This should be separated from such doctrinal chaff as illogicalities, 'expedient' concepts, and unjustified 'borrowings' from foreign schools and jurisdictions.[49]

Analysis of foreign doctrines might, nevertheless, be of assistance in marking out the British approach by dint of juxtaposition. In addition, not infrequently, Australian, American and Continental European legislative, judicial and academic discourses may provide lessons for British copyright and its evolution. Some ideas coming from abroad can be accommodated, drawn upon or in some ways adopted, thus building on the systematic conceptualisation of copyright subsistence.

'Systematic' is construed here as methodical and created (and/or existing) in conformity with a system. The latter is read as a structure made up of parts (notions,

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[46] See Recital 6, the Copyright Directive. See also Proposal for a European Parliament and Council Directive on the harmonisation of certain aspects of copyright and related rights in the Information Society. COM (97) 628 final. Explanatory Memorandum, at 2. See also Vinje, T., "Should We Begin Digging Copyright's Grave?" [2000] EIPR 551.

[47] See Vaver, D., "Intellectual Property: The State of the Art" (2000) 16 LQR 621 (hereinafter "Vaver"), at 624, 636.

[48] See also Patterson, L. and Lindberg, S., *The Nature of Copyright: A Law of Users' Rights,* University of Georgia Press, 1991, at 5, 109-111, 238.

[49] Cf. Hayhurst, W., "'Creativity' as an Aspect of Originality: Copyright in Works that are Included in Other Works" [2003] EIPR 326.

concepts, doctrines, procedures, arguments, etc.) organised into a connected whole.[50] Therefore, it is important to detect specific patterns in the field and mesh them together. The process of reducing the existing frameworks to a system is termed in this study 'systematisation'.[51] The intermediate results of the underlying synthesis are also grouped under this rubric.

The words 'system' and 'systematisation' further connote references to a scheme of classification. The emphasis is here on natural, or rather historically justified, conceptual links and hierarchies.[52] The taxonomic aspect of our systematic approach in the form of a genus/species template is reflected in the structure of the present thesis. This arrangement echoes the underlying reasoning which springs from the notion of work. The argument further deductively unfolds through the concept of originality and original works to literary works and, finally, to computer programs, including Web-based software.[53] As explained in this chapter, the classificatory ingredient is methodologically specified as a superclass/class framework within the proposed model of structuring and determining copyright subsistence.[54]

Such a system is to be integral, that is containing all parts that are necessary in particular contexts. Ultimately, notions and phenomena acquire meaning only if they are integrated into a system.[55] Within this framework, 'systematic' implies that new and/or tested conceptions and subject matter should be justified, consistent, and fitting in with the rest of the field.[56] At the same time, the resultant system can evolve, without changing its nature, to adapt to new environments. On these lines, copyright domains, such as the literary one, can be viewed as spatio-temporal phenomena: they are projected onto the aforesaid spatial axes and evolve to embrace new sub-domains, such as computer programs.

Copyright law as contextualised, that is placed, developed and studied in contexts, exhibits its capacity to accommodate the relevant attributes and the language of the related domains in evolving forms. This 'sense of environment' is inherent in copyright. Accordingly, contextualisation embodying this quality is framed in both

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[50] See also Ricketson, at 39.
[51] See also Sherman and Bently, at 138.
[52] See further subs-s 2.3.6., 2.7., 3.2.1., 4.3.1., below.
[53] As to specific inductive lines of our analysis, see subs. 1.7., below.
[54] See subs. 1.7., below.
[55] See further Lévi-Strauss, C., *Structural Anthropology*, Anchor Books, 1967, at 31-32.
[56] This inclusion/exclusion rationale determines the shape of the system. See further subs-s 2.5.3.D., 3.4., 4.3.2.B., below. See also Sherman and Bently, at 120, 123, 124, 127.

technological and historical terms as intrinsic to the system of copyright subsistence mapped out in this thesis.[57]

Based on the above metaphysical legacy, contexts are utilised in so far as they further define the nature and internal logic of what is protected as well as the evolution and hierarchy of the related notions. The nature or basic character of the matter protected by copyright resides in the essence of such notions as work, originality, domain, substantiality, and part. In the copyright subsistence investigation, the substance of the material being dealt with should be construed as an instance of this basic character. The internal logic which this study tries to unveil is mainly encapsulated in the concepts of result of intellectual labour, description of work, originality continuum, *de minimis* thresholds, part-and-substantial, and the nature/domain structure. These areas can be abstracted from the details of an author's life and the questions of fixation, publication, and registration.[58] Accordingly, such areas as (absence of) formalities, permanent form, qualification requirements and duration principally lie outside the scope of the present work. Before these existing or possible additional requirements or criteria are considered, the framework analysed here within the generality of copyright subsistence takes on a certain potentiality. That is, the abstracted substance of the material at issue, which embodies and manifests the above basic character, is what can be potentially copyright if the additional requirements/criteria are met. These in turn can be conceptualised without recourse to the act of creation (as distinct from its form and timing) and the corresponding labour/result structure.[59] The additional criteria, albeit extrinsic to the basic character of the protected matter, still constitute part of the system. Up to a point, they are thus addressed where appropriate in this thesis.[60] But, of course, such important issues require substantial studies in their own right. Here, only some related observations can be made to clarify further reasoning on the lines of the main inquiry.

Theoretically, arguments put forward in such fields as the appropriate period of protection and the requirement of permanent form can be mapped onto specific copyright precepts. On these lines, a justificatory rationale which might be shored up

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[57] See further subs-s 3.3.1., 3.3.4., 4.2.3.C., below.

[58] See also Fitzpatrick, S., "Copyright Imbalance: US and Australian Responses to the WIPO Digital Copyright Treaty" [2000] EIPR 214, at 218.

[59] See further subs-s 2.3.5., 2.3.6., below. Copyright still subsists in a work as long as the term of its copyright protection has not expired. Thus duration is construed as a criterion or requirement in terms of the temporal dimension of copyright subsistence.

[60] See further subs-s 2.3.5., 2.7., 3.3.2., below.

on both sides of the Atlantic could include the limited scope of rights, the preservation-of-the-public-domain   policy, the statutory-monopoly principle, etc..[61] However, in actuality, inevitably the questions of duration and fixation are largely determined by expediency and practicability respectively.[62] The conceptual models which mediate the rationales behind qualification requirements (sufficient connection by personal status or publication)[63] and (absence of) formalities address the fundamental nature of copyright and creativity.[64] This issue is of higher philosophical order compared with the basic character of the subject matter. At the same time, the principles of sufficient connection and absence of formalities find their specific expression in the concrete forms which are mainly governed by various political or economic considerations and by what might be termed 'club membership' (Convention countries or the countries of the Union; the EEC, etc.).[65] In these guises expediency and practicability again come to the fore. Tellingly, it is only the narrative of the absence of formalities, in contrast to qualification requirements, which tallies with the concept of copyright as a property 'naturally flowing' from the act of creation under the Berne paradigm purportedly guided by the personality theory.[66]

Within this framework, the ideal of universality gives way to the principle of national treatment which is effectively a compromise on this subject.[67] Similarly, in both historical and theoretical terms the phenomenon of registration may coexist with the abstract concept of work characteristic of the modern law of copyright.[68]

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[61] See further Cornish and Llewelyn, at paras. 9-54, 10-33; Patterson and Lindberg, at 50-51, 60-62, 239.

[62] See subs. 3.3.2., below. See further Cornish and Llewelyn, at paras. 9-54, 9-55; Kilbey, I., "Copyright Duration? Too Long!" [2003] EIPR 105. See also Bently and Sherman, at 146, 147, 149; Brennan, D., and Christie, A., "Spoken Words and Copyright Subsistence in Anglo-American Law" [2000] IPQ 309, at 313-316; Copinger, at para. 3-74; Gendreau, Y., "The Criterion of Fixation in Copyright Law" (1994) 159 Revue Internationale du Droit d'Auteur 110; Nimmer, at § 2.03[B]; Ricketson, S., "Simplifying Copyright Law: Proposals From Down Under" [1999] EIPR 537, at 543-545; Seville, C., "Copyright' Bargain – Defining Our Terms" [2003] IPQ 312. It is to be noted that material form or tangible embodiment is not a requirement for protection under the Berne Convention. See Art. 2(2), Berne Convention.

[63] See further Bently and Sherman, at 100-105; Cornish and Llewelyn, at paras. 10-35 to 10-37.

[64] See further Fitzpatrick, S., "Prospects of Further Copyright Harmonisation?" [2003] EIPR 215; Kawohl, F., and Kretschmer, M., "Abstraction and Registration: Conceptual Innovations and Supply Effects in Prussian and British Copyright (1820-50)" [2003] IPQ 209 (hereinafter "Kawohl and Kretschmer").

[65] See further Bently and Sherman, at 78, 103; Cornish and Llewelyn, at paras. 10-32, 10-35; Kawohl and Kretschmer, at 221-222, 226; Ricketson, at 144-156, 200.

[66] See further Fitzpatrick, S., "Prospects of Further Copyright Harmonisation?" [2003] EIPR 215.

[67] See further Bently and Sherman, at 5, 100. See also Ricketson, at 20, 32, 39-41.

[68] See further Kawohl and Kretschmer, at 214, 221, 226-227.

The abstract or archetypal model of work mediates the outlined internal logic of the protected matter. From this derives the copyright-specific signification of the word 'logical'. At the same time, the logic of copyright law should not fly in the face of logic framed in general terms as sound reasoning. Along these lines, 'logical' is further specifically interpreted as free of contradictions, inconsistencies and discontinuities.[69] The term 'logical' also connotes references to the above justified order of things, including justified timing of changes, to prevent cart-before-the-horse (that is, illogical and impractical) situations.

Coherence, embracing among other things logical and terminological consistency, should characterise both a paradigm of protection and a systematic account of its fundamentals.[70] It would appear that British copyright has lost its coherence on such an issue as originality in view of the European threshold framed as the author's own intellectual creation and introduced in the fields of databases, computer programs, and certain photographs.[71] This criterion has been transposed into the CDPA 1988 only with reference to databases.[72] It might be argued that the European yardstick of originality was not legislatively implanted into the British formula of computer programs' copyright because the position in the UK prior to the implementation of the Software Directive was already similar to the position required under Community law.[73]

On these lines, the fact that the originality requirement of the 1988 Act in relation to databases explicitly includes the new formula can be mapped onto the actual origins of this change. More specifically, the Database Directive and the UK Database Regulations introduced a two-tier system: the modified copyright protection for databases with the new originality criterion and a new *sui generis* right known as the database right.[74] It is this juxtaposition of rights that might possibly be responsible for

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[69] See further subs. 5.4., below.

[70] See Vaver, at 637. See also Dicey, A., *Can English Law Be Taught at the Universities?* Macmillan &Co, 1883, at 18; Kress, K., "Coherence" in Patterson, D., *A Companion to Philosophy of Law and Legal Theory*, Blackwell Publishers, 2000, at 533-552. It should not be overlooked that a technological sea change is likely to exacerbate unpredictability attributable to unsystematic frameworks. See also Siebrasse, N., "A Property Right Theory of the Limit of Copyright" (2001) 51 Univ. of Toronto LJ 1 (hereinafter "Siebrasse"), at 60.

[71] See Art. 1 (3), the Software Directive; Art. 6, Recital 17, the Duration Directive; Art. 3 (1), Recitals 15, 16, the Database Directive. See also Bently and Sherman, 2nd ed., at 88-89, 101-106.

[72] See s. 3A (2), CDPA. See also reg. 6, the Copyright and Rights in Databases Regulations 1997, SI 1997/3032.

[73] See also Bently and Sherman, 2nd ed., at 103.

[74] See Art. 7, Recitals 39, 40, the Database Directive; reg. 13, the Copyright and Rights in Databases Regulations 1997, SI 1997/3032.

the 'special case' of databases as regards the standard of the author's own intellectual creation. In this context, s.3A(2) points out the principal distinctive feature of the copyright tier.[75]

Furthermore, it is not surprising that some commentators nearly equated the criterion of the author's own intellectual creation with the common law standard of originality.[76] Other writers characterised the new EC test as a compromise between the existing originality criteria. It cannot be ruled out that the ECJ will eventually decide on the standard that prevails.[77] At the same time, the ambiguity of the new requirement in terms of its wording and doctrinal lineage as well as the conspicuous absence of proceedings brought before the ECJ on this subject may indicate that interpretative flexibility was intended by the Community legislator.

It will be clear from the analysis carried out in this study that the terms constituting the author's own intellectual creation can be construed as consistent with the corresponding elements of the UK standard.[78] It is of paramount importance how the national courts will read the formula. If the ECJ comes up with the final exegesis of the test, British copyright should be prepared for such an eventuality.[79] To minimise possible destructive effects, it is necessary to demystify the identity of domestic copyright law and its internal workings. A clear and accurate representation of the law can be obtained through continuous systematic analysis. In the meantime, we would agree with Professor Karnell that 'national laws are free to develop originality wording at will, as long as the legislators and courts take care [to use] … a prescribed "mantra" for originality'.[80]

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[75] See also Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 217; Bently and Sherman, 2nd ed., at 298.

[76] See further subs. 2.5.3.C., below.

[77] See Bently and Sherman, 2nd ed., at 102.

[78] See subs. 2.5.3.A., below.

[79] See also Commission Staff Working Paper on the review of the EC legal framework in the field of copyright and related rights, SEC (2004) 995, at para. 3.1; Report from the Cooission to the Council, the European Parliament and the Economic and Social Committee on the implementation and effects of Directive 91/250/EEC on the legal protection of computer programs, COM (2000) 199 final, at 9-10; Walter, M., "Updating and Consolidation of the Acquis. The Future of European Copyright" (speech at the Copyright Conference, Santiago de Compostela, June 2002; available at http:// europa.eu.int/comm/ internal_market/copyright/docs/conference/2002-06-santiago-speech-walter_en.pdf), para. III.1.1..

[80] Karnell, G., "European Originality: A Copyright Chimera" in Kabel and Mom, at 208-209.

1.3. Topicality in the context of copyright re-framing conceptions.

New narratives generated in broader technological and/or international contexts may instigate copyright reforms or at least induce an idea of change in the field.[81] Software often tends to be a bone of contention in such situations.

It is not the purpose of this thesis to juxtapose various modalities for software protection[82] in order to 'enthrone' one of the principal system-forms of intellectual property in this realm[83]. Instead, we focus on copyright and specifically the concept of copyright subsistence forming the nucleus of 'legislative realities'[84] so far as IP protection for computer programs is concerned.

These realities indicate that copyright protection 'does not necessarily exclude other forms of protection'[85]. Moreover, within the framework of developing a *sui generis* form of software protection[86], even the leading proponents of such an approach 'do not recommend any change to the role of copyright law in protecting program code and/or expressive displays … produced when program instructions are executed'[87]. This framing might be built into the system of coexisting but not coextensive forms of protection.

It is hardly debatable that the rationale behind the *sui generis* paradigm is logically sound in being construed in general justificatory terms as providing a legal form of protection tailored for the subject matter[88]. On the other hand, such a conceptual framework might still be illustrative of the famous Achilles paradox. That is, irrespective of the speed of a proposed doctrinal sea change, while we close the initial

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[81] See also Sherman and Bently, at 111, 127, 219.

[82] See also Correa, C., "TRIPs Agreement: Copyright and Related Rights" (1994) 25 IIC 543 (hereinafter "Correa"), at 545.

[83] See further Bainbridge, at 11-16; Cornish, at 3, 441. See also Siebrasse, at 38.

[84] Lai, at 5. As to certain policy set-backs we may have to face up to in this context, see Vaver, at 636.

[85] Correa, at 546. See also Dworkin, G., "Copyright, Patents and/or Sui Generis: What Regime Best Suits Computer Programs?" (hereinafter "Dworkin") in Hansen, at 179 ("Copyright is the major player in the software game, backed up by a reasonably generous patent approach for innovative and technical aspects of software related inventions"). See further ibid., at 168.

[86] See further Reichman, J., "Legal Hybrids Between the Patent and Copyright Paradigms" (1994) 94 Colum. LR 2432; Samuelson, P., Davis, R., Kapor, M., and Reichman, J., "A Manifesto Concerning the Legal Protection of Computer Programs" (1994) 94 Colum. LR 2308; Stern, R., "The Bundle of Rights Suited To New Technology" (1986) 46 U Pitt LR ; Stern, R., "Is the Centre Beginning to Hold in US Software Copyright Law?" [1993] EIPR 39.

[87] Samuelson, P., "Comments on Gerald Dworkin's Article on Copyright, Patent or *Sui Generis* Protection for Computer Programs" (hereinafter "Samuelson") in Hansen, at 193.

[88] See Stern, R., "Is the Centre Beginning to Hold in US Software Copyright Law?" [1993] EIPR 39.

gap of understanding and conceptualisation, the technological developments in question will have created a new 'gap'.

In addition, 'a groundswell of academic opinion, critical of the application of current law to current problems and also of the capacity of such law to cope with future software related technological developments, is gaining momentum'[89]. It is crucial to examine the existing mechanism systematically and to test it for consistency and workability in ascertaining whether copyright law has to be 'distorted to accommodate software'[90] since copyright is not to begin *de novo*[91]. Along these lines, the above 'doctrinal run' might be rendered otiose.

Within this matrix, a *sui generis* form of software protection could effectively imply corresponding re-contouring of the scope of copyright. A number of issues fitting into the mould of copyright re-conceptualisation[92] might acquire particular prominence in view of the development of the Information Society[93]. Although not operating in conceptually uncharted waters, the widely discussed reforms enacted in the USA[94] and Australia[95] in conformity with the standards set down in the WIPO Copyright Treaty[96] conspicuously put the digital agenda[97] on the map of 'domestic

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[89] Dworkin in Hansen, at 179. See also ibid., at 181.

[90] Ibid., at 180. See also Samuelson, P., "CONTU Revisited: the Case Against Computer Programs in Machine Readable Form" (1984) Duke LJ 663. Similarly, in the context of patents, see Samuelson, P., "Benson Revisited: the Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions" (1990) 39 Emory LJ 1025. See also Brimelow, A., "Does Intellectual Property Need a New Set of Wheels" [2001] EIPR 44, at 47.

[91] See also Rose, L., "The Emperor's Clothes Still Fit Just Fine – Or, Copyright is Dead. Long Live Copyright" (1995) 3.02 Wired 103. Cf. Barlow, J., "Selling Wine without Bottles. The Economy of Mind on the Global Net" (hereinafter "Barlow") in Hugenholtz, at 169.

[92] See also Brimelow, A., "Does Intellectual Property Need a New Set of Wheels" [2001] EIPR 44; Laddie, H., "Copyright: Over-strength, Over-regulated, Over-rated?" [1996] EIPR 253, at 260; Perlmutter, S., "Convergence and the Future of Copyright" [2001] EIPR 111 (hereinafter "Perlmutter"), at 112-113, 115.

[93] See Goldstein, P., "The Future of Copyright in a Digital Environment: Summary of Discussion" in Hugenholtz, at 241, 244, 246; Hugenholtz, B., "Adapting Copyright to the Information Superhighway" in Hugenholtz, at 81; Vandoren, P., "Copyright and Related Rights in the Information Society" in Hugenholtz, at 153. See also Castells, Vol. I, at 21; Castells, Vol. III, at 377-382.

[94] See Digital Millennium Copyright Act 1998 (DMCA). See further Band, J., "The Digital Millennium Copyright Act: A Balanced Result" [1999] EIPR 92; Cohen, J., "WIPO Copyright Treaty Implementation in the United States: Will Fair Use Survive?" [1999] EIPR 236; McEvedy, V., "The DMCA and the E-Commerce Directive" [2002] EIPR 65; Nimmer, chapters 12A, 12B, Appendix 2K; Vinje, T., "Copyright Imperilled?" [1999] 192, at 201; Wing, M. and Kirk, E., "European/US Copyright Law Reform: Is a Balance Being Achieved?" [2000] IPQ 138 (hereinafter "Wing and Kirk"), at 149, 157.

[95] See the Copyright Amendment (Digital Agenda) Act 2000.

[96] See also Dixon, A. and Hansen, M., "The Berne Convention Enters the Digital Age" [1996] EIPR 604; Vinje, T., "A Brave New World of Technical Protection Systems: Will There Still Be Room for Copyright?" [1996] EIPR 431; Vinje, T., "The New WIPO Copyright Treaty: a Happy Result in Geneva" [1997] EIPR 230.

law'[98]. It should be pointed out that while the USA is a contracting party to the WCT[99], Australia is not a signatory to the Treaty[100]. In this respect, it is the DMCA that can be formally construed in terms of the implementation of the WIPO Treaty provisions[101]. At the same time, for the purposes of our present deliberations, specific significance could be attached to the Australian discourse[102] since its conceptual background incorporates the idea of copyright simplification as a re-contouring framework[103], although, inevitably, it cannot be said that this model in it entirety has found its way into Australian copyright doctrine.

As to 'questions of substance' raised within this template[104], there were propounded two 'open-ended' categories of protected subject-matter, namely 'creations' satisfying the criterion of 'significant intellectual effort' and 'productions' as 'results of the application of time, effort and resources'[105]. It was recommended by the Copyright Law Review Committee that the category of creations was to include computer programs[106]. Since no specific sub-categories of productions are proposed, it remains to be unambiguously answered whether this categorisation signifies that a program not passing the higher 'innovation threshold'[107] could irreversibly drop out of the realm of copyright (possibly, being 'wedged' into a *sui generis* scheme[108]) or, *reductio ad*

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[97] See <http://www.wipo.int/copyright/en/digital_agenda.htm>; Green Paper on Copyright and Related Rights in the Information Society. COM (95) 382 final; Follow-up to the Green Paper on Copyright and Related Rights in the Information Society. COM (96) 568 final. See further Bently and Sherman, at 38; Bonofacio, at 33-35; Ficsor, M., "Towards a Global Solution: the Digital Agenda of the Berne Protocol and the New Instrument. The Rorschach Test of Digital Transmissions" in Hugenholtz, at 114, 119. See also Perlmutter, at 113.

[98] As to the European dimension, see Hugenholtz, B., "Why the Copyright Directive is Unimportant, and Possibly Invalid" [2000] EIPR 499; Vinje, T., "Should We Begin Digging Copyright's Grave?" [2000] EIPR 551; Wing and Kirk, at 139, 142.

[99] See <http://www.wipo.int/treaties/documents/english/pdf/s-wct.pdf>.

[100] See further Aplin, T., "Contemplating Australia's Digital Future: The Copyright Amendment (Digital Agenda) Act 2000" [2001] EIPR 565.

[101] Cf. Fitzpatrick, S., "Copyright Imbalance: US and Australian Responses to the WIPO Digital Copyright Treaty" [2000] EIPR 214, at 215, 228.

[102] See further the Copyright Amendment (Computer Programs) Act 1999; the Copyright Amendment (Moral Rights) Act 2000. See also <http://www.ipaustralia.gov.au>, <http://scaleplus.law.gov.au>.

[103] See further Christie, A., "Reconceptualising Copyright in the Digital Era" [1995] EIPR 522. See also Christie, A., "Australia's Proposal for Computer Software Protection" [1994] EIPR 77; Perlmutter, at 115.

[104] See Ricketson, S., "Simplifying Copyright Law: Proposal from Down Under" [1999] EIPR 537, at 550.

[105] See ibid., at 544.

[106] See Copyright Law Review Committee: Simplification of the Copyright Act, Part 2: Categorisation of Subject Matter and Exclusive Rights and Other Issues (February, 1999), at 53-54. See also Christie, A., "A Proposal for Simplifying United Kingdom Copyright Law" [2001] EIPR 26, at 35.

[107] See also Christie, A., "A Proposal for Simplifying United Kingdom Copyright Law" [2001] EIPR 26, at 33, 35.

[108] See ibid., at 35.

absurdum, 'cease to exist' as a computer program and be 'reincarnated' in a 'broadly and inclusively defined'[109] 'production' form. On the other hand, were different computer programs (or indeed, literary works in general) to be protected under different headings indicating differential doctrinal treatment, such a system would embody a radical reappraisal of copyright philosophy[110].

It is opined that a remedy for what might be diagnosed as the syndrome of 'simplification for its own sake' should be sought[111] since such a 'self-centred' abstract may materialise in the shape of a construct incompatible with the very nature of copyright. To eschew such an artificial approach, it is essential to provide a proving ground for the existing general paradigm of copyright. This, in turn, ought to rest on a systematic account of the present framework to determine what, if anything, is to be simplified.

Further discussions on this subject might be particularly material to the 'roots' of copyright as certain grounds for simplification of British copyright have recently been adduced[112]. The above reasoning, in this context, could be viewed as a principled approach predicated upon the primacy of systematisation as a conceptual precept that is not aimed at any specific rendering of the idea of copyright re-framing or retrofitting[113].

Furthermore, this thesis seeks to explicate that various associated technological (here programming) theories and methodologies might, as superimposed on the current 'state of affairs', provide certain analytical patterns of systematisation and possible conceptual evolution[114] in this area.

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[109] See ibid., at 32, 35, 40. See also Christie, A., "Reconceptualising Copyright in the Digital Era" [1995] EIPR 522, at 524-525; Ricketson, S., "The New Copyright Act 1997" (1997) 29 IP Forum 14.
[110] For a somewhat similar approach mapping a level of protection onto the 'level' of authorship, or separating works manifesting 'authorial personality' from those of 'low authorship', see Ginsburg, J., "Creation and Commercial Value: Copyright Protection of Works of Information in the United States" in Dommering and Hugenholtz, at 54. See also Wilkins, J., "Protecting Computer Programs as Compilations Under Computer Associates v Altai" (1994) 104 The Yale Law Journal 435, at 461-462.
[111] See also Ricketson, S., "Simplifying Copyright Law: Proposal from Down Under" [1999] EIPR 537.
[112] See Christie, A., "A Proposal for Simplifying United Kingdom Copyright Law" [2001] EIPR 26.
[113] Cf. Barlow, at 170.
[114] See also Christie, A., "Reconceptualising Copyright in the Digital Era" [1995] EIPR 522, at 523.

1.4. Computer programs: from definitions to an extended definitional framework. The concept of programmatic entities.

Any analysis addressing the field of computer programming entails references to a certain technologically determined time-span. However, as indicated at the outset of this study, such a temporal dimension does not exhaust the meaning of the term 'modern' as employed here. It is within the general paradigm of modern copyright law with its inherent pre-modern metaphysical faculties that we examine various issues relative to the realm of software. A fairly complex mosaic of identities and guises taken on by computer programs and their elements within the ambit of copyright is a recurring theme in this study.

Although there is no legislatively enshrined definition of 'computer program' under British copyright[115], this privative factor should be woven into the general narrative of copyright subsistence (that includes reflections on European copyright 'actants' and 'settings') while certain additional guidelines could be drawn from the Australian and American legislation[116].

First of all, the categorisation of computer programs as literary works[117] is framed in accordance with the Berne paradigm as conceptualised under the auspices of both the World Intellectual Property Organisation (WIPO)[118] and the World Trade Organisation (WTO)[119]. In this context, it is to be pointed out that, within the

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[115] See also Bainbridge, at 1-2; Cornish, at 444; Laddie et al, at 797.

[116] In these common law jurisdictions, for better or worse, they opted for statutory definitions in this field. As to American copyright, see 17 USC § 101 ("A 'computer program' is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result"). See further Nimmer, at § 2.04[C]. As to Australian copyright, see ss. 10 (1), 47AB, the Copyright Act 1968. See also 4.3.2.B.b, below. For the international dimension in this respect, see Bently and Sherman, at 57; Ricketson, at 896.

[117] See s. 3 (1) (b), CDPA. Admittedly, this doctrinal step was not intuitively obvious. See s. 1 (1), Copyright (Computer Software) Amendment Act 1985 ('The Copyright Act 1956 shall apply in relation to a computer program… as it applies in relation to a literary work'.) See also Bently and Sherman, at 57.

[118] Pursuant to Art. 4 of the WIPO Copyright Treaty, computer programs, whatever may be the mode or form of their expression, are protected as literary works within the meaning of the Art. 2 of the Berne Convention. See further Copinger, at 24-77; Ricketson, at 900. However, it may hardly be averred that the WIPO has been constantly and consistently of the view that copyright protection is suitable for computer programs. See further Perry, L., "The Legal Protection of Computer Software – The WIPO Model Provisions" [1979] EIPR 34; Ricketson, at 896. Tellingly, its conceptually 'flirtatious' lapse into the idea of a *sui generis* form of protection was associated with the Paris Union rather than the Berne Union. See further Ricketson, at 895.

[119] See Art. 10 (1), the TRIPs Agreement ("Computer programs, whether in source or object code, shall be protected as literary works under the Berne Convention").

generality of such a non-copyright term as 'software'[120], there could be identified two principal copyright-significant abstracts mediated by such constructs as computer programs and preparatory design material[121]. These could, in turn, be construed as generic terms embracing multifarious entities and conceptions reflected in our elemental copyrightability analysis[122]. The relative classificatory disposition of these generalised constructs within the genus of literary works, contained in the provisions of s. 3(1) of the CDPA, differs from the corresponding framework formulated in the Software Directive[123]. According to the British version, preparatory design material is regarded as a distinct 'literary' species[124], while for the purposes of the Directive the term 'computer programs' includes their preparatory design material[125].

As the ramifications of this discrepancy are dealt with in this study[126], we may emphasise that not only cannot the common law/civil law distinction[127] be invoked here but also no other doctrinal 'seismic fault' could be associated with this situation. To solve this and related puzzles, the 'isolated versions' and 'evolving work' concepts are developed here not as competing approximations of the truth but as subgroups of possible copyrightability perspectives that extend to a number of issues[128]. It is submitted that, subject to contextualisation, these analytical instruments could be employed to determine copyright subsistence if based on the nature/domain approach as elaborated in this study. In terms of copyright systematisation, the accompanying conceptualisations could be 'played in counterpoint'.

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[120] Generally, the word 'software' is used in contrast with 'hardware'. In addition, the term 'code' can be employed in delimiting *instructions* as distinct from *data*.

[121] See further Bainbridge, at 1-2.

[122] The word "elemental" (employed, for instance, in such chemical terms as "elemental analysis", "elemental structure" and "elemental composition" related to various systematic analytical procedures involved in determining the nature of compounds and proportions of components) is preferred, in this context, to "elementary" that may connote, among other things, non-decomposability. Another signification of "elemental" as referring to the "four elements" is, in a sense, also not ruled out here and might be alluded to in the form of the "copyright quartet" composed of literary, dramatic, musical and artistic works as represented at elemental (in the first sense) level.

[123] As to definitional problems in this context, see Lai, at 166.

[124] See s. 3 (1) (c), CDPA.

[125] See Art. 1 (1), Software Directive.

[126] See also Cornish, at 444. Cf. Bainbridge, at 52.

[127] Reflected in the sphere of intellectual property in discriminating between the systems of *copyright* and *droit d'auteur*. See further Derclaye, E., "Software Copyright Protection: Can Europe Learn from American Case Law?" [2000] EIPR 7; Ginsburg, J., "A Tale of Two Copyrights: Literary Property in Revolutionary France and America" (1990) 64 Tulane LR 991; Goldstein, P., *International Copyright Principles, Law and Practice,* Oxford University Press, 2001, at 4-5; MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, 2nd ed., at 182-183.

[128] An element of 'competition' could be attributed only to specific contexts.

Along these lines, we make no attempt to word a 'hard and fast' definition of a computer program as a matter of principle on conceptual grounds. First, as Professor Torremans observed, 'technological evolutions outdate definitions rapidly'[129]. On top of it, the realm of software is too complex a system to save on contexts. Otherwise, any related formula might be misperceived or misleading owing to inevitable lacunae as reflected in the turbulent history of IP protection for computer programs[130]. Accordingly, all the essential characteristics of this subject-matter should be thoroughly contextualised. This may hardly be achieved by means of 'detached' statutory definitions.

Furthermore, as explicated in this thesis, the contours of a copyright work do not necessarily coincide with the margins of the underlying text, as it were. In this respect, efforts expended in drafting copyright applicable definitions of computer programs as technological entities could be counter-productive as leading to the subject-matter/work/copyright work confusion. It is particularly important that the concept of computer programs expressed in copyright terms of art should be built on the conceptualisations of the notions of work, originality, 'literary', domain, substantiality, etc. as part of an integral system incorporating extended frameworks and definitional mechanisms.

Through this prism, the construct of 'programmatic entities' is designed here as another analytical tool accentuating the role of sub-domains and conceptual continuities between the related notions and phenomena. It is focused on various identifiable structures placeable in the programming sub-domain and their categories and elements. It is further developed in the context of the respective copyright abstracts as elaborated along the lines of this research, and encapsulated in such copyright locutions as computer programs, preparatory design material, computer programs including their preparatory design material (notably, in the context of the evolving work approach), part and substantial part. Incidentally, the above reading of the term 'logical' as free of contradictions, inconsistencies and discontinuities might be particularly suitable for the digital age: digital computing utilises the binary number system operating in combinations of 'ones' and 'zeros' (the laguage of conventional computers) which represent the logical values 'true' and 'false'.

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[129] Torremans, at 526.
[130] See further Bainbridge, at 5-16; Laddie et al, 797, 798; Lai, at 1-4; Lloyd, at 246, 250; Ricketson, at 895-900.

1.5. Computer languages and categories of computer programs: conceptualisation of principal questions in the field of programmatic copyrightability.

By definition, computer languages and dialects occupy the centre stage in the general programming narrative. In this context, the term 'programming language' is sometimes 'earmarked' for high-level languages. It may also refer to low-level assembly languages thus reflecting a distinct type[131] of linguistic evolution which might be depicted as one of the generative forces fostering the current diversity of computer languages[132]. This wide linguistic spectrum is analysed here in conjunction with specific types of code-forms written in, or converted into, such languages[133]. The nexus between such codes may underscore the sub-domain specificity of programming reflected in a separate conceptual 'space-time' in that languages, historically attributable to different eras of computing, may coexist within a piece of software and 'flow' into one another along 'conversion' lines thus creating some kind of linguistic 'time warp'.

It is also to be taken into account that programmers can 'make up' additional 'invented on the fly' names (as some kind of 'partial language') for various data structures holding fixed sums, pre-defined codes, and display messages as well as instruction entry points. As any process in this area may only proceed in an orderly way, it pertains to this reasoning that a computer language is principally defined in terms of its syntax[134] and semantics[135]. The issues of programmers' expertise and

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[131] Hence its sub-domain specificity and its classificatory role in the realm of copyright as programmatic
entities developed on these lines make up a species of literary works.

[132] This framework should not be confused with computational linguistics. This scientific discipline deploys computer systems in gathering, analysis, and manipulation of linguistic data, including certain areas of artificial intelligence. Sometimes, the term 'computational linguistics' refers to the science of structures of human languages as applied to computers while the concept of 'natural language processing' covers the actual application of scientific theories in this field.

[133] In certain contexts, the terms 'language' and 'code' could be used interchangeably. It is, for instance,
habitually maintained that machine *code* is the only *language* computers understand. It is the word 'language' that is employed with reference to the distinction between *imperative* (or procedural) *languages*, specifying explicit sequences of steps, and *declarative languages* (this construct encapsulates functional and relational categories), describing relationships between variables in terms of functions or inference rules.

[134] The structure of strings of symbols in a particular language.

[135] The meaning of language constructs since each language is characterised by its vocabulary as a unique meaningful set of words or word-like pieces.

'latitude' springing from this paradigm bear on the general concept of programmatic copyrightability, particularly with reference to the notions of work and originality.

Along this discoursal pathway, we are to accommodate the underlying 'textuality' of the field conceptually ploughed in this work. In this regard, we seek to devise specific analytical structures that may utilise the interface between the programming/programmatic narrative and the copyright discourse framed as correlative to certain attributes of the general literary idiom. The 'output' of this three-tiered method includes our model of copyrightability based on object-oriented programming (OOP).

Whether or not computer languages are copyrightable could be determined on a policy footing[136]. Nonetheless, in conceptual terms, this issue can be resolved into a plethora of questions that are addressed in this thesis. It may also be maintained that, even on such a high 'linguistic' plane, the general rules of copyrightability for computer programs might obtain, particularly if the nature/domain reasoning is doctrinally adopted.

A number of notions and phenomena intrinsic to the field of programming languages provided a focal point for the copyrightability analysis carried out in the famous *Data Access* litigation[137] under Australian copyright.[138] Since this authority from down under is frequently cited in this thesis, it might be necessary to keep in mind the fact pattern of the case. The appellants developed and sold a software package, known as the Dataflex system, designed to enable programmers to build database management systems for specialised applications. This system included a programming language containing 296 'reserved words' which had to be used in conformity with its syntax. The respondents produced their database software by a

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[136] See Recital 14, Software Directive. See also Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 214.

[137] See *Data Access Corp.* v *Powerflex Services Pty Ltd* (1996) 33 IPR 194 (hereinafter '*Data Access I*'); *Powerflex Services Pty Ltd* v *Data Access Corp.* (1997) 37 IPR 431 (hereinafter '*Data Access II*'); *Data Access Corp.* v *Powerflex Services Pty Ltd* (1999) 73 ALJR 1435 (hereinafter '*Data Access HC*'). See further Hunter, D., "Mind Your Language: Copyright in Computer Languages in Australia" [1998] EIPR 98 (hereinafter 'Hunter'); MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, 2nd ed., at 193.

[138] Admittedly, the purpose of certain provisions of the aforementioned Copyright Amendment (Digital Agenda) Act 2000 is to neutralise the repercussions of the Australian High Court decision in *Data Access*. See s. 47AB, the Copyright Act 1968. See further Aplin, T., "Contemplating Australia's Digital Future: The Copyright Amendment (Digital Agenda) Act 2000" [2001] EIPR 565 (hereinafter 'Aplin'), at 571.

process of reverse engineering[139] and study of both the documentation and operation of the Dataflex program.[140] The resultant system, PFXPlus, performed the same function as, and was highly compatible with, Dataflex.[141] At first instance, it was held in finding for the plaintiff, Data Access, that, on the lines of the case, using the same words and attributing to them the same functions constituted an infringing reproduction[142]. It was also found that copyright subsisted and was infringed in the Huffman table, macros and function keys as well as the file structure of the plaintiffs' program[143]. In fact, the only feature that was held uncopyrightable was the error table[144]. On appeal, the Full Federal Court overturned the finding of infringement as regards the reserved words, the macros and the file structure[145], and upheld conclusions as to the Huffman table (infringement) and the error table (non-infringement)[146]. Data Access appealed to the High Court in respect of the reserved words and the macros while Powerflex Services cross-appealed regarding the Huffman table. Both the appeal and the cross-appeal were dismissed.[147] It was held that the reserved words, defining the totality of commands to be employed in source codes written by user-developers, were not themselves computer programs[148] *without finding* that neither their underlying source code nor the corresponding object code could qualify for copyright protection as a computer program[149].

Although not addressing the question of computer languages' copyright in its entirety[150], the *Data Access* rulings reflected the conceptual character of this subject, it being thematically framed[151] in accord with both the general system of copyright subsistence and the paradigm of programmatic copyrightability (whether or not

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[139] However, cf. *Autodesk, Inc.* v *Dyason* (1992) 172 CLR 330; *Sega Enterprises Ltd* v *Accolade, Inc.,* 23 USPQ 2d 1440 (N.D. Cal. 1992). See further Hunter, at 99.
[140] See further Aplin, at 571; Hunter, at 99.
[141] Compatibility, in this context, came down to a high degree of operational similarity and the fact that, without difficulty, users could run their Dataflex applications on PFXPlus. To this end, the respondents reproduced many of the names of the reserved words (although, admittedly, without copying the source code defining their functions) and a data compression table eponymously named the Huffman table. See *Data Access HC,* at 1439.
[142] See *Data Access I,* at 197.
[143] See ibid., at 201-203.
[144] See ibid., at 202. See further Hunter, at 104.
[145] See *Data Access II,* at 450-453.
[146] See ibid.
[147] See *Data Access HC,* at 1447-1448.
[148] See further Aplin, at 571.
[149] See *Data Access HC*, at 1440, 1443, 1446-1448. See further Kremer, B., "Copyright Protection of Computer Programs" [2000] EIPR 292.
[150] See further Hunter, at 105.
[151] Thus, in a sense, pointing up certain additional aspects of the aforesaid underlying textuality.

accurately perceived) in approaching a whole panoply of issues ranging from substantiality, originality, the idea-expression dichotomy, and the concepts of literary work to the source/object code distinction, microprogramming, computer-generated works, and intermediate languages.

All these and other related themes conceptualised as clear-cut constructs are to be built into an integral system within the umbrella of programmatic copyrightability. This, in turn, is to be framed as a sub-class of the archetype of general copyright subsistence.

In similar fashion, there is no conceptual specificity so far as the copyrightability status of programmatic categories is concerned. Moreover, a wide range of topics related to both general and elemental copyrightability ought to be invoked and crystallised in connection with specific software categories.

Technically speaking, software can be divided into two main classes, namely systems software and applications (or application programs). The first category comprises programs and data files that constitute and relate to an operating system (OS) which controls the allocation and use of hardware resources, including main memory, and runs applications (that is end-user programs)[152]. When an application[153] is ready for input or output, it sends a request to its OS that performs the services in question and returns control to the application[154]. Within this framework, the operating system forms the foundation of the software as an integrated system[155].

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[152] On top of operating systems, the term 'system software' normally embraces network operating systems (providing services to computers attached to networks, notably by managing 'traffic' between clients and servers), communication protocols (sets of rules, formats and functions utilised in sending data across networks), database management systems, messaging protocols (sets of rules and standards followed in sending, storing and forwarding e-mails in networks), TP monitors (transaction processing monitors), device drivers (programs controlling, and enabling computers to communicate with, hardware components and peripheral devices), BIOS (Basic Input/Output System), and programming languages. In certain contexts, the concepts 'system software' and 'control programs' are coextensive. In some usages, the latter term refers to *operating environments*, enhancing operating systems, in which users run programs. In this sense, 'operating environment' might be construed as synonymous with 'intelligent shells'. Unlike 'intelligent shells', *shells* do not extend capabilities of operating systems but only provide interfaces.

[153] Small applications relatively limited in their capability and performing very specific tasks (mainly in managing system resources) are known as 'utilities'. Sometimes, as terminology is fairly loose in this regard, this word refers to narrowly focused and inessential *parts* (or routines, procedures) of an OS.

[154] As to the role of *interfaces* in this context, see subs. 4.3.1.C.e, below. It is also to be noted that to execute an OS routine, a *system call* invoking such a routine performing low-level operations is to be made.

[155] It is often said that operating systems provide a software platform on top of which applications can run.

Further, various relevant attributes of such task-based categories as network software (enabling computers to communicate) and language software (providing programming tools) are to be explored with reference to the concept of part, sub-domain structures, and technological identities of software elements/parts. In addition, the copyrightability analysis of software categories distinguished on the basis of their method of distribution (for instance, shareware, 'open source' and public domain software) turns on the general notion of originality and utilises certain aspects of the 'public domain' as a copyright concept.

Another distinction, that between 'servers' and 'clients' in programmatic terms, plays a key role on the Internet, and is examined in this study, especially, in the context of elemental structures, thus interweaving macro- and micro-analyses of copyright subsistence.

1.6. A brief history of the Internet and its ideational background.

The emergence of a related technological and cultural phenomenon such as the Internet not only may trigger specific conceptual and doctrinal changes but also can be of assistance in making out a case for a reappraisal of the existing framework of copyright protection. Certain background information is crucial here, particularly bearing in mind that, as indicated above, the language of copyright up to a point echoes broader developments in associated narratives.

As regards the general history of ideas, the genesis of the Internet is associated with cybernetics and such concepts as automated library systems and 'a global village interconnected by an electronic nervous system'[156]. As to the immediate roots of the present technological incarnation of the virtual world… Legend has it that not until all the interested parties came together for the 1967 ACM Symposium on operating system principles, did these scientists researching into the riskiest 'grey areas' and 'dark matter' of computer technology realised that they had been dwelling upon the same hypothesis independently of each other on both sides of the Atlantic. The participants of this forum represented the Advanced Research Project Agency

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[156] These ideas are attributed to Vannevor Bush, Marshall McLuhan and Norbert Wiener respectively. See further <http://livinginternet.com>.

(ARPA)[157], the RAND Corporation and the National Physical Laboratory (NPL). The idea in question (or rather, a treasure trove of ideas and their embodiments) was formulated as a packet-switching network.

This concept, usually attributed to Paul Baran of the RAND and Donald Watts Davies of the NPL, could be described as a communications paradigm in which messages are broken into individual blocks, called 'packets', so that each packet, labelled to indicate its origin and destination, is dynamically transmitted over a network. A packet finds its way from node to node and to its required destination through the most expedient (as defined by the routing algorithm) route. At the receiving end, the packets are reassembled into the original message. This model marked a technological quantum leap and laid the groundwork for the Internet. Some of the world's leading authorities in the field contributed to the development of the principles of this ubiquitous technology. It should be mentioned that Professor Leonard Kleinrock, who is often called a father of the Internet, conducted early seminal research in a number of related areas (including data networks, time-sharing and message switching) and played a key role in both promoting the idea of wide area computer networks and preparing functional specifications[158] for the world's first packet switching network, the ARPANET. This legendary network was born in early September 1969 as the first host computer (the first node of the ARPANET, located at the University of California, Los Angeles (UCLA), was connected to the first packet switch, called Interface Message Processor (IMP).[159] The first ever host-to-host message was sent from UCLA to the Stanford Research Institute, where the second ARPANET node was located, in October 1969. Later on other networks (such as Usenet) were connected to ARPANET. In 1983 the expanding network broke off from its military part (which became known as MILNET) to evolve into the Internet[160].

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[157] Set up in 1958 within the American Department of Defence in response to the Soviet launching of the first artificial earth satellite, Sputnik. From the very outset, the ARPA project, intended as an instrument of regaining the technological lead in the cold-war arms race, was associated with such scientists initially based at Massachusetts Institute of Technology (MIT) as L. Kleinrock, J. Killian, D. Licklider, L. Roberts.

[158] A set of such specifications was approved in 1968 by the Information Processing Techniques Office (IPTO) founded by ARPA in 1962.

[159] Built at BBN (Bolt, Beranek and Newman Inc.) and delivered to the UCLA. Interestingly, the first basic e-mail programs for sending and reading mail were written at BBN for ARPANET by Ray Tomlinson in 1971-1972.

[160] See also Castells, Vol. I, at 6, 45-54; Castells, M., *The Internet Galaxy: Reflections on the Internet, Business, and Society*, Oxford University Press, 2001, at 10-23, 207..

On these lines, the Internet is a global collection of networks and gateways communicating via the TCP/IP[161] suite of protocols[162] and ultimately (through a number of larger networks) connected to the so-called 'Internet backbone' of very high bandwidth far flung networks where traffic is exchanged at network access points (NAPs).

As the name ARPANET was retired in 1989-1990, the system was transferred to the NSFNET which later was connected to both the CSNET and EUnet. One of the European research facilities then connected to this network was the European Particle Physics Laboratory (CERN[163]) where Tim Berners-Lee, helped by Robert Cailliau, developed the concept of the World Wide Web (as an Internet client-server[164] hypertext[165] distributed[166] information retrieval system), and in August 1991, using the EUnet connection, made available the first web browser and web server around the world.[167] Crucially, on 30 April 1993 a certification was obtained to the effect that the web technology was declared to be in the public domain. The term WWW effectively refers to the total set of interlinked hypertext documents[168] written in HTML[169].

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[161] IP (Internet Protocol) specifies the format of packets (or 'datagrams') and the addressing scheme while TCP (Transmission Control Protocol) establishes a virtual connection between a source and a destination. It is the *de facto* standard of data transmission over networks. IP corresponds to the network layer in the ISO/OSI model while TCP to the transport layer. Transport functions mainly come down to quality of service and accurate delivery of information to ensure that messages reach their destination complete and uncorrupted and in the correct order by, *inter alia,* adding sequencing information. See further subsection 4.3.1.D.g, below. Being a routable protocol, TCP/IP contains both the address of the destination station and of a destination network. As to the role of such protocols as HTTP and FTP, see subsection 4.3.1.D.a, below.

[162] Overseen by the Internet Architecture Board.

[163] Which in fact stands for Conseil Européen pour la Recherche Nucleaire.

[164] See subs. 4.3.1.D.a, below. The first Web server was nxos01.cern.ch, later called <info.cern.ch>. The first Web browser (or browser-editor) was called WorldWideWeb. Later it was renamed Nexus in order to avoid confusion between the program and the abstract information space. The first Web page was <http://nxos01.cern.ch/hypertext/www/TheProject.html>.

[165] The concept of *hypertext* was developed by Ted Nelson in the 1960s to denote a system in which multifarious objects could be linked non-sequentially, in a sense, mimicking the way humans think. See Nelson, T., *Literary Machines,* Mindful Press, 1994. See also Castells, M., *The Internet Galaxy: Reflections on the Internet, Business, and Society*, Oxford University Press, 2001, at 201. Nelson, T., *Computer Lib. Dream Machines,* Microsoft Press International, 1988. The first working hypertext system (NLS) was devised by D. Engelbart in 1968. See <http://www.bootstrap.org/engelbart/index. jsp>.

[166] See subs. 4.3.1.D.a, below.

[167] See further Berners-Lee, T., and Fischetti, M., *Weaving the Web: The Original Design and Ultimate Destiny of the World Wide Web by its Inventor*, Harper Collins, 1999; "WorldWideWeb: Proposal for a HyperText Project by T. Berners-Lee and R. Cailliau, 12.11.90" (available at http://www.w3.org/ Proposal.html). The World Wide Web Consortium (3WC) at the Massachusetts Institute of Technology defines the Web as 'the universe of network-accessible information (available through your computer, phone, tv, or networked refridgerator..)'. See http://www.w3.org. The name World Wide Web was preferred to Information Mesh, Mine of Information, and Information Mine.

[168] In this respect, the truck/road analogy is often used to draw a distinction between the Web and the Net.

HTML tags (codes) are embedded in documents on the Web (Web pages[170]), and define the page layout, fonts and graphic elements to indicate how Web browsers should display these elements and respond to user actions. It is important that such tags are employed to specify hypertext links[171] to other resources (documents or their elements). On these lines, HTML is not an ordinary programming language but rather, a 'presentation language'.

Some kind of total 'connectedness' regardless of physical geography is often described by the term 'cyberspace' coined by W. Gibson in his novel 'Neuromancer'[172] with reference to a futuristic computer network navigable with brain-computer interfaces. However, nowadays the word is popularly read as coextensive with the Internet or the digital world in general.

It is not the purpose of this research to entertain or extensively critique the idea of cyberspace self-governance[173] or cyberspacism, as it were, that is the notion of cyberworld as a self-existent whole bordering on some kind of hackers' *leges nulae*[174]. We may only observe here that many doubts lingering in this area could be

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[169] Hypertext Markup Language is an example of a markup language, it being a set of codes in a text file to instruct a computer how to format a (platform-independent) file or how to index and link its contents. HTML is derived from SGML (Standard Generalized Markup Language) developed by the International Organisation for Standardisation in 1986. It is an international standard in describing the relationship between a document's content and its structure.

[170] An entry page for a set of Web pages and files in a Web site (it being a group of related HTML documents and associated files, scripts, etc. on the World Wide Web) is known as a 'home page' often serving as a table of contents. As to the role of the 'cable programme service' analogy with reference to the non-programmatic copyright conceptualisation of Web sites and Web pages, see *Shetland Times v Wills* [1997] FSR 604. See further MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, 2nd ed., at 191-194, 196, 208.

[171] Each link contains the address of its destination. Such an address is called a URL (Uniform Resource Locator) and specifies the protocol (as a set of rules or standards enabling computers to connect and exchange information) to be used in accessing the resource, the name of the server on which the resource resides (which might be anywhere in the world, hence the World Wide Web), and the path to such. The resultant address may contain the protocol prefix, port number (often permanently assigned and thus not specified), domain name, subdirectory names, and file name. Only the protocol and domain name are normally required to access a home page. See also *Shetland Times v Wills* [1997] FSR 604. See further MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, 2nd ed., at 185, 193. As to the system of domain names, see Terrett, A., "A Lawyer's Introduction to the Internet" in Edwards and Waelde, at 16; Black, W., "The Domain Name System" in Edwards and Waelde, 2nd ed., at 125; Waelde, C., "Trade Marks and Domain Names: There's a Lot in a Name" in Edwards and Waelde, 2nd ed., at 133.

[172] See Gibson, W., *Neuromancer,* Voyager, 1995.

[173] See further Netanel, N., "Cyberspace Self-Governance: A Sceptical View From Liberal Democratic Theory" (2000) 88 California LR 395 (hereinafter 'Netanel').

[174] Cf. Barlow, J., "A Declaration of the Independence of Cyberspace", <http://www.eff.org/~barlow/ Declaration-Final.html>; Barlow, J., "The Economy of Ideas – A Framework for Rethinking Patents and Copyrights in the Digital Age. (Everything You Know About Intellectual Property is Wrong.)" (1994) 2.03 Wired 84. For discussions on this subject see Dommering, E., "Copyright Being Washed Away Through the Electronic Sieve: Some Thoughts on the Impending Copyright Crisis" in Hugenholtz, at 1; Gibbons, L., "No Regulation, Government Regulation, or Self-Regulation: Social

dispelled by demystifying such concepts as copyleft and open source, and discarding the idea/expression dichotomy which can be viewed as one of the pretexts for various forms of protection combining ethics and technology[175] that are framed as antithetical to the legal realities, if not law itself, and championed by 'cyberians'[176].

1.7. Scope and methodology.

This research aspires to set the stage for gradual development of technology-based concepts within the evolving species of copyright protection in order to achieve the symbiosis between copyright and the related technologies without altering the nature of copyright. On the one hand, the software idiom in the form of programming methodologies can be useful here, particularly in terms of the general arrangement of copyright law. Along these lines, this study aims to formulate the OOP-modelled framework of structuring and determining copyright subsistence. Among other things, this model plays a methodological role. As an orderly procedure, it utilises the aforementioned archetypal copyright stories. More specifically, it is deployed in identifying the structure and attributes of the referents (that is, objects of reference) of

Enforcement or Social Contracting for Governance in Cyberspace" (1997) 6 Cornell JL & Public Policy 475; Hardy, I., "The Proper Legal Regime for Cyberspace" (1994) 55 Univ. of Pitt. LR 993; Johnson, D., and Post, D., "Law and Borders – The Rise of Law in Cyberspace" (1996) 48 Stanford LR 1367; Lessig, L., *Code: And Other Laws of Cyberspace,* Basic Books, 1999; Lessig, L., *Cyberspace's Architectural Constitution.* Lecture given at www9, Amsterdam, Netherlands, June 12, 2000, <http://cyber.law.harvard.edu/works/lessig/ www9.pdf>; Lessig, L., "Post Constitutionalism" (1996) 94 Mich. LR 1422; Lessig, L., "Intellectual Property and Code" (1996) 11 St John's JLC 635; Lessig, L., "Reading the Constitution in Cyberspace" (1996) 45 Emory LJ 869; Lessig, L., "The Zones of Cyberspace" (1996) 48 Stanford LR 1403; Lessig, L., "The Law of the Horse: What Cyberlaw Might Teach" (1999) 113 Harvard LR 501; Lessig, L., "The Limits in Open Code: Regulatory Standards and the Future of the Net" (1999) 14 Berkeley Tech. LJ 759; Mackaay, E., "The Economics of Emergent Property Rights on the Internet" in Hugenholtz, at 13; Perritt, H., "Cyberspace Self-Government: Town Hall Democracy or Rediscovered Royalism?" (1997) 12 Berkeley Tech. LJ 413; Post, D., "Anarchy, State, and the Internet: An Essay on Law-Making in Cyberspace" (1995) J. Online Law, <http://www.wm.edu/law/publications/jol/post.html>; Radin, M., and Wagner, R., "The Myth of Private Ordering: Rediscovering Legal Realism in Cyberspace" (1998) 73 Chi-Kent LR 1295; Reidenberg, J., "Lex Informatica: The Formation of Information Policy Rules Through Technology" (1998) 76 Tex. LR 553; Shapiro, A., "The Disappearance of Cyberspace and the Rise of Code" (1998) 8 Seton Hall Const. LJ 703. See also Clark, C., "The Answer to the Machine is in the Machine" in Hugenholtz, at 139; Ginsburg, J., "Putting Cars on the 'Information Superhighway': Authors, Exploiters and Copyright in Cyberspace" in Hugenholtz, at 189.
[175] As to the role of technological protection, see Kirk, E., "Encryption and Competition in the Information Society" [1999] IPQ 37; Samuelson, P., "The Copyright Grab" (1996) 4.01 Wired <http://www.wired.com/wired/archive/4.01/white.paper.html>; Samuelson, P., "Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to Be Revised" (1998) <http://www.sims.berkeley.edu:~pam/papers/>, at 11.
[176] See Netanel, at 401. See further Barlow, J., "Selling Wine Without Bottles. The Economy of Mind on the Global Net" in Hugenholtz, at 187.

the construct 'original literary work'. It is also intended to be instrumental in placing the key conceptions of copyright law in their proper setting[177]. On the other hand, an integrated copyrightability system might be moulded round the resultant schema in setting out to contribute to the current paradigm of software copyright protection. The latter can thus be not only built into such a system but also better adjusted to the actualities of the underlying technology. In a sense, this approach reflects the decription of software as discourse in the information society.[178]

The upshot of systematisation of copyrightability might also be described as *analytical copyrightability* that follows the discursive pathway from general (perceived, *inter alia*, as holistic) to elemental copyright subsistence, notably in the field of software. The other side of the coin is that the above technology-based concepts make up the mainstay of the exercitation of analytical copyrightability. It is to be further accommodated that the general and elemental conceptualisations are intertwined and mutually reflective thus adding a further dimension to the discourse in question.

A number of concepts formulated at the general level are applied to elemental structures deductively.[179] At the same time, reasoning within the proposed framework may advance in deductive or inductive terms subject to contextualisation. More specifically, the existence of a whole (unsystematic) host of self-contradictory texts (including the related case law) invites inductive, i.e. from particular to general, inferences. Analysis flowing from the fundamentals of copyright law, e.g. the notion of originality and the *de minimis* principle, unfolds deductively. Among other things, it is inferred that there could be no proviso *de minimis* with reference to the term 'literary' or the category 'literary work'. The nature/domain reasoning, which supports this inference, utilises inductive and deductive elements at different junctures.

In a sense, the internal logic of copyright may also operate deductively or inductively under what might be termed relative models where the starting point is determinative. For instance, in the case of non-original types of works the protection limited to signal and image effectively renders the requirement of originality extraneous. By the same token, the absence of the requirement spells a certain

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[177] See further subs-s 4.2.3.C, 4.3, below.
[178] See Fitzgerald, B., "Software as Discourse? The Challenge for Information Law" [2000] EIPR 47, at 47-48 ('software is now a key part of our social structure… it is fundamental to communicative architecture').
[179] See subs. 4.3.1., below.

depersonalisation which sets the stage for the direct protection of the result of labour in the form of signal and image whereas the labour is relocated to the realm of authorship by means of a legal fiction. It is submitted that both lines of reasoning could be identified in the very fabric of copyright. The argument from image and signal, which springs from the technical context and is present in specific cases, can be thought of as inductive. The reasoning progressing from the requirement of originality as a copyright precept is deductive. It is directly connected to the entire system of copyright and can be considered more systematic. It is also logically sound or in the philosophical jargon truth-preserving, i.e. leading from true premises to a true conclusion which is not just 'rendered plausible' in the context of past regularities. In similar vein, it will be shown that copyright subsistence can be consistently determined either inductively as a system of protected features or deductively as 'part of the protected work'.[180]

The general paradigm of copyright subsistence is mainly covered in Chapter 2. Within this framework, it is reasoned that the labour/skill concept, equipped with its own links and criteria and reflected in various notions and analytic formulae, regains its identity and may account for the performative nature of the intangible encapsulated in the process of creation. At the same time, the nexus between labour and result may reconcile the dynamic and the static within the remit of copyright.[181] It is further argued that the terms work, original and literary represent distinct identifiable referents and meanings.[182] But it is the projection of the composite nature of the notion original literary work that is pivotal in piecing together the general concept of protected subject matter.[183] Through this prism, the present study is to address such issues as the construct 'work of a copyrightable description', computer-related categories, compilations in the realm of software, the role of creativity, and the definitional mechanism of the term 'literary'. A number of conceptions or analytic tools are also formulated or unveiled in this thesis in building an integral system of copyright subsistence. The proposed model thus embraces the nature/domain reasoning, isolated versions and evolving work approaches, 'depersonalisation' of subject matter, homogeneity and heterogeneity within the ambit of work, the originality continuum, contextual works, etc..

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[180] See further subs-s 4.3.2.B.c, 4.3.2.C.b, below.
[181] See Sherman and Bently, at 4, 43, 47, 49, 173-175, 195, 200.
[182] See subs. 2.1., below.
[183] See subs. 2.5.1., below.

In a sense, practicability, or rather common sense, as a basic form of policy reasoning can be seen as one of the stimuli to elaborate the *de minimis* rule.[184] But in addition, the universal legal precept *de minimis non curat lex* ('the law does not concern itself with trifles') is vital for any analysis of the concepts of work, originality and substantiality.[185] Accordingly, specific varieties and applications of the *de minimis* principle are subsumed into the integrated framework of copyright subsistence.[186] A *de maximis* rule formulated in this study in the context of the concept of extraordinary ideas can determine the non-protection of objects that are 'too big' to be protected/privatised.[187] In analytical terms, the *de maximis* concept mirrors the *de minimis* principle and restores some kind of doctrinal and policy symmetry if, in specific circumstances, it is preferred to the arguments for copyright protection put forward under the general justificatory (particularly, incentive-based) theories.

Where the idea/expression dichotomy is governed by practicability it mainly comes down to the *de minimis* rule and the fixation requirement, and thus virtually dissipates as a separate conceptual entity. Ironically, the Berne Convention, the foundation of the paradigm now tainted with the dichotomy through the WIPO Copyright Treaty and the TRIPs Agreement,[188] does not require material form or tangible embodiment.[189]

The idea/expression construct is closely related to the field of copyright subsistence in both historical and thematic terms. Furthermore, the dichotomy admittedly purports to mark out copyright significant principal parts of any 'intellectual material'.[190] In fact, public policy lies at the root of the multifarious forms of the abstract that can be described as 'non-protection of certain ideas'.[191] The rationale behind the dichotomy has been associated with a number of policy considerations ranging from freedom of speech to the free use of functional ideas.[192] However, it is reasoned that most of the relevant policy goals can be achieved without recourse to the idea/expression concept.

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[184] See also Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 42; Bently and Sherman, 2nd ed., at 61-62.
[185] See also *Sinanide v La Maison Kosmeo* (1924) LTR 365.
[186] See subs-s 2.3.6., 2.5.2.C., 2.7., 4.3.2.B.e, 4.3.2.C.b, below.
[187] See further subs. 2.5.3.D., below.
[188] See subs. 3.1., below.
[189] See Art. 2 (2), Berne Convention.
[190] See further subs. 3.1., below.
[191] See further Bently and Sherman, 2nd ed., at 172-174. See also *Newspaper Licensing Agency Ltd v Marks & Spencer plc* [2001] 3 WLR 290, at 297.
[192] See further Bently and Sherman, 2nd ed., at 174.

Moreover, the application of the dichotomy in specific policy contexts can be counter-productive.[193] In effect, the dichotomy may exist as a general rule in name only. At the same time, there remains the crucial argument that 'the non-protection of ideas represents one of the few avenues by which the courts can take account of the individual circumstances and merits of particular decisions'.[194] Nevertheless, if the dichotomy is utilised as a policy and/or conceptual tool, we are likely to encounter further conceptual and doctrinal confusion if not judicial inconsistency, that is conflicting application of the rules by the national courts.[195]

To avoid such an undesirable outcome, judicial discretion should be exercised within a coherent framework. On these lines, there is room for conceptual flexibility which should not, however, spell expediency or be read as stretching the meaning of the underlying notions beyond acceptable limits. On the contrary, it should operate on a solid doctrinal foundation. The integrated system of copyright subsistence, which is designed to provide or unveil such a basis, accommodates flexibility. The latter is not restricted to the creative interpretation of the existing categories.[196] The proposed system contains a number of conceptual tools which can be adjusted to specific contexts but still should be utilised according to certain rules. Such constructs embodying an element of choice include the isolated versions and evolving work approaches as well as the text/behaviour reasoning.[197] In addition, this study formulates such conceptual continua as the originality continuum and the part-substantial part-work continuum.[198] By definition, the term 'continuum' implies flexibility. In similar vein, the factor of relevant intention may enter the equation and dramatically influence conclusions.[199] All these conceptualisations are drawn from the analysis of the basic character of the protected subject matter which forms the nucleus of this thesis.

Methodologically, for the purposes of our investigation into the realm of the dichotomy, we employ in Chapter 3 'deconstructive readings' of the related legislative, judicial and academic texts in both *identifying* certain conceptual oppositions ordinarily implied, mobilised or utilised within this system, and *subjecting*

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[193] See subs. 3.2.6., below.
[194] Bently and Sherman, 2nd ed., at 175.
[195] See subs-s 3.2., 3.3., below.
[196] See further Bently and Sherman, 2nd ed., at 56.
[197] See subs-s 2.5.3.B., 4.3.1.D., below.
[198] See subs-s 2.5.2., 4.3.1.D.c, 4.3.2.B.e, below.
[199] See subs-s 4.3.1.D.d, 4.3.1.d.f, below.

these attributes of the dichotomy to internal critiques. Thus the characteristics under discussion are further destabilised and the related self-contradictory writings are turned 'against themselves'. Indeed, so far as the idea/expression abstract is concerned, the only certainty is that copyright law does protect many ideas.[200] This overthrows the protected expression/non-protected idea hierarchy as the (non-chronological) structural phase of our deconstructive reading. Further, this allows for the dissonant emergence of the unprotected inside the protected, thus disorganising the received order.[201] All in all, the history of the dichotomy can be viewed as a combination of myth and confusion clothed in pseudo-philosophical terms.

The narrative of elemental copyright subsistence principally unfolds in Chapter 4 which is focused on the notion of substantial part. In this connection, various schemata introduced in Chapter 2 are further scrutinised. Along these lines, we return to such conceptions as labour/result systems, nature/domain, area of copyright, isolated versions and evolving work, etc.. These ideas are also utilised to disentangle the concepts of part and substantiality from multifarious confusions. It is in this context that our OOP-based model of analytical copyrightability is framed and employed in methodological terms in conjunction with the aforementioned three-tiered 'linguistic' method. It is further elaborated with reference to software life cycle and Web-based architectures. The concept of part is also specified in being superimposed on elemental structures in the realm of computer programs. The related conceptualisations include instantiation of originality, discrete elemental copyright identities of 'placing', programmatic behaviour and quasi-behaviour, deducible and letter-bound elements, inductive reading of copyright identities, etc.. The questions of functionality and substantiality criteria are also dealt with against this background. Chapter 5 is given over to certain conclusions arrived at from the analysis of various texts and phenomena related to the paradigm of analytical copyrightability as attempted to set out in this study. Finally, the strands of the underlying narrative are meshed together.

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[200] See also Bently and Sherman, 2nd ed., at 173.
[201] See further Derrida, J., *Positions*, The Athlone Press, 1987, at 41-42.

Chapter 2.

Subsistence of copyright in a computer program.

The notion 'original literary work':

conceptualisation.

2.1. Frame of reference of the current paradigm.

One of the most frequently recited 'spells' of copyright subsistence reads as follows: '[T]here remains the rough practical test that what is worth copying is *prima facie* worth protecting'.[202]

As any rule of thumb, as it were, this formula[203] could not be completely reliable. In some measure, its 'doctrinal usefulness' could have accrued if a special emphasis had been placed on the *prima facie* concept in the form of *prima facie* evidence. The latter justifies a reasonable inference of the existence of a fact without being tantamount to conclusive evidence. It may also be read as proved in the absence of adequate evidence to the contrary.[204]

As substantiated by leading scholars, an approach growing out of the above dictum within British copyright lacks utility. In effect, it calls for the concept of originality 'after an unnecessary detour'.[205]

For computer programs as species of literary works[206] originality is a cardinal protectability requirement. Ascertaining the meaning of the notion 'original literary work' as a description of work[207] and one of the forms of the general formula of copyright subsistence involves walking a tightrope in trying to apprehend the significations of the elements of this tripartite construct without losing sight of the

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[202] *University of London Press, Ltd v University Tutorial Press, Ltd* [1916] 2 Ch 601 (hereinafter "*University of London Press*"), at 610. It was held in this action that copyright subsisted in the examination paper as an 'original literary work'. See also *Exxon Corporation v Exxon Insurance Consultants International Ltd* [1982] RPC 69, at 76-77; approved on appeal [1982] RPC 81; *Ladbroke (Football) Ltd v William Hill (Football) Ltd* [1964] 1 WLR 273, at 279, 288, 294. Cf. *Cantor Fitzgerald International v Tradition (UK) Ltd* [2000] RPC 95, at para. 76; *Smith Kline & French Laboratories Ltd, Re* [1990] 1 AC 64, at 106. For a similar US dictum (however addressing the issue of 'quantum of originality'), see *Bleistein v Donaldson Lithographing Co.*, 188 US 239, 250 (1903). See also Nimmer, at 2-13.
[203] See also Dworkin, G., "Copyright, Patents and/or Sui Generis: What Regime Best Suits Computer Programs?" (hereinafter "Dworkin") in Hansen, at 168. See further Bently and Sherman, at 157.
[204] It is to be emphasised that evidentiary issues are beyond the scope of this thesis. However, in this context, see Nimmer, §§ 12.11[A], [B]. See also ibid., at 13-7, 13-8.
[205] Laddie et al, at 213.
[206] See s. 3 (1), CDPA.
[207] See s. 1 (1) (a), CDPA.

combined effect of the constituents. Only in this sense we would agree with a cautionary remark that 'there is a trap in dissecting a composite phrase into its individual terms'.[208]

It is submitted that sometimes the notions[209] relevant to the current framework of copyrightability have been employed as not interrelated concepts. Nonetheless, they may marry up if built into a system which develops in line with the internal logic of copyright subsistence.

In this context, the following factors related to the structure of British copyright are to be accommodated:

1. Pursuant to CDPA copyright subsists not only in original literary works but also in original dramatic, musical and artistic works.[210] Accordingly, the phrase 'original work' and, with reference to our subject, the word 'literary' may reflect notions characterised by their distinct existence within copyright law.

2. In CDPA the term 'work' is employed *per se[211]* covering both original and non-original works[212] thus indicating that the concepts of 'work' and 'original' could be to a certain extent examined in isolation and identified as such.

On top of it, a literary work[213] is not copyright unless it is original. This may suggest that a separate construction might be put on the expression 'literary work' also pointing up the role of the term 'original' as such.

It should also be taken into consideration that there are parallel formulae embracing the term 'work' and other copyrightability related terms of art in other jurisdictions as well as at both European and international levels.

In this regard, it is pointed out that a certain equivocality is characteristic of the European criterion of the 'author's own intellectual creation'.[214] Even if the tenor of the test is construed to correspond to the notion of originality (as distinct from the concept 'original work')[215], it is susceptible of various interpretations which can be

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[208] Laddie et al, at 29. See also ibid., at 41.
[209] For instance, 'work', 'original work' and 'non-original work'.
[210] See s.1 (1) (a), CDPA.
[211] See, for instance, ss. 1 (2), (3); 2 (1), CDPA.
[212] See s. 1 (1) (b), (c), CDPA.
[213] See s. 3, CDPA.
[214] See Art. 1 (3), the Software Directive; Art. 3 (1), the Database Directive. The British implementation in this respect has covered only the field of databases. See s. 3A (2), CDPA (as inserted by the Copyright and Rights in Databases Regulations 1997, SI 1997/3032, reg. 6). Cf. Copyright (Computer Programs) Regulations 1992, SI 1992/3233.
[215] It is at least plausible to call such a construction into question owing to the wording employed in the related formulae.

placed on a continuum from a low threshold analogous to the British one towards the special emphasis on the author's personality.

In seeking terminological compatibility as a prerequisite for harmonisation and implementation of the respective provisions, the related notions ought to be comprehended and fine-tuned[216] thus eliminating a welter of conceptual confusion.

2.2. Formulae of copyright subsistence: critique of general construction.
2.2.1. Reflections on British discourse.

As mentioned above, judging from the formula enshrined in CDPA[217], literary works could be categorised as a subgenus of original works.

It is an established approach that for a work to be original it is to be produced independently by the expenditure of a not insubstantial amount of skill, labour or judgment.[218] Paradoxically, the expression 'result of independent labour', as used in the landmark case of *Walter v. Lane[219]* decided before the statutory inauguration of the general requirement of originality [220], could be construed as pointing to the

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[216] From that perspective, the history of film copyright (particularly bearing in mind a significant role of cinematographic analogies in the digital environment and in the field of software) and the ideation of computer-generated works may cast light on the conceptualisation of copyright nomenclature and taxonomy.

[217] See s. 1 (1) (a), CDPA.

[218] See, for instance Laddie et al, at 47; MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, at 73.

[219] See *Walter v. Lane* [1900] AC 539 (hereinafter *"Walter v Lane"*), at 549-550. The main question attended to in this case, which is still good law (see *Express Newspapers plc v News (UK)* Ltd [1990] FSR 359; see also *Hager v ECW Press Ltd and Williams* [1999] EIPR N-80 (a decision by the Canadian Federal Court). Cf. *Roberton v. Lewis* (1960) [1976] RPC 169, at 174-175), was whether a person who made notes of a speech delivered in public, transcribed and published them in a newspaper *verbatim* was entitled to copyright as the author of the report under the Copyright Act 1842. In fact, the actual speeches were delivered by the Earl of Rosebery, who made no claim to copyright, on five occasions in 1896 and 1898 and the reports were published in The Times. The Times reporters formally assigned the copyright to the appellants (the proprietors of The Times). The latter brought an action against the respondent who published in 1899 a book containing the reports. North J, before whom the case was first heard, held that the reporter was entitled to copyright in his reports (but not in the speeches) and granted an interim injunction restraining the respondent from publishing copies of the book. This ruling was reversed by the Court of Appeal and then restored by the House of Lords. See also Garnett, K., "Copyright in Photographs" [2000] EIPR 231-233; Laddie, H., "Copyright: Over-strength, Over-regulated, Over-rated?" [1996] EIPR 253, at 259.

[220] See s. 1 (1), The Copyright Act 1911. It is noteworthy that 'new and original sculpture and model' (alongside 'copy or cast') and 'original painting, drawing, and photograph' were referred to in s.1 of the Sculpture Copyright Act 1814 and s. 1 of the Fine Arts Copyright Act 1862 respectively. In this respect, the correct understanding to the effect that 'the modern concept of originality… had not been developed' (see Laddie et al, at 484) to some extent detracts from a certain significance which could be

protected matter. This tends to reinforce the import of the Copyright Act 1911 residing principally in the framework which scotched the 'watertight compartments'[221] approach ingrained in the old copyright law without, in fact, precipitating any doctrinal transmutation associated with the reformulation of the subject mater of protection as such.[222]

It would seem indicative that the formula of independent labour was employed in both the 4th[223] and 5th[224] editions of Copinger's Law of Copyright, that is before and after the date of commencement of the Copyright Act 1911 respectively. The relevant Copinger's exegesis was invoked as a principal textbook authority in one of the seminal and oft-quoted decisions of the Privy Council under the 1911 Act, *Macmillan v Cooper* approving, *inter alia*, the *Walter v Lane* approach [225].

Nevertheless, despite the thorough investigation carried out by their Lordships in *Macmillan* into the principal sources of the doctrine, a certain opacity remained as to whether the formula was a composite two-tiered criterion of the general copyright subject-matter[226] or described only the requirement of originality as such. The two-

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attached to the cases decided under these instruments. However, such a thought-provoking judgment as that in *Graves' Case* is invoked in this chapter. See *Graves' Case* (1869) LR 4 QB 715.

[221] See Laddie et al, at 112.

[222] Furthermore, the formula of independent labour could be found in the cases decided prior to *Walter v Lane*. See, for instance, *Scott v Stanford* (1867) LR 3 Eq 718, at 721. This, however, was not invoked as an established requirement. Admittedly, the formula could be read as some kind of reflection of the old undisputed dicta on infringement with their principle of not availing oneself of the previous labours of another (see *Hogg v Scott* (1874) LR 18 Eq 444, at 458; *Scott v Stanford* (1867) LR 3 Eq 718, at 724) or directly following from the description of property as 'the result of … labour'. See *Hogg v Scott* (1874) LR 18 Eq 444, at 458. This approach may also be traced back to the influential observation made by Lord Mansfield:'[A]n author should reap the profits of his own ingenuity and labour.' See *Millar v Taylor* (1769) 4 Burr 2303, at 2398. See also Sherman and Bently, at 13.

[223] See Copinger, 4th ed., 1904, at 59.

[224] See Copinger, 5th ed., 1915, at 64.

[225] See *Macmillan & Co Ltd v K. & J. Cooper* (1923) 93 LJPC 113 (hereinafter "*Macmillan*"), at 117, 120. In April, 1911, the appellants published a book consisted of detached passages from Sir Thomas North's translation (in which there was no copyright) of Plutarch's 'Life of Alexander' selected to be suitable for use in schools and accompanied by the notes necessary to fill in the narrative. In January, 1918 the respondents published an addition of the foregoing translation. All the passages selected and published in the appellants' book were published by the respondents in their edition. The suit instituted by the appellants on October 30, 1918, came on for hearing before Fawcett J, who gave judgment for the appellants. The Court of Appeal dismissed the appellants' suit. On June 20, 1922 special leave to appeal was granted to the appellants. Their Lordships came to the conclusion that the appellants were not entitled to copyright in the text consisting merely of extracts taken *verbatim* from another book but copyright was allowed in the appended notes. It should be taken into account that the decision of the Privy Council are only of persuasive authority and not binding under the doctrine of precedent upon English courts.

[226] The term 'subject-matter' along the lines of copyrightability is also understood in this study, subject to contextualisation, as a related material (or matter) perceived prior to the copyrightability analysis, as a theme or topic of such an examination, or as a topic of the material in question. In certain contexts, the term 'other subject-matter' may indicate a copyright category which is distinct from *works*. From a

tiered structure is resolved on these lines into the sub-criteria of 'labour', corresponding to 'work', and 'independent' read as 'original'.

In this context, the following observation made with regard to 'the product of the application of … skill, judgment, labour and learning to those materials' should be taken into consideration: '[A]lthough it may be neither novel nor ingenious, [it] is the claimant's original work, in that it is originated by him, emanates from him, and is not copied.'[227]

It is submitted that such a formula may be construed as describing the term 'original' as such and yielding the signification which the adjective 'independent' has acquired within this matrix. Moreover, the actual wording utilised in *Macmillan* can be read as synonymous with the new European criterion.

In a sense, the issue was further obscured in the *Ladbroke* case also alluding to the formula 'independent labour'.[228] For instance, in *Macmillan* the question of the amount of labour as a matter of degree was associated with the field of copyright subsistence in general[229] as contrasted with a stance adopted in the *Ladbroke* judgment: '[O]riginality is matter of degree depending on the amount of skill, judgment or labour.'[230]

In this respect, the parlance of the judgment would seem destitute of consistency in that some of the locutions could be construed one way or the other.[231] At the same time, certain other formulations (ambiguous to a lesser degree) might appear to couch the concept of 'amount of labour'[232] in terms of attracting copyright without restricting it to the threshold of originality.[233]

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historical perspective, see s. 1 (4), (5), the Copyright Act 1956. See further Cornish, at 329 (as to "a strategic division between true authors' rights and the 'neighbouring' or 'related' rights of investors").

[227] *Macmillan*, at 118-119.

[228] *Ladbroke (Football) Ltd v William Hill (Football) Ltd* [1964] 1 WLR 273 (hereinafter "*Ladbroke*"), at 288. This judgment dealt with a breach of copyright in football betting coupons as compilations regarded as a single work. What the appellants adopted from the respondents were the types of wages and to a large extent the arrangement and the heading. This decision was governed by the Copyright Act 1956.

[229] See *Macmillan,* at 121 (discussing the 'amount of the knowledge, labour, judgement or literary skill or taste which the author … must bestow … in order to acquire copyright').

[230] *Ladbroke, at 277-278. See also ibid, at 289, 290, 292.*

[231] That is related either to the notion 'literary work' as a generic term or to the term 'original' looked at in isolation. See ibid., at 281, 285.

[232] Which is at least disputable in itself.

[233] Whilst the latter could be read as coupled with the 'not copied' criterion. See *Ladbroke*, at 286. See also ibid., at 282, 287.

While making arguably an inevitable detour to the modern textbook authorities, one can notice that a 'certain minimum standard of efforts' is still closely associated with the requisite 'originality'[234]. Furthermore, the construct of the amount (or degree) of originality is habitually bound up with the 'amount of labour'[235]. It is reasoned that the notions of 'work', 'originality' and 'original work' are jumbled within this template.[236]

2.2.2. Reflections on American discourse.

Symptomatically, nowadays American copyright paradigm may be described as increasingly receptive to the notion of creativity in the realm of protectability.[237]

In some measure, this may be mapped onto the role of the concept of authorship within the formula of the general subject matter of protection[238] on top of the other related peculiarities of the doctrine (let alone the current policies on the subject).[239]

At the same time, judging from the leading doctrinal expositions, a certain imbalance could be diagnosed in the adopted techniques with reference to the constituents of the general formula. It would seem that great importance is generally attached to the word 'original' scrupulously expatiated upon and glossed pervasively. 'Originality' is interpreted to encompass a whole host of constructs[240] including those

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[234] See Cornish, at 333. See also ibid., at 337 (the originality of musical works in the context of minimum effort as to 'arrangement'), 338 ('if artistic skill is required to make the copy, it seems that this may supply 'originality' (emphasis added)).

[235] See, for instance Laddie et al, at 47, 48, 50, 106. See also Copinger, at 114. Cf. Laddie et al, at 87.

[236] This may also be drawn from the analysis of a 'substantial amount of purely routine mental labour' as distinct from inventiveness. See Laddie et al, at 47, 125.

[237] Notably, in the aftermath of the *Feist* decision. See *Feist Publications, Inc. v Rural Tel. Serv. Co.*, 499 US 340 (1991).

[238] Under s. 102, Title 17, USC copyright subsists in *original works of authorship*. This term extends to, for instance, motion pictures and sound recordings (see s. 102 (a) (6), (7)) which are subsumed into the non-original category under British copyright (see s. 1 (1) (b), (c), CDPA). Historically, the requirement of originality was judicially established under the US Copyright Act 1909 by drawing upon the notion of authorship (in particular, bearing in mind that copyright could but be claimed by authors or their successors in interest under s. 9 of the Act). For the compelling analysis of the relevant case law, see Nimmer, at 2-6, 2-7, 2-10. In our estimation, it has been inferred from the doctrinal precept that 'a work is not the product of an author unless the work is original' (Nimmer, at 2-7) that the converse is valid in that a work is not original unless the work is the product of an author as evincing an imprint of the author's personality. This approach is reflected in the 'theory of choice' or its analogues intrinsic to the *droit d'auteur* school (notably with reference to the realm of software).

[239] Such as the exclusive role of functionality, the idea-expression dichotomy, and the dichotomy between federal and state law (which, *mutatis mutandis*, reflects the dichotomy between common law and statutory copyright).

[240] 'Distinguishable variation', 'independent effort', 'the author's creative contribution', 'not-copied' requirement, 'a modicum of creativity', 'the quantum of originality', to name but a few. Most of these

which could be associated with the term 'work'[241]. It follows further that the latter is considered, in a sense, dispensable in that it has been 'purposely left undefined' as part of the phrase 'works of authorship'[242]. On top of it, it can be divested of any meaning for the topic has been analysed within the parameters[243] of the enumeration of the protected categories with the emphasis placed on the related attributive adjectives (such as literary and musical). This narrative unfolded in discussing the expansion of the subject-mater and the scope of the notion 'original work of authorship' as regards the character of the general framework[244]. In this respect, the word 'work' does not exist on the plane of a separate entity or, at least, does not connote anything specific, and *reductio ad absurdum* any word (such as, say, 'thing') may be capable of being substituted for it.

The law in this context, it is reasoned, does not operate on any principle. Furthermore, such an approach may fail to dispel doubts as to the tenability of any list of unprotectable subject-matter.[245] On this score, it would appear impossible to produce cogent reasons for non-protectability in the case of a particular subject-matter if the criterion of originality is satisfied.

Paradoxically, the above confluence of the concepts of copyrightability and authorship pointed up within the general subject-matter under American copyright law may provide an additional common denominator between the modern copyright doctrines on the subject of the nature of the notion of 'work' addressed in the ensuing subsections.

2.3. The concept of work.
2.3.1. An overview of the problem.

There is no established definition of the notion of work statutory or judicially.[246] On the other hand, it is not to be considered devoid of meaning. Bearing in mind the

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doctrines rather try to describe the concept of original work of authorship as a whole thus rendering it increasingly amorphous. See also Nimmer, at 2-9 to 2-17, 3-2, 3-12, 3-13, 3-16, 3-27, 3-28.

[241] Such as the quantity of efforts as part of the quantum of originality analysis. See Nimmer, at 2-17.

[242] See ibid., at 2-29. The phrase 'works of authorship' is not coextensive with an author's 'writings'. See further Nimmer, at 2-28.

[243] Forming a list and taking account of the characteristic indicia. See ibid., at 2-28, 2-30, 2-43.

[244] As to whether the list is illustrative or limitative. See further Nimmer, at 2-29, 2-30.

[245] See, for instance, the Copyright Office Regulations of 1959 (37 CFR, § 202.1 (a)); the House Committee Report of 1966 (HR Rep. No 2237, 89th Cong., 2d Sess., at 44, n. 1).

[246] See also Laddie et al, at 29.

structure of the post-1988 copyright law, the principal factor to make allowance for in building the notion into the framework of copyrightability is the applicability of the term 'work' to both original[247] and non-original[248] categories.

In respect of the second category, the term under scrutiny in the form of the phrase 'what is protected' has been doctrinally construed to come down to the actual image or sound.[249] However, unless the nature of such a construction is fathomed, the applicability of the term 'work' as such to the first category may be at least debatable. As a result, the term could be rendered self-contradictory and confusing.

The first solution to sort out this problem could be for the structural formula of the Copyright Act 1956 to come back[250]. This may hardly be the best decision. The history and current development of films' copyright may evidence in corroboration of our approach.[251]

2.3.2. Complications in microcosm:
an outline of the films' copyright history.

Cinematographic films are often considered from a copyright standpoint closer in character to the subject-matter constituting the second category, although the species of the latter (such as sound recordings) largely fall outside the umbrella of the Berne Convention.

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[247] See s.1 (1) (a) CDPA (hereinafter 'the original category' or 'first category').

[248] See s.1 (1) (b), (c) (hereinafter the 'non-original category' or 'second category'). In a sense, non-original works could be regarded as works *per se* that is without the attribute of originality. At the same time, original works of the non-original category are impliedly protected but without recourse to the criterion (or criteria) of originality or otherwise identifying them as original and without implications for the level or character (within the category) of protection. As pointed out above, under American copyright such works as motion pictures and sound recordings are species of original works of authorship. (See s. 102 (a) (6), (7), Title 17, USC). This should be perceived in the context of the US copyright paradigm with all its peculiarities. Nevertheless, the aspect under consideration may well be a step on the road to the abolition of the distinction between the two categories (bearing in mind the present role of the USA on the copyright stage) and probably as a bridgehead for the abrogation of the classification of works altogether.

[249] See, for instance, Laddie et al, at 386, 406, 431, 468.

[250] Cf. Cornish and Llewelyn, at 383. According to the Arrangement of Sections, works were protected under Part I of the Act ('Copyright in Original Works') whilst Part II ('Copyright in Sound Recordings, Cinematograph Films, Broadcasts, etc.') was given over to 'other subject-matter'. Works and other subject-matter were juxtaposed in, for example, s. 17 (2) (b), the Copyright Act 1956.

[251] For a recent analysis of a somewhat fashionable idea of a special role of the cinematograph film copyright category in the digital environment, see Alpin, T., "Not in Our Galaxy: Why "Film" Won't Rescue Multimedia" [1999] EIPR 633. As to the cinematographic analogy in the field of software, see Ulmer, E., and Kolle, G., "Copyright Protection of Computer Programs" (1983) 14 IIC 159.

However, cinematographic production may be described as an 'instance where the Convention has had an influence on the shaping of domestic laws, rather than *vice versa*'.[252]

For the obvious technical reasons[253] prior to the Berlin Revision Conference the Berne text did not touch upon this subject-matter. At the Berlin Revision a new article recognised the rights of authors of literary and artistic works to authorise the reproduction and public performance of their works by cinematography.[254] Further, not only cinematographic productions (in fact as a particular form of dramatic works) manifesting a personal and original character but also cinematographic reproductions of pre-existing works were granted protection under the Convention.[255]

The resolution of the ALAI Congress in Paris in 1925 employed the expression 'cinematographic works'[256] and in 1928 art. 14(2) was amended at the Rome Conference to cover films not possessing an original character under the heading of photographic works.[257] In this context, as Professor Ricketson maintained, the skill involved in actually making a film was 'just as worthy of protection' as that in deciding how the subject matter was to be treated.[258]

In the meantime, under the corresponding British doctrine not only were cinematograph productions subsumed within the notion of 'dramatic work' subject to the requirement of 'original character'[259] but also a film could qualify as an original photograph and, therefore, as an original artistic work.[260] Subsequently, the 1956 Act enabled the UK to ratify the Brussels Act which saw the promotion of cinematographic works (without qualification) to the status of the works enumerated in article 2 (1).[261]

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[252] Ricketson, at 549.
[253] See ibid., at 95, 550.
[254] See Art. 14 (1), Berlin Act. See also Ricketson, at 550, 569.
[255] See Art. 14 (2), (3), Berlin Act. See also Copinger, at 1128; Ricketson, at 549-551.
[256] See Ricketson, at 552-553.
[257] See Art.14 (2), Rome Act. See also Copinger, at 1129; Ricketson, at 103, 261-262, 552-554. This may also reflect the common technical nature (or 'ancestry') of photographs and films.
[258] See Ricketson, at 554.
[259] See s. 35 (1), the Copyright Act 1911.
[260] See *Nordisk Films Co Ltd v Onda* [1917-23] MCC 337. See further Laddie et al, at 368. See also Art. 3, Berlin Act; s. 35 (1), the Copyright Act 1911.
[261] See also Copinger, at 1129-1130, 1140; Ricketson, at 109, 554-558.

On top of it, after the Stockholm Act the legitimacy of the 'film copyright' system of the common law countries is confirmed as consistent with Art. 14-bis[262]. This allows for the investment based approach which now in the UK under CDPA to some extent comes down to a legal fiction.

Furthermore, the Court of appeal in *Norowzian v Arcs* held that the content of a film as a cinematographic work could enjoy copyright protection as a species of dramatic works in addition to the copyright in a film as a physical recording.[263]

The convoluted history of films' protection in the eyes of copyright may reflect a close connection between original and non-original works[264] thus pointing to the applicability of the term 'work' to both the categories and calling for a meaningful and systematically structured concept of work.

2.3.3. Roles of 'labour' and 'result': *Exxon* in the doctrinal context.

As a general alternative to the authors' rights-neighbouring rights dichotomy it is of the essence to find an elusive common denominator between the two generic copyrightable classes.[265]

In this regard, Professor Cornish, for instance, considers the construct of a certain minimum standard of effort in the context of the notion of 'work' as to the original category.[266] On the other hand, taking into account that the same construct as indicated above is generally deemed congruent with the requirement of originality[267], the primary elements of copyright subsistence could be, to a certain extent, reconciled

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[262] See Art. 14-bis (2), Berne Convention. This provision could be interpreted in the context of both the 1956 Act (which used the term 'maker') and CDPA (framing the issue in terms of authorship). See s. 13 (10), the Copyright Act 1956; s. 9 (2) (ab), CDPA. See further Ricketson, at 557, 572.
[263] See *Norowzian v Arcs (No2)*, CA, The Times, November 11, 1999. See also James, M., "Some Joy at Last for Cinematographers" [2000] EIPR 131. For the reasons discussed in this section we would not agree with M. James about the nature of the opposition between 'physical recording' and 'work itself'. See ibid., at 132.
[264] Another facet of the interrelation may be perceived in the context of the intertwined subject-matter within the product incorporating a film as such. Confluence and convergence of subject-matter furthered by the advent of multimedia works may scarcely be calculable as to the line between the discussed categories. Such a distinction by implication marking the notion of originality is to be drawn against a background of work *per se.*
[265] Cf. Cornish, at 342, 344.
[266] See ibid., at 333.
[267] See also Laddie et al, at 32 (what confers originality on such works is the skill and labour…').

if the term 'original' is taken as an attributive of the concept 'independent labour'.[268] However, if the adjective 'independent' is read as coextensive with 'original' the construction may epitomise circular reasoning. At all events, the remainder of the formula, that is the notion of 'labour' would correspond to the fundamental understanding of 'work' with some necessary specifications explicated below.

By the same token,[269] 'independent' and 'original' may scarcely be viewed as conveying discrepant conceptual versions of the general subject matter. Accordingly, the formula 'independent labour' may but be of assistance in sketching out the concept of copyrightability. To sketch it in, the meaning attached to the foregoing statutory words is to be elucidated.

Within this matrix, the role of the result of labour should be elaborated[270]. In fact, in describing the subject matter, it is necessary to accommodate not only the not insignificant labour, skill, etc but also the result which is not insignificant.[271] This can, for instance, be inferred from the ostensive (that is, giving explanation via examles) definitions of literary and artistic works as well as from the verbal (traditionally framed) definitions of the species of these sub-genera of original works[272].

On this score, certain key judgments may provide further guidance. For instance, in the *Exxon* case the discussion on the subject of copyright[273] was centred upon the constructions put on the notion of literary work which in turn pivoted on the significations of the word 'literary' from a copyright standpoint. In this respect, several formulae were identified:

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[268] The formula 'bringing out one characteristic from the requirement of "skill, labour and judgment"' (Cornish, at 334) may suggest the same if juxtaposed with such a requisite as (see, for instance, Laddie, et al, at 33) 'skill … if original'.

[269] Again, unless the term 'work' is meaningless which could be the case if the formula 'originality corresponds to the independent skill and labour' (Laddie et al, at 211) is taken at face value. Cf. also *Cantor Fitzgerald International v Tradition (UK) Ltd* [2000] RPC 95, at para. 79.

[270] Cf. Derclaye, at 12.

[271] Cf. Laddie et al, at 833 (the phrase "what is meant is the misappropriation of the author's mental labour" may reflect an understanding of the protectable as "labour, skill, etc.", or, at least, be construed as some kind of incomplete or "nascent" conceptualisation of the subject). Cf. also *Warwick Film Productions Ltd v Eisinger* [1969] Ch 508, at 530.

[272] See ss. 3 (1), 4, CDPA. According to s. 4 (2) (b) 'photograph' means a recording of light (as distinct from 'recording light').

[273] Regarding the invented corporate name EXXON. See *Exxon Corporation v Exxon Insurance Consultants International Ltd* [1982] RPC 69 (hereinafter "Exxon").

1. The dictum of Davey, LJ in the seminal *Hollinrake* case was invoked[274] to the effect that 'a literary work is intended to afford either information and instruction, or pleasure, in the form of literary enjoyment'.[275]

2. Two dictionary definitions of the word 'literary' were cited, namely: 'Pertaining to the letters of the alphabet' (considered as an earlier meaning) and 'of or pertaining to, or of the nature of, literature … or books…'[276]

3. The landmark cases of *University of London Press* and *Ladbroke* were quoted with approval to describe the words 'literary work' as 'work which is expressed in print or writing irrespective of the question whether the quality or style is high'.[277]

4. The meaningfulness of subject-matter was discussed as a requisite component of copyrightability in the context of the so-called 'code' cases and compilations as species of literary works.[278]

In essence, the enumerated formulae indicated that the scope of the criterion of significance was not limited to the realm of labour but extended to the result of it.

From this perspective, the following remark of Stephenson LJ is of importance: 'I am not sure whether this can be said to be a "work" at all; I am clearly of the opinion that it cannot be said to be a literary work.'[279] In suggesting the possibility of examining the elements of the notion 'literary work' in isolation, this could be construed to signify that the non-significance of the result of labour as distinct from the labour *per se* was ascribed to the term 'literary'. Furthermore, the term 'work' juxtaposed with the phrase 'expressed in' may denote but labour. In some measure, this was reflected in the principal question of the *Exxon* case: '[W]hether it is proper

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[274] See *Hollinrake v Truswell* [1894] 3 Ch 420 (hereinafter "*Hollinrake*"). See further *Exxon,* at 70, 88, 89. See also Frame, R., "The Protection and Exploitation of Intellectual Property Rights on the Internet: The Way Forward for the Music Industry" [1999] IPQ 443, at 448.

[275] *Hollinrake,* at 428. It is noteworthy that the case was decided under the Copyright Act 1842 which dealt with the notion of literary work only in the preamble. Interestingly enough, Oliver LJ preceded his reference to the foregoing dictum with the ironic observation that ascertaining whether a particular subject-matter falls within the meaning of each of the constituent parts of the expression 'original literary work' was 'to take leave of one's commonsense' (*Exxon,* at 89). In fact, he proceeded with his analysis of the term 'literary' and concluded as to the word 'Exxon': 'It conveys no information; it provides no instruction; it gives no pleasure that *I can conceive.*' (Ibid., at 90 (emphasis added)).

[276] See *Exxon,* at 75, 78. Mr Mummery, as *amicus curiae,* viewed the latter as 'literary in the normal sense'. (Ibid., at 78).

[277] See *University of London Press,* at 608; *Ladbroke,* at 291. See further *Exxon,* at 76.

[278] See *Exxon,* at 77-79. See also *Data Access Corp.* v *Powerflex Services Pty Ltd* (1999) 73 ALJR 1435, at 1454-1455.

[279] Ibid., at 89. Cf. Laddie et al, at 29 ('not a work').

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to construe "original literary work" … as covering a single invented word even if considerable time and work were expended on it…'[280]

It is reasoned that the labour/skill concept, equipped with its own links and criteria and reflected in various notions and analytic formulae, regains its identity and may account for the performative nature of the intangible encapsulated in the process of creation. At the same time, the nexus between labour and result may reconcile the dynamic and the static within the remit of copyright.[281]

2.3.4. The construct 'description of work'
(work of a copyrightable description).
The Berne context. Non-insignificance.

Within the 'labour and skill' paradigm of work, the non-insignificance[282] of the result as a suddenly surfacing attribute of the notion yields up the missing link between the concept of *work* and original literary work. Such an *intermediate stratum*, viewed as an umbrella term for all classes of copyrightable works, could be found by superimposing the statutory formulations on the case law understanding.

The wording of s. 1(1)[283] may be seen as an ostensive definition of the construct 'description of work' or rather 'work of a copyrightable description'. This abstract, to a certain extent, could be identified with placing result of labour in a particular domain.[284] Nevertheless, it is to be taken into account that, in connection with the first category, the result of labour in a particular domain ought to be original to be copyright. In this respect, the sweep of the notion 'work' is broader than that of 'work of a copyrightable description' in that there are more works than works that could be *described* as copyrightable. On the other hand, within this pattern the non-insignificance of the result may be attached to the concept 'work' since 'work of a copyrightable description' presupposes that it is some kind of labour/result system[285]

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[280] *Exxon,* at 77. See also *University of London Press,* at 609 (the time spent cannot *per se* be a test for determining copyright subsistence).
[281] See further Sherman and Bently, at 4, 43, 47, 49, 173-175, 195, 200.
[282] As consistent with the *de minimis* rule. Cf. *Ladbroke,* at 287, 289, 292.
[283] See s. 1 (1), CDPA.
[284] Or attributing a particular mode to a work.
[285] Not just *labour.* 'Common fate' (in terms of being placed in a particular domain) of 'result' and 'labour' implies an essential correlation.

which is to be placed in a particular domain and assessed against other related criteria. Consequently, the essence of such a system is to be distilled in the first place.

Further, the term 'description' connotes that not every work of a particular description receives copyright protection for certain additional requirements/criteria are to be met[286].

It may also be pointed out that the construct 'description of work' more readily than the term 'work' (even in its generic form) implies the distinction between the two categories of works. In addition, the phrase 'work of a copyrightable description' spells the applicability of the adjectives 'original' and 'literary' (as copyright terms of art) to such a work as a computer program.

In the Berne context the interpretation of production[287] as the result of work[288] (if 'work' is equated with 'labour') can render nugatory the choice of the word 'work' in the construct 'literary work'. The other side of the coin is that the construction to the effect that 'work' is synonymous with 'production' may exemplify some kind of tautology. However, the term 'work' may be deployed as correlative with the word 'production', bearing in mind the connotations of the word 'production' reiterating the role of the result or placing an emphasis on the result within the formula 'result of labour'.[289] In a sense, 'work' is utilised here as part of an explication of 'production'.

In this regard, the construct 'work (or production) constituting an intellectual creation' within the Berne paradigm may be seen, *mutatis mutandis,* as a conceptual counterpart of 'a work of a copyrightable description' under British copyright for both the formulae depict the stage of the protectability analysis before the examination of the qualification status and without specifying a particular domain.

In conformity with copyright tradition[290], the non-insignificance is to be appraised primarily qualitatively in that quality (for instance, as a role or function) can make up for a dearth of quantity[291] (as not infrequently, *maximus in minimis*) in determining

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[286] See s. 1 (2), (3), CDPA and the provisions referred to there. See also s. 3 (1), (2), CDPA.
[287] See Art. 2 (1), Berne Convention.
[288] Cf. *LB (Plastics)*, at 612.
[289] See also Ricketson, at 230.
[290] See Richardson, M., "Copyright in Trade Marks? On Understanding trade Mark Dilution" [2000] IPQ 66, at 74.
[291] See Laddie et al, at 47. Cf. ibid., at 49, 51. See also Copinger, at 111; Gringras, at 190. The indications of this approach could be found even in the *Exxon*, at 75, 79. It would seem at least plausible that the threshold of *non-triviality* (as not completely unimportant 'in respect of the 'result') as distinct from the criterion of *non-commonplace* within the fold of originality proper (see subs. 2.5.2.C., below) may serve as a *de minimis* formula in this context. See also Kremer, B., "Copyright Protection of Computer Programs" [2000] EIPR 292, at 301; Laddie et al, at 212-213. Cf. *SPE*

protectability of, say, a 'small work'. It is also to be reiterated that the criterion should be met with reference to both labour/skill and the result of such to constitute a work as a not trivial result[292] of not insignificant labour, skill or judgment.[293] For instance, in the digital world a password most likely does not attract copyright on account of a lack of labour or skill exerted on it without proceeding with assessing the result.[294]

2.3.5. The non-original category:
The implied presumption of not insignificant labour
and 'depersonalisation' of subject-matter.

It is a commonly held opinion that in connection with the second category 'the statutory monopoly arises even though the author expended no mental skill, labour or ingenuity in its preparation.'[295]

Nevertheless, judging from the description of 'author' in CDPA[296] an implied presumption of not insignificant labour could be identified and utilised in the conceptualisation of 'work'.

One might trace a certain revival in the doctrinal fortunes of the construct *skill/labour* with reference to the non-original category in the recent House of Lords decision in *Newspaper Licensing Agency* where the purpose of the copyright was formulated as 'something which could be taken into account in deciding the kind of skill and labour which attracted protection'.[297] Furthermore, the skill/labour

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International Ltd v Professional Preparation Contractors (UK) Ltd [2000] EIPR N-19. For an earlier exposition of 'triviality' see *Macmillan*, at 121.

[292] Sifted out as a corollary of some kind of "micrological" analysis. 'Trivial', on these lines, is construed as an antonym of 'important' and described in terms of *status* in the *domain* context. See also subs. 4.3.1.D.e., below.

[293] An element of serendipity may also be part of this formula. (See also Laddie et al, at 238, 484.) However, it is reasoned , to secure *originality* an intention to produce a work (not necessarily as regards each and every facet of it) should be identifiable. (See also *Designer Guild Ltd* v *Russell Williams (Textiles) Ltd* [2001] FSR 113) It is also submitted that the deployment of financial resources (say, as a part of the formula 'financial and professional investment' as used in the Database Directive (see rec-s 39, 40, the Database Directive)) may be made allowance for within this framework. A similar approach was adopted in the *Macmillan* case employing the formula 'labour, skill and capital'. (See *Macmillan,* at 117-118.) In a sense, the borderline between the <u>sui generis</u> right and copyright may be drawn according to the 'work'/'original work' distinction. See further subs. 2.5.3.C., below. As to a certain disparity between the 'financial' elements and the rest of the formula, see subs. 2.3.6., below.

[294] See also Laddie et al, at 834.

[295] Ibid., at 404, 468.

[296] See s. 9, CDPA.

[297] See *Newspaper Licensing Agency Ltd* v *Marks & Spencer plc* [2001] WLR 290 (hereinafter "*NLA*"), at 291, 298. In this case the plaintiff (company formed to protect the intellectual property rights of publishers of national and provincial newspapers relating to press cuttings) sought an injunction and an

conception was invoked in analysing the notion of typographical arrangement copyright[298] in its historical contextand asking 'whether there has been copying of sufficient of the relevant skill and labour to constitute a substantial part of the edition's typographical arrangement' in proceeding to examine the nature of the skill and labour involved in a typographical arrangement.[299]

A certain 'depersonalisation' of subject-matter and separation of a work from its originator flowing from the absence of the requirement of originality is logically mediated by the fact that the author of a non-original work is identified according to a legal fiction. The latter is largely for the construct of labour, skill and investment to be distilled into the abstraction which can be read as 'responsibility' and employed to single out the relevant type of person.[300]

This also reflects the concomitant division within the notion of work or a shift of emphasis within the expression 'result of labour'. More specifically, the 'not trivial result' as distinct from 'not insignificant labour' is what is protected directly, whereas the foregoing legal fiction entails labour, skill and investment admittedly residing in the types of persons representing the notion of 'author'.

It is a separate question whether the identity of the author is known. It was observed as early as in 1858 that copyright was not restricted to cases in which there was a known author.[301] This rule, that holds good under the current copyright law[302], does not prevent the aforesaid presumption imparting the specified characteristics to the notion of authorship. Accordingly, even in the event of the qualification for copyright protection due to the requirement other than the personal status of the author[303], the

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inquiry as to damages for infringement of the copyright subsisting in the typographical arrangement of its published editions. The House of Lords dismissed an appeal by the claimant from a decision of the Court of Appeal that in turn allowed the defendant's appeal, holding that typographical arrangement copyright subsisted only in the newspaper as a whole and that none of the individual cuttings could be regarded as a substantial part of the newspaper in question. By and large, the NLA litigation is beyond the scope of our research. However, where appropriate, certain aspects of the decision are cited in this thesis. See further Cornish and Llewelyn, at 425, 506, 513, 787; Torremans, at 200, 238, 239.

[298] It might be considered as a watchword in this area that "what is protected is the image on the page". See Laddie et al, at 483.

[299] See *NLA*, at 292-293, 297-298.

[300] Namely, the producer, the principal director, the person making the broadcast or the publisher subject to a particular species of work. See s. 9 (2), CDPA. See also Cornish, at 344; Laddie et al, at 5.

[301] See *MacLean v Moody* (1858) 20 Sc. Court Sess. Cas 1154.

[302] See ss. 9 (4), 104 (4), 151 (1), CDPA.

[303] See ss. 1 (3), 153 (1), CDPA.

presumption indicates that it is a may-be-unknown author who has expended his effort on the work.[304]

Further, in the case of a sound recording or film (in the way ascribed also to the original category[305]) '[w]hile a work remains unpublished, of course, the connection can only concern personal status'.[306]

Moreover, even the special qualification requirement in the case of a broadcast[307] taken at face value as not bound up with the notion of authorship is not an inhibiting factor in that the formula employing such a word as 'made' can be interpreted as pointing to the relevant type of person.

For a number of reasons it is not to be taken for granted that under British copyright law the notion of authorship has no bearing on the subsistence of copyright in a work.[308] It is of particular relevance here that the formulations mediating the latter presuppose the existence of the former and, by the same token, the formulae describing the relevant persons point to the elements inherent in the realm of copyright subsistence.[309]

In this context, responsibility as a major receptacle for labour and investment may also justify copyright protection.[310]

2.3.6. Ideation of *work* : culmination.

To encapsulate the above reasoning, in the case of original types of works the accent as a requirement of non-insignificance flows or shifts alternately within the construct 'result of labour'. Further, there could be intellectual labour (even bestowed by the author) of an irrelevant kind or not related to the result directly[311]. There might also be a result (within the margins of the text, so to speak) not produced by the

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[304] See also Laddie et al, at 38; Tapper, C., "The European Software Directive: The Perspective from the United Kingdom" in Lehmann and Tapper, at 150.

[305] See s. 155 (1), CDPA.

[306] See Cornish, at 346.

[307] See s. 153 (1) (c), CDPA.

[308] The correlation between the notions is notably essential to the civil law systems and, as indicated elsewhere in this study, is becoming increasingly important with reference to American copyright doctrine. See also Copinger, at 181-182.

[309] This may affect conceptualisation of certain PIL related issues of authorship. These questions are, however, beyond the scope of this study.

[310] See also Fitzpatrick, S., "Copyright Imbalance: US and Australian Responses to the WIPO Digital Copyright Treaty" [2000] EIPR 214, at 215-216; Frankel, S., "Protecting "Killer Cross" and "Fantasy Football", The Ethics of Copyright Law" (1998) 28 VUWLR 191.

[311] E.g. effort, although made by the same person at the same time, put into collecting material not intended for the work in question and not reflected in the text. See also subs. 2.6.2, below.

expenditure of labour in question[312]. In this connection, as far as the concept of *work* is concerned, with reference to the first category it is the 'not insignificant' labour shaping the 'not trivial' result which matters, and it is the 'not trivial' result produced by the 'not insignificant' labour which counts[313]. A clearly integral labour/result system is formed on this basis. At the same time, on account of the *isolation* of the elements of the formula within the ambit of non-original works, the requirement is anchored to the result. It is also to be borne in mind that the result in each case is couched in terms of the respective statutory definitions.[314]

Within this matrix, the above presumption completes the framework for the presumed labour (which is not necessarily 'independent'), being a prerequisite of copyright subsistence and, on the other hand, not protected directly, effectively lies dormant. It is activated in being protected in the form of the result and in the rights of the author. This schema highlights the link between copyrightability and authorship so that the nature of the latter could be described as mediating and delineating the personification of the construct 'labour/skill-responsibility'.

In a sense, this could be seen as an apt illustration of a 'chicken-and-egg situation' in that the protection limited to signal and image up to a certain point renders the requirement of originality extraneous[315] and by the same token, the absence of the requirement spells a certain depersonalisation setting the stage for the direct protection

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[312] E.g. a note or a drawing included in the preparatory design material (here *not* in the copyright sense) produced, albeit by the same person, not as part of the efforts to design the software under consideration.

[313] It is submitted that this formula as well as the criterion of 'non-insignificance' as such and the systematised elaboration of the elements of copyrightability may justify a 'disjunctive' reading of the 'labour, skill or judgment' construct thus suggesting a certain interchangeability as to, say, 'labour' and 'skill'. (See also Laddie et al, at 47. Cf. Sterling, J., "Creator's Right and the Bridge between Author's Right and Copyright" (1998) 29 IIC 302, at 305;*Tele-Direct (Publications) Inc v American Business Information Inc* [1998] EIPR N-17.) At the same time, arguably, only in connection with the above 'financial' elements of the formula a 'disjunctive' reading may fly in the face of the nature of the modern copyright law. This would appear to be reflected in the *Macmillan* construct 'labour, skill *and capital*'. (See *Macmillan,* at 117-118 (emphasis added). Cf. ibid., at 121 ("the knowledge, labour, judgment or literary skill or taste"). Judging from the context, the formulae "the labour and skill and capital" and "labour... knowledge...judgement...and literary skill" (Ibid., at 117,118.) would seem to reflect the actual circumstances of the case as distinct from the general approach.). Therefore, such an ingredient as 'capital' might be used on a complementary basis. See also *LB (Plastics)*, at 624. Cf. Aplin, T., "When Are Compilations Original?" [2001] EIPR 543, at 546. Cf. rec.40, the Database Directive. See also MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, 2nd ed., at 191. On the other hand, money (like 'time', see also subs. 2.3.3., above) *per se* can scarcely conjure up any work.

[314] For example, in the case of broadcasts, visual images, sounds or other information. See s. 6 (1), CDPA. See also Laddie et al, at 469.

[315] Since the presumed labour should not perforce be independent that is original.

of the result of labour in the form of signal and image. At the same time the labour is relocated to the realm of authorship through a legal fiction.

It is submitted that the argument from 'image and signal' (that is from the technical context) can be thought of as *inductive* and may have the advantage of practicality'. The reasoning progressing from the requirement of originality as a copyright precept is *deductive*. It could be considered more systematic as directly connected to the entire system of copyright. It is also logically sound or, in the philosophical jargon, truth-preserving, i.e. leading from true premises to a true conclusion that is not just 'rendered plausible' in the context of past regularities. A theoretical distinction can be drawn along these lines between an archetypal principled system and a (currently) working mechanism. An instance of the former may notably gain ground in our expanding copyright universe. The deductive reading may also be more elaborate and justified to the extent that it accommodates the reality of 'depersonalisation' and the above presumption reflecting the restructuring of the notion of 'work'. In some measure, it mediates the 'legal fiction based' form of copyright protection.

In this context and with reference to the conceptualisation of work the notion of computer-generated works may provide food for thought.

2.4. Post-1988 Copyright: computer-generated works.
2.4.1. 'Depersonalisation': a special type.

CDPA, in inaugurating the concept[316], defines "computer-generated", in relation to a work, as 'generated by computer in circumstances such that there is no human author of the work'.[317]

In this regard, 'depersonalisation' springs not from the absence of the requirement of originality[318] but from a lack of, by definition, 'a human element' or 'person', as it

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[316] For discussions preceding the enactment, see Millard, C., *Legal protection of Computer Programs and Data,* Sweet & Maxwell, 1985, at 25-30. See also Lloyd, at 302-304.

[317] See s. 178, CDPA. As to certain related international aspects, see Dreier, T., "The International Development of Copyright Protection for Computer Programs" in Lehmann and Tapper, at 237; Gervais, D., "The Protection under International Copyright Law of Works Created with or by Computers" (1991) 22 IIC 628. See also Ricketson, S., "Simplifying Copyright law: Proposals from Down Under" [1999] EIPR 537, at 545.

[318] It is submitted that the converse proposition ('depersonalisation engenders irrelevance of originality') does not hold good. Another form of such a one-way system may be illustrated by the following reasoning: resort to a legal fiction as to authorship always points to general difficulty in identifying a single author concerning a certain type of work (for instance, owing to the number of persons involved) whereas such a conundrum in turn does not inevitably lead to the formulation of a

were. Further, in contrast with non-original works, in the case of a computer-generated work the issues of non-insignificance'[319] and 'source'[320] of the labour/skill ought to be considered as essential to the status of the material as a work and an original work respectively.

Paradoxically, the resultant legal fiction reads: 'In the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.'[321]

Taking into account that this formula admits of human authorship within this pattern there is a marked discrepancy in terminology.[322] There could be some further complications. For instance, the wording of s. 178 does not conform with the notion of works of joint authorship[323] if the ('not distinct') human contribution is established. As a result there could be no author at all[324] with mystifying (if not mysterious) consequences as to the subsistence of copyright in the creation with no creator and labour expended by nobody.

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legal fiction. This may also help to draw a distinction between the team production of, say, films and software respectively. So far as the depersonalisation/originality junction is concerned the primacy of the stability of the copyright classification could also tip the balance. It may also be observed that the nature of the related domain prevails. On the other hand, a clear correlation ('If there is one there is the other') exists between the requirement of originality and the unity of labour and the result of it (describing what can or cannot be taken) as well as between the adoption of a legal fiction within the realm of authorship and 'depersonalisation'.

[319] Which is not presumed.

[320] This comes down to examining the question whether the labour has been exerted by the computer technologically and/or, by virtue of a legal fiction, by a would-be author. (See also *Fylde Microsystems Ltd v Key Radio systems Ltd* [1998] FSR 449, at 455.) In the event of a work not originated along these lines but 'taken' by the computer/'author' such a work cannot be deemed original. As to the authorship, theoretically, the choice might be primarily made between the computer programmer and the user. (See also Commission of the European Communities. Communication from the Commission. Green Paper on copyright and the challenge to technology, Copyright issues requiring immediate action, COM (88) 172 final (hereinafter "Green Paper"), at 196-197; Millard, C., "Copyright" in Reed, at 117. Other related aspects are discussed elsewhere in this chapter.

[321] See s. 9 (3), CDPA. This bears a close analogy with the canvassed approach adopted in connection with the non-original category since all the related formulae (see s. 9 (2), (3), CDPA) are framed in terms of responsibility. The wording of s. 9 (3) also is nearly identical to the definition of the maker of a cinematograph film under the 1956 Act. (See s. 13 (10) (b), the Copyright Act 1956) C. Tapper points out that the first drafts of the Software Directive contained a provision providing for the vesting of ownership in computer-generated works in the person causing the generation of subsequent programs subject to contrary contractual arrangement. See Tapper, C., "The European Software Directive: The Perspective from the United Kingdom" in Lehmann and Tapper, at 149.

[322] This can be put down to several reasons such as the use of the word 'author' in s. 178 in the popular (non-copyright) sense or under the normal rules of the respective type (literary, artistic, etc.) of work so that computer-generated works constitute an exception. These constructions arguably point to some legislative imperfections, to say the least, as does another interpretation coming down to the 'delayed authorship' approach. See Bainbridge, at 222.

[323] See s. 10 (1), CDPA. See also Ginsburg, J., "Putting Cars on the 'Information Superhighway': Authors, Exploiters and Copyright in Cyberspace" in Hugenholtz, at 192-194.

[324] See Laddie et al, at 841.

2.4.2. Computer-related categories : nuancing.

There remains another puzzle as to the line between computer-generated works and works produced with the aid of a computer.[325] So far as the latter is concerned, a computer is used 'as a tool'. Such a formula was adopted by Whitford J in the famous *Express Newspapers* judgment[326] considering copyright in the tables of winning sequences of letters in the newspaper competition run by the plaintiff. In this case, decided under the Copyright Act 1956 not providing for computer-generated works, it was stated that the labour involved in working out the tables 'could be immensely reduced by writing out an appropriate computer [program] and getting the computer to run up an appropriate number of varying grids and letter sequences.'[327]

As to the submission on the question of employment of a computer[328] to the effect that the tables under consideration were not copyright as not produced by a human being, it was further maintained that a position would be as unrealistic to suggest a pen could be held the author of a written work.[329]

It is respectfully submitted that this judgment might hardly be reconciled with the notion of computer-generated works. If such works are to be protected by copyright, the contribution technologically attributable to a programmed computer and in the above circumstances (as an equivalent of human labour or skill) ascribed to a relevant person on a statutory footing should qualify as an original literary work in its own right so long as the criterion of originality is met. It is to be pointed out that, under the concept of adoptive skill as used to determine originality in such a case, the person

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[325] Hereinafter "computer-aided works". See also Dreier, T., "The International Development of Copyright Protection for computer Programs" in Lehmann and Tapper, at 237; Dworkin in Hansen, at 172; Millard, C., "Copyright" in Reed, at 116-117; Sookman, B., "Computer-Assisted Creations of Works Protected by Copyright" (1990) 5 IPJ 165.

[326] See *Express Newspapers plc v Liverpool Daily Post & Echo plc* [1985] 1 WLR 1089 (hereinafter "*Express Newspapers*").

[327] Ibid., at 1093. Cf. Hunter, D., "Mind your Language: Copyright in Computer Languages in Australia" [1998] EIPR 98, at 105.

[328] It is noteworthy that within the ambit of computer-generated works a computer program may be, adopting a grammatical expression, not only a subject but also an object. The first function is self-explanatory since a computer is taken to be programmed. On top of it, a computer program such as a compiler or an assembler (a "subject") translates the source code of a program written in a high-level language (such as C or Visual Basic) or an assembly language respectively into the object code. Another example of a computer-generated computer program (an "object") can be a code automatically produced from screen layouts designed by a user. See also Copinger, at 189; Cornish, at 456.

[329] See *Express newspapers,* at 1093. See further Dworkin in Hansen, at 171. See also Bainbridge, at 221 (mentioning an identical reasoning found in the unreported judgment of *Jockey Club v Rahim,* 22 July 1983, Ch.D.).

making the arrangements 'inherits' the skill of the programmer.[330] However, we would not incline to the view that "there must be some skill or judgment underpinning the work otherwise it cannot be 'original'".[331] It is submitted that the skill may indicate a *work* but, as reasoned in the ensuing subsections, to be original such a work (as the result-labour system) should originate with the author of the work. It would seem that the problem is solved in CDPA by means of the legal fiction entailing some kind of 'inheritance' without mentioning such. To encapsulate, a computer-generated work may be original if the labour/result was not 'taken'.[332]

Further, we would subscribe to the opinion that in this context a computer tends to be treated as an artificial mind.[333] In this sense, human-created, computer-aided, hybrid (intermediate or mixed)[334] and computer-generated works could be seen as forming the same kind of continuum.[335]

2.4.3. Formulation of the conception.

From the vantage point of copyright[336], the nub of this situation is that there is a direct correlation between formulating the notion of computer-generated works and marking out the copyrightable computer-related material. On top of this, the category of works of joint authorship should be directly provided for with reference to the issue under consideration to address the concept of hybrid (human/computer generated) works.

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[330] See Bainbridge, at 228.
[331] See ibid.
[332] See also subs. 2.5.2., below.
[333] See, for instance, Laddie et al, at 38, 842.
[334] The authors of The Modern Law of Copyright and Designs describe the works of mixed authorship as partly created by a human author and partly computer-generated, and pigeon-hole under this heading, for example, engineering drawing created by a computer-aided design (CAD). See Laddie et al, at 840. Interestingly, Bainbridge uses the formula 'created with the assistance of a CAD' to classify such works as computer-aided (see Bainbridge, at 226) considering intermediate or hybrid works as encompassing, for instance, the output produced by specialised accounting system, and as a very special species, the output derived from the use of an expert system. See ibid., at 230.
[335] This system, reckoning with the increasing sophistication in the computer realm, may well be extended to neural networks. (See Johnson–Laird, A., "Neural Networks: The Next Intellectual Property Nightmare?" (1990) 7 The Computer Lawyer 7.) This matter is generally beyond the scope of this study. Here we may only reiterate that neural networks are modelled on the structure of the human brain. See also Cornish, at 457; Dreier, T., "The International Development of Copyright Protection for Computer Programs" in Lehmann and Tapper, at 235; Laddie et al, at 850.
[336] As to the prospect of a *sui generis* scheme in the context of computer-generated subject-matter, see Lai, at 164.

Along these lines the relevant statutory provision might read:

'Computer-generated', in relation to a work, means that the work is generated by a computer in circumstances such that the human contribution, if any, is separable.[337] This contribution shall not be considered part of a computer-generated work.

To be copyright such works are to satisfy the criteria of the respective types of original works.

If the respective contributions[338] are not distinct from those of the other authors so that at least one of the authors may be identified pursuant to s. 9(3)[339], a work of joint authorship shall be recognized under s. 10(1)[340].

Against this background, the nuances of the above computer-related categories are transposed into the realm of copyrightability. Consequently, the related differences are accentuated in re-emerging as follows: the contribution attributable to a computer within computer-aided subject-matter is not apt to pass the thresholds of both 'work' and originality.[341] Alternatively, the complementary criterion (congruent with the concept of 'responsibility' as described above) of direct human control could be introduced to mark out computer-aided as opposed to computer-generated works. In this connection we would accede to the opinion that the content and format of the output are material to the analysis.[342] Accordingly, direct human control should be estimated with reference to these characteristics.

If the contribution attributable to a computer is not distinct[343] and the notion of work of joint authorship comes into play[344], it is to be taken into consideration that the

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[337] This word as not connoting that the existence of the human contribution is presupposed, in this respect, may be preferred to 'separate' or 'distinct'.

[338] For a similar approach coming down to the identification of two stages comprising human and computer tasks respectively, see Laddie et al, at 840. It is opined that the term 'contribution' in the proposed context may provide some additional flexibility since it does not connote a correlation with the order of stages. It also leaves room for the concept of joint authorship entailing the requirement of collaboration.

[339] It is a separate question whether the formula of s. 9 (3) is fair and reasonable (as consistent with the nature of the notion of authorship) or only expedient. This, however, is largely not within the scope of our present deliberations.

[340] As to the term "computer-produced" that could be employed in similar contexts, see Dworkin in Hansen, at 172. See also Hart, R., "Author's Own Intellectual Creation – Computer-Generated Works" (1993) 9 Computer Law and Security Report 164; Samuelson, P., "Allocating Ownership Rights in Computer-Generated Works" (1992) 47 U Pitt LR 1185.

[341] See also subs. 2.5.2.C., below.

[342] See Bainbridge, at 226.

[343] Which is, however, unlikely in the case of computer-aided subject-matter boiling down to relatively simple operations.

[344] As one of the requisites for a work of joint authorship (see Copinger, at 200) the quality of being 'not distinct' from the other contributions characterises the *result* of labour, whilst the labour proper is supposed to be somehow shared or divided up between the joint authors. (The concept of responsibility

respective contributions are to measure up to the same copyright criteria.[345] In this regard, a computer-related contribution to computer-aided subject-matter is liable to fail such a litmus test for the above reasons.

This analysis may indicate that, generally, the concept of computer-generated works would seem consistent with the current germinal, as it were, structure of copyright[346] receptive to new developments on the subject and amenable to being coherently organised. Consequently, it should not be jettisoned[347] and may evolve in promising fashion.

2.5. The concept of 'originality'.
2.5.1. Locating the Threshold of Originality: General Approach.

With reference to the species of the original types of works three interrelated criteria are to be met to attract copyright protection[348]:

1. The threshold of *work* common, *mutatis mutandis*, to both categories.

2. The criterion of the relevant domain[349].

3. The requirement of originality.

It may be noted here that varying combinations of the attributes of the last two criteria make up the concept 'copyrightable description' framed along the above lines

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is also of particular relevance here.) Nonetheless, the labour and skill need not be of the same kind. (See ibid., at 201.) Therefore, here it is the 'non-distinct' (in the above sense) result produced by the shared labour which counts thus reinforcing the interpretation of *work* as the result of labour as a system. It is pointed out that the distinct results of shared labour may constitute a work of co-authorship (see *Levy v Ruttley* (1871) LR 6 CP 523, as one of the sources of the concept) as a species of collective works. (See s. 178, CDPA (for the current statutory definition). See also ss. 79 (6), (4), 116 (4) (a), CDPA.) The post-1988 notion differs from the homonymous American formula (see s. 101, Title 17, USC; see also Nimmer, at 3-5 et seq.) as well as from the earlier British approach. (See s. 35 (1), the Copyright Act 1911.)

[345] See Laddie et al, at 556.

[346] A 'minimalist' approach, addressed in the course of the discussion on the simplification of Australian copyright and linked to, if not equated with, the rationale behind CDPA, was described by Professor Ricketson as, to a certain extent, maintaining the conceptual (as distinct from structural) division between *works* and *other subject-matter*. See Ricketson, S., "Simplifying Copyright Law: Proposals from Down Under" [1999] EIPR 537, at 543. It is reasoned that the ideation of 'work' set out in this chapter may suggest that the distinction is effectively internal as reflecting the nature of the notion of work, juxtaposed with the general concept of originality imparting an element of heterogeneity construed in terms of the difference between original and non original works.

[347] Cf. Bainbridge, at 236; Tapper, C., "The European Software Directive: The Perspective from the United Kingdom" in Lehmann and Tapper, at 150.

[348] Cf. *Designers Guild Ltd v Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2418. Cf. also Lai, at 18.

[349] Construed within the nature/domain template.

subject to contextualisation. Further, the projection of the composite nature[350] of the notion *original literary* (dramatic, musical or artistic) *work* is pivotal to piece together the concept of protected subject-matter.

So far as an original literary work is concerned, conceptual *synergy* can be achieved by a *modus operandi* which entails passing sequentially the relevant thresholds and reflects answering the related questions boiling down to:

1. Whether the subject-matter recognised as a work situates in the literary domain.[351]
2. Whether the work qualified as a literary work is original.

It is submitted that the points at issue can be effectively transposed as:

1. Whether the work is original.[352]
2. Whether the work recognised as an original work situates in the literary domain.

Only to the extent that the material passes these *thresholds as a system* may it acquire copyright.

The latter scheme rests on the classification of copyrightable literary work as a subgenus of original work. For the purposes of the examination and exposition of the framework of copyright subsistence such a choice of method would seem warranted as it serves to complete the task of disentangling the notion of originality from the quantum of labour constructs.

2.5.2. Ideation of the criteria.

A. The realm of originality:

Rejecting the quantum of labour constructs.

It is submitted that the amount of labour and skill is too subjective and vague a criterion to acquiesce if it deviates from the principle *de minimis non curat lex.*

The problem is particularly clear when the abstract 'amount of labour' is construed to mean that a certain quantum of labour and skill worked out under the *de minimis* rule constitutes a work and a larger amount may make up an original work

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[350] For a cumulative requirements approach, see Torremans, at 178.
[351] See also Cornish, at 334.
[352] In this context, the measure of originality can be formulated as a criterion of 'original' on top of the threshold of work or, as an alternative, as a criterion of 'original work' without distilling the notion 'original'.

with an indeterminate add-on amount denoting the term 'original'. On these lines, the construct in question could be interpreted *reductio ad absurdum* to the effect that the appropriation of the author's labour might be viewed as the *overborrowing of originality* or, if such an amount is small enough, of a work but not an original work.

At any rate, were the amount even not estimated as exceeding the required by the *proviso de minimis* to be read into the formula 'independent labour' as indicating originality, it might result not only in the foregoing overborrowing of *originality* but also, as pointed out above, in dissolving the essence of such terms as 'work' and 'independent'.

Further, if the status of original work called for the *de minimis* amount of labour as the sole requirement then, to eschew blurring the distinction between the notions of *work* and *original work*, the threshold may shade into another 'touchstone' such as 'independent labour' or, in the light of the above analysis, the 'result of independent labour'.[353]

Given that the latter is at best a two-tiered criterion, this may only bear out the view that the quantum of labour concept should be anchored to the notion of work under the *de minimis* rule.[354]

B. The 'not-copied' criterion.
Rejecting the argument of 'room for individual interpretation'.

As to a separate criterion of 'original', the concept 'originated from the author' may suggest a suitable solution.

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[353] Moreover, it is opined, the approach equating the requirement with the 'not-copied' criterion clearly placed in the realm of originality (see, for instance, Laddie et al, at 47, 73, 80) to some extent engendered a misconception about British doctrine as framing originality in terms of 'labour' or restricting copyrightability to 'labour, skill or investment'. See, for example, Cohen Jehoram, A., "Two Fashionable Mistakes" [2000] EIPR 103. Cf. Lai, at 18. This in turn is reflected in a perception now ingrained in American copyright due to the most vigorous judicial espousal of the *Feist* doctrine (see *Feist Publications, Inc v Rural Telephone Service, Co., Inc* (1991) 20 IPR 129 (hereinafter "*Feist*")) rejecting the 'sweat of the brow' approach sometimes read as illustrative of, or associated with, British copyright. See, for instance, Gendreau, Y., "The Copyright Civilisation in Canada" [2000] IPQ 95; Hunter, D., "Mind Your Language: Copyright in Computer Languages in Australia" [1998] EIPR 98, at 105; MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, at 73.

[354] In this connection, such a characteristic of the subject-matter as 'easy of execution' (see Laddie et al, at 214; see also *Ladbroke*, at 293) cannot be used as an indication of lack of originality while it may but point to a certain want of labour.

It is reasoned that this formula cannot be equated with the requirement that the work should not be copied from another work.[355] Measuring up to the 'not-copied' criterion may be seen as necessary[356] but not sufficient for the work to be deemed original on top of the threshold of 'work' which is to be passed in the first place. This should be distinguished from the so-called 'double test' for assessing originality embracing both the 'not copied' test and the 'skill and labour' framework so that the latter could be construed along the lines of 'creativity'. [357]

Certain formulae enshrined in CDPA directly only as regards non-original works may point to such an interpretation. For example, pursuant to the Act copyright does not subsist in a film which is, or to the extent that it is a copy taken from a previous film.[358] Therefore, the tenor of the notion 'originality' does not come down to the construct 'not copied from another work'.[359] The latter, on the other hand, taking into account that such a requirement holds good in the case of original works[360], can be viewed as one of the constituents making up the 'originated from the author' criterion[361]. In this respect, the formula employed with regard to films and sound recordings may be a prototype for the general conception applicable *mutatis mutandis*[362] to all classes of works.

It should also be specified here that the term 'author' in this connection is to be construed as applicable only to the work in question. Otherwise, new editions of existing works would qualify, *reductio ad absurdum*, for copyright protection in terms of originality even without any alterations[363]. Similarly, copyright in a translation made by the author would extend to the language neutral_elements[364] as not taken

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[355] Cf. Copinger, at 108; Ricketson, S., "The Concept of Originality in Anglo-Australian Copyright Law" (1991) 9 Journal of the Copyright Society of Australia 1; Sterling, at 263. Cf. also Lai, at 18.
[356] If understood correctly.
[357] See Lai, at 18.
[358] See s. 5B (4), CDPA. For an identical formula adopted with reference to sound recordings, see s. 5A (2), CDPA. A similar approach could be found in s. 8 (2) concerning typographical arrangements. So far as broadcasts are concerned, the relevant provision is couched in terms of infringement as distinct from copying. See s. 6 (6), CDPA. For the exposition of the underlying technical and policy reasons, see The Parliamentary Debates (hereinafter "Hansard"). Vol.493. House of Lords. Cols. 1057, 1073. See also Hansard. House of Commons. Standing Committee E. Cols. 49-50.
[359] Cf. Frame, R., "The Protection and Exploitation of Intellectual Property Rights on the Internet: The Way Forward for the Music Industry" [1999] IPQ 443, at 448.
[360] See Hansard. House of Commons. SCE. Col. 50.
[361] See also *University of London P*ress, at 609.
[362] It might be noteworthy that the above canvassed isolation of the elements within the notion of work as to the non-original type leads to a marked disparity in the scope of the notion of copying (and as a result, that of 'not-copied') between the two categories. (See s. 17, CDPA.)
[363] See also Copinger, at 115; Laddie et al, at 53.
[364] That is to say, existing regardless of, or not determined by, the language of the text.

from another author. Moreover, within this matrix, there could be neither justification for nor possibility of infringement by the author who is not the owner of the copyright (at least, from the standpoint of the concept of originality as extrapolated to the meta-subsistence area).[365] It may be noted that total originality of the work (as indicating that nothing has been 'taken'), unlike originality intertwined with copying[366], can foreclose the possibility of finding of infringement. This, *inter alia,* points up the distinction between the 'author' (as a person) and the 'author of the work'.[367] Only the latter notion may be deemed copyright significant as an element of the relevant (subsistence of copyright or authorship) analysis. This may be one of the justifications for preventing the 'author not the owner' from copying the work[368]. Along these lines, the nature of the doctrinal difference between the notions of authorship and ownership reflects the distinction between the issues of copyright subsistence and scope/infringement respectively.

Consequently, within the originality framework the formula 'not copied from another work' cannot be equated with 'not copied from the work of another author'. Furthermore, this suggests that 'originality' cannot come down to the concept of 'personality'.

On the other hand, the converse chain of causation (from the absence of the personality doctrine in common law jurisdictions) may also be followed. The non-personality approach is also justified by the fact that the originating person may, in addition, copy some other elements. This conception is reflected in the formula 'to the extent'.

In this context, it is well to entertain a copyist's eligibility for copyright. We would agree with the authors of 'The Modern Law of Copyright and Design' that it is rather hard to see why a copy[369] rendered by an artist displaying superb craftsmanship would not attract copyright.[370] The same is true for the case of a 'mere dauber' if a copy

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[365] See also Cornish, at 367.
[366] See Laddie et al, at 80.
[367] So that another work presupposes another author. Accordingly, he/she is an author to the extent that he/she has not copied from another work if some other conditions coalesce within copyrightability.
[368] As 'copying another work' without being 'copying the work of another author' (as a person).
[369] As to the related issues in the context of such "species of the wider genus" (Laddie et al, at 87.) as *adaptations*, see s. 21 (2), CDPA. See further Laddie et al, at 87, 111-114.
[370] See Laddie et al, at 217. Cf. Deazley, R., "In Response to Simon Stokes, Tarlo Lyons, London" [2001] EIPR 601; *Interlego*, at 371-372. It is a separate issue whether such a right is enforceable. On this score, major importance is, as a matter of course, attached to the principle *ex turpi causa non oritur actio.*

differs from the original and a measure of relevant skill and labour has been expended in replicating.[371]

However, the argument of 'room for individual interpretation'[372] can be debatable in the sense that as to a daub the difference may be put down to a failed endeavour to reproduce thus reflecting some lower professional skill as opposed to artistic freedom of choice. In case of copying an old master painting there are higher prospects for *passing as* a fruit of individual interpretation[373], while the argument as such cannot provide a foundation for the subsistence of copyright. That is, a copy of a technical drawing is most likely not protectable owing to a dearth of labour and skill exerted on such *and not taken from the author of the antecedent work*, at that.[374] In this case, additional labour and skill could be imperceptible and, accordingly, even if the *de minimis* rule did not operate, the scope of such an unimaginable copyright would be tenuous, if any[375].

To fathom the labour to reproduce as distinct from the labour to produce, it is to be borne in mind that even when copyright in the original is expired the author of the reproduction cannot secure copyright in respect of the facets of the anterior work[376] originated with the author of the original and still can enjoy the rights expending to the aspects related to the reproduction techniques.[377] Consequently, copyright does not subsist in a work *to the extent* that it is a copy taken from a previous work.[378]

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[371] See ibid. See also Perry, M., "Literary Work or Mechanical Commonplace" [2000] EIPR 237.

[372] See Laddie et al, at 217. This may also be seen as one of the incarnations of the theory of choice also discussed in this section in the context of the 'author's own intellectual creation' requirement.

[373] Or even some kind of implicit presumption that such subject-matter is an interpretation rather than a copy unless and until otherwise proved. Nevertheless, it is the author's original contributions that is protected not a professional failure. In this regard the issue of the status of such a work in relation to the notion of originality is to be relocated to the realm of derivative works and compilations as explicated in this section.

[374] Cf. *Bridgeman Art Library Ltd v Corel Corp.*, 25 F.Supp. 2d 421 (S.D.N.Y.1998); *Interlego,* at 371.

[375] See also MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, 2nd ed., at 194.

[376] For instance, the labour expended in composing the work or, say, chiaroscuro.

[377] Taking account of the peculiarities of computing and programming, the attempts to design a computer program emulating the pre-existing software may attract copyright protection whereas an exact imitation can only indicate, if not authorised, infringement as not involving any 'additional and not taken labour' save clicking on a button. As to the scope of copyright in reproductions, the expression 'reproduction is an art in itself' (see *Walter v Lane,* at 542) may provide, it is submitted, the necessary guidance in framing *reproduction* in terms of *production*. Cf. ibid., at 543. See also ibid., at 546, 553, 557.

[378] Cf. *Biotrading & Financing OY v Biohit Ltd* [1998] FSR 109, at 116. Paradoxically, a reproduction may well be copyright to the extent that it does not reproduce, boiling down to labour and skill in reproducing. Cf. *Interlego AG v Tyco Industries Inc* [1988] RPC 343, at 372.

C. The 'not taken from the public domain' criterion.
Reflection on publication right. Non-commonplace.

It follows further that a subject-matter taken from the public domain cannot qualify as an *original* work[379]. The content of this 'not taken' requirement, here viewed as the second 'ingredient' of the composite criterion 'originated from the author of the work', can be illuminated in the light of the juxtaposition of copyright and publication right.

The latter is described in reg. 16(1) of the Copyright and Related Rights Regulations implementing Art. 4 of the Duration Directive as a property right equivalent to copyright[380] conferred on a person who after the expiry of copyright protection publishes for the first time a previously unpublished work.[381]

In a sense, the origins of the publication right[382] could be traced back to the Copyright Act 1842 according to which the copyright in every book published posthumously endured for the term of 42 years from the first publication thereof and was 'The Property of the Proprietor of the Author's Manuscript from which such Book shall be first published and his Assigns'.[383]

However, bearing in mind that prior to the Copyright Act 1911 unpublished works were protected in perpetuity by common law copyright[384], the first publication did not mediate the act of 'taking from the public domain'.

So far as the modern publication right is concerned, it is logical that as to the notion of work the Regulations do not discriminate between the works that were in their previous incarnations, as it were, copyright as the species of the original[385] or non-

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[379] See also *Harper House, Inc. v Thomas Nelson, Inc.,* 889 F. 2d 197, 204, 205, 206 (9th Cir. 1989).

[380] Or, in the parlance of the Duration Directive (Art. 4), equivalent to the economic rights of the author.

[381] For an analysis see, for instance, Burrell, R., and Haslam, E., "The Publication Right: Europe's First Decision" [1998] EIPR 210; Copinger, at 875-899; Griffiths, J., "Copyright in English Literature: Denying the Public Domain" [2000] EIPR 150; Williams, A., "Publication Right" (1997) 15 *International Media Law* 15.

[382] Admittedly, along the lines of harmonisation of a publication right, the Duration Directive is principally based on the so-called *editio princeps* as developed under German law. See further Copinger, at 876.

[383] Section III, The Copyright Act 1842.

[384] Sometimes referred to as 'right analogous to copyright'. See, for example, Robertson, *The Law of Copyright,* Clarendon, 1912, at v, 42. Nonetheless, this could not change the fact that the subject-matter was not in the public domain.

[385] Including literary works (see reg. 16 (7), Regulations). This may again suggest that the terms 'literary work' and 'originality' can be examined in isolation. It should be noted here that a whole range of copyright provisions applies to the publication right (see reg.17, Regulations), subject to a number of exceptions and modifications leaving enough room for comparison between original literary works of

original[386] categories respectively. It is the characteristics of being taken from the public domain (reflecting its relatively 'narrower' contours)[387] or 'copied from another ('non- (as 'post-') copyright') work' which might wipe out the difference coming down to originality. This also reflects the nature of the publication right (which according to the Explanatory note entitles its owner to exclusive rights *similar* to those granted by copyright) as a separate entity not necessarily mapped exclusively onto the purpose of avoiding duplication of rights.[388] It is noteworthy that the substantive copyright (but not moral rights, of course) provisions of CDPA, embodying the rights of a copyright owner, including those related to the meaning of the notion of copying[389], hold good with reference to the publication right[390]. This can be put down to *an implied principle of continuity* as inferred from reg. 17(2). As a result, only the provisions directly flying in the face of the tenor of the right as defined that is mainly those related to the notion of authorship and expiry of copyright[391] are excluded from application, whereas the defining provisions of CDPA apply with any necessary adaptations on a supplementary footing.[392]

As the authors of 'Copinger and Skone James on Copyright' maintained: 'It … might have accorded with the presumed purpose of the new right … to have made the publication right available irrespective of whether the work has ever enjoyed copyright protection … by saying that unpublished works could benefit from the publication right if the author of the work had died 70 or more years previously.'[393]

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copyright and literary work of the publication right. However, in our estimation, the separation of the work from its originator from the very outset nearly by definition is notably material as an inherent feature of non-original works within the ambit of copyright. See also subs. 2.4.1., above.

[386] Viz 'films' (see reg. 16 (7), Regulations). It is noteworthy that in Ireland the publication right covers also sound recordings and broadcasts. See reg. 8, European Communities (Term of Protection of Copyright) Regulations 1995 (SI 1995 No 158).

[387] As exclusively 'not (or no longer) protected by copyright' matter (that is framed in copyright terms). See also Siebrasse, N., "A Property Right Theory of the Limit of Copyright" (2001) 51 Univ. of Toronto LJ 1 (hereinafter "Siebrasse"), at 36.

[388] Cf. Copinger, at 884.

[389] See s. 17, CDPA.

[390] See reg. 17 (1), Regulations.

[391] See reg. 17 (2), Regulations.

[392] See reg. 17 (4), Regulations.

[393] Copinger, at 891. This approach is enshrined in Art. 71 (1) of the German Law on Copyright and Neighbouring Rights (Copyright Law) 1965.

Further, in this context, both previously published and unpublished works which have never been protected[394] or whose statutory or common law protection has expired might fall within the sweep of the notion of the public domain.

In the field of software, a computer program may also enter the public domain[395] as, for instance, free software, 'open source', or public domain software.[396] Within this framework the term 'public domain' might be understood to refer not only to material not covered by copyright or other property rights such as the publication right but also to freely available though protected works[397].

Along these lines, the concept of 'copyleft' should be accommodated. This idea was originated (and the term coined) by Richard Stallman, and further fleshed out under the auspices of the Free Software Foundation (FSF)[398]. As a legal instrument, copyleft

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[394] For instance, on account of the author's nationality.

[395] Thus broadening or stretching the scope of the notion. Under the US doctrine the issue is mainly addressed within the ambit of substantial similarity. See *Computer Associates International, Inc. v Altai, Inc.,* 982 F. 2d 693 (2nd Cir. 1992), at 710. See also Nimmer, at 13-141, 13-142. However, for the originality related analysis, see Nimmer, at 2-39; 3-19, 22, 23, 24; 13-142 (*inter alia*, mentioning *computer bulletin boards* open to any member of the public so that a user can dial the host computer and copy programs). See also Wing, M. and Kirk, E., "European/US Copyright Law Reform: Is a Balance Being Achieved?" [2000] IPQ 138, at 139.

[396] The word "free" here connotes "freedom" or "freedoms" as distinct from "costing nothing". To some extent free software is protected by a licence agreement. This concept is further elaborated within the framework of "copyleft". *Free software* should be distinguished from *freeware*. Normally, freeware developers retain their rights resulting in various copyright restrictions. On the other hand, freeware is given away free of charge. The term *open source* is used here *stricto sensu*. Public domain software is software donated for public use.

[397] Cf. Lloyd, at 344. In this context it is necessary to distinguish *shareware* which is distributed on a try-before-you-buy basis and comes with permission for users to redistribute copies. In the *OzEmail* case, a shareware licence was considered to extend to certain *implied terms* in being "distributed in its entirety and without modification, addition or deletion … to enable the end user to evaluate the product as produced by the author". (*Trumpet Software Pty Ltd v OzEmail Pty Ltd* (1996) 34 IPR 481, at 500.) Shareware usually does not reveal its codes. Users are required to pay a registration and/or licence fee if they wish to continue using the software after the trial period. See further Lambert, P., "Shareware. Problems of Definition and Legal Nature After the OzEmail Decision" [2000] EIPR 595. See also Bainbridge, D., "Software Licensing Fundamentals" [1997] Computers and Law 4; Kelleher, D., "Shareware Licences for Software" [1998] EIPR 140; Lai, at 194; Richardson, M., "Comment. Intellectual Property Protection and the Internet" [1996] EIPR 669. Not infrequently, shareware is deemed a method of selling as distinct from a software category. See also *Compustore v Patterson,* 89 F.3d 1257 (6th Cir. 1996); *Storm Impact, Inc. v Software of the Month Club*, 13 F. Supp. 2d 782 (N.D. Ill. 1998).

[398] Hence free software *stricto sensu*. Collaborative efforts exerted on the process of developing and refining Unix, an interactive time-sharing operating system, grew into the free software GNU project set up in 1983 (while the GNU Manifesto was published in March 1985) to design a freely distributable replacement for Unix, hence the "recursive" acronym "GNU's Not Unix!". See <http://www.gnu.org>. The notion of copyleft particularly acquired prominence as the Linux operating system was developed. See further Lambert, P., "Copyleft, Copyright and Software IPRs: is Contract Still King?" [2001] EIPR 165 (hereinafter "Lambert"), at 167. This version of Unix has gained popularity as an operating system for hosting Web servers. Its kernel (the essential part of an OS responsible for resource allocation, low-level hardware interfaces, security, etc.) was mainly created in 1990 by Linus Torvalds, a Finnish computer science student, while most of the supporting applications and utilities came from the GNU project. Large amounts of high-quality software are freely distributed under the FSF imprimatur. See

requires that a regular copyright notice and the so-called General Public License, often described as 'copyleft stipulations', should be included when software of this category is distributed[399]. Under such a licence users are granted the rights to copy, use, examine, modify and redistribute computer programs in their source code[400] (not necessarily free of charge) provided that the 'copyleft stipulations' are not omitted[401]. In addition, modified versions must be clearly identified as such.

In general terms, the formula 'open source' could be used as synonymous with 'free software'[402]. However, open source *stricto sensu* distribution terms must specifically conform to the Open Source Initiative (OSI)'s Open Source Definition (OSD). Under this model, the source code ought to be made available so that it can be improved, modified or redistributed without any restrictions. Such a licence can require that a modified version should carry a name different from that attached to the original software. Multifarious software distribution licences[403] are considered to be conformable with the OSD.

It is also sometimes predicated that, for the purposes of substantial similarity, licensed material (including, by implication, free software and open source) should be assimilated to material that lies in the public domain[404]. However, in the context of protectability, such material if used in the work under consideration, could be categorised as copied from another (copyright) work (as distinct from the public domain) on the lines of the originality analysis.

In this regard, the notions 'copied from another work' and 'taken from the public domain' may in some measure overlap and the related subject-matter can be placed on

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also Himanen, P., Torvalds, L. and Castells, M., *The Hacker Ethic and the Spirit of the Information Age*, Vintage, 2001; Lessig, L., *Cyberspace's Architectural Constitution*. Lecture given at www9, Amsterdam, Netherlands, <http://cyber.law.harvard.edu/works/lessig/www9.pdf>, June 12, 2000, at 9; Moody, G., *Rebel Code: Linux and the Open Source Revolution*, Penguin Books, 2002; Poynder, R. (ed.), *Caught in a Web: Intellectual Property in Cyberspace*, Derwent Information, 2001.

[399] See further Heffan, I., "Copyleft: Licensing Collaborative Works in the Digital Age" (1997) 49 Stanford Law Review 1487, at 1508; Lambert, at 167, 168; Patterson, C., "Copyright Misuse and Modified Copyleft: New Solution to the Challenges of Internet Standardization" (2000) 98 Michigan LR 1351 (hereinafter "Patterson"), at 1358, 1377.

[400] See further Patterson, at 1377.

[401] The GNU General Public License stipulates, *inter alia*, the FSF principles and objectives.

[402] See also Fitzgerald, B., "Software as Discourse? The Challenge for Information Law" [2000] EIPR 47, at 48; Lessig, L., *Code: And Other Laws of Cyberspace*, Basic Books, 1999, at 100.

[403] Such as GNU General Public License, Berkely System Distribution License, Artistic License (Perl), X Window System License, Mozilla Public License, etc..

[404] See Nimmer, at 13-141. See also *Apple Computer, Inc. v Microsoft Corp.,* 717 F. Supp. 1428 (N.D. Cal. 1989).

a continuum from infringing to taken from the material which could not attract any intellectual property protection.

Interestingly, one of the oft-quoted judgments under the old copyright, *Graves'* Case[405], may give support to such an approach. Blackburn J examined the statutory meaning of the term 'original' and maintained: '[A] photograph taken from a picture is an original photograph, in so far that to copy it is an infringement of [the] statute … [A]lthough it is unlawful to copy a photograph or the negative, it is permitted to copy the subject matter of the photograph by taking another photograph'.[406]

It is submitted that notwithstanding the less-then-perfect reasoning[407] this language might be construed as indicating that it is the 'not taken' (or 'not copied') criterion (or criteria) that could be distilled into the concept of originality.[408] Indeed, the subject-matter of a photograph identified in *Graves* with 'any object'[409] could be only 'taken' from an anterior work or from the public domain in its narrow (directly related to the realm of intellectual property) or broad sense (as an artefact or, say, a natural phenomenon)[410]. At the same time, 'a photograph or the negative' was, it is reasoned, conceived as originated with the author of the work.[411]

One way and another, the concept 'originated from the author of the work' perforce embraces the requirement of 'not taken from the public domain'.

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[405] See *Graves' case* (1869) LR 4 QB 715 (hereinafter "*Graves*"). This decision addressed the question of copyright in photographs of engravings. For the purposes of our analysis it may be opportune to invoke this judgment in that it was decided under Fine Arts Copyright Act 1862 which referred to '*original* painting, drawing and photograph'. See s. 1, The Fine Arts Copyright Act 1862 (emphasis added). As to the role of *Graves* under the modern copyright, see Garnett, K., "Copyright in Photographs" [2000] EIPR 229 (hereinafter "Garnett"); Laddie et al, at 186, 214, 484. Cf. *Bridgeman Art Library Ltd v Corel Corp.,* 36 F. Supp. 2d 191; 25 F. Supp. 2d 421 (S.D.N.Y., 1998). See also *Reject Shop plc v Manners* [1995] FSR 870.

[406] *Graves,* at 723.

[407] For instance, the notion of originality cannot be built on the infringement analysis. In contrast, an antecedent work should be original as one of the conditions for an act of copying to be held infringing. Therefore, it can be averred that the concept of originality as part of the framework of copyright subsistence is to be worked out before setting down infringement rules.

[408] Cf. *G*arnett, at 235; Laddie et al, at 239. It is submitted that 'special skill or labour' may have been self-evident with reference to the concept 'work'.

[409] See *Graves,* at 722.

[410] At least under the old law. This reflected in the sentence immediately preceding the above-quoted passage: 'All photographs are copies of some object such as a painting or a statue.' *Graves,* at 723. See also *Stackemann v Paton* [1906] 1 Ch 774, at 779. To add a rider to it, the idea of carefully arranged or composed' subject-matter (as under the modern law, see Copinger, at 196) was not entertained in *Graves.*

[411] As a prerequisite for the status 'author' in applying the general principle of authorship, thus identifying the author as the person who *created* the work. See Copinger, at 196-197. However, as to a certain opacity of the conception of authorship in respect of photographs under the 1862 Act, see *Nottage v Jackson* (1883) 11 QBD 627.

On top of it, unlike some of the other reflections of the *de minimis* principle such as 'too small' a subject-mater[412] or 'slight degree of literary composition'[413], the threshold of 'commonplace' (read as an antonym of 'original'), or rather non-commonplace[414], can be avowedly placed in the realm of originality.

It is submitted that merely a commonplace subject-matter may be recognised as part of the public domain as known by, or available to the public.[415] Accordingly, the 'result of labour' imparting non-commonplace characteristics to otherwise commonplace material can 'conjure up' originality.

D. The 'originating character' criterion.
The originality continuum :
Originated from the author of the work.
The negative and affirmative criteria.

As reasoned above, so far as the original category of works is concerned, the notions of labour and the result of such operate in unity[416] imbuing the labour with the originating properties. More specifically, it is the author's[417] not insignificant[418]

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[412] See, for example, Bainbridge, at 46, 177, 234. See also MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, 2nd ed., at 193-194. This threshold is to be attributed to the realm of the notion of 'work', however, in estimating the subject quantitatively.

[413] See Cornish, at 333. Pace Professor Richardson (see Richardson, M., "Copyright In Trade Marks? On Understanding Trade Mark Dilution" [2000] IPQ 66. at 72), this criterion addresses the concept 'literary work', if not the term 'literary' within it.

[414] As neither too ordinary nor too frequent. See further Laddie, H., "Copyright: Over-strength, Over-regulated, Over-rated?" [1996] EIPR 253, at 259-260; Laddie et al, at 51, 212. See also *Cramp & Sons Ltd v Frank Smythson Ltd* [1944] AC 329, HL; Ladbroke, at 288. Cf. Ladbroke, at 285. Cf. also Laddie, H., "Copyright: Over-strength, Over-regulated, Over-rated?" [1996] EIPR 253, at 260.

[415] Availability to the public can be associated with policy reasons. For instance, some kind of *de maximis rule* might be accepted in the field of the so-called extraordinary ideas. On the philosophy of such ideas in the context of 'common' in the Lockean sense of the word, see Hughes, J., "The Philosophy of Intellectual Property" (1988) 77 *The Georgetown Law Journal* 320. See further subs. 2.5.3.D., below.

[416] In the sense of the absence of a certain *isolation* as to the elements composing the construct of 'work' regarding the non-original category.

[417] With reference to computer-generated works, as indicated above , the author 'inherits' the labour by virtue of the legal fiction enshrined in s. 9 (3), CDPA thus 'masquerading' as an originator.

[418] For a similar approach, see Laddie et al, at 58-59 (to some extent, this proposition rests on the examination of the *Macmillan* case and represents part of the copyright 'relevant labour' (see ibid., at 216; see also *Cantor Fitzgerald International v Tradition (UK) Ltd* [2000] RPC 95, at para. 76; *Electronic Techniques (Anglia) Ltd v Critchley Components Ltd* [1997] FSR 401) other aspects of which describe the term 'literary' (or 'artistic', 'musical', etc.). The 'relevant labour' principle is in turn reflected in the realm of authorship as the concept of the right kind of skill and labour. See *Fylde Microsystems Ltd v Key Radio Systems Ltd* [1998] FSR 449, at 456; *Hadley v Kemp and Reformation Publishing Co Ltd* [1999] EIPR N-144; *Pierce v Promco SA* [1999] IT+CLR 233.

labour shaping the not trivial result which matters, and it is not trivial result produced by the not insignificant labour expended by the author which counts.

In other words, the subject-matter may constitute a work but not an original work even if the labour/skill required to produce the result is considered sufficient to pass the *de minimis* threshold since estimating such labour does not entail any inference as to the source of the labour in question. If, however, the 'relevant' skill has been exerted by the author in the process of creating the work (and the related *de minimis* requirements have been met), the work is to be deemed original to the author of the work.

In this context, 'preserving for posterity an original to which access is difficult'[419] or impossible any longer is not to be perceived as taken from the public domain in that (following relatively 'broader' interpretative schemata in this field) the material has not been known by or available to the public. At the same time, if the copyright protection in the 'preserved' work has yet to expire the act of 'preserving' may constitute copying from another work. However, an original subject-matter produced along these lines embraces only the facets originated with the author of the 'preserving' work and mediating the foregoing act. In this respect, indirect protection for the copied elements is admitted of.

Furthermore, the act that after the expiry of protection in the work access to which is neither impossible nor difficult constitutes taking from the public domain can be attributed partly to 'taken' and to some extent to 'not taken' from the public domain thus mirroring the case of copying. The same act in the event of 'preserving' in its entirety passes the threshold of not taken from the public domain.

In this connection, imparting to the product the quality of accessibility can be construed as serving to originate something'[420] or 'originating'.[421] As a result, the

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[419] Laddie et al, at 217. The origins of such an approach could be traced back to the framework preceding that governed by the Copyright Act 1911. On the early modern approach, see, for example, Copinger, 5th ed., 1915, at 56. For the position under the old copyright, see *Walter v Lane,* at 549, 551, 555.

[420] See Laddie et al, at 59. The US canon is different also from this aspect. (See *Suid v Newsweek Magazine*, 503 F. Supp. 146 (DD.C.1980). See also Nimmer, at 2-10, 3-22.) It would seem reasonable, according to the same *'broader' than exclusively copyright or programmatic* reading, that 'little-known facts' may hardly be attributed to the public domain as such facts are not 'known'. By the same token, inaccessible snippets of information are not in the public domain as unavailable to the general public.

[421] See also Siebrasse, at 25, 32-33. To elaborate the conception of the originating character some of the US judgments may direct attention to another angle of the issue. See *Alfred Bell& Co v Catalda Fine Arts, Inc*., 191 F. 2d 99, 105 (2d Cir, 1951); *Florabelle Flowers, Inc. v Joseph Marcovitz, Inc*., 296 F. Supp. 304 (S.D.N.Y. 1968). The language of these decisions may be construed to mean that the result of the efforts in question, albeit produced inadvertently concerning some of the facets of the work, may

criteria of 'not taken from the public domain' and 'originating' overlap. This extends the aforesaid continuum which is effectively the threshold 'originated from the author of the work' composed of three correlative elements, in a sense, flowing into one another: 'not copied from another copyright work', 'not taken from the public domain' (the *negative criteria*), and evincing the originating properties (the *affirmative criterion*).[422]

The ensuing subsections are concerned with the conceptions of creativity often associated with the notion of originality.

2.5.3.   The role of creativity.
A. Creativity within the Berne paradigm.

Intellectual creation is stipulated as a prerequisite for the protection of collections of literary and artistic works under the Berne Convention.[423] It may be inferred from this that the expression 'literary and artistic works' implies the notion of intellectual creation.

Professor Ricketson arrived at such a conclusion examining the *travaux preparatoires* for the Brussels Revision Conference.[424] He also maintained that the creativity requirement (identified in this context with the standard of originality) was concerned with the way in which a work comes into existence that is the act of intellectual creation as distinct from the quality of this act.[425]

It is also to be noted that the aesthetic quality cannot in principle be substituted for the originality criteria in that the latter delimit the scope of the protectable subject-matter, whereas the former could be attributed to some copied elements as distinct from the skill in copying paradoxically indicated by the 'not copied' criterion. In a sense, the aesthetic standard might be deployed only as a complementary measure, indicating *prima facie* the subsistence of copyright without delineating the very *area*

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still be copyright. However, it is reasoned, to measure up to the criterion of original as originating such efforts must be exerted *intentionally* on the creation of the work in that there should be an intention to produce a work, the attendant circumstances or factors should be mediated by the efforts, and the result of the efforts should be employed in the final version not accidentally. See also subs. 4.3.1.D.d., below.
[422] As predicated upon the distinction between affirmative and negative propositions in classical logic.
[423] See Art. 2 (5), Berne Convention.
[424] See Ricketson, at 230.
[425] See ibid., at 231.

of copyright.[426] In any event, by dint of such an indicator copyrightability cannot be established.

It is not surprising that British copyright law conforms to the principle of the irrelevance of the merit[427] and objective of the subject-matter for the purposes of copyright subsistence.[428] This might be drawn from both pre- and post-1912 case law.[429]

A certain level of worldwide unanimity and uniformity could be identified on this point.[430] For instance, under the French approach there is no room for aesthetic value[431] and novelty[432] judgments within the ambit of copyrightability. American copyright also distinguish originality from the assessment of the merit of a work.[433]

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[426] *Area of copyright* might be defined in this regard as a system of copyrightable elements reflecting, *inter alia,* the distinction between *text* and *work.*

[427] It is submitted that the generality of the term 'merit' may embrace both aesthetic value as a somewhat subjective quality and uniqueness (see also *Harper House, Inc. v Thomas Nelson, Inc.,* 889 F. 2d 197, 201, 204 (9th Cir. 1989)) or novelty (Cf. *LB (Plastics),* at 611, 612) as an objective characteristic. (As to the distinction between "internal" and "comparative" approaches, see Strowel, A., *Droit D'Auteur et Copyright. Divergences et Convergences. Etude de Droit Comparé,* Bruylant, 1993, paras 302-312.) The latter should be distinguished from the internal separation between novelty of a subjective character (unknown to the author) and that of an objective character (non-existent earlier). In this respect, see Karnell, G., "European Originality: A Copyright Chimera" in Kabel and Mom, at 207.

[428] Admittedly, the only exception (which proves the rule) is the case of works of artistic craftsmanship protected under s. 4 (1) (c), CDPA. See Cornish, at 339; Laddie et al, at 205-209; Torremans and Holyoak, at 180-183 and the seminal case on the subject, *George Hensher Ltd v Restavile Upholstery (Lancs) Ltd* [1975] RPC 31. As to the analysis of this position in the Berne context, see Ricketson, at 269. Interestingly, French law rejects under the theory of unity of art (see Finnis, G., "The Theary of "Unity of Art" and the Protection of Designs and Models in French Law" (1964) 46 *JPOS* 615) the distinction between 'major art' and 'minor art'. This rationale is reflected in Art. L. 112-2 of the Intellectual Property Code. (See also Ginsburg, J., "French Copyright Law" (1989) 36 *J. Copyright Society* 273.) With reference to works of architecture covered by the inconsistent formula of s. 4 (1) (b), CDPA, it is unlikely to be concluded that artistic quality is required. See Laddie et al, at 204-205; Torremans and Holyoak, at 179.

[429] See, for example, *Interlego,* at 368; Ladbroke, at 277, 291; *Macmillan,* at 119; *University of London Press,* at 608; *Walter v Lane,* at 549, 552, 554, 558.

[430] The special case of Germany is dealt with elsewhere in this section. Here we may point out that the standard of copyright protection in Germany does not require novelty. See Dietz, A., "Germany" in Nimmer and Geller, at GER-24. It is also to be noted that the so-called 'double-creation criterion' (as applied, for instance, in Sweden), which might be seen, in a sense, as an incarnation of the novelty approach (to establish 'material independence'), however determines the 'sphere of protection' as distinct from the general protectability. On this criterion, see Dreier, T., and Karnell, G., "Originality of the Copyrighted Work: a European Respective" (1992) 39 Journal of the Copyright Society of the USA 292; Karnell, G., "European Originality: A Copyright Chimera" in Kabel and Mom, at 207 ("the sphere of protection that widens with the individually unique and narrows with what, due to functionality or banality, is protected only within a comparativaly limited sphere").

[431] See Art. L. 112-1, the Intellectual Property Code. See also Chambellan, A., "France" in Metaxas-Maranghidis, at 148; Desbois, H., *Le Droit D'Auteur en France,* 3rd ed., 1978 (hereinafter Desbois), at 3; Lucas, A. and Plaisant, R., "France" in Nimmer and Geller, at FRA-18.

[432] See *Societe Isermatic France v Societe Gerber* (1991) 139 Expertises 194 (Judgment of Apr. 16, 1991, Cass. Civ. 1 re.) See also Desbois, at 5-6; Gasnier, J.P., Somnier, J.-L. and Staeffen, V., "France" in Campbell, at 138; Lucas, H., "Propriete Litteraire et Artistique" (1986) 303-1 Juris Classeur 6.

[433] As to the irrelevance of the aesthetic merit as such, see *Alfred Bell & Co v Catalda Fine Arts,* 191 F. 2d 99 (2d Cir. 1951), at 102; *Baltimore Orioles, Inc. v Major League Baseball Players Ass'n,* 805 F. 2d

In this context, in the absence of further Conventional guidelines as to the meaning of 'intellectual creation' we would not agree that the common law countries depart from the 'spirit, if not the letter, of the Convention'[434] for the following reasons.

1. It is to be taken into consideration that the import of creativity/originality has been left as a matter for national legislation[435], and an element of creativity, if any, is attributed to the way in which a work comes into existence regardless of the merit of the material. In this regard, it is at least plausible that the term 'creation' may be perceived as a derivative of 'create' interpreted as the opposite of 'reproduce' and synonymous with 'make' or 'produce' as 'have as a result'.[436] By the same token, the adjective 'intellectual' would be taken to mean 'mental' as 'of the mind'.[437]

2. The mandatory nature of the requirement that the works enumerated or otherwise dealt with in Article 2 of the Convention should enjoy protection in all countries of the Union[438] does not entail that the works which only measure up to arguably a lower threshold of originality should not be protected. On the contrary, the aforesaid principle of the irrelevance of merit suggests that certain higher standards should be ruled out as originality criteria.

3. The issue of 'intellectual creation' has been linked to the disputes over the protectability of specific categories of subject-matter.[439] Interestingly, photographic and cinematographic works eventually fell on the right side of

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663 (97th Cir. 1986), at 669; Nimmer, at 2-14; Shuster, T., "Originality Programs and Expert Systems: Discerning the Limits of Protection Under Copyright Laws of France and the United States" (1992) 5 *The Transnational Lawyer* 1 (hereinafter "Shuster") , at 26-28. Concerning the originality/novelty distinction, see *Feist Publications, Inc. v Rural Telephone Co, Inc* (1991) 20 IPR 129 (hereinafter *"Feist"*), at 132; *Key Publications, Inc v Chinatown Today Publishing Enterprises, Inc.,* 945 F, 2d 509,513 (2d Cir 1991); Nimmer, at 2-7.

[434] Ricketson, at 901. This remark might be treated as levelling criticism primarily at British copyright and notably making allowance for the increasingly convergent French and American approaches. See Shuster, at 8.

[435] See also Christie, A., "Reconceptualising Copyright in the Digital Era" [1995] EIPR 522; Christie, A., "Australia's Proposal for Computer Software Protection" [1994] EIPR 77; Dworkin in Hansen, at 179.

[436] It is noteworthy that the verb 'create' is used in the general definition of 'author' (see s. 9 (1), CDPA) whilst 'make' (as 'was made') is employed as regards duration of copyright in original works of unknown authorship and computer-generated works. (See s. 12 (3) and (7) respectively.) It could be observed that the latter verb may connote in this connection a somewhat waned link between the subject-matter and the author.

[437] See also *Macmillan,* at 115.

[438] See Art. 2 (6), Berne Convention. See also Ricketson, at 234-235.

[439] See Ricketson, at 232.

the Berne fence[440]. At the same time, sound recordings and broadcasts are subject of the conventions on neighbouring rights.[441] The main objections to the inclusion of the latter categories under the Berne umbrella are both bound up with the historical context[442] and ill-founded. Tellingly, the arguments of 'the technical nature of the work of the maker', 'the derivative character of the subject-matter', and 'the collective nature of the undertaking' can be readily laid to rest within the framework of the Berne Convention.[443]

It is submitted that, in this respect, the structure of British copyright reflects the homogeneity of the notion of *work* in categorial terms while, at the same time, paying attention to certain peculiarities or an element of heterogeneity existing on the plane of originality[444]. As a matter of principle, the UK approach is consistent with the Berne paradigm to the effect that non-original types are not protected in the UK in the same way as original ones.

4. It could be argued that uniformity as one of the targets of the Convention cannot be achieved, and Union countries are allowed to adopt differing interpretations of such a fundamental question as the meaning of 'intellectual creation'. Nonetheless, the machinery of choice of law is built into the Berne framework.[445]

5. It is often maintained that the protection in the common law countries of such subject-matter as timetables and directories has resulted in lowering the required level of intellectual creation.[446] However, judging from the history of *droit d'auteur*, such works as a salad bowl, address books and the text of a patent are protected in France[447] despite the fact that this country cannot be considered as 'taking a more relaxed view on this question'.[448] Even under German law protection has been accorded to catalogues, price lists, telephone

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[440] For relevant debates see ibid., at 264, 551.

[441] See The International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organisations, 1961 (Rome Convention); the Convention for the Protection of Producers of Phonograms against Unauthorized Duplication of their Phonograms, 1971 (Geneva Convention).

[442] See Ricketson, at 308.

[443] See ibid., at 866-868.

[444] See further subs-s 2.7, 4.2.2, below.

[445] See, for example, Articles 5 (2), 7 (8), Berne Convention. See also Copinger, at 1128; Fawcett, J., and Torremans, P., *Intellectual Property and Private International Law,* Clarendon Press, 1998, at 462-475; Ginsburg, J., "The Private International Law of Copyright in an Era of Technological Change" in *Recueil Des Cours. Collected Courses of the Hague Academy of International Law 1998 (Tome 273 de la Collection),* Martinus Nijhoff Publishers, 1999, at 266-281; Ricketson, at 225.

[446] See Ricketson, at 901.

[447] See Lucas, A. and Plaisant, R., "France" in Nimmer and Geller, at FRA-19.

[448] Ricketson, at 231.

directories and recipe books according to the concept of 'small change' ('kleine Münze').[449] Such a doctrine may also be found in French law as the 'petite monnaie' concept.[450]

6. In the light of the relevant provisions of the TRIPs Agreement[451] and WIPO Copyright Treaty[452] the argument of non-protectability of software in the context of 'intellectual creation'[453] cannot be considered tenable.

B. *Feist* and the peculiarities of the US doctrine.
The 'isolated versions' and 'evolving work' approaches.

As indicated above, a clear reference to the requirement of 'intellectual creation' is included in the formula of article 2(5) dealing with collections of literary and artistic works.[454] It is not a coincidence that the so-called 'sweat of the brow' doctrine[455] and the seminal *Feist* judgment rejecting such an approach (and now often considered the core of the modern American understanding of copyrightability[456]) revolved around copyright in compilations.[457]

The *Feist* case arose from a copyright infringement action brought by Rural Telephone Service Co, a public utility providing telephone service to several communities in Kansas, against Feist Publications, Inc, a publisher specialising in area-wide telephone directories. It was held that Rural's white pages lacked the

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[449] See Dietz, A., "Germany" in Nimmer and Geller, at GER-23 to GER-25; Hugenholtz, P., "Protection of Compilations of Fact in Germany and the Netherlands" in Dommering and Hugenholtz, at 62; Lehmann, M., "Germany" in Lehmann and Tapper, at 9-11; Sterling, at 260.

[450] See Lucas and Lucas, at para. 83.

[451] See Art. 10 (1), TRIPs.

[452] See Art. 4, WCT and the agreed statement concerning Art. 4. For the related history, see Samuelson, P., "Challenges for the World Intellectual Property Organisation and the Trade-related Aspects of Intellectual Property Rights Council in Regulating Intellectual Property Rights in the Information Age" [1999] EIPR 578, at 580.

[453] See Ricketson, at 897-901 (contending that the inclusion of computer programs in Art. 2(1) would devalue the protected categories).

[454] See Art. 2 (5), Berne Convention.

[455] See also *Del Madera Properties v Rhodes and Gardner, Inc.,* 820 F.2d 973, 976 (9th Cir. 1987). Cf. *Harper House, Inc. v Thomas Nelson, Inc.,* 889 F. 2d 197, 205 (9th Cir. 1989). See further Dworkin in Hansen, at 169; Ginsburg, J., "'No Sweat'? Copyright and Other Protection of Works of Information After Feist v Rural Telephone" (1993) 93 Colum. LR; Nimmer, at 3-15, 3-20, 3-24, 3-28.

[456] See Cornish, at 335 (as to the distinction between British and American copyright on the subject). See also Goldstein, P., "The EC Software Directive: A View from the USA" in Lehmann and Tapper, at 207.

[457] See also Abrams, H., "Originality and Creativity in Copyright Law" (1992) 55 *Law and Contemp. Problems* 3; Bartz, P., and Band, J., "Feist v Rural Telephone: The Beginning of the End of Software Overprotection" (1991) 8 *Computer Law* 10; Beck, H., "Copyright Protection for Compilations and Databases After Feist" (1991) 8 *Computer Law* 1; Gorman, R., "The Feist Case: Reflections on a Pathbreaking Copyright Decision" (1992) 18 Rut. Comp. Tech. LJ 731.

requisite originality and Feist's use of the listings accordingly did not constitute infringement.[458]

It is submitted that if the labour expended is perceived as mediating the notion of work as such, the difference between British and American systems on the point may be encapsulated as residing in the definition and categorisation of compilations.[459] To some extent, the distinction may also be put down to the interpretation of 'commonplace' or some kind of logical distance between the latter and the concept of a modicum of creativity.[460]

It is noteworthy that not only the meaning of such a modicum is somewhat cryptic if distinct from 'commonplace' but also the *doctrinal location of creativity* may be in doubt. As a corollary, sometimes originality and creativity are regarded as separate elements[461]. Taking account of the 'labour and skill' understanding of originality the idea of a reciprocal relationship between creativity and independent effort comes into play[462] which entails quantitative examination of a subject-matter[463]. This does not necessarily conform with the nature of copyright, let alone the purpose of coherence and cohesion in view of the anti-'sweat of the brow' crusade.

It should be borne in mind that the 'sweat of the brow' doctrine was developed to justify the protection of factual compilations[464] and is alternatively known as the

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[458] See *Feist*, at 143. See also Nimmer, at § 3.04 [B] [2].

[459] In the US compilations are defined with the accent on selection, coordination or arrangement. (See s. 101, Title 17, USC.) Under the US approach the collection of pre-existing material cannot be the sole requirement and is not enough for copyright purposes.(See *Feist*, at 139.) In the UK the collection of a comprehensive body of materials may pass a relevant threshold. (See Laddie et al, at 47, 55. See also s. 3 (A), CDPA (the definition of a database.) It is to be noted here that under s. 3, CDPA, a database (s. 3 (1) (d)) is a separate (distinct from a table or compilation (s. 3 (1) (a)) entry in the list of the species of literary works. See also Aplin, T., "When Are Compilations Original?" [2001] EIPR 543, at 546. In the UK compilations make up a species of literary works. See s. 3 (1) (a), CDPA. In some measure, the correlation between the notions 'compilations' and 'derivative works' under American law differs from that under British copyright as well as from the Berne approach. This issue is addressed elsewhere in this chapter.

[460] See *Feist*, at 133; *Universal Athletic Sales Co v Salkeld*, 511 F.2d 904 (3d Cir. 195). The origins of the 'modicum of creativity' doctrine are often associated with the famous 19th century decisions in *Burrow-Giles Lithographic* and *Trademark* cases. (See *Burrow-Giles Lithographic Co v Sarony,* 111 US 53, 4s.Ct.279 (1884); Trademark Cases, 100 US 82 (1879).) See also Nimmer, at 2-14; Vinje, T., "Copyright Imperilled?" [1999] EIPR 192, at 193.

[461] See *Warren Publishing, Inc v Microdos Data Corp.,* 115 F. 3d 1509, 1523 n.2 (11th Cir. 1997). See also Nimmer, at 2-15.

[462] See Nimmer, at 2-17. See also Richardson, M., "Copyright in Trade Marks? On Understanding Trade Mark Dilution" [2000] IPQ 66, at 72.

[463] Say, the longer the work the lower requirement of creativity.

[464] See also *American Dental Association v Delta Dental Plains Association,* 39 USPQ. 2d 1714 (N.D. Ill. 1996); *Bell South Advertising and Publishing v Donnelly Informatio Publishing, Inc.,* 933 F.2d 952 (11th Cir. 1991); *Cooling Systems & Flexible, Inc. v Stuart Radiator, Inc.,* 777 F. 2d 485, 492 (9th Cir. 1985); *Worth v Selchow & Richter Co.,* 827 F. 2d 569, 573 (9th Cir. 1987); *Warren Publishing, Inc v Microdos Data Corp.,* 115 F. 3d 1509 (11th Cir. 1997).

concept of 'industrious collection'[465]. It is reasoned that even if non-protectability of facts were not a common feature of the modern copyright theories, the copyright status of the materials going into the compilation would have but a marginal effect on the protection of the latter thus highlighting the distinction between copyrightability and legality in this area.[466] As to the latter, the issue of permission may become a bone of contention.

Where it is self-evident that such a problem is beside the point this might in turn beg the question of the originality of later versions where the creation of the work goes through successive stages.[467]

It is a well-established rule that the copyright continues to subsist in the earlier versions.[468] At the same time, the protectability of a subsequent version *as a whole* has also been recognised.[469] As to the copyright nomenclature, not only the notion of 'originality' but also the notion of 'work' as copyright terms of art should not be confused with the use of such words in popular speech[470]. Accordingly, for the purposes of copyright the boundaries of a literary work do not perforce coincide with the margins of the text, as it were.[471] It would seem accurate to drop the formula

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[465] See *Jeweller's Circular Publishing Co v Keystone Publishing Co* 281 F. 83, 88 (2d Cir. 1922); *Leon v Pacific Telephone &Telegraph Co* 91 F 2d 484 (9th Cir. 1937); *West Publishing Co v Mead Data Cent., Inc.,* 799 F. 2d 1219 (8th Cir. 1986). See also *Feist,* at 136-140; *CCH Canadian Ltd, Thompson Canadian Ltd and Canada Law Book Inc v The Law Society of Upper Canada* (2000) 2 CPR (4th) 129; *Tele-Direct (Publications) Inc v American Business Information, Inc* (1998) 2 FC 22. For related theorisations, see Cohen Jehoram, H., "Two Fashionable Mistakes" [2000] EIPR 103; Genderau, Y., "The Copyright Civilisation in Canada" [2000] IPQ 94-95; Nimmer, at § 3.04 [B][2]. It is also to be noted that the formula 'industrious collection' was employed in *Walter v Lane* by the appellants. See *Walter v lane,* at 542. As to the Australian version of the doctrine, see, for instance, *Telstra Corp. Ltd v Desktop Marketing Systems Pty Ltd* [2001] FCA 612. See further Aplin, T., "When Are Compilations Original?" [2001] EIPR 543.

[466] See Laddie et al, at 55, 121.

[467] See Copinger, at 110-112.

[468] See, for example, *Cala Homes (South) Ltd v Alfred McAlpine Homes East Ltd* [1995] FSR 818, at 827; *Macmillan Publishers Ltd v Thomas Reed Publications Ltd* [1992] FSR 455; *Ray (Robin) v Classic* [1998] FSR 622, at 640.

[469] See, for example, *L.B.(Plastics) Ltd v Swish Products Ltd* [1979] PRC 551. See also Griffiths, J., "Copyright in English Literature: Denying the Public Domain" [2000] EIPR 150, at 151.

[470] Multifarious meanings might be attached to the word 'original' in the non-copyright 'vernacular' so that 'originality' would connote*, inter alia*, some kind of 'poetic authenticity'. For the related history, see Holmes, O., *Assembling the Lyric Self*, University of Minnesota Press, 2000, at 2. As to IP locutions in common parlance, see Vaver, D., "Intellectual Property: The State of the Art" (2000) 116 LQR 621, at 622.

[471] See also subs-s. 2.3.6., 2.5.3.A, above (as to the related description of *work* and a definition of *area of copyright* respectively). Cf. *Harbor Software, Inc. v Applied Systems*, Inc., 936 F. Supp. 167,170 (S.D.N.Y.). It is submitted that such a formula as "where the copyrighted work contains both protectable and unprotect-able elements" might be read as indicating that not only the word '*work*' but also the phrase '*copyright work*' could, in a sense, refer to non-copyright language. Cf. also *Baker v Selden* (1879) 101 US 99, at 101-103; *Feist,* at 134, 135; *Gates Rubber Co. v Bando Chemical*

'copyright as a whole'[472] and replace it with the phrase 'copyright as' (a compilation or otherwise), subject to the characteristics of the work. It might thus be emphasised that the copyright extends only to the author's contribution (primarily as 'not taken'). On these lines, if all the material is original with the author, copyright subsists in each version in isolation.[473] This may be particularly important if the duration of copyright in a work is to be calculated from the time of its creation.[474]

It would be consistent with this approach to disregard in the direct copying analysis the elements taken from the previous versions and examine them with reference to the notion of indirect copying.[475]

Alternatively, there could exist circumstances where in the light of a detected intention to produce the work might suggest the originating character of the related labour[476] and determine a number of crucial points of analysis. If such an ultimate intention is common to the versions in question, these might be considered parts of the same transaction or the embodiments of the same, in essence, labour. The upshot of this is that the end result evolved (remaining *essentially* the same) through several stages, including the elements derived from the antecedent versions, could be deemed original.[477]

In this connection, the arguments of 'labour' or 'the author's work and labour'[478] (or, as a variation on this theme, 'made by [the author]'[479]) may be beside the point. More specifically, the first construct in fact addresses the notion of 'work' and the second one does not accommodate the possibility that the author may create more than one copyright work.

Further, the notions of infringement and subsistence of copyright should not be confounded. Since the question of permission is extraneous, 'lawful' taking is not to

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Industries, Ltd, 9 F.3d 823 (10th Cir. 1993); Nimmer, at 13-45, 13-134; *Warwick Film Productions Ltd v Eisinger* [1969] Ch 508, at 530.

[472] As, *inter alia*, not yielding any clarification or insights into the matter. Cf. *Apple Computers, Inc.* v *Microsoft Corp.*, 35 F. 3d 1435, 1439, 1446 (9th Cir. 1994) (suggesting that before considering a work *as a whole*, the unprotectable elements should be 'filtered'). Cf. also Copinger, at 408; *Harper House, Inc. v Thomas Nelson, Inc.,* 889 F. 2d 197, 206 (9th Cir. 1989); Nimmer, at 13-58.

[473] Hereinafter the '*isolated* versions' approach.

[474] See s. 12 (3), (7), CDPA.

[475] See also *Warwick Film Productions Ltd v Eisinger* [1969] Ch 508. As to the concept of indirect copying, see Bainbridge, at 55-57; Copinger, at 395-396; Cornish, at 361-362; Torremans and Holyoak, at 227.

[476] See also *Designer Guild Ltd v Russell Williams (Textiles) Ltd* [2001] FSR 113.

[477] Hereinafter the "*evolving work*" approach. See also *Ladbroke,* at 278, 293. Cf. *J. & S. Davis (Holdings) Ltd v Wright Health Group Ltd* [1988] PRC 403. See also *British Leyland,* at 356.

[478] See *LB (Plastics),* at 569, 617.

[479] See *LA Gear, Inc v Hi-Tech Sports plc* [1992] FSR 121.

be identified with originality. A work should pass the 'not copied' threshold as one of the particularised elements of the 'originated with the author of the work' criterion.

It is reasoned that, with reference to the criterion of originality, the above '*isolated versions*' approach would seem more consistent as not equating the concept 'not copied from another work' with 'not copied from the work of another author' regardless of the circumstances of the case. Only the above intention may 'stick' the versions together and thus tip the balance in favour of the '*evolving work*' approach.[480]

Coming back to the analysis of the 'industrious collection' conception, it might be observed that the origins of such may lend credence to the identification of the above doctrinal difference as restricted to the definition of compilation. Judging from the *Feist* case, a *de minimis* quantum of creativity might be construed as commonplace, and the disparity between the doctrines again comes down to the components of the notion 'compilation' since the adjective 'commonplace' was applied to the arrangement of facts.[481]

Furthermore, the *Feist* holding applies to a circumscribed sphere as recognised under American copyright.[482] Even the *Feist* court found original the material in the yellow pages advertisements.[483] One of the justifications of the ruling as to the distinction between original and not original subject-matter was assigned by the court to choices open to a compiler.[484]

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[480] This might call for the complex duration framework with reference to different elements of the work in the cases referred to in s. 12 (3), (7), CDPA. In this context, copyright in the elements derived from the earlier versions, which are to be protected as original, may expire earlier than in the non-derivative ones. The derivative elements, nearly by definition, were made earlier thus marking the commencement of copyright protection and completing some kind of *various starting points framework*. Nonetheless, theoretically speaking, if the emphasis is on the perception that the 'evolving' work is made every time a new version is made then protection as to all the elements might be renewed, say, from the date when the later version was made.

[481] See *Feist,* at 142.

[482] See *Engineering Dynamics, Inc v Structural Software, Inc.,* 26 F. 3d 1335 (5th Cir.1994) (recognising copyright in a computer used manual compiling facts for a user interface); *Key Publications, Inc. v Chinatown Today Publishing Enters., Inc.,* 945 F. 2d 509 (2d Cir. 1991); *Oasis Pub. Co v West Pub. Co.,* 924 F. Supp. 918 (D. Minn. 1996). See further Nimmer, at 3-29. See also *Telstra Corp. Ltd* v *Desktop Marketing Systems Pty Ltd* [2001] FCA 612. In this recent Australian decision Finkelstein J considered the *Feist* standard not only uncertain, but also a disincentive to producing compilation. See ibid., at para. 74-78. See further *Desktop Marketing Systems Pty Ltd v Telstra Corporation Ltd* [2002] FCAFC 112. No "creative spark" is required for a compilation to be entitled to copyright under Australian law. See also Aplin, T., "When Are Compilations Original?" [2001] EIPR 543.

[483] See *Feist,* at 141. As to the contract related limits of the *Feist* doctrine, see Nimmer, at § 3.04 [B] [3] [a].

[484] See *Feist,* at 142. See also Nimmer, at 2-17.

C. The EC criterion : the author's own intellectual creation.
German and French approaches.

The Software Directive contains the formula of protectability coming down to the requirement of the 'author's own intellectual creation' which is, in spite of its ambiguity, in a sense *'en passe de devenir un "standard" international'*.[485]

The intended purpose of the provision of Art. 1(3) of the Directive, as part of the Europe-wide copyright harmonisation strategy[486], was to eliminate the doctrine formulated in 1985 by the German Supreme Court in its seminal *Inkasso* decision[487] and confirmed in the *Betriebssystem* judgment in 1990.[488]

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[485] Lucas and Lucas, at 105. See also Lucas, A. and Panhaleux, L., "France" in Lehmann and Tapper, at 11. As to the above ambiguity, see also Cornish, at 336; Derclaye, E., "Software Copyright Protection: Can Europe Learn from American Case Law? Part I" [2000] EIPR 7, at 15.

[486] See Commission of the European Communities. White Paper from the Commission to the European Council. Completing the Internal Market, COM (85) 310 final (hereinafter "White Paper"). The introduction of a Community framework for the legal protection of software was pointed out in the context of priorities in the field of intellectual and industrial property. (See ibid., at 35.) It is worth noting that these questions were dealt with under the heading 'Creation of suitable conditions for industrial cooperation.' The latter in turn was included in Part II (The Removal of Technical Barriers) of White Paper. This structure may be construed as indicating the role of the subject in completing the Internal Market. In the subsequent Green Paper identifying, *inter alia*, the Community's fundamental concerns (see Green Paper, at 3) the Commission emphasised that significant differences in the protection available to particular classes of copyright works could clearly fragment the internal market. (See ibid., at 4. See also Arenas, P., "Implementation, Compliance and Enforcement: The European Community Directive for the Legal Protection of Computer Software (1992) 5 *The Transnational Lawyer* 803; Cline, D., "Copyright Protection of Software in the EEC: The Competing Policies Underlying Community and National Law and the Case for Harmonisation" (1988) 75 *Cal. L.R.* 633; Cohen Jehoram, H., "The EC Copyright Directives, Economics and Authors' Rights" (1994) 25 *IIC* 821; Lucas, A., "Copyright in the European Community: The Green Paper and the Proposal for a Directive Concerning Legal Protection of Computer Programs" (1991) 29 *Colum. J. Transnational* 145.) However, at that point it was considered premature to take actions with reference to the *Inkasso* case since the threat of divergence was perceived 'less significant than might at first sight appear'. (See Green Paper, at 188.)

[487] See *Inkasso Programm (Collection Program)*, BGH, May 9, 1985, (1985) GRUR 1041; (1986) 17 *IIC* 681 (hereinafter "*Inkasso*"). See also Dietz, A., "Germany" in Nimmer and Geller, at GER-33; Kindermann, M., "Copyright Protection for Computer Software in Germany, Recent FSC Decisions and the Copyright revision Act 1985" [1986] *EIPR* 179; Lehmann, M., "Germany" in Lehmann and Tapper, at 3-6; Röttinger, M., "The Legal Protection of Computer Programs in Germany: Renunciation of Copyright?" (1987) 4 *Comp. Law and Pract.* 34. As to the identified purpose of the provision, see Cornish, 444; Cornish, W., "Computer Program Copyright and the Berne Convention" in Lehmann and Tapper, at 192; Czarnota and Hart, at 43-44; Dreier, T., "The Council Directive of 14 May 1991 on the Legal Protection of Computer Programs" [1991] EIPR 320; Karnell, G., "European Originality: A Copyright Chimera" in Kabel and Mom, at 204; Tapper, C., "The European Software Directive: The Perspective from the United Kingdom" in Lehmann and Tapper, at 146.

[488] See *Betriebssystem (Operating system)*, BGH, October, 4, 1990, (1991) 22 IIC 723 (hereinafter "*Betriebssystem*"). See also Dreier, T., "Program Protection in the Federal Republic of Germany – A New Decision Leaves Inkasso Programm Intact" (1991) 7 *Comp. Law and Practice* 178; Kindermann,

Under the *Inkasso* test a program was original in the sense of § 2(2) UrhG, that is the 'personal intellectual creation' of an author, only if the software was noticeably superior to the ordinary average programming skill.[489] In 1993 the 'author's own intellectual creation' standard was codified as a specific rule for software.[490] In the context of the European 'no other criteria' criterion (the 'negative criterion')[491], this may also be read as a 'liberalising' interpretation of the general requirement of the personal intellectual creation.[492]

The criterion of the author's own intellectual creation was later introduced also in the field of databases and certain photographs.[493] However, it has been transposed into the CDPA 1988 only with reference to databases.[494] It should be noted that while directives can be enforced directly by individuals against state bodies after the time limit for the implementation has expired (vertical direct effect), they cannot of themselves impose obligations on individuals (no horizontal direct effect).[495] Pursuant to Art. 10 EC (formerly Art. 5 of the Treaty), the Member States should take all appropriate measures to ensure the fulfilment of the obligations arising from a directive. This duty is binding on the Member States including the courts.[496] According to Art. 249 EC (formerly Art. 189 of the Treaty), a directive is binding, as to the result to be achieved upon each Member State to which it is addressed, but

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M., "Copyright Protection of Computer Programs in Germany: Nixdorf v Nixdorf" [1991] EIPR 296. Both *Inkasso* and *Betriebssystem* were referred back to the lower courts and the parties settled the matter by a transaction after several years of litigation. See Lehmann, M., "Germany" in Lehmann and Tapper, at 5. As to the impact of the Directive on the system of protection in Germany, see Dietz, A., "Germany" in Nimmer and Geller, at GER-33; Hoeren, T., "The EC Directive on Software Protection – A German Comment" (1991) 7 *Comp. Law and Practice* 246; Hoeren, T., "Supreme Court Applies 'Old' Law in Ruling on Software Protection" (1994) 7 *World Intellectual Property Report* 321; Scholz, "Implementation of the European Community Software Directive in Germany" (1993) 34 *Copyright World* 36; Schricker, G., "Farewell to the 'Level of Creativity' (Schöpfungshöhe) in German Copyright law?" (1995) 26 IIC 41.

[489] See also Lehmann, M., "Germany" in Lehmann and Tapper, at 4. It should be pointed out that the general originality test has been 'much more generous'. (Ibid., at 5.) The concept of different levels of creativity was initially restricted to the protection of applied art. See also Dietz, A., "Germany" in Nimmer and Geller, at GER-24; Sterling, at 260.

[490] See s. 69 a (3), UrhG.

[491] See Karnell, G., "European Originality: A Copyright Chimera" in Kabel and Mom, at 203 (identifying positive and negative criteria within the formulae of the copyright directives.)

[492] See ibid., at 204. See also *Buchhaltungsprogramm (Accounting Program)*, BGH, July 14, 1993, (1994) GRUR 39; (1995) 26 IIC 127 (following the *Inkasso* model in the context of infringing acts taking place before the effective date of the Amendment 1993).

[493] See Art. 6, Recital 17, the Duration Directive; Art. 3 (1), Recitals 15, 16, the Database Directive. See also Bently and Sherman, 2nd ed., at 88-89, 101-106.

[494] See s. 3A (2), CDPA. See also reg. 6, the Copyright and Rights in Databases Regulations 1997, SI 1997/3032.

[495] See further Craig and de Búrca, at 178-182.

[496] See further *Von Colson and Kamann v Land Nordrhein-Westfalen*, Case 14/83 [1984] ECR 1891 (hereinafter 'Von Colson'), at para. 26.

leaves to the national authorities the choice of form and methods. Therefore, the implementation of a directive does not necessarily require legislative action in each Member State.[497] In this context, national courts are required to interpret their national law in the light of the wording and the purpose of the directive.[498]

It might also be argued that the European yardstick of originality was not legislatively implanted into the British formula of computer programs' copyright because the position in the UK prior to the implementation of the Software Directive was already similar to the position required under Community law.[499]

On these lines, the fact that the originality requirement of the 1988 Act in relation to databases explicitly includes the new formula can be mapped onto the actual origins of this change. More specifically, the Database Directive and the UK Database Regulations introduced a two-tier system: the modified copyright protection for databases with the new originality criterion and a new *sui generis* right known as the database right.[500] It is this juxtaposition of rights that might possibly be responsible for the 'special case' of databases as regards the standard of the author's own intellectual creation.[501] In this context, s.3A(2) points out the principal distinctive feature of the copyright tier.[502]

Some commentators, probably influenced by the discussion on the Green Paper characterised as 'unduly bound to Anglo-Saxon notions of "copyright"'[503], nearly

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[497] See further *Commission v Germany*, Case 29/84 [1985] ECR 1661, at para. 23.

[498] See further *Von Colson*, at para. 26.

[499] See also Bently and Sherman, 2nd ed., at 103.

[500] See Art. 7, Recitals 39, 40, the Database Directive; reg. 13, the Copyright and Rights in Databases Regulations 1997, SI 1997/3032.

[501] In addition, the new criterion is also located in a slightly different way: it 'seems to require a court to distinguish more rigorously than British courts have hitherto been accustomed,between pre-expressive and expressive aspects in the creation of a database. Bently and Sherman, 2nd ed., at 102. See also Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 220. This distinction may be reflected in the transitional provisions regarding databases created on or before 27 March 1996 and protected by copyright immediately before 1 January 1998. See Recital 60, the Database Directive. To a certain extent, the difference between the two tiers reflects the contrast between the notions of work and original work. However, within the scope of the new related right the financial factor can be read disjunctively. See reg. 12, the Database Regulations. Furthermore, the author of a copyright database may be a different person to the maker of a database in respect of the database right. See reg. 14, the Database Regulations. See further Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 217-218, 220-226. As to the issue of substantiality within the remit of the database right, see Bently and Sherman, 2nd ed., at 299-300.

[502] See also Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 217; Bently and Sherman, 2nd ed., at 298.

[503] Lehmann, M., "The European Directive on the Protection of Computer Programs" in Lehmann and Tapper, at 163. It was stated under the heading 'Originality and independent intellectual effort' that 'a work must be "original" in the sense that it is the result of the creator's own intellectual efforts and not itself a copy'. (Green Paper, at 187.) Further, in the context of computer-generated programs the related formula read: 'The basis of all copyright protection is the exercise of sufficient skill and labour for a

equated the formula of the author's own intellectual creation with the common law standard of originality.[504] Other writers characterised the 'positive' criterion as a compromise between the existing types of originality requirements.[505]

It cannot be ruled out that the ECJ will eventually decide on the standard that prevails.[506] At the same time, the ambiguity of the new requirement in terms of its wording and doctrinal lineage as well as the conspicuous absence of proceedings brought before the ECJ on this subject may indicate that interpretative flexibility was intended by the Community legislator.

However, particularly on account of the relevant formula of the Duration Directive illuminating the criterion of the 'author's own intellectual creation' by adding in the context of photographs the requirement that such a creation should reflect the author's personality[507], the interpretation intrinsic to the *droit d'auteur* school may become increasingly predominant and prevailing.[508] At the same time, it is noteworthy that Member States may provide for the protection of other photographs.[509]

Within the traditional French protectability framework epitomising the Continental personality approach the notion of originality could be depicted as the imprint of the author's personality[510] attributable to an *oeuvre de l'esprit.*[511] Notably, a nascent at

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work to be considered original.' (Ibid., at 197.) See also Art. 1(3), Proposal for a Council Directive on the Legal Protection of Computer Programs (1989) O.J. (C 91/05).

[504] See Cornish, W., "Computer Program Copyright and the Berne Convention" in Lehmann and Tapper, at 192; Goldstein, P., "The EC Software Directive: A View from the United States of America" in Lehmann and Tapper, at 207; Tapper , C., "United Kingdom" in Lehmann and Tapper, at 6; Tritton, at 226; Verstrynge, J.-F., "Protecting Intellectual Property Rights within the New Pan-European Framework: Computer Software" in Lehmann and Tapper, at 4.

[505] See, for example, Karnell, G., "European Originality: A Copyright Chimera" in Kabel and Mom, at 208; Lucas, A. and Panhaleux, L., "France" in Lehmann and Tapper, at 11. As to the classification of European copyrightability systems, see Cohen Jehoram, H., "The EC Copyright Directives, Economics and Authors' Rights" (1994) 25 IIC 828-829. These should not be confused with the doctrine of pseudo-copyright in non-original writings under Dutch law. (See Art. 10, the Netherlands Copyright Act. For an exposition of this 'remnant of an 18th century printer's rights', see Cohen Jehoram, H., "Netherland" in Nimmer and Geller, at § 2 [4] [f] [iii]; Cohen Jehoram, T., "Copyright in Non-Original Writings Past-Present-Future?" in Kabel and Mom, at 103; Hugenholtz, P., "Protection of Compilations of Facts in Germany and the Netherlands" in Dommering and Hugenholtz, at 63.)

[506] See Bently and Sherman, 2nd ed., at 102.

[507] See rec.17, the Duration Directive. See also Cohen Jehoram, H., "The EC Copyright Directives, Economics and Authors' Rights" (1994) 25 IIC 827-831.

[508] See, for example, Cohen Jehoram, H., "The EC Copyright Directives, Economics and Author's Right" (1994) 25 IIC 829, 837, 839.

[509] See Art. 6, the Duration Directive. See further Bently and Sherman, 2nd ed., at 105.

[510] See Desbois, at para. 3; Lucas and Lucas, at para. 81; Lucas, A. and Panhaleux, L., "France" in Lehmann and Tapper, at 9; Lucas, A. and Plaisant, R., "France" in Nummer and Geller, at FRA-20; Shuster, at 47; Sterling, at 255.

[511] According to the French Intellectual Property Code, copyright is accorded to the author of a work of the mind. (See Art. L.111-1, the IP Code.) To be protected such an *oeuvre de l'esprit* should be original as it is construed against a backcloth of the general paradigm of protectability. See also Colombet, C.,

that moment system of protection for computer programs that emerged under the 1985 Amendment Act[512] (or even prior to the Act) effected changes in the doctrine so that the ideation of the yardstick of originality has evolved into the concept of 'intellectual input'.[513] With the latter still not fully developed, it would appear that the theory of creative choice might be assimilated into various standards.

D. Rejecting the theory of choice.

The so-called 'theory of choice' has played a key role in the development of European doctrines of originality. Under this theory great importance is attached to choices between diverse modes of presentation and expression made by the author as suggestive of originality of the subject-matter.[514]

In this connection, Derclaye maintains that creativity as an attribute of originality 'in the computer programming field, has to do with choices and exclusions of elements that the programmer is led to do while programming whereby one programmer chooses differently from another because they have different personalities.'[515]

At the same time, in our estimation, the existence of the only or, as a variation on this theme, a limited number of ways to express the idea cannot invalidate the originality of a computer program even within the 'creativity' framework.

Propriete Litteraire et Artistique et Droits Voisins, 3d ed., 1986, at 36; Desbois, at 11; Gaudrat, "L'Originalite des Logiciels" (1989) 7 *Cahiers Lamy du Droit de L'Informatique* 2.

[512] See Law No. 86-660 of July 3, 1985, "relative to Author's and Neighbouring Rights".

[513] The seminal *Rachot* case was decided under the Law of 1957 (Law No 57-298 of March 11, 1957, "on Literary and Artistic Property"). See *Babolat Maillot Witt v Pachot,* Cass., Ass. Plen., 7 March 1986, RIDA 1986, no 129 (hereinafter "*Pachot*"). For the prehistory of the decision, see Lucas, A. and Panhaleux, L., "France" in Lehmann and Tapper, at 9. See further *Pachot,* at 136. For a commentary on the formula 'intellectual input', see Lucas, "Propriete Litteraire et Artistique" (1986) 303-1 *Juris Classeur* 6; Lucas, A. and Plaisant, R., "France" in Nimmer and Geller, at FRA-22. This approach was just adumbrated in *Pachot.* At the same time, the Cour de Cassation did not recant its 'personality' language. (See Shuster, at 58-59.) The matter was in a sense further obfuscated in the famous *Isermatic* judgment employing the formula 'personal contribution'. See *Societe Isermatic France v Societe Gerber,* Cass. 1 re civ., 16 avril 1991, 139 Expertises, May 1991, at 194 (hereinafter "*Isermatic*"). See also Lucas, A. and Pahaleux, L., "France" in Lehmann and Tapper, at 10; Strowel, at 402.

[514] See Shuster, at 57; Wilkins, at 448-452, 455, 461. See also *Designers Guild Ltd v Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2422; *John Richardson Computers Ltd v Flanders* [1993] FSR 497, at 553, 555-557. There could be seen a close affinity between this doctrine and the concept of 'room for individual interpretation' which is in turn relative to the quantitative approaches (such as the plurality of expression test) as regards the idea-expression dichotomy. (See subs. 3.2.3, below.) A certain link between the dichotomy and the concept of choice is alluded to in *Designers Guild.* See *Designers Guild Ltd v Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2422. See also Lai, at 23; Nimmer, at 13-128, 13-129.

[515] Derclaye, E., "Software Copyright Protection: Can Europe Learn from American Case Law? Part I." [2000] EIPR 16.

In a sense, the act of following the technical restrictions to bring about a certain result as an evidence of professionalism may manifest the author's personality and creativity. In addition, there could very well be found no more creativity in choosing between the known alternatives in comparison with the situation of the technical constraints breeding a single version. Moreover, scrupulous dealing with technical requirements may reflect the author's personality to the same extent as the choice given to, and made by, a computer programmer in the event of an uncountable number of options.[516]

An author grafting innovations onto the craft of programming may be viewed as 'sowing' the seeds of choice, as it were, in her/his work. However, through lack of alternatives, this kind of creativity does not entail *making* a choice. A ground-breaking work introducing a different approach into the field of a single version available, in a sense, if the theory of choice holds good, renders original that existing version, or rather its equivalent concurrent with the innovative work. Thus, an obsolescent technique which has not been held original in the first place, may become original in the copyright sense only owing to the possibility of choice.

Furthermore, a mediocre computer programmer carrying out a particular operation in the same fashion for years 'choosing' between myriads of techniques may command copyright unlike a hypothetical computer genius who has meticulously followed the convoluted requirements of the target hardware and software or even designed a path-breaking program.

In some measure, this echoes the situation of a copyist's masterpiece and a daub. Nevertheless, following the requirements may hardly be equated with copying. On top of it, as it has been reasoned in this chapter, a copyist may secure protection for her/his work as to the facets not copied, say, in respect of her/his copyist skills.

 On the other hand, it cannot be ruled out that the protection of computer programs exemplifying production in technically or otherwise restricted areas might bring the development of the subject to a 'standstill'[517] since it would inhibit uses which are material to the software industry. It is reasoned that such a danger could be obviated

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[516] See also Shuster, at 58.
[517] Torremans and Holyoak, at 500.

without impinging upon the originality criterion as it is understood within English copyright tradition[518].

An apt solution may involve following up the principle of fair compensation for right holders in the context of exceptions[519] or the regime of compulsory licensing[520]. In the event of a hypothetical work of genius there could be adopted a policy construct based on what might be termed a *de maximis rule*. Generally, such a rule might determine the non-protection of objects that are 'too big' to be protected/privatised. That is, if certain things were removed from the (Lockean) common, there would not be 'enough and as good' for the remaining individuals.[521] Interestingly, practicability again may play a certain role in this context. For instance, air cannot be claimed as physical property not only because it is (justifiably) an inextricable part of the common but also because it would be impossible to fix internal boundaries in the first place, let alone impracticability of successful policing.

Marking out property and keeping out potential infringers can be equally problematic in the realm of IP where the *de maximis* rule may be illustrative of the concept of extraordinary ideas.[522] Along these lines, 'basic truths' (ideas or intellectual entities disclosing facts about the world) are never permitted to become private property. This subcategory of extraordinary ideas can be suitable for patent law, say, to further justify the exclusion of discoveries from the scope of the notion 'invention' (in conjunction with drawing a line between 'artificial' inventions and 'natural' discoveries).[523]

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[518] In this respect, a "limiting" role of the theory of choice might be entertained in the context of *infringement* as opposed to *copyrightability*. See Lai, at 23, 24. See also Sterling, J., "Testing for Subsistence and Infringement of Copyright in Computer Programs: some US and UK cases" (1995) 11 CLSR 119, at 124.

[519] See Recitals 35, 36, Art. 5 (2) (b), Copyright Directive. See also Amended proposal for a European Parliament and Council Directive on the harmonisation of certain aspects of copyright and related right in the Information Society. COM (1999) 250 final.

[520] Cf. Ginsburg, J., "Creation and Commercial Value: Copyright Protection of Works of Information in the United States" in Dommering and Hugenholtz, at 56.

[521] See Locke, J., *Two Tretises of Government*, Cambridge University Press, 2000, at 291. See further Hughes, J., "The Philosophy of Intellectual Property" (1988) 77 The Georgetown Law Journal 287 (hereinafter 'Hughes'), at 315. ('Locke's common had enough goods of similar quality that one person's extraction from it did not prevent the next person from extracting something of the same quality and quantity. The common did not need to be infinite: it only needed to be practically inexhaustible.')

[522] See further Hughes, at 319-321.

[523] See also s. 1 (2) (a), PA 1977; Art. 52 (2) (a), EPC. See further Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 362; Bently and Sherman, 2nd ed., at 407-410; Cornish and Llewelyn, at paras. 5-56 to 5-58.

Furthermore, some ideas become 'depropertised' as 'too widespread'. This, e.g., might be the case in the field of trademarks under the doctrine of genericness.[524] In the context of copyright, the *de maximis* in the form of 'too widespread' almost collapses into the *de minimis* 'too commonplace'. Thus, extremes meet, opposites nearly coincide or become two sides of the same coin. Statically, the corresponding test formulae of *de minimis* and *de maximis* could be framed in pairs of semantic mirror images or extremes marking the outer limits of copyright. That is, the *de maximis* criteria of labour, result and originality can be read as antonyms of insignificant, trivial and commonplace respectively. Then, each standard is to be further interpreted to the highest degree of the quality in question. More specifically, intellectual labour which can be viewed as *de maximis* should be expended on a certain project on a grand or global scale (estimated qualitatively and/or quantitatively). Similarly, 'trivial' is to be reversed as 'too important', while 'commonplace' can be turned round as 'too unique' or representing singularity.

Without an established *de maximis* tenet it is only fortunate that such an extraordinary idea/work as World Wide Web was declared freely usable. In analytical terms, the *de maximis* concept mirrors the *de minimis* principle and restores some kind of doctrinal and policy symmetry if, in specific circumstances, it is preferred to the arguments for copyright protection put forward under the general justificatory (particularly, incentive-based) theories. The outlined precept is thus weighed against 'the desire to protect … the rights of authors' proclaimed in the Berne Convention[525] and manifested along with the principle of the public benefits in the description of copyright continuing 'to enrich mankind by encouraging intellectual creativity' as solemnly declared by the Assembly of the Berne Union.[526]

The hardly tenable theory of choice, if built into the rationale behind the formula 'the author's own intellectual creation', is unlikely to clarify the question of originality. It is submitted that, in the absence of reliable guidelines as to the European originality criterion[527], British copyright cannot be forced to undergo any significant

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[524] See further Hughes, at 322.
[525] See the preamble of the Berne Convention.
[526] Ricketson, at 890, 891.
[527] Answer given by Mr Vanni d'Archirafi on behalf of the Commission (6 October 1993; (1993) O.J. 93/C 350/12) is not an exception. See also Karnell, G., "European Originality: A Copyright Chimera" in Kabel and Mom, at 203, 208; Lucas, A. and Panhaleux, L., "France" in Lehmann and Tapper, at 12; Lucas, A. and Plaisant, R., "France" in Nimmer and Geller, at FRA-22.

transformation in this respect.[528] As Professor Karnell observed: '[N]ational laws are free to develop originality wording at will, as long as the legislators and courts take care [to use] … a prescribed … "mantra" for originality.'[529]

Sometimes, the discussion on creativity and qualitative value is bracketed with the term 'literary' and undertones it may have.[530] To some extent this might be attributed to the logical tension between the respective concepts constituting the notion 'original literary work' and its analogues dwelt upon above. The resultant definitional problems and concomitant complications are addressed below.

2.6. Original literary work as a subgenus of protection.
2.6.1. The term 'literary': definitional mechanism.

In the first place, it is to be observed that in spite of the incorporation of computer programs into the category of literary works[531] the tension referred to above bears on the status of software not only generally or contextually. That is, the positioning of certain elements within the scope of 'literary' may result in leaving such matters out of the generality of originality *per se* and, by implication, the originality analysis of software.

In this regard, it is really fortunate that the question of the applicability of aesthetic quality has not been answered in the affirmative under any copyright heading.[532] Nonetheless, the exclusion of such an issue from the copyrightability analysis in toto may smooth the path to a particular judgment but this cannot sort out the general problem.

Some of the leading commentators impugned the logical possibility of defining the expression 'literary work' comprehensively.[533] Nevertheless, the existing statutory, case law and scholarly definitions, if systematised, may shed light on the notion.

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[528] Cf. Garnett, K., "Copyright in Photographs" [2000] EIPR 229, at 230.

[529] Karnell, G., "European Originality: A Copyright Chimera" in Kabel and Mom, at 208-209.

[530] See, for example, Laddie et al, at 30; Nummer, at 2-43; *University of London Press,* at 608.

[531] Thus indicating that if a work is a computer program it is, by definition, a *literary work* without getting down to the nuances of the latter notion and before giving attention to the originality status of the work. See also Corre, C., "TRIPs Agreement: Copyright and Related Rights" (1994) 25 IIC 543, at 546.

[532] See, for instance, *University of London Press,* at 608. The same is true of 'quantity of matter'. See Richardson, M., "Copyright in Trade Marks? On Understanding Trade Mark Dilution" [2000] IPQ 74.

[533] See Laddie et al, at 34.

The quoted above formula worked out in the *Hollinrake* case more than a century ago is still one of the most frequently invoked with reference to the concept 'literary work'. It is submitted that this dictum may hardly be of any assistance for anything in the world might in a sense be labelled 'information'. As to 'pleasure in the form of literary enjoyment', such a description, to some extent appealing to emotions, not only sounds antediluvian in the modern legal context but also may further obscure the issue.[534]

Another oft-cited definition was elaborated in the landmark judgment of *University of London Press.* On the one hand, it reflected a certain confusion of the conceptions of *literary* and *original.*[535] On the other hand, the formula 'expressed in print or writing'[536] may be viewed as some kind of germ of one of the limbs of the complex definition of the notion in question.

Such an approach is somehow echoed by American copyright. Under the US Copyright Act literary works are, *inter alia,* described as 'works … expressed in words, numbers, or other verbal or numerical symbols or indicia…'[537]

This may be identified as an affirmative verbal definition as distinct from the following negative ostensive (that is, giving explanation via examples) definition which reads as part of the composite formula: '"Literary work" are works, other than audiovisual works'.[538]

It may be postulated that CDPA also purports to lay down a synthesised definition. In this context, the statutory formula is composed of three statements. These sub-definitions may be characterised as follows: negative ostensive[539](in framing an inference by negative implication or *a contrario*), affirmative verbal[540] and affirmative ostensive[541] respectively.

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[534] See also ibid..

[535] In the same way, the description of 'literary work' as covering secondary work may be conceived as mixing up the elements of originality *per se* with the term 'literary'. (Cf. Cornish, at 334.) In similar vein, if 'too short' a subject-matter is considered 'not literary', this might indicate an understanding of one of the versions of the *proviso de minimis* as to the notion 'work' as related to the term 'literary'. Cf. Laddie et al, at 51.

[536] *University of London Press*, at 608.

[537] 17 USC § 101.

[538] Ibid. See also Nimmer, at 2-43.

[539] '"Literary work" means any work, other than a dramatic or musical work'. (s. 3 (1), CDPA.)

[540] '"Literary work" means any work … which is written, spoken or sung.' (Ibid.)

[541] Examples of literary works are listed in s. 3 (1) (a-d) and embrace, *inter alia,* a table and compilation, a computer program, etc. See ibid.

It is reasoned that as to 'literary work' as a term being defined, a viable method of tailoring a conception breaking the impasse should embody a composite expression supplying the definition.

In this connection, the affirmative ostensive element represents the list of borderline cases. Thus, it need not be complete and may conceptually evolve in the course of the development of the Information Society. As regards the second affirmative ingredient, the distinguishing features[542] may be altered and formulated in terms of the feasibility for a work to be printed.[543] This should in turn lead to the inclusion of the term 'artistic' within the formula of the negative ostensive sub-definition thus indicating the interdependence of the defining elements.

The role of the genus ('work') is, arguably, reinforced by the absence of an indication of a distinction between the notions of 'literary work' and 'performance' in the negative ostensive definition for a performance is not a work in the first place.[544]

Such a definitional mechanism may be supplemented with a negative verbal component to point out that a literary work need not convey meaning or be in words.[545] That is to say, there is no necessary connection between 'literary' as a term of art in copyright law and 'meaningful' as 'communicating meaning'.

This complex structure, in a sense, shuts the maxim *expressio unius est exclusio alterius* out of the protectability analysis since the express mention of a particular species or characteristic of literary works is made within this matrix on a complementary basis to fashion a flexible system.[546]

On the other hand, the method of contrast[547] or a variation on the theme of the maxim *exceptio probat regulam in casibus non exceptis* is intrinsic to this approach as embodied in the negative sub-definitions in that particularising exceptions to a rule clarifies it and specifies its applicability.

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[542] As distinct from the genus ('work'). Cf. Laddie et al, at 35 ('anything' as part of the proposed definition).

[543] See Laddie et al, at 35,38,39. (Cf. *University of London Press,*at 608.) Accordingly, compilations presented in pictorial form (see Copinger, at 62; Laddie et al, at 32; see also *Geographia Ltd v Penguin Books Ltd* [1985] FSR 208) would fit in with the described domain without being 'written, spoken or sung' or without stretching the meaning of the word 'written'. Cf. Monotti, A., "The Extent of Copyright Protection for Compilations of Artistic Works" [1993] EIPR 156. Cf. also Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 46. See also s. 10, the Australian Copyright Act 1968.

[544] Se also Laddie et al, at 39.

[545] See ibid., at 30, 34. However, it might be observed that, in the context of the programming/ programmatic narrative, the signification of 'meaning' can be drawn from the concept of computer languages' semantics.

[546] See also ibid., at 37. This approach may also pave the way for our nature/domain framework particularly with reference to the sub-domain structure. See subs. 2.6.2., below.

[547] See also Laddie et al, at 35.

The delineated framework, in effect, marks out the concept 'literary' resting on the notion 'work' as the above depicted genus. This underlines that the synergy of the elements of the general protectability formula does not imply that the facets of the respective constituents could be confounded. At the same time, if the term 'literary' *per se* is not conceptualised and such a formula as 'original mental contribution' represents the protectable subject-matter[548], there could be created a chain of uncertainties since any formula cannot be understood without perceiving the actual wording. As a corollary, the problem of conceptualisation is reintroduced as the general notion is only reformulated.

All in all, the term 'literary' in connection with a work denotes an attribution of such a work to the literary domain as related to the matter which is printed or may be potentially printed as long as the other conditions indicated within the above complex definition of 'literary work' are met.[549] It might also be observed that the word *literary* in this context might refer not only to printable matter, but also to literary as representable in any language, the latter being a system of signs or symbols within certain rules[550]. This implied matter is thus 'idiomatic' as referring to a form or variety of language. Printable, in this mode*,* may connote transcribable as amenable to being transcribed into some kind of notation (as opposed to being dependent upon a particular form of notation[551]) so long as such a notation is not musical. This may, in addition, facilitate the protectability analysis since any field (including the musical one) or sub-field (including the fold of programming) is easier to mark out if it is couched in terms of notation. Up to a point, transcribable along these lines elements of a (generally) non-literary (for instance, artistic) work may constitute a literary work. In exposing the common (here notational) nature of works, this approach, yet again, may form a bridgehead for abolishing the copyright classification altogether[552]. This

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[548] See ibid., at 29, 40, 41.
[549] As being, for instance, not 'dramatic', 'musical' or, indeed, 'artistic'.
[550] As to certain elements of conceptualisation regarding the notion of "text", notably with reference to the text/non-textual aspects distinction in the light of the construct of literary and pictorial compilations, see *Harper House, Inc. v Thomas Nelson, Inc.,* 889 F. 2d 197, 202-203, 205 (9th Cir. 1989); *Harper House, Inc. v Thomas Nelson, Inc.* (1991) US Dist. LEXIS 11790, at paras. 15-16. See also *Fabrica, Inc.* v *El Dorado Corp.,* F. 2d 890, 893 (9th Cir.1983).
[551] See also Laddie et al, at 30.
[552] See also Christie, A., "Reconceptualising Copyright in the Digital Era" [1995] EIPR 522, at 525. As to the principle of technological neutrality framed in terms of the merger of existing media and their traditional platforms, see Perlmutter, S., "Convergence and the Future of Copyright" [2001] EIPR 111, at 112, 115.

might be achieved, however, through analytic understanding but not for fear of exponentially increasing complexity.

Within this framework dealing with the nature of works and accommodating the domain structure of copyright, there could be no proviso *de minimis* with reference to the term 'literary' or the notion of literary work[553] as distinct from the application of the *de minimis* principle to the concepts of 'work' and 'original'.

2.6.2. The nature/domain framework.

It is to be taken into account that the exploration of the literary domain involves the appraisal of the attributes of a particular species[554] of this subgenus. Proceeding from differentiation of genus and species, this reasoning reflects some kind of definition by division[555], which might be notably suitable as the conceptual entities in question often do not represent exhaustive frameworks/lists of sub-categories. On the other hand, related subject matter can be held a literary work without being considered, for instance, a computer program as a complete and functioning set of instructions. Alternatively, such a work may still be categorised as a computer program for the purposes of copyright as capable of being used indirectly[556] or as preparatory design material for a computer program.

In this respect, there is a certain discrepancy between European and British copyright and moral rights systems. Whilst Software Directive describes the term 'computer programs' as including their preparatory design material[557], under CDPA preparatory design material for a computer program is assimilated to literary works as a distinct species of the latter.[558] As a result, under British doctrine the provisions related exclusively to computer programs[559] do not bear on the preparatory design material.[560]

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[553] Cf. Cornish, at 333.
[554] See also Laddie et al, at 834.
[555] It being an application of the concept of dichotomy.
[556] See s. 101, Title 17, USC (the definition of a computer program).
[557] See Art. 1 (1), Software Directive. See also Derclaye, E., "Software Copyright Protection: Can Europe Learn from American Case Law? Part 2" [2000] EIPR 56, at 57.
[558] See s. 3 (1) (c), CDPA. See also Bainbridge, at 52, 126.
[559] See, for instance, ss. 21 (3) (ab), 50A, 50B, 296 (A), CDPA. Arguably, the case of the exceptions to moral rights may be notably indicative. See ss. 79 (2) (a), 81 (2), CDPA.
[560] Cf. Bainbridge, at 52.

At the same time, any (including unfinished) material may be pigeon-holed by inferring from the analysis of the characteristics of the subject-matter lending themselves to a particular species (or subgenus[561]) of work, particularly in terms of the nature of the labour expended, thus building on the concept of work. In this regard, the concept of 'relevant labour'[562], to the extent that it describes the special character of the related labour[563], should be retrieved from the ambit of originality as such and re-established in the realm of the related domain principally to flesh out the notions of the copyrightable species making up the domain.

Such species may be called sub-domains within our *domain approach* that might be deployed in seeking to shed light on certain abstruse cases[564] where the categorisation of subject-matter is not clear from the analysis of the nature of the labour as the labour in question could manifest certain characteristics suitable for different types of work. Moreover, a work might be shifted from, say, 'literary work' to 'dramatic work' in virtue of certain aspects that might not necessarily affect the very nature of the labour.[565] In this regard, further conceptualisation may be framed at domain[566] or sub-domain[567] level.

On the other hand, such a shift from one domain (as a field of intellectual activity) or sub-domain (theoretically, there could be various degrees of specificity in defining such 'sub-fields') to another might be justified bearing in mind that the subject matter may take on different indicative nuances as contextualised.

To a certain extent, the role of the term 'domain' in the Berne text and context has been somewhat overlooked. However, generally the domain reasoning is reflected in the Berne paradigm. For instance, the use of the adjective 'scientific' alongside 'literary' and 'artistic' in the formula of Art. 2 (1)[568] might be put down to an

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[561] If not listed as part of the related affirmative ostensive definition.

[562] See Laddie et al, at 67, 216. See also *Cantor Fitzgerald International v Tradition (UK) Ltd* [2000] RPC 95, at para. 76; *Electronic Technique (Anglia) Ltd v Critchley Components Ltd* [1997] FSR 401; *Interlego AG v Tyco Industries Inc* [1988] RPC 343.

[563] As distinct from the originating character of the labour as part of the originality continuum.

[564] See also Dworkin in Hansen, at 171.

[565] See further Kamina, P., "Authorship of Films and Implementation of the Term Directive: The Dramatic Tale of Two Copyrights" [1994] EIPR 319, at 320. Cf. Ricketson, at 898. See also *Norowzian v Arks Ltd (No. 2)* [2000] FSR 363.

[566] See ss. 1 (1) (a), 3 (1), CDPA; 17 USC §§ 102 (a), 106 (4), (5). See also Cornish, at 336.

[567] See Art. 2 (1), Berne Convention; 17 USC §§ 110 (2), (3), (4), (8), 601 (a). See also House Report, at 53. See further Nimmer, at 2-61; Torremams, at 175.

[568] See Art. 2 (1), Berne Convention.

interpretation of the term 'domain' as referring to a 'field of intellectual activity'.[569] This reference to the scientific domain, by definition entailing emphasis placed on certain technical and practical skills and knowledge, might be notably material to the field of software.[570] Further, separately held various artistic and literary congresses leading up to the Berne Convention and the process of building up the International Literary and Artistic Association (ALAI)[571] may point to an established distinction between the respective fields of intellectual activity.[572]

This distinction coupled with the wording of the Berne formula ('literary and artistic works … production in the literary, scientific and artistic domain') might be construed in the sense that the scientific domain could be stratified as composed of literary and artistic elements[573]. These in turn might be viewed as the appendages (or sub-domains) suggesting the complex structure of the literary and artistic domains respectively and forming the relevant scientific strata thus indicating some kind of 'literary – scientific – artistic' continuum.

Accordingly, the same element could be seen as part of the scientific stratum of the literary domain and the literary stratum of the scientific domain. As to the problem of categorisation of works seemingly falling into the scientific domain, a solution to such a puzzle tends to lie in the sub-domain categorisation as also specifically shown in Chapter 4[574].

Further, gaining an insight into the nature of the labour provides guidance that cannot be overestimated.[575] Therefore, the domain formulae are worked out (and, as a result, the subject-matter is placed in the relevant domain) through examination of the related field of intellectual activity as amalgamated with the nature of the labour/result

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[569] Here, *science* as distinct from *literature* and *the arts*. The latter term in this context does not embrace literature but is hardly restricted to the fine arts. See also Ricketson, at 233. It is also reasoned that the idea of 'domain as a field of intellectual activity' is reflected in the definition of intellectual property enshrined in Art. 2, para. viii of the WIPO Convention (Convention Establishing the World Intellectual Property Organisation) 1967 ('…all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields').
[570] Cf. Ricketson, at 898-899.
[571] See Ricketson, at 45-48.
[572] Cf. Ricketson, at 232.
[573] See also Christie, A., "A Proposal for Simplifying United Kingdom Copyright Law" [2001] EIPR 26, at 35.
[574] See subs. 4.2.2..
[575] See also *Designer Guild Ltd.* v *Russell Williams (Textiles) Ltd.* [2001] FSR 113, at   .

analysis.[576] It is this 'domain/nature' system[577] that is referred to when the term 'domain' is used in this study.

2.6.3. Compilations in the realm of software.

Compilation analysis gives rise to two schemes of protection in the software context[578]. The first one mediates copyright in a suite of programs irrespective of the protectability of the individual programs making up the package.[579] On these lines, it was held in the landmark *Ibcos* case[580] that not only were the plaintiffs' programs copyrightable individually but also the whole suite ('Agricultural Dealer System') was copyright as a compilation and infringed by the defendants[581]. It was also observed, in this connection, that 'the putting together of the various programs…, by a kind of organic growth over the years, did result in a copyright work'[582].

On top of it, American copyright doctrine would appear to absorb the idea of compilation-type protection for a computer program as such[583] as well as input formats.[584] Such a framework has been considered consistent with 'object-oriented' design methodologies[585] arguably, not dealt with under the *Computer Associates* test.[586]

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[576] In distinguishing between specific areas of IP, the nature of labour is also a crucial factor, say, to differentiate between 'scientific works' and 'scientific discoveries'. See Art. 2, para.viii, the WIPO Convention. This role of the nature of labour is also reflected in the 'domain/field of target application' distinction. See further subs-s 3.4., 4.3.1.D.e, below.

[577] See further subs. 4.2.2., below.

[578] See also *Gates Rubber Co. v Bando Chemical Industries, Ltd .,* 9 F. 3d 823, 837 (10th Cir. 1993). As to the role of the notions of compilations and databases in the Web context, see MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, 2nd ed., at 190.

[579] See Bainbridge, at 51, 180; Torremans, at 497. Cf. *Total Information Processing Systems Ltd v Daman Ltd* [1992] FSR 171, at 179.

[580] See *Ibcos Computers Ltd v Barclays Mercantile Highland Finance Ltd* [1994] FSR 275 (an action for breach of confidence and infringement of copyright in respect of a packaged suite of accounting programs for agricultural dealership).

[581] See ibid., at 276, 289, 296.

[582] Ibid., at 304.

[583] See *Atari Games Corp. v Nintendo of America, Inc.*, 975 F. 2d 832, 840 (Fed. Cir. 1992).See further Derclaye, E., "Software Copyright Protection : Can Europe Learn from American Case law? Part 2" [2000] EIPR 56, at 59, 60, 62; Dworkin in Hansen, at 171; Nimmer, at 13-144 to 13-145; Wilkins, at 435. See also Cornish, at 446; Lai, at 168.

[584] See *Engineering Dynamics, Inc v Structural Software, Inc.,* 26 F. 3d 1335, 1346 (5th Cir. 1994).

[585] See Wilkins, at 468.

[586] See *Computer Associates v Altai*, 982 F. 2d 693 (2d Cir. 1992). For one of the related modifications of the *Computer Associates* doctrine, see Wilkins, at 446, 457-464, 467-469. For reconciliation between the *Computer Associates* test and the compilation doctrine, see also *Harbor Software, Inc. v Applied Systems, Inc.,* 925 F. Supp. 1042, 1047 (S.D.N.Y. 1996); *Softel, Inc. v Dragon Medical and Scientific Communications, Inc.*, 118 F. 3d 955 (2d Cir 1997).

Indeed, the application of object-oriented design, specific to a relatively new software paradigm emphasising the use of self-contained, interchangeable parts to construct large systems, may notably justify drawing an analogy between software and compilations.[587] However, the discrepancy understanding compilations under various copyright doctrines comes into play.

Compilations fall within the purview of the Berne Convention pursuant to the provision of Art. 2 (5).[588] Such works figuring in the text of the Convention since the Berlin Act[589] have been doctrinally classified as derivative works along with alterations such as translations, adaptations, etc. protected under Art. 2 (3).[590]

It is to be noted here that CDPA, also not mentioning the term 'derivative'[591], considers making a translation as an act of adaptation generally dealt with under the rubric 'the acts restricted by copyright in a work' whilst compilations, as indicated above, are categorised as literary works.[592] On the other hand, compilations and translations are often described as works derived from earlier material within the general analysis of copyrightability and originality.[593]

At the same time, under the US Copyright Act the line is drawn between derivative works and compilations.[594] A compilation, unlike a derivative work, consists of the selection, coordination and arrangement[595] of pre-existing material without any

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[587] See also Wilkins, at 454.

[588] The original French word 'recueils' is usually translated as 'collections'. For the nuances of the interpretation, see Ricketson, at 300.

[589] See Art. 2 (2), Berlin Act.

[590] The term 'derivative works' is not mentioned in the actual Berne text. See also Ricketson, at 238, 286, 290, 294, 298.

[591] See also Bently and Sherman, at 85; Copinger, at 187. Sometimes, the word 'derivative' is used to denote works of non-original descriptions. See Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 53. However, it should be taken into consideration that such works are not always based on works of the 'original' type, let alone 'original works'.

[592] See ss. 3 (1) (a), 16 (1) (e), 21 (3) (a) (i), CDPA. See also Laddie et al, at 112; Vaver, D., "Translation and Copyright: a Canadian Focus" [1994] EIPR 159.

[593] See, for example, Copinger, at 187; Laddie et al, at 52-55. For the seminal concept of protectability as to works based on pre-existing 'raw material', see *Macmillan,* at 118. See also Garnett, K., "Copyright in Photographs" [2000] EIPR 233, at 236.

[594] See s. 103, Title 17, USC. For expositions of the related theories, see Goldstein, P., "Derivative Rights and Derivative Works in Copyright" (1983) 30 J. Copyright Soc. 209; Nimmer, Chapter 3 ("Derivative and Collective Works", particularly at 3-5, 3-20). See also *Apple Barrel Prods. v* Beard, 730 F. 2d 384, 387-388 (5th Cir. 1984); *Harper House, Inc. v Thomas Nelson, Inc.,* 889 F. 2d 197, 204, 205, 206 (9th Cir. 1989); Note, "Gone With the Wind Done Gone: "Re-writing" and Fair Use" (2002) 115 Harvard Law Review 1193. See further House of Representatives Report, No 94-1476 (1976) 94th Congress, 2d Session, at 57-58.

[595] These criteria are not applicable to the same extent in British copyright (see also Copinger, at 112-114) whilst 'selection' and 'arrangement' operate in the 'intellectual creation' analysis with reference to

internal changes and regardless of the copyrightability status of the individual items in the material.[596] However, collective works, that are subsumed into the category of compilations, are defined as works in which contributions constituting separate and independent works in themselves are assembled into a collective whole.[597] In contrast, under British law no particular category of work is tied up with the copyrightability of the underlying material.[598]

As to 'collective works', a suggestion made at the time of the Brussels revision of the Berne Convention to introduce such a construct in lieu of 'collections' was rejected on account of the connoted reference to works by several authors which was detected in the expression 'collective works'.[599] In fact, according to CDPA, the term 'collective work' embraces works of joint authorship and co-authorship.[600] Nonetheless, in the eyes of American copyright, collective works may comprise 'collections of the discrete writings of the same authors'.[601]

In this context, the British approach to derivative works[602] and compilations should be further refined. Related conceptions, it is submitted, might be to some extent modelled on the outlined US framework with some alterations doctrinally justified under British copyright.[603]

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compilations/collections under the Berne Convention. See Art. 2(5), the Berne Convention. See also Ricketson, at 298, 301. Under US copyright, the term 'derivative work' embraces, *inter alia* , translations and works adapted from pre-existing works. See s. 101, Title 17, USC. See also Ginsburg, J., "Putting Cars on the 'Information Superhighway': Authors, Exploiters and Copyright in Cyberspace" in Hugenholtz, at 204; Rubenfeld, J., "The Freedom of Imagination: Copyright's Constitutionality" (2002) 112 The Yale Law Journal 1, at 49.

[596] See 17 USC § 101. See also Nimmer, at 3-4 to 3-5. Cf. *Harbor Software, Inc. v Applied Systems, Inc.,* 925 F. Supp. 1047-1048 (S.D.N.Y. 1996).

[597] See 17 USC § 101. See also House of Representatives Report, No 94-1476 (1976) 94th Congress, 2d Session, at 122-123. See also Ginsburg, J., "Putting Cars on the 'Information Superhighway': Authors, Exploiters and Copyright in Cyberspace" in Hugenholtz, at 196.

[598] See also Laddie et al, at 55. Protection of collections of non-copyright material as not covered by the provision of Art. 2 (5) of the Berne Convention has been left as a matter for national legislation. See also Ricketson, at 302-303.

[599] See Ricketson, at 300.

[600] See ss. 10, 178, CDPA. See also Copinger, at 200. Further, the term 'collective work of reference' covers an encyclopaedia, dictionary, yearbook, etc. (See ss. 79 (6) (b), 81 (4) (b), CDPA.) These are juxtaposed with a newspaper, magazine or similar periodical (see ss. 79 (6) (a), 81 (4) (a), CDPA) previously also explicitly incorporated in 'collective works' under the 1911 Act. (See s. 35 (1), the Copyright Act 1911.) Interestingly, encyclopaedias and anthologies are included in the formula of Art. 2 (5) of the Berne Convention whilst 'periodicals' are not used in the actual wording but generally regarded as being capable of falling within the scope of the provision. See Ricketson, at 301-302.

[601] House of Representatives Report, No 94-1476 (1976) 94th Congress, 2d Session, at 122. See also Nimmer, at 3-7.

[602] Cf. *Designers Guild Ltd v Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2433 ("derived from" as "not original").

[603] Further, such doctrinal 'impurities' (from the vantage point of UK law) as the idea-expression dichotomy (see chapter 3, below) and the theory of choice are also to be eliminated from the

To that end, within the ambit of compilations there could be identified at least two subgenera in addition to a compilation as such. The first might be depicted as *'composition'* coming down to placing an element of a pre-existing work in a different context.[604] As to the second, *'rearrangement',* its merit may reside in an arrangement of the component parts previously juxtaposed in a different way within an antecedent work.

Subject to the emphasis, which can be placed on the work as a system or on a substantial part of it, the umbrella terms for the three species of compilations[605] could be, to highlight the related distinctive features, 'combination works'[606]or ' contextual works'[607] respectively.

Alternatively, paying special heed to the above categories as receptacles for the aforementioned characteristics, *compositions* and *rearrangements* could be recognised as separate subgenera of works within the meaning of the proposed generic terms to illuminate the concept of derivative works[608].

Bearing in mind that under CDPA compilations constitute a separate species of literary works irrespective of the nature of the elements combined[609], it would be accurate to stipulate that the provisions related exclusively to computer programs are not to be applied to compilations in the realm of software even if selection and arrangement form the only protectable subject-matter.[610]

However, taking into account some peculiarities of software design reflecting the coexistence of top-down and object-oriented methodologies, it would not seem unwarranted to recognise a hybrid (compilation/computer program) form of protection that may entail extended application of the above special provisions. In this connection, a software system of systems (as distinct from a system of subsystems) would notably benefit from its protection being moulded round this hypothetical species of work for the combined systems could be built at different times for different

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compilation analysis. Cf. Wilkins, at 437-438 and 448-452 respectively. As to theorisations under Australian copyright, see Aplin, T., "When Are Compilations Original?" [2001] EIPR 543.

[604] The context may be taken from a separate source or originated. Cf. Nimmer, at 3-7, 3-10.

[605] If 'compilation' as such is perceived in a way analogous to the US doctrine.

[606] Pointing out the combination of the constituent parts within a work.

[607] If originality of the respective parts lies in the relevant context whilst non-original labour may reside elsewhere. See also Laddie et al, at 212.

[608] It is also to be accommodated that a machine code can be, in a sense, considered a derivative work. See, for instance, *Computer Edge Pty Ltd v Apple Computer Inc* (1984) 53 ALR 225. See further subs. 4.3.1.C.c, below.

[609] See also Laddie et al, at 32. As to an American reasoning, see *Harper House, Inc. v Thomas Nelson, Inc.,* 889 F. 2d 197, 203 (9th Cir. 1989).

[610] See also Wilkins, at 436, 448.

purposes in different environments. Such a framework may be of assistance in further elaborating the literary domain within the general copyrightability paradigm as examined in this section.

2.7. Systematisation.

It has been reasoned in this chapter that the construct 'work (or production) constituting an intellectual creation' within the Berne paradigm may be seen, *mutatis mutandis,* as a conceptual counterpart of 'a work of a copyrightable description' under British copyright for both the formulae depict the stage of the protectability analysis before the examination of the qualification status and without specifying a particular domain. The notion 'work of a copyrightable description' is seen in this context as an intermediate stratum between the concepts of work and original literary work.

As to the notion of 'work' in respect of the first category the threshold of non-triviality ('not completely unimportant'), as distinct from the criterion of non-commonplace within the fold of originality proper, may (as a form of the 'non-insignificance' standard) serve as an ingredient of a *de minimis* formula in this context. It is also to be reiterated that the more than *de minimis* criterion should be met with reference to both labour/skill and the result of such to constitute a work as a not trivial result of not insignificant labour, skill or judgment. 'Trivial', on these lines, is construed as an antonym of 'important' and described in terms of the result or *status* in the *domain* context. An element of serendipity may also be part of this formula. However, to secure originality, an intention to produce a work should be identifiable, although not necessarily as regards each and every facet of it. It is also submitted that the deployment of financial resources may be made allowance for within this framework.

Judging from the description of 'author' in CDPA, the implied presumption of not insignificant labour as to the second copyright category could be identified and utilised in building up the concept of 'work'. A certain 'depersonalisation' of subject matter and separation of a work from its originator flowing from the absence of the requirement of originality is logically mediated by the fact that the author of a non-original work is identified according to a legal fiction. The latter is largely for the construct of labour, skill and investment to be distilled into the abstraction which can be read as 'responsibility' and employed to single out the relevant type of person.

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This also reflects the concomitant division within the notion of work or a shift of emphasis within the expression 'result of labour'. More specifically, the 'not trivial result' as distinct from 'not insignificant labour' is what is protected directly, whereas the foregoing legal fiction entails labour, skill and investment admittedly residing in the types of persons representing the notion of 'author'.

It is reasoned that the labour/skill concept, equipped with its own links and criteria and reflected in various notions and analytic formulae, regains its identity and may account for the performative nature of the intangible encapsulated in the process of creation. At the same time, the nexus between labour and result may reconcile the dynamic and the static within the remit of copyright.[611]

To encapsulate our reasoning in the case of original types of works, the accent as a requirement of non-insignificance flows or shifts alternately within the construct 'result of labour'. In this connection, it is the author's 'not insignificant' labour shaping the 'not trivial' result which matters, and it is the 'not trivial' result produced by the 'not insignificant' labour expended by the author which counts. A clearly integral labour/result system is formed on this basis.

It is submitted that this formula as well as the criterion of 'non-insignificance' as such and the systematic elaboration of the elements of copyright subsistence may justify a 'disjunctive' reading of the 'labour, skill or judgment' construct thus suggesting a certain interchangeability as to, say, 'labour' and 'skill'. At the same time, arguably, only in connection with the above 'financial' elements of the formula, a 'disjunctive' reading may fly in the face of the nature of the modern copyright law. Therefore, such an ingredient as 'capital' might be used on a complementary basis.

At the same time, on account of the *isolation* of the elements of the formula within the ambit of non-original works the 'non-insignificance' requirement is anchored to the result in each case couched in terms of the respective statutory definitions[612].

Within this matrix, the above presumption completes the framework: the presumed not necessarily 'independent' labour effectively lies dormant for it is not protected directly. It is activated in being protected in the form of the result and in the rights of the author. This schema highlights the link between copyright subsistence and

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[611] See further Sherman and Bently, at 4, 43, 47, 49, 173-175, 195, 200.
[612] See also *Data Access Corp.* v *Powerflex Services Pty Ltd* (1999) 73 ALJR 1435, at 1444-1445.

authorship so that the nature of the latter could be described as mediating and delineating the personification of the construct 'labour/skill-responsibility'.

In a sense, the protection limited to signal and image up to a certain point renders the requirement of originality extraneous. By the same token, the absence of the requirement spells a certain depersonalisation thus setting the stage for the direct protection of the result of labour in the form of signal and image. At the same time, the labour is relocated to the realm of authorship through a legal fiction.

Further, in contrast with non-original works, in the case of a computer-generated work the issues of 'non-insignificance' and 'source' of the labour ought to be considered as integral to the status of the material as a *work* and an *original work* respectively.

In this regard, 'depersonalisation' springs not from the absence of the requirement of originality but from a lack of, by definition, 'a human element' or 'person', as it were. From the vantage point of copyright, the nub of this situation is that there is a direct correlation between formulating the notion of computer-generated works and marking out the copyrightable computer-generated material. On top of this, the category of works of joint authorship should be directly provided for with reference to the issue under consideration to address the concept of hybrid (human/computer generated) works.

Along these lines, the relevant statutory provision might read:

'Computer-generated', in relation to a work, means that the work is generated by a computer in circumstances such that the human contribution, if any, is separable. This contribution shall not be considered part of a computer-generated work.

To be copyright such works are to satisfy the criteria of the respective types of original works.

If the respective contributions are not distinct from those of the other authors so that at least one of the authors may be identified pursuant to s. 9(3), a work of joint authorship shall be recognized under s. 10(1).

Against this background the nuances of the computer-related categories are transposed into the realm of copyright subsistence. Consequently, the substantial differences are accentuated in re-emerging as follows: the contribution attributable to a computer within computer-aided subject-matter is not apt to pass the thresholds of both 'work' and originality.

If the contribution attributable to a computer is not distinct and the notion of work of joint authorship comes into play, it is to be taken into consideration that the quality of being 'not distinct' from the other contributions characterises the *result* of labour, whilst the labour proper is supposed to be somehow shared or divided up between the joint authors. Nonetheless, the labour and skill need not be of the same kind. Therefore, it is the 'non-distinct' (in the above sense) result produced by the shared labour which counts thus reinforcing the interpretation of *work* as the result of labour as a system. It is pointed out that the distinct results of shared labour may constitute a work of co-authorship as a species of collective works.

With reference to the species of the original types of works three interrelated criteria are to be met to attract copyright protection:

1. The threshold of *work* common, *mutatis mutandis*, to both categories.

2. The criterion of the relevant domain construed within the nature/domain template.

3. The requirement of originality.

It may be noted here that varying combinations of the attributes of the last two criteria make up the concept 'copyrightable description' framed on the above lines subject to contextualisation.

Further, the projection of the composite nature of the notion *original literary* (dramatic, musical or artistic) *work* is pivotal to piece together the concept of protected subject-matter. So far as an original literary work is concerned, conceptual synergy can be achieved by a *modus operandi* which entails passing sequentially the relevant thresholds. Only to the extent that the material passes these <u>thresholds as a system</u> may it acquire copyright.

It has been shown that within the originality framework the formula 'not copied from another work' cannot be equated with 'not copied from the work of another author'. Furthermore, this suggests that 'originality' cannot come down to the concept of 'personality'. On the other hand, the converse chain of causation (from the absence of the personality doctrine in common law jurisdictions) may also be followed. The non-personality approach is also justified by the fact that the originating person may, in addition, copy some other elements.

So far as the modern publication right is concerned, it is logical that, as to the notion of work, the Copyright and Related Rights Regulations do not discriminate between the works that were in their previous 'incarnations' copyright as the species of the original or non-original categories respectively. It is the characteristics of being

taken from the public domain (reflecting its narrower contours) or 'copied from another ('non- (as post-) copyright') work which might wipe out the difference coming down to originality.

In the field of software, a computer program may also enter the public domain as free software, 'open source', or public domain software. Within this framework, the term 'public domain' may refer not only to material not covered by copyright or other property rights such as the publication right but also to freely available though protected works, notably with reference to the abstract of copyleft.

In this regard, the notions 'copied from another work' and 'taken from the public domain' may, in some measure, overlap and the related subject-matter can be placed on a continuum from infringing to taken from the material which could not attract any intellectual property protection.

On top of it, unlike some of the other reflections of the *de minimis* principle such as 'too small' a subject-matter or 'slight degree of literary composition' the threshold of non-commonplace can be avowedly placed in the realm of originality. Along these lines, 'commonplace' is synonymous with (too) 'frequent' or 'ordinary' and can be read as an antonym of 'original'.

In this connection, imparting to the product the quality of accessibility can be construed as serving to 'originate something' or 'originating'. As a result, the criteria of 'not taken from the public domain' and 'originating' overlap. This extends the aforesaid continuum which is effectively the threshold 'originated from the author of the work' composed of three correlative elements in a sense flowing into one another: 'not copied from another copyright work', 'not taken from the public domain' (the *negative criteria*), and 'evincing the originating properties' (the *affirmative criterion*).

In drawing the parameters of a protectable original work under the umbrella of copyright nomenclature, not only the notion of 'originality' but also the notion of 'work' as copyright terms of art should not be confused with the use of such words in popular speech. Accordingly, for the purposes of copyright, the boundaries of a literary work do not necessarily coincide with the margins of the text, as it were. It would seem accurate to drop the formula 'copyright as a whole' and replace it with the phrase 'copyright as' (a compilation or otherwise), subject to the characteristics of the work. It might be thus emphasised that the copyright extends only to the author's contribution (primarily as 'not taken'). In this regard, if all the material is original with

the author, copyright subsists in each version in isolation. This schema is here depicted as the 'isolated versions' approach.

Alternatively, there could exist circumstances where a detected intention to produce the work might suggest the originating character of the related labour. If such an ultimate intention is common to the versions in question, these might be considered parts of the same transaction or the embodiments of the same, in essence, labour. That is, the end result, including the elements derived from the antecedent versions, could be deemed original as evolved (remaining essentially the same) through several stages. This reasoning is described in this thesis as the 'evolving work' approach.

It is reasoned that with reference to the criterion of originality, the above 'isolated versions' approach would seem more consistent as not equating the concept 'not copied from another work' with 'not copied from the work of another author' regardless of the circumstances of the case. Only the above intention may 'stick' the versions together and thus tip the balance in favour of the 'evolving work' approach.

It would appear that British copyright has lost its coherence on such an issue as originality in view of the European threshold framed as the author's own intellectual creation and introduced in the fields of databases, computer programs, and certain photographs.[613] This criterion has been transposed into the CDPA 1988 only with reference to databases.[614] It might be argued that the European yardstick of originality was not legislatively implanted into the British formula of computer programs' copyright because the position in the UK prior to the implementation of the Software Directive was already similar to the position required under Community law.[615]

On these lines, the fact that the originality requirement of the 1988 Act in relation to databases explicitly includes the new formula can be mapped onto the actual origins of this change. More specifically, the Database Directive and the UK Database Regulations introduced a two-tier system: the modified copyright protection for databases with the new originality criterion and a new *sui generis* right known as the database right.[616] It is this juxtaposition of rights that might possibly be responsible for the 'special case' of databases as regards the standard of the author's own

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[613] See Art. 1 (3), the Software Directive; Art. 6, Recital 17, the Duration Directive; Art. 3 (1), Recitals 15, 16, the Database Directive. See also Bently and Sherman, 2nd ed., at 88-89, 101-106.
[614] See s. 3A (2), CDPA. See also reg. 6, the Copyright and Rights in Databases Regulations 1997, SI 1997/3032.
[615] See also Bently and Sherman, 2nd ed., at 103.
[616] See Art. 7, Recitals 39, 40, the Database Directive; reg. 13, the Copyright and Rights in Databases Regulations 1997, SI 1997/3032.

intellectual creation. In this context, s.3A(2) points out the principal distinctive feature of the copyright tier.[617]

Furthermore, it is not surprising that some commentators nearly equated the criterion of the author's own intellectual creation with the common law standard of originality. Other writers characterised the new EC test as a compromise between the existing originality criteria. It cannot be ruled out that the ECJ will eventually decide on the standard that prevails.[618] At the same time, the ambiguity of the new requirement in terms of its wording and doctrinal lineage as well as the conspicuous absence of proceedings brought before the ECJ on this subject may indicate that interpretative flexibility was intended by the Community legislator.

It is clear from the analysis carried out in this study that the terms constituting the author's own intellectual creation can be construed as consistent with the corresponding elements of the UK standard. It is of paramount importance how the national courts will read the formula. If the ECJ comes up with the final exegesis of the test, British copyright should be prepared for such an eventuality. To minimise possible destructive effects, it is necessary to demystify the identity of domestic copyright law and its internal workings. A clear and accurate representation of the law can be obtained through continuous systematic analysis. In the meantime, we would agree with Professor Karnell that 'national laws are free to develop originality wording at will, as long as the legislators and courts take care [to use] … a prescribed "mantra" for originality'.[619]

The so-called 'theory of choice' has played a key role in the development of European doctrines of originality. At the same time, in our estimation, the existence of the only or, as a variation on this theme, a limited number of ways to express the idea cannot invalidate the originality of a computer program even within the 'creativity' framework.

It is observed that, in spite of the incorporation of computer programs into the category of literary works, the logical tension between the concepts constituting 'original literary work' bears on the status of software not only generally or contextually. That is, the positioning of certain elements within the scope of 'literary'

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[617] See also Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 217; Bently and Sherman, 2nd ed., at 298.
[618] See Bently and Sherman, 2nd ed., at 102.
[619] Karnell, G., "European Originality: A Copyright Chimera" in Kabel and Mom, at 208-209.

may result in leaving such matters out of the generality of originality *per se* and, by implication, the software originality analysis.

It is reasoned that CDPA purports to lay down a synthesised definition of literary work. In this context, the statutory formula is composed of three statements. These sub-definitions may be characterised as follows: negative ostensive, affirmative verbal and affirmative ostensive respectively.

As to 'literary work' as a term being defined, a viable method of tailoring the conception breaking the impasse should embody a composite expression supplying the definition.

In this connection, the affirmative ostensive element represents the list of borderline cases. Thus, it need not be complete and may conceptually evolve in the course of the development of the Information Society. As regards the second affirmative ingredient, the distinguishing features may be altered and formulated in terms of the feasibility for a work to be printed. This should in turn lead to the inclusion of the term 'artistic' within the formula of the negative ostensive sub-definition thus indicating the interdependence of the defining elements.

The role of the genus ('work') is, arguably, reinforced by the absence of an indication of a distinction between the notions of 'literary work' and 'performance' in the negative ostensive definition for a performance is not a work in the first place.

Such a definitional mechanism may be supplemented with a negative verbal component to point out that a literary work need not convey meaning or be in words. That is to say, there is no necessary connection between 'literary' as a term of art in copyright law and 'meaningful' as 'communicating meaning'.

The delineated framework, in effect, marks out the concept 'literary' resting on the notion 'work' as the depicted genus. This underlines that the synergy of the elements of the general protectability formula does not imply that the facets of the respective constituents could be confounded. At the same time, if the term 'literary' *per se* is not conceptualised and such a formula as 'original mental contribution' represents the protectable subject matter, there could be created a chain of uncertainties since any formula cannot be understood without perceiving the actual wording. As a corollary, the problem of conceptualisation may but be reintroduced when the general notion is only reformulated.

All in all, the term 'literary' in connection with a work denotes an attribution of such a work to the literary domain as related to the matter which is printed or may be

potentially printed so long as the other conditions indicated within the above complex definition of 'literary work' are met. Printable is perceived here as connoting transcribable in the sense explicated in this chapter. On these lines, there could be no proviso *de minimis* with reference to the term 'literary' or the notion of literary work as distinct from the application of the *de minimis* principle to the concepts of 'work' and 'original'.

This study also formulates a *de maximis rule*. Generally, such a rule might determine the non-protection of objects that are 'too big' to be protected/privatised. In the realm of IP the *de maximis* rule may be illustrative of the concept of extraordinary ideas.[620] In the context of copyright, the *de maximis* in the form of 'too widespread' almost collapses into the *de minimis* 'too commonplace'. Thus, extremes meet, opposites nearly coincide or become two sides of the same coin. Statically, the corresponding test formulae of *de minimis* and *de maximis* could be framed in pairs of semantic mirror images or extremes marking the outer limits of copyright. That is, the *de maximis* criteria of labour, result and originality can be read as antonyms of insignificant, trivial and commonplace respectively. Then, each standard is to be further interpreted to the highest degree of the quality in question. More specifically, intellectual labour which can be viewed as *de maximis* should be expended on a certain project on a grand or global scale (estimated qualitatively and/or quantitatively). Similarly, 'trivial' is to be reversed as 'too important', while 'commonplace' can be turned round as 'too unique' or representing singularity. Without an established *de maximis* tenet it is only fortunate that such an extraordinary idea/work as World Wide Web was declared freely usable. In analytical terms, the *de maximis* concept mirrors the *de minimis* principle and restores some kind of doctrinal and policy symmetry if, in specific circumstances, it is preferred to the arguments for copyright protection put forward under the general justificatory (particularly, incentive-based) theories.

It is also to be taken into account that the exploration of the literary domain involves the appraisal of the attributes of a particular species of this subgenus. To a certain extent, the role of the term 'domain' in the Berne text and context has been somewhat overlooked. However, generally the domain approach is reflected in the Berne paradigm. It is reasoned in this context that the scientific domain could be

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[620] See further Hughes, at 319-321.

stratified as composed of literary and artistic elements. These in turn might be viewed as the appendages (or sub-domains) suggesting the complex structure of the literary and artistic domains respectively and forming the relevant scientific strata thus indicating some kind of 'literary – scientific – artistic' continuum.

Within this framework, the domain formulae are worked out (and as a result the subject-matter is placed in the relevant domain) through examination of the related field of intellectual activity as amalgamated with the nature of the labour/result analysis. It is this 'domain/nature' system that is referred to when the term 'domain' is used in this study.

Compilation analysis gives rise to two schemes of protection in the software context. The first one mediates copyright in a suite of programs irrespective of the protectability of the individual programs making up the package. On top of it, American copyright doctrine would appear to absorb the idea of compilation-type protection for a computer program as such as well as input formats.

In this context, the British approach to derivative works and compilations should be further refined. Related conceptions, it is submitted, might be to some extent modelled on the US framework with some alterations doctrinally justified under British copyright.

To that end, within the ambit of compilations there could be identified at least two subgenera in addition to a compilation as such. The first might be depicted as '*composition*' coming down to placing an element of a pre-existing work in a different context. As to the second, '*rearrangement*', its merit may reside in an arrangement of the component parts previously juxtaposed in a different way within an antecedent work.

Subject to the emphasis, which can be placed on a work as a system or on a substantial part of it, the umbrella terms for the three species of compilations could be, to highlight the related distinctive features, 'combination works' or 'contextual works' respectively. Alternatively, paying special heed to the above categories as receptacles for the described characteristics, compositions and rearrangements could be recognised as separate subgenera of works within the meaning of the proposed generic terms to illuminate the concept of derivative works.

Bearing in mind that under CDPA compilations constitute a separate species of literary works irrespective of the nature of the elements combined, the provisions related exclusively to computer programs are not to be applied to compilations in the

realm of software even if selection and arrangement form the only protectable subject-matter.

However, taking into account some peculiarities of software design reflecting the coexistence of top-down and object-oriented methodologies, it would not seem unwarranted to recognise a hybrid compilation/computer program form of protection that may entail extended application of the special provisions.

As to the general concept of copyright subsistence, the diagram below graphically illustrates the structure of the notion 'work' under British copyright as deduced from the analysis carried out in this chapter.
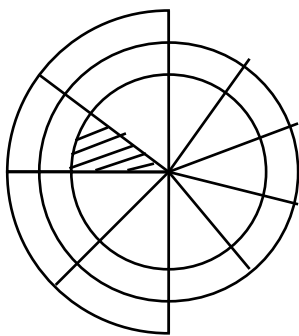
Figure 1.

The word 'work' in this context may stand for 'works' or 'a work'[621], taking into consideration that within a work as the result of diverse intellectual efforts (labour, skill, etc) there could be divers works, notably in the context of the isolated versions approach, or if the nature/domain framework is not fully utilised.[622] A work, in this regard, is homogeneous as a result of intellectual efforts and heterogeneous as a result of diverse intellectual efforts. It should be borne in mind that not every work of a particular copyrightable description[623] receives copyright protection since the related requirements are to be met. With reference to the diagram, in considering the concentric circles along these lines, the outer circle represents 'work of a copyrightable description' and the inner circle 'copyright work'.[624] Further, the vertical line splits the chart in two. The right part is in turn divided into five congruent sectors corresponding to non-original types of works.[625] The left part is divided into

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[621] These terms are employed in this subsection interchangeably if not specified otherwise.
[622] Whether at the same time such works could be deemed *substantial parts* of the work (of the copyright work if the relevant criteria are satisfied) is discussed in subs. 4.2., below.
[623] See also s. 1 (1), CDPA.
[624] See s. 1 (2), CDPA.
[625] See s. 1 (1) (b) (c), CDPA.

four sectors to reflect the structure of s. 1(1)(a).[626] In addition, the respective halves of the above circles are subsumed into the larger semicircle to indicate that not every 'result of labour in a particular domain' is original.

Within this pattern, 'copyright original literary work' is represented by the shaded area which is part of the sector 'original literary work' (as one of the copyrightable descriptions). The latter is in turn a subset of the sector 'literary work'.

The structure of the diagram may also be depicted as some kind of *palimpsest*. Taking into account that the above larger semicircle represents the umbrella concept embracing the descriptions of the relevant domains as to the first category of works, the related sector-layer showing the concept 'literary' is superimposed on the lowest 'stratum' drawn in the form of the diagram marking out the notion 'work' as such.

In this connection, the left semicircle of the outer circle[627], which stands for 'originality' as the remaining characteristic of the copyrightable descriptions, and the inner circle, which represents the aforementioned additional copyrightability requirements/criteria[628], constitute the upper layers of the palimpsest.[629]

In a sense, if we could add some colour, the undertones of these layers would all combine in the above shaded area.

This might be seen as emblematic of the copyrightability framework within which the conceptualisation of the elements of the general formula and the combined effect of the constituents are kept in equilibrium.

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[626] See s.1 (1) (a), CDPA.

[627] The right semicircle here indicates the domain descriptions in regard to the second category of works.

[628] There could be a separate layer-requirement regarding literary, dramatic and musical works as stipulated in s. 3 (2), CDPA.

[629] The structure of the general copyrightability formula (as regards the first category) as such is, of course, restricted to three layers (thus excluding the additional requirements/criteria). If this conceptualisation is deployed with reference to the first category of works in general, the intermediate sector-layer is extended to the semicircle-layer 'descriptions of the relevant domains'.

CHAPTER 3

SUBSISTENCE OF COPYRIGHT IN ELEMENTS OF

A COMPUTER PROGRAM.

THE IDEA-EXPRESSION DICHOTOMY: DECONSTRUCTION.

3.1. Background of the discourse.

The notion of ideas was inaugurated by Plato[630] (here one could not help going along with Cicero's *instar omnium*) to become an inherent part of Western philosophical tradition. In the context of the legal history of the concept, presumably traceable to the time of Seneca's "Moral Epistles"[631], it can but scarcely be illustrated by Whitehead's aphorism about 'a series of footnotes to Plato'.[632]

The related discourse unfolding along the lines of the philosophy of law and property as well as jurisprudence of intellectual property[633], ordinarily invoking Hegelian[634] and Lockean[635] constructs, has brought in its train indicative conceptual, etymological and semantic perplexity. Various legal (academic, judicial, and

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[630] See Hamilton, E. and Cairns, H., (eds.), *The Collected Dialogues of Plato*, Princeton University Press, 1961; Ross, W., *Plato's Theory of Ideas*, Greenwood Press, 1976; De Botton, A., *The Essential Plato*, TSP, 1999.

[631] See Nimmer, M., "The Law of Ideas" (1954) 27. S. Cal. L. Rev. 119. See also Sorensen, V., *Seneca: The Humanist at the Court of Nero*, Canongate Publications, 1984.

[632] See Whitehead, A., *Process and Reality*, Macmillan, 1979.

[633] See Baird, D., "Common Law Intellectual Property and the Legacy of International News Service v. Associated Press" (1983) 50 U. Chil. Rev. 411; Goldstein, P. and Shapo, H., *Copyright, Patent, Trademark and Related State Doctrines*, Foundation Press, 5th ed., 2002; Hettinger, E., "Justifying Intellectual Property" (1989) 18 Philosophy & Public Affairs 31; Hughes, J., "The Philosophy of Intellectual Property" (1988) 77 Geo.L.J.287 (hereinafter "Hughes"); Prager, B., "The Early Growth and Influence of Intellectual Property" (1952) 34 J. Pat. Off. Soc. 106.

[634] See Hegel, G., *Philosophy of Right*, Oxford University Press, 1968. See also Berki, R., "Political Freedom and Hegelian Metaphysics" (1968) 16 Pol. Stud. 365; Drahos, P., *A Philosophy of Intellectual Property*, Aldershot, Dartmouth, 1996, at 73, 82; Ilting, K.-H., "The Structure of Hegel's 'Philosophy of Right" in Pelczynski, Z. (ed.), *Hegel's Political Philosophy: Problems and Perspectives*, Cambridge University Press, 1971; Knowles, D., "Hegel on Property and Personality" (1983) 1 Phil. Q. 3, at 45, 48; Radin, M., "Property and Personhood" (1982) 34 Stan. L. Rev. 103.

[635] See Locke, J., *Two Treatises of Government*, Cambridge University Press, 2000. See also Ashcraft, R., *Locke's Two Treatises of Government*, Unwin Hyman, 1987; Ayers, M., *Locke: Epistemology and Ontology: The Arguments of the Philosophers,* Routledge, 1999; Becher, L., "The Labor Theory of Property Acquisition" (1976) 73 J. Phil. 653; Drahos, P., *A Philosophy of Intellectual Property*, Aldershot, Dartmouth, 1996, at 41, 54; Ellerman, D., "Property and the Theory of Value" (1985) 16 Phil. Q. 293; Epstein, R., "Possession as the Root of Title" (1979) 13 Ga. L. J. 1221; Hamilton, E., "Property-According to Locke" (1932) 41 Yale L. J.; Mautner, T., "Locke on Original Acquisition" (1982) 19 Am. Phil. Q. 259; Rowen, H., "A Second Thought on Locke's First Treatise" (1956) 17 J. Hist. Ideas 130.

legislative) inquiries, up to a point instrumental in the narratives involved, have centred upon the so-called 'idea-expression dichotomy'.[636]

Within this framework, the method used in this chapter in conjunction with doctrinal techniques could be perceived as 'deconstructive reading'. Such a mode of analysis is congruent with the dichotomy which can be viewed as a classic[637] case of fundamental conceptual opposition analogous to those identified by Derrida[638]. It should be accommodated, in this connection, that in the field under consideration there is a plethora of self-contradictory texts from diverse quarters to sift through. The related pieces of legal writing can be subjected to 'turning against themselves' to diagnose the doctrinally implied nature of the distinction[639].

The evolution of the continuum[640] within the ambit of intellectual property culminated in TRIPs Agreement of 1994[641]. It would seem that the worldwide legal discussion was brought to an end when the idea/expression abstract was enshrined in WIPO Copyright Treaty[642]. However, given the advent of the Information Society, it is submitted, the arguments put forward by the advocates of the dichotomy merit

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[636] If it is not indicated otherwise, hereinafter the 'dichotomy', 'distinction' or 'doctrine'. For the philosophy of dichotomies, see Cruz, A., "What's the Big Idea Behind the Idea-Expression Dichotomy?- Modern Ramifications of the Tree of Porphyry in Copyright Law" (1990) 18 Flo. St. U. L. Rev. 221 (hereinafter "Cruz"), at 224-228.

[637] Albeit represented, as shown in this chapter, in rather a philosophically unorthodox way, as it were.

[638] For instance, speech-writing, soul-body, literal-metaphorical. See Bernasconi, R. and Wood, D., *Derrida and Différance,* Northwestern University Press, 1988*;* Culler, J., *On Deconstruction: Theory and Criticism after Structuralism,* Cornell University Press, 1983*;* Derrida, J., *Margins of Philosophy,* University of Chicago Press, 1984; Derrida, J., *Of Grammatology,* Johns Hopkins University Press, 1998; Derrida, J., *'Speech and Phenomena' and Other Essays on Husserl's Theory of Signs*, Northwestern University Press, 1973; Derrida, J., *Writing and Difference,* University of Chicago Press, 1978; Goodrich, P., "Europe in America: Grammatology, Legal Studies, and the Politics of Transmission" (2001) 101 Columbia LR 2033; Hobson, M., *Jacques Derrida: Opening Lines,* Routledge, 1998; Johnson, C., *Derrida*, Routledge, 1999; Norris, C., *Derrida,* Harvard University Press, 1988; Norris, C. and Roden, D., *Jacques Derrida*, Sage Publications, 2002; Norris, C., *Deconstruction: Theory and Practice,* Routledge, 1991; Sallis, J., *Deconstruction and Philosophy. Texts of Jacques Derrida*, University of Chicago Press, 1989.

[639] See also Nimmer, at 2-204.8; Samuels, E., "The Idea-Expression Dichotomy in Copyright Law" (1989) 56 Tenn. L.R. 321.

[640] See Knowles, A. and Palmieri, A., "Dissecting Krofft: An Expression of New Ideas in Copyright?" (1980) 8 San. Fern. V. L. Rev. 109 (hereinafter "Knowles and Palmieri"), at 119; Davis, G., "Computer Software - The Final Frontier: Clones, Compatibility and Copyright" (1985) 6 Computer Lawyer 1, at 2.

[641] See Article 9 (2), Agreement on Trade-Related Aspects of Intellectual Property Rights. See also Correa, C., "TRIPs Agreement: Copyright and Related Rights" (1994) 25 IIC 543, at 544-545; Gervais, D., *The TRIPs Agreement: Perspectives on Intellectual Property,* Sweet & Maxwell, 2nd ed., 2003; O'Regan, M., "The Protection of Intellectual Property, International Trade and the European Community: the Impact of the TRIPS Agreement of the Uruguay Round of Multilateral Trade Negotiations" [1995] Legal Issues of European Integration 1, at 29.

[642] See Article 2, WCT. See further Lai, S., "The Impact of the Recent WIPO Copyright Treaty and Other Initiatives on Software Copyright in the United Kingdom" [1999] 1 IPQ 35, at 36-39. See also Nimmer, D., "A Tale of Two Treaties" in Nimmer.

reappraisal. In this context, the history of the concept may provide the starting point for our present deliberations. Nevertheless, before getting down to this discussion, our choice of analytical rubric is to be elucidated.

Owing to the prevailing constructions put on the doctrine as the allegedly salient feature of copyright[643] or an "axiom of Copyright Law"[644] the questions of copyrightability, authorship, infringement and defences appertain to the issue. Despite the fact that the problem arises primarily in the event of infringement, in the first place, there is a *sine qua non* to entertain the subsistence of copyright in the work. Further, it is opined that owing to certain landmark cases concerning computer programs' copyright[645] the matter might, in effect, boil down to the process of elaborating and carrying out conceptually apposite tests to explore the elements of a particular computer program from a protectability perspective[646]. Moreover, the dichotomy, admittedly, purports to mark out copyright significant principal parts of any 'intellectual'[647] material. Hence, the accent is on elements' copyrightability as the main umbrella heading to address the distinction. Accordingly, questions only alluded to against this background and closer connected with other copyrightability related areas are covered elsewhere in this study (and referred to in footnotes where appropriate).

On these lines, it might be used as a generalised point of departure for our 'deconstructive' readings that the immediate sources and the rules of doctrinal

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[643] Examples of positing the dichotomy could be found in a plurality of papers on modern copyright and related areas. See, for instance, Derclaye, E., "Software Copyright Protection: Can Europe Learn from American Case Law?" [2000] EIPR 7 (hereinafter "Derclaye"), at 13-14; Dreier, T., "The Council Directive of 14 May 1991 on the Legal Protection of Computer Programs" (1991) EIPR 319, at 320; Hunter, D., "Mind Your Language: Copyright in Computer Languages in Australia" [1998] EIPR 98, at 104; Kuester, J. and Nieves, P., "Hyperlinks, Frames and Meta-Tags: an IP Analysis" (1998) 38 Idea: J.L. & Tech. 243; Lai, at 23, 44, 48; Ogilvie, J., "Defining Computer Program Parts Under Learned Hand's Abstraction Test in Software Copyright Infringement Cases" (1992) 91 Michigan L.R. 526 (hereinafter "Ogilvie"), at 527, 563; Siebrasse, N., "A Property Rights Theory of the Limits of Copyright" (2001) 51 Univ. of Toronto LJ 1 (hereinafter "Siebrasse"); Sucker, M., "The Software Directive - Between the Combat against Piracy and the Preservation of Undistorted Competition" in Lehmann, M. and Tapper, C.(eds.), *A Handbook of European Software Law*, Oxford University Press, 1993 (hereinafter "Lehmann and Tapper"), at 12. See also *Designer Guild Ltd v Russell Williams (Textiles) Ltd* [2000] FSR 121; *Data Access Corp.* v *Powerflex Services Pty Ltd* (1999) 73 ALJR 1435. See also Barlow, J., "Selling Wine without Bottles. The Economy of Mind on the Global Net" in Hugenholtz, at 170, 187.

[644] *Sid & Marti Krofft TV Productions v. McDonald's Ltd Corp.*, 562 F.2d 1157,1163 (9th Cir. 1977).

[645] Mainly in the US, but such judgments as *Computer Associates v. Altai, Lotus v. Paperback* etc. have been cited and interpreted in English case law considered in this chapter and elsewhere in this thesis.

[646] See also *Feist Publications, Inc. v Rural Telephone Service Co., Inc.,* (1991) 20 IPR 129 (hereinafter "*Feist*"), at 138.

[647] See also Vaver, D., "Intellectual Property: the State of the Art" (2000) 116 LQR 621 (hereinafter "Vaver"), at 632.

applicability of the contemporary framing of the dichotomy have not been established incontrovertably. Professor Cornish submitted that the reiteration of the distinction set down by the EU Council[648] had been 'left unstated in the British implementation, for the understandable reason that it is already there as a matter of common law principle applicable to the entire field of copyright'.[649] Nonetheless, as it will be seen, the dichotomy as a legal phenomenon is primarily attributable to American copyright doctrine[650].

3.2. GENESIS AND CONCEPTUALISATION OF THE DISTINCTION: THE US FRAMEWORK.

3.2.1. Classification of key cases.

In the US the idea-expression dichotomy has been adopted in the current Copyright Act, and section 102(b) of Title 17 USC reads:

'In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated ,or embodied in such work.'[651]

This formula is mapped onto the doctrine which has arguably long been recognized by the US judiciary. The wealth of related judgments has prepared the ground for an examination of the relevant 'tell-tale' details through pinpointing the purposes proclaimed, but at times not achieved[652], in many 'historic' decisions. On this basis, paradoxically enough, the deconstructive reading of the most quoted and indicative cases has helped to identify the common features predicated upon to build the lines of cases as structural constituents of the following classification:[653]

   1. According to general significance.

      a) the line of authorities contributing to the formulation of the distinction:

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[648] Article 1 (2), Recitals 13-15, Software Directive. See also Article 5, Database Directive.
[649] Cornish, at 447 (references omitted). See also Lloyd, at 330. Millard, C., "Copyright" in Reed, at 144.
[650] As to the role of the US lead in 'policy and practice', see Vaver, at 635-636.
[651] 17 USC § 102. See also House of Representatives Report No. 94-1976 (1976) 94th Congress, 2d Session, at 57.
[652] See also Ogilvie, at 527.
[653] Within this framework relevant cases are subsumed within several genera. The references to the decisions categorized are provided respectively in footnotes to the analysis following the classification.

Baker - Bleistein - Sheldon - Mazer.[654]

b) the chain of judgments claiming to frame the pertinent tests [655] and elaborating, or forming a germ of, a general approach to draw the line: *Nichols - Peter Pan Fabrics - Paperback - Computer Associates.*

c) the genus embracing decisions drawing up guidelines on the so-called 'extrinsic' (expert testimony) and 'intrinsic' ("the response of the ordinary   reasonable person") tests[656]: *Arnstein - Krofft.*

2. With reference to particular doctrines:

a) the merger doctrine and the plurality of expressions test: *Baker - Dymow - Morrissey - Kalpakian - Landsberg - Paperback.*

b) the total concept and feel doctrine : *Roth - Krofft - Reyher - Broderbund - Whelan.*

c) the First Amendment/copyright clause collision: *Eichel - Lee v. Runge - Krofft.*

In a sense, this structure could be topped up without, arguably, ever being topped out. In this regard, the propounded classification, as not confined to the cases 'strung together' above, might be further developed within the framework here elaborated. To this end, the rest of the existing case-law as well as forthcoming decisions could be analysed along the same lines and 'threaded' on the described classificatory strings.

3.2.2. Rationale behind the doctrine: general formulae and tests.

Traditionally, the US Supreme Court decision in *Baker v. Selden*[657] (copyright in the book 'Selden's Condensed Ledger or Bookkeeping Simplified') has been

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[654] These cases addressed the question of what the elements to be separated are. With reference to software the doctrine was introduced in 1978. See *Synercom Technology, Inc v. Universal Computing Co.*, 462 F. Supp. 1003 (N.D.Tex.1978) (hereinafter '*Synercom*'). For the sources of the distinction in the context of varying types of works see Brinson, J., "Copyrighted Software: Separating the Protected Expression from Unprotected Ideas, a Starting Point" (1988) 29 Boston College Law Rev. 803 (hereinafter "Brinson"), at 814-815.

[655]   The cases of this category have been focued on the question of how ideas and expressions can be distinguished. For a definition of a legal test, see *Lotus Development Corp. v. Paperback Software International* (1990) 18 IPR 1, at 26.

[656] These are designed to provide evidence in establishing the fact of infringement, however, they also mediate the process of identification of the elements composing the idea and its expression respectively. Further, the importance of the tests lies in determining the roles of a court and of the trier of fact and answering the question:" Who is to assist in discriminating between the elements?"

accounted the first judgment associated with the distinction.[658]The principal question in the case was whether the exclusive property in a system of book-keeping could be claimed under the law of copyright by means of a book in which that system was explained.[659] The Court inferred from the context 'a clear distinction between the book as such and the art which it [was] intended to illustrate' and averred that '[t]he same distinction [might] be predicated of every other art as well as that of book-keeping'.[660] In ruling for the defendant it was held:

> 'The description of the art in a book, though entitled to the benefit of copyright, lays no foundation for an exclusive claim to the art itself. The object of the one is explanation; the object of the other is use'.[661]

Presumably, the doctrine owes its origin to the above formulae bearing in mind that the terms 'art' and 'description of the art' have been construed as the 'idea' and its 'expression' respectively (although the explanation/use distinction is at times considered doctrinally 'awkward'[662]). This germ of the dichotomy was judicially interpreted in the seminal case of *Mazer v. Stein* providing arguably the first express description of the distinction: '[A] copyright gives no exclusive right to the art disclosed; protection is given only to the expression of the idea - not the idea itself'.[663]

During the gestation period of the concept, from *Baker* (1879) to *Mazer* (1954), another decision significantly made for framing the doctrine. *Bleistein v Donaldson Lithographing* arguably elucidated the dichotomy in its 'most basic terms'[664]:'Others are free to copy the original... They are not free to copy the copy'.[665]

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[657] *Baker v. Selden* (1879) 101 US 99 (hereinafter "*Baker*"). See also Reichman, J., "Computer Programs as Applied Scientific Know-How: Implications of Copyright Protection for Commercialized University Research" (1989) 42 Vanderbilt Law Review 639, at 693.

[658] See, for example, Bainbridge, at 73; Cruz, at 231; Drexl, J., *What is Protected in a Computer Program? Copyright Protection in the USA and Europe,* Weinheim, 1994 (hereinafter 'Drexl'), at 19, 25. See also *Harper House, Inc. v Thomas Nelson, Inc.,* 889 F. 2d 197 (9th Cir. 1989) (hereinafter "*Harper House*"), at 204. Cf. Jones, R., "The Myth of the Idea/Expression Dichotomy in Copyright Law" [1990] Pace Law Review 551.

[659] See *Baker*, at 101.

[660] See ibid., at 102.

[661] See ibid., at 104.

[662] See *Harcourt, Brace & World, Inc. v Graphic Controls Corp.,* 329 F. Supp. 517, 524 (S.D.N.Y. 1971). Cf. *Computer Associates v Altai*, 982 F.2d 693, 705 (mentioning "a sound analytical foundation") (2d Cir.1992).

[663] See *Mazer v. Stein* (1954) 347 US 201 (hereinafter "*Mazer*"), at 217.

[664] See Cruz, at 233.

[665] See *Bleistein v Donaldson Lithographing* (1903) 188 US 239 (hereinafter "*Bleistein*"), at 249-250. For syllogistic arguments leading to an understanding of the "original" as the "idea" and a "copy" as its "expression", see Cruz, at 233.

Another paradox reflects the genesis of the doctrine. Some twenty four years earlier than the dichotomy was explicitly established in *Mazer* (and some six years earlier than one of the most famous germ formulae of the construct was introduced in *Sheldon*[666]) judge Learned Hand had laid down his celebrated 'abstractions test' to separate the 'idea' from its 'expression':

> 'Upon any work and especially upon a play a great number of patterns of increasing generality will fit equally well, as more and more of the incident is left out. The last may perhaps be no more than the most general statement of what the play is about and at times consist of only its title, but there is a point in this series of abstractions where they are no longer protected since otherwise the playwright could prevent the use of his ideas to which apart from their expression his property is never extended'.[667]

In terms of the legal doctrinal import of this *locus classicus,* which appears to be indispensable to the US legal lore, *Nichols* anticipated the *Mazer*'s postulate and suggested, as Professor Nimmer put it, 'a helpful approach to the problem'[668] without developing a working test or a fundamental principle.

Moreover, in *Nichols* Judge Hand proceeded to admit that '[n]obody has ever been able to fix that boundary [between "ideas" and "expressions"], and nobody ever can'.[669] Some thirty years later he reiterated in *Peter Pan Fabrics*:

> 'Obviously, no principle can be stated as to when an imitator has gone beyond the "idea", and has borrowed its "expression". Decisions must, therefore, inevitably be ad hoc'.[670]

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[666] See *Sheldon v. Metro-Goldwyn Pictures Corp.,* 81 F.2d 49,54-55 (2d Cir. 1936) (hereinafter "*Sheldon*").

[667] *Nichols v. Universal Pictures Corp.*, 45 F. 2d 119 (2d Cir. 1930) (hereinafter "*Nichols*"), at 121. See further Ogilvie, at 529.

[668] Nimmer, at 13-20.1. See also *Nash v. Columbia Broadcasting Sys., Inc.,* 899 F. 2d 1537,1540 (7th Cir.1990); Knowles & Palmieri, at 118. The philosophical rationale behind the analytical construct set forth in *Nichols* could be ascribed to the discourse traceable to Plotinus and Porphyrius Malchus, it being rooted in the tradition of employing abstraction as a method of hierarchical classification. In addition, the four rules of reasoning (or of 'the search for truth') enumerated by Descartes in his 'Discourse on Method' are to be referred to as making for the framework illustrated by the approach under consideration. For information on the philosophy of Plotinus and Porphyrius Malchus, see Armstrong, A. (ed.), *The Cambridge History of Later Greek and Early Medieval Philosophy*, Cambridge University Press, 1967, at Ch 12-16; O'Meara, D., *Plotinus: An Introduction to the "Enneads",* Clarendon Press, 1993; Smith, A., *Porphyry's Place in the Neoplatonic Tradition: A Study of Postplotinian Neoplatonism*, Kluwer, 1975. On Descartes's constructs ,see Descartes, R., *Discourse on Method and Other Writings,* Harmondsworth: Penguin Books, 1966, at 50. See also Descartes, R., *Key Philosophical Writings,* Wordsworth, 1997.

[669] Nichols, at 121.

This renowned dictum could be viewed as an authority in respect of infringement. However, it touches upon (without, in actuality, casting light on) an elusive 'doctrinal' line which is purported to shape the silhouette of the notion of protectability and thereby hangs a tale: the parable of legal uncertainty[671], as it were. Indeed, vagueness to some extent is inherent in any laws, let alone ambiguity engendered by poor bill drafting, thus leaving space for judgment[672]. But qualms accompanying the *ad hoc* approach constitute, using a mathematical metaphor, the uncertainty squared, taking into account the labyrinthine nature of the concomitant complications.[673] Moreover, a decision based very much on its own facts may often be marginalised and ignored.[674]

To clarify the situation, a distinct scholarly tradition has been focused on sketching in that doctrinal 'contour' in the context of its testability and trying to provide further guidance. On this score, Professor Chafee's 'pattern test' may suggest a further dimension:[675]

> 'No doubt the line does lie somewhere between the author's idea and the precise form in which he wrote it down. [T]he protection covers the "pattern" of the work...the sequence of events, and the development of the interplay of characters'.[676]

This proposition alluding to the distinction between the 'precise form' and the protected 'pattern' indicated a methodical approach to a distillation of copyrightable elements. Relying on the connoted here requirement of the 'sufficiently concrete', Professor Nimmer observed that the 'abstractions test' should be used in conjunction

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[670] *Peter Pan Fabrics Inc v. Martin Weiner Corp.,* 274 F. 2d 487,489 (2d. Cir 1960). See also Latman, A., "'Probative Similarity' As Proof of Copying: Toward Dispelling Some Myths in Copyright Infringement" (1990) 90 Columbia L.R. 1187 (hereinafter "Latman"), at 1196, 1199.

[671] See also Recitals 4, 7, 25, the Copyright Directive. See further Hart, M., "The Copyright in the Information Society Directive: An Overview" [2002] EIPR 58.

[672] Which (unlike general logic) involves choice. For a thorough analysis invoking Kantian deliberations see Davis, M*., Delimiting the Law: 'Postmodernism' and the Politics of Law,* Pluto Press, 1996.

[673] For discussion about uncertainty see, for example, Yen, A., "A First Amendment Perspective on the Idea/Expression Dichotomy and Copyright in a Work's "Total Concept and Feel" (1989) 38 Emory L.J. 393 (hereinafter "Yen"), at 396-397, 430-432.

[674] See Torremans, at 70.

[675] Chafee's analysis was mainly concentrated on such a new technology of that time as motion pictures. It is questionable whether it indicates some possible implications for modern technological developments.

[676] Chafee, Z., "Reflections on the Law of Copyright" (1945) 45 Colum. L. Rev. 503, at 513. The quoted formula is of note in relation to copyright in literal/non-literal elements. For analysis of Chafee's constructs see Nimmer, at 13-20.1 to 13-24; Brinson, at 813, 829-830; Cruz, at 248-249. For an application of the 'pattern test' see, for instance, *Reyher,* at 91; *McGraw-Hill, Inc. v Worth Publishers, Inc.,* 335 F. Supp 415 (S.D.N.Y. 1971).

with the 'pattern test'[677] to elaborate the construction which may be called the Hand - Chafee - Nimmer test.[678]

3.2.3. *Whelan.*

The evolution of this approach has come into play in connection with the software related subgenus of cases: *Whelan - Paperback - Computer Associates*. In *Whelan*[679] the following rule purported to identify and distinguish the idea and its expression was formulated:

'The line between idea and expression may be drawn with reference to the end sought to be achieved by the work in question...[T]he purpose or function of a utilitarian work would be the work's idea, and everything that is not necessary to that purpose or function would be part of the expression of the idea'[680] (describing the purpose as 'aid in the business operations of a dental laboratory')[681]. The somehow missing link within this pseudo-Aristotelian approach[682] could be retrieved from the proposition that '[w]here there are various means of achieving the desired purpose, then the particular means chosen is not necessary to the purpose; hence, there is expression, not idea'. This reasoning apparently implies that the set of 'necessary means' falls within the generality of the term 'ideas'.[683]

However, such an inference could be queried in that both 'means' are of the same character not boiling down to the purpose. More specifically, they are identifiable as 'the particular means' incorporating an element of choice, and distinguishable only against a background of an extrinsic factor (the existence, or even potentiality, of

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[677] See Nimmer, at 13-32.1 to 13-33. See also *Krofft,* at 1163-64; Knowles and Palmieri , at 137.

[678] See Nimmer, at 13-20.1 to 13-28. See also Brinson, at 813, 841.

[679] See *Whelan Associates Inc. v. Jaslow Dental Laboratory Inc.,* 797 F 2d 1222 (3d Cir 1986) (hereinafter "*Whelan*"). There is no dearth of scholarly commentaries on this case. See, for instance, Brinson, at 831-832, 841-843,847-854; Cruz, at 246-247; Derclaye, at 13-14; Drexl, at 6, 18-20, 83; Englund, S., "Idea, Process, or Protected Expression?: Determining the Scope of Copyright Protection of the Structure of Computer Programs" (1990) 88 Mich. LR 866 (hereinafter "Englund"), at 881; Goldhammer, J., "Computer Programs and Technological Innovations: Testing the Copyright Law" (1987) 2 J.L. & Tech. 17; Goldstein, P., "Infringement of Copyright in Computer Programs" (1986) 47 U. Pitt. L. Rev. 1119, at 1126; Karjala, D., "Copyright, Computer Software and the New Protectionism" (1987) 28 Jurimetrics 33; Ladd, D. and Joseph, B., "Expanding Computer Software Protection by Limiting the Idea" (1987) 2 J.L. & Tech. 25; Wessel, M., "Substantial Similarity" (1987) 2 J.L. & Tech. 35; Yen, at 412-415, 431-33.

[680] See *Whelan*, at 1236. See also *Broderbund Software v Unison World, Inc.,* 648 F. Supp. 1127, 1133 (N.D. Cal. 1986).

[681] See *Whelan*, at 1238.

[682] See Cruz, at 226, 246.

[683] For the *Whelan* meaning of 'necessary', see Brinson, at 847.

other means) which indicates one of the interpretations of originality.[684] Moreover, certain confusion has been brought into play by failing to accommodate that the 'idea' cannot be identified by dint of calculation of the avenues to the desired end and attending to the merger doctrine in lieu.[685]

Otherwise, the quantitative criterion of necessity could be condensed into the following syllogistic conclusion: when a new *means* (or even a new infinite line of means) is found, it immediately becomes an *expression* along with the 'old' (or rather, previous) one which is not the *idea* any more (or paraphrasing the *Whelan* rule: the dispensable idea is its expression and the necessary expression is the idea). In this context, one might, theoretically, contend that the antecedent *means* is not the *idea* because it is not new any longer. Paradoxically, this proposition re-framed with reference to the above new *means* within the matrix of necessity might read: 'A new *means* is not new', which sounds as a parody of the biblical 'there is nothing new under the sun', let alone the fact that novelty is not a criterion of copyrightability.

In constructing the discussed framework the *Whelan* court in a way drew upon *Apple Computer Inc. v. Franklin Computer Corp.* which addressed the subject in a similar way to equate 'ideas' with 'function'[686], the highest level of abstraction (without drawing upon the Hand-Chafee-Nimmer test) and misinterpreted the merger doctrine as one of the ways to define the dichotomy, or even, as one commentator observed, twisted 'the merger principle around'.[687]

The doctrine of merger (or unity) of idea and expression[688] is sometimes viewed as an exception to the dichotomy.[689] It is often asserted that *Baker*, with its formula of

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[684] See subs. 2.5., above.

[685] Here, without considering a range of conceptual possibilities flowing from inefficient or determined by the computer designer's style elements in the context of limited ways of accomplishing the purpose. See also Stern, R., "Microlaw: Software Copyright Developments" (1986) 12 IEEE Micro 75; *Ibcos Computer Ltd v. Barclays Finance Ltd* [1994] FSR 275, at 300, 303.

[686] See *Apple Computer, Inc. v. Franklin Computer Corp.,* 714 F 2d 1240 (3d Cir. 1983) (hereinafter '*Franklin'*), at 1253. See further Brinson, at 843.

[687] Brinson, at 851.

[688] See *Autoskill, Inc. v National Education Support System, Inc.,* 994 F.2d 1476, 1494 (10th Cir. 1993); *Bevan v Columbia Broadcasting System, Inc.,* 329 F. Supp. 601 (S.D.N.Y. 1971); *Cooling Systems & Flexibles, Inc. v Stuart Radiator, Inc.,* 777 F.2d 485 (9th Cir. 1985); *Data East USA, Inc. v Epex, Inc.,* 862 F.2d 204, 208 (9th Cir. 1988); *Financial Control Associates. Inc. v Equity Builders, Inc.,* 799 F. Supp. 1103, 1117 (D.Kan. 1992); *Gates Rubber,* at 836, 838, 842*; Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F. 2d 738 (9th Cir. 1971); *Kern River Gas Transmission Co. v Coastal Corp.,* 899 F.2d 1458 (5th Cir. 1990); *Marshall & Swift v BS & A Software,* 871 F. Supp. 952, 961 (W.D. Mich. 1994); *McGraw-Hill, Inc. v Worth Publishers, Inc.,* 335 F. Supp. 415 (S.D.N.Y. 1971); *Project Development Group, Inc. v O.H. Materials Corp.,* 766 F. Supp. 1348 (W.D. Pa. 1991); *Sid & Marty Krofft Television Productions v McDonald's Corp.,* 562 F.2d 1157 (9th Cir. 1977); *Summer Mfg. Co. v Midco Mfg. Co.,* 29 USPQ2d 1230, 1232 (S.D. Tex. 1993). See further Goldstein*,* at 209, 210; Lai, at 41; Mick, R.,

'necessary incidents to the art', laid the foundation of the 'merger'.[690] Both *Herbert Rosenthal Jewelry Corp. v. Kalpakian*[691] and *Morrissey v. Procter & Gamble Co*[692], the leading cases on the subject, interpreted *Baker*. In *Kalpakian,* it was held that where the idea and expression are indistinguishable copying the expression is to be permitted so that not to grant a monopoly over the idea[693] (without, of course, defining such). According to the *Morrissey* court, in case of 'only a limited number' of possible ways to express the 'idea', such an expression cannot be considered copyrightable.[694] This approach could in a way be traced back to *Dymow v. Bolton*[695] cited also in *Franklin*. Nevertheless, the Franklin court turned 'the *Dymow* statement around'[696]: in *Dymow* it was stated that in case of a wide range of available modes to express the idea each expression is copyrightable[697], while the *Franklin* court concluded that in such a situation the plaintiff's work (a computer program) was the 'expression', not the 'idea'.[698]

There also can be traced an additional element of confusion as to 'inseparable' expression and a limited number of expressions[699]. These two reasonings are, in effect, conflated, if not 'blended' together under the rubric of *merger[700]*. Splitting merger into sub-categories (such as merger where the idea dictates the form of expression[701] and merger where the idea permits very little variation in expression[702])

"Applying the Merger Doctrine to the Copyright of Computer Software" (1991) 37 Copyright Law Symposium 173; Nimmer, at 13-67. Recognized by CONTU. See CONTU Report, at 20.

[689] See Brinson, at 814.

[690] See *Baker*, at 103. It should be observed that the Baker court's construct was formulated in the context of the use (of the art conventionally interpreted as 'idea') which does not come down to 'expression'. Cf. Lai, at 42.

[691] See *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F. 2d 738 (9th Cir. 1971) (hereinafter *"Kalpakian")*.

[692] See *Morrissey v. Procter & Gamble Co*, 379 F. 2d. (1st Cir. 1967) (hereinafter *"Morrissey"*).

[693] See *Kalpakian*, at 742. See also *Concrete Machinery Co v. Classic Lawn Ornaments Inc*., 843 F. 2d 606 (1st Cir. 1988*); Continental Casualty Co. v. Beardsley*, 253 F.2d 702 (2d Cir. 1958); *Digital Communications Associates Inc. v. Softklone Distribution Corp*., 659 F Supp. 449,457 (N.D. Ga. 1987).

[694] See *Morrissey,* at 678-679.

[695] See *Dymow v. Bolton*, 11 F. 2d 690 (2d Cir. 1926) (hereinafter *"Dymow"*). The *Dymow -Morrissey* arithmetical way of investigating the risk of monopoly over 'ideas' could be deemed the 'plurality of expression test' (otherwise exemplified by *Landsberg v. Scrabble Crossword Game Player, Inc.,* 736 F 2d 485 (9th Cir. 1984) and *Atari, Inc. v. North American Philips Consumer Electronics. Corp.,* 672 F 2d 607 (7th Cir. 1982) (one of the most confusing decisions, see Nimmer, 13-27, 29,30; Hemnes, T., " The Adaptation of Copyright Law to Video Games" (1982) 131 U. Pa. L. Rev. 171, at 196-205). See further Yen, at 401, 413.

[696] See Brinson, at 845.

[697] See *Dymow,* at 691.

[698] See *Franklin,* at 1253.

[699] Diversity in expression is sometimes described as 'reverse merger'. See Lai, at 42.

[700] See ibid..

[701] See ibid..

[702] See ibid., at 43.

does not solve the puzzle. Both species of merger are framed in terms of 'inseparability'[703] since 'some minimal amount of original expression'[704], added within the ambit of the second sub-category, does not appear to be illustrative of 'additional modes of expression', let alone separability beyond *de minimis*. In this context, inseparability connotes some kind of idea-expression 'centaur', while a limited number of expressions may still suggest certain definitional prospects.

Whelan with its 'weak' view of idea[705] in the context of software has come in for a lot of scholarly criticism primarily on account of a 'single idea' approach it took (despite the court's obiter dictum to the effect that the idea of a utilitarian work could be 'to accomplish a certain function in a certain way' thus relatively widening the potential scope of the notion).[706]

3.2.4. *Paperback* and *Computer Associates*.

Prior to *Whelan* (to begin with *Synercom*[707]) and in the later case law [708] a manifold ideas framework was frequently applied and has been prevalent by now. In

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[703] And, as a result, the concept of 'verbatim copying' is invoked in the infringement analysis along these lines. See Lai, at 42-43.

[704] Ibid., at 43.

[705] From this perspective, another classification of cases could be worked out in compliance with the gauge of the 'strength' ('capaciousness' as to the elements embraced) of idea and expression respectively as held in the decisions pigeon-holed along these lines (for a similar approach see Yen, at 401-403, 411-415.). The ensuing genera of judgments may be identified:
a) 'weak idea'*: Whelan – Broderbund*;
b) 'strong idea': *Synercom –Paperback*;
c) 'weak expression'*: Baker - Landsberg - McGraw - Hill;*
d) 'strong expression': *Krofft - Broderbund*.
It is submitted that in this context interpretation is the name of the game. On these lines, the famous *Aliotti* (see *Aliotti v. R. Dakin & Co.,* 831 F.2d 898 (9th Cir. 1987) (hereinafter "*Aliotti*")) judgment was characterized by Professor Yen as a decision with 'a strong vision of idea'. See Yen, at 411. See further Nimmer, at 143-130, 13-134, 13-137, 13144. Nonetheless, this proposition is based upon the lack of quantitative criterion (which bred, for instance, the *Whelan* construction) in *Aliotti*, not accommodating the fact that the court described the elements necessarily following from the idea as part of the expression (see *Aliotti*, at 901). Thus, there could be some confusion of idea and unprotected expression, as a result, affecting the scope of 'idea'. This illustrates another Yen's contention that the idea-expression dichotomy is 'at best a very amorphous distinction'. See Yen, at 433.

[706] See Brinson, at 843, 848-852; Englund, at 881; Spivack, P., "Does Form Follow Function? The Idea/Expression Dichotomy In Copyright Protection of Computer Software" (1988) 35 UCLA LR 723, at 747-55; Nimmer, at 13-62.34. See also *Gates Rubber Co. v Bando Chemical Industries Ltd,* 798 F. Supp. 1499, 1513 (D. Colo. 1992); *Gates Rubber Co. v Bando Chemical Industries Ltd,* 9 F. 3d 823, 834, 840 (10th Cir. 1993).

[707] See *Synercom,* at 1012,1014. See also Brinson, at 832-33, 838.

[708] See Brinson , at 834-840.

the seminal case of *Lotus v. Paperback*[709] Judge Keeton did not follow the *Whelan* rule in this respect [710]. In *Paperback* the 'abstractions test' was interpreted to draw the line between the 'idea' and its 'expression' forming a 'scale of abstraction'('somewhere between the most abstract and the most specific of all possible conceptions')[711] without defining a clear criterion of the separation or the scope of the notion of 'idea'. Incidentally, it was maintained that 'even if the "idea" cannot be completely disentangled from its expression, to determine what is copyrightable a decision-maker must understand the meaning of 'idea' within the idea-expression distinction.'[712]

The *Paperback* court invoked four concepts to conceive 'the legally significant contrasts among an idea, non-copyrightable expressions of the idea and a copyrightable expression'[713]:

1- originality: the expression is original and, therefore, copyrightable if it originated with the author;

2- functionality: the expression is not copyrightable if it 'does no more than embody elements of the idea that are functional in the utilitarian sense';

3- obviousness: the expression is inseparable from the idea when it 'goes no farther than the obvious';

4- 'merger': the expression is not copyrightable if it is one of a quite limited number of possible ways to express the idea.

It is submitted that none of these doctrines, in effect related but to the copyrightable/non-copyrightable separation, contributed to the understanding of the distinction between 'ideas' and 'expressions'[714].

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[709] See *Lotus Development Corp. v Paperback Software International* (1990) 18 IPR 1 (hereinafter '*Paperback*'). For critique see Drexl, at 20-23, 30, 84; Patterson, C., "Copyright Misuse and Modified Copyleft: New Solutions to the Challenges of Internet Standardization" (2000) 98 Michigan LR 1351, at 1360; Samuelson, P., "Computer Programs. User Interfaces; Section 102 (6) of the Copyright Act of 1976: A Critique of Lotus v Paperback" (1992) 2 C & Contemp. Problems 311.

[710] There were identified several ideas, such as, for instance, the idea of developing an electronic spreadsheet, the 'somewhat less abstract idea' of a menu structure for it, the idea for a two-line moving cursor menu (the type of menu system), etc. See *Paperback*, at 33-35.

[711] *Paperback*, at 28. See also ibid., at 25-27,32.

[712] Ibid., at 26.

[713] Ibid., at 25.

[714] See also *Gates Rubber Co. v Bando Chemical Industries Ltd*, 9 F. 3d 823, 834 (10th Cir. 1993) (hereinafter "*Gates Rubber*"). This litigation dealt with copyright for computer software designed to aid in selection of replacement industrial belts. The Tenth Circuit vacated the finding of copyright infringement since it was concluded that the district court relied on unprotectable elements within the Gates program in determining that the defendants had infringed Gates' copyright. See also Samuelson, P., "Comment on Gerald Dworkin's Article on Copyright, Patent or *Sui Generis* Protection for Computer Programs" in Hansen, at 185.

On top of it, the concept of 'merger' was described as only a slight extension of the idea of 'obviousness'. Nevertheless, the latter, framed along general lines, cannot be divorced from the *context* of originality.[715] Accordingly, with the utilitarian/functional facets viewed as dictated by the utilitarian functions, the above enumerated concepts might in fact reinforce the vital role of the notion of originality[716] and paradoxically dissipate the realm of the dichotomy.

Another landmark case, *Computer Associates v. Altai*, further elaborated the manifold ideas approach.[717] Judge Walker propounded a three-step substantial similarity test for computer program structure.[718] The first two stages, abstraction and filtration,[719] encompassing certain dichotomy related considerations, could be viewed as applicable to the issue of copyrightability, while the third step, 'comparison', was intended for the infringement investigation[720]. The court interpreted the renowned *Nichols* formula[721] and relied upon reverse engineering as a methodological basis to

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[715] Or rather as an illustration within the juxtaposition of copyright's originality and patents' non-obviousness. See also subs. 2.5, above. In the realm of copyright, the word *obvious* might also be used as synonymous with *commonplace* as built into the framework of originality conceptualised with reference to the *de minimis* rule. See subs. 2.5.2.C., above. See also *Brown Bag Software v Symantec Corp.,* 960 F. 2d 1465, 1473 (9th Cir. 1992); *Computer Associates v Altai*, 982 F.2d 693, 710 (2d Cir.1992).

[716] Cf. Nimmer, at 13-143, 13-144, 13-144.1. See also subs. 4.3.2.B., below.

[717] See *Computer Associates v Altai*, 982 F.2d 693 (2d Cir.1992) (hereinafter '*Computer Associates*'). As to the fact pattern of this well-known case, it might be reminded that Computer Associates, the owner of a copyrighted job scheduling computer program, called CA-Scheduler, brought an action for infringement of non-literal elements of an operating system compatibility component ("Adapter") translating the language of a given program into the language that the computer's own operating system can "understand". Mr Arney, the plaintiff's former employee hired by the defendant, used the Adapter source code in developing a "common system interface" component ("Oscar"). The Second Circuit's deliberations were mainly focused on the Oscar 3.5 version, the result of a rewrite project initiated upon receipt of the summons. For comments see Band, J., Steinberg, R. and Vinje, T., " The US Decision in Computer Associates v. Altai Compared to the EC Software Directive: Transatlantic Convergence of CR Standards Favouring Software Interoperability" (1992) 8/5 Comp. L.& Prac.137; Bender, D., "Computer Associates v Altai: Rationality Prevails" [1992] The Computer Lawyer 1; Drexl, at 23-27; Effross, W., " Assaying Computer Associates v Altai: How Will the 'Golden Nugget' Test Pan Out?" (1993) 19 Rutgers Computer & Technology L.J. 1; Lai, at 40; MacDonald, E. and Rowland, D., *Information Technology Law*, Cavendish Publishing Ltd, 1997, at 31-53; Miller, A., "Copyright Protection for Computer Programs, Databases and Computer Generated Works: Is Anything New Since CONTU?" (1993) 106 Harvard L. Rev. 977, at 1001-1011; Wilkins, J., "Protecting Computer Programs as Compilations Under Computer Associates v Altai" (1994) 104 The Yale Law Journal 435 (hereinafter "Wilkins"); Zadra-Symes, L.J., "Computer Associates v. Altai: The Retreat from Whelan v. Jaslow"[1992] EIPR 327. Cf. Clapes, A. and Daniels, J., "Revenge of the Luddites: A Closer Look at Computer Associates v Altai" (1992) 9 The Computer Lawyer 11; Fitzgerald, B., "Square Pegs and Round Holes" (1993) 4 J Law and Inf. Science 142.

[718] See *Computer Associates*, at 706-711.

[719] Levels of abstraction were redefined as six levels of declining abstraction in the *Gates Rubber* case. See *Gates Rubber*, at 835. The filtration step was further defined in *Gates Rubber*. See *Gates Rubber*, at 834, 836, 838. See further Derclaye, at 59.

[720] See also *Gates Rubber*, at 841.

[721] See *Nichols*, at 121.

frame the abstraction step.[722] Expounding on the step of filtration the judge invoked a 'successive filtering method' put forward by Professor Nimmer[723] and formulated as follows:

'This process entails examining the structural components at each level of abstraction to determine whether their particular inclusion at that level was "idea" or was dictated by considerations of efficiency, so as to be necessarily incidental to that idea; required by factors external to the program itself; or taken from the public domain and hence is nonprotectable expression'.[724]

Again, there was no further guidance offered as to the scope of 'idea' except for the reiteration of a multiplicity of 'ideas' in accordance with the program's structure.[725]

As a corollary, contrary to popular opinion, the *Computer Associates* court failed to determine ideas and discriminate between 'ideas' and 'expressions' or elaborate an appropriate test.[726]

In addition, the above formula turned out amenable to being construed in rather a bizarre way. For instance, despite the aforesaid clear, as it would seem, wording employed by the judge in this respect, Drexl identified the elements dictated by efficiency required by external factors and taken from the public domain as part of the 'idea'[727] confusing 'ideas' with unprotected elements[728] and ignoring the evident: the separation line between protectable and unprotectable parallels the original/unoriginal distinction.[729] As to the notion of 'idea', examining the applicability of the doctrine of

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[722] See *Computer Associates*, at 706-707. Along with reverse analysis, it was often suggested, 'top down' (or 'step wise refinement') program design methodology might be a factor indicating that software cases could be deemed congruent with a version of the Nichols test. See *E.F. Johnson Co v. Uniden Corp.,* 623 F. Supp 1485,1501 (1985); Brinson, at 854; Reback, G., and Hayes, D., "The Plains Truth: Program Structure, Input Formats, and Other Functional Works" (1987) 3 Comp. Lawyer 1; Reback, G. and Siegel, P., "Toward a Comprehensive Test for Software Copyright Infringement" [1985] Comp. Law Annual, at 139, 145-146. However, the situation is different in the context of 'object-oriented' design methodologies. (See Barkan, M., "Software Litigation in the Year 2000: The Effect of Object-Oriented Design Methodologies on Traditional Software Jurisprudence" (1992) 7 High Tech. L.J. 315; Wilkins, at 436, 444, 466, 468.
[723] See Nimmer, at §13.03 F.
[724] *Computer Associates*, at 707.
[725] See ibid., at 705,707.
[726] For further criticism, see Clapes, A. and Daniels, J., "Revenge of the Luddites: A Closer Look at Computer Associates v Altai" (1992) 9 The Computer Lawyer 11; Karjala, D., "Recent US and International Developments in Software Protection (Part 2)"[1994] EIPR 58; Rinck, G., "Maturing US Law on Copyright Protection for Computer Programs" [1992] EIPR 361.
[727] See Drexl, at 25.
[728] See *Paperback,* at 21 (for Keeton J's analysis mirroring, and approving of, the earlier constructions akin to those set forth by Drexl). Ideas are sometimes construed as "those aspects of a work for which independent creation is likely but difficult to establish". See Siebrasse, at 36.
[729] See subs. 2.5., above. However, the US approach towards utilitarian works had an influence on the court's understanding of originality. See *Computer Associates*, at 705, 721. The major role of

merger to computer programs in determining the elements dictated by efficiency the *Computer Associates* court inferred:

> '[T]he more efficient a set of modules are, the more closely they approximate the idea or process embodied in that particular aspect of the program's structure.'[730]

It is submitted that, along these lines, 'idea' is viewed as some kind of 'ideal program' in corroboration of diagnosing the dichotomy as a 'metaphysical issue'.[731] As a result, both sides of the dichotomy have yet to be defined, and in this sense the distinction does not exist. Moreover, uncertainties are multiplied on these lines.

3.2.5. *Krofft.*

Knowles and Palmieri maintained that another widely quoted case*, Sid & Marty Krofft Television Productions. v. McDonald's Corp.*[732] might provide the missing link

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originality in this context was given lip-service to even in *Feist*. (See *Feist,* at 135.) On the other hand, the use of the idea/expression and fact/expression dichotomies interchangeably (see ibid.) might be particularly perplexing since an idea may well owe its origin to the author whilst such an outcome is unlikely in the case of a fact. (See *Miller v Universal City Studios,* 650 F. 2d 1365,1368 (5th Cir. 1981) (the link between the concept of originality and the fact/expression dichotomy). Cf. *Feder v Videotrip Corp.,* 697 F. Supp. 1165, 1169 (D. Colo. 1988). See also Nimmer, at 13-63.) Nevertheless, even as to the latter we would not rule out the possibility of room for the 'originating' character of the labour expended. See also subs. 2.5.2.D., above. See further Ginsburg, J., "Creation and Commercial Value: Copyright Protection of Works of Information in the United States" Dommering, E. and Hugenholtz, P. (eds.), *Protecting Works of Fact. Copyright, Freedom of Expression and Information,* Kluwer, 1991, at 57; Lloyd, at 335; Nimmer, at 2-17 n. 43, 2-172.15; Perry, M.," Literary Work or Mechanical Commonplace" [2000] EIPR 237, at 241; Wyburn, "Copyright, Databases and Misuse of Market Power" (1997) 15 Copyright Report 46. See also Siebrasse, at 55. (These sources might be invoked with reference to the 'sole source of information' framework. See further Aplin, T., "When Are Compilations Original?" [2001] EIPR 543, at 547.) See also *Cooling Systems & Flexibles, Inc. v Stuart Radiator, Inc.,* 777 F. 2d 485, 492 (9th Cir. 1985); *Feder v Videotrip Corp.,* 697 F. Supp. 1165, 1169 (D. Colo. 1988); *Harper House,* at 205; *Worth v Selchow & Righter Co.,* 827 F. 2d 569, 573 (9th Cir. 1987); *Harper & Row Publishers, Inc. v Nation Enterprises,* 471 US 539 (1985); *McMahon v Prentice-Hall, Inc.,* 486 F. Supp. 1296 (E.D. Mo. 1980); *Narell v Freeman,* 872 F.2d 907 (9th Cir. 1989); *Nash v CBS, Inc.,* 899 F.2d 1537 (7th Cir. 1990); *United Telephone Co. of Missouri v Johnson Publishing Co., Inc.,* 855 F. 2d 604 (8th Cir. 1988).

[730] See *Computer Associates*, at 708.

[731] See *Franklin,* at 1253; *Computer Associates*, at 706. Elements dictated by external factors and taken from the public domain have little bearing on the dichotomy and are considered under the rubric of 'substantial part'. See subs. 4.3.2., below. As to the assumptions of the doctrines, it could be observed that, unlike the merger doctrine designed to reflect the 'text', the doctrine of *scenes a faire* may be described as 'context'-orientated. On this score, the *Hoehling v. Universal City Studios* decision interpreted in *Computer Associates* can provide an example. See *Hoehling v. Universal City Studios, Inc.,* 618 F.2d 972 (2d Cir. 1980) (film treatment of the Hindenberg disaster). If the text were about life in Nazi Germany in general, the 'Hindenberg' could be seen as *scenes a faire* and 'greetings' would exemplify the 'expression' 'merged' with the 'idea' (and the converse proposition is valid). By like reasoning, if the notion of efficiency includes compatibility the elements required by it are 'merged'. Otherwise, they are accounted as *scenes a faire*. In many cases such reasoning could be vulnerable bearing in mind circumstances susceptible of various interpretations.

[732] *Sid & Marty Krofft Television Prods. v McDonald's Corp.* 562 F. 2d 1157 (9th Cir. 1977) (hereinafter "*Krofft*").

in the Hand - Chafee - Nimmer test[733] (and thus alleviate the strains of uncertainty). The *Krofft* rationale is rooted in the field ploughed through by *Arnstein v. Porter*.[734] A bifurcated method of establishing substantial similarity was introduced in *Arnstein* thus permitting expert analysis and dissection concerning 'idea-level' elements to prove copying and modifying the 'ordinary observer' test to decide whether the defendant's appropriation could be held unlawful.[735] This procedure also mediated the analytic process of defining the components of the idea and its expression as well as the distinction itself. According to Professor Nimmer, the second step of the *Arnstein* test regarding 'comprehensive non-literal similarity' entails making a judgment 'as to whether the borrowed 'pattern' is of a sufficiently concrete nature'[736] thus trying to draw a line between the abstract and the concrete.[737]

Krofft interpreted *Arnstein* to the effect that the court was first to determine only 'copying of ideas' without considering 'copying of expression'.[738] The first step of the *Krofft* bifurcation, articulated as the 'extrinsic test'[739], was designed to establish substantial similarity as to the 'general ideas' by employing analytic dissection and expert testimony.[740] Nevertheless, for the defendant had admitted the appropriation of the idea, the extrinsic 'objective' determination was not carried out and the court applied only the intrinsic test to establish 'whether there is substantial similarity in the expressions of the ideas' from the perspective of the 'ordinary reasonable person' without resort to expert testimony and analytic dissection.[741] It is at the point

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[733] See Knowles and Palmieri, at 119.

[734] See *Arnstein v Porter* (1946) 154 F. 2d. 464 (a music copying case). See *Krofft,* at 1165. See further Latman, at 1191-1204. See also *Litchfield v Spielberg,* 736 F. 2d 1352 (9th Cir. 1984). Cf. *Shaw v Lindheim,* 919 F. 2d 1353 (9th Cir. 1990). See also Lai, at 42.

[735] See *Arnstein*, at 468-9. See also *Miller v. Universal City Studios Inc.*, 650 F. 2d 1365 (5th Cir. 1981); *Scott v. JWKJG, Inc.*, 376 F 2d 467 (7th Cir. 1967). Cf. *West Publishing Co v. Lawyers Coop. Publishing Co*, 79 Fed. 756 (2d Cir. 1897). In explicating the notion of 'permissible copying' the court quoted, *inter alia, Dymow v. Bolton*, 11 F. 2d 690 (2d Cir. 1926). The test in question is also called the 'lay observer' or 'audience' test predicated upon the 'reasonable man' doctrine as applied in torts or trusts, for instance. See Nimmer, at §13.03 [E].

[736] Nimmer, at § 13.03 [E], 13-52. See also ibid., at § 13.03 [A] [1].

[737] But generally not with reference to 'fragmented literal similarity'. See Nimmer, at § 13.03 [A] [2]. Cf. *Atari, Inc. v. Amusement World*, 547 F. Supp. 222 (D. Md. 1981); *Davis v. United Artists, Inc.*, 547 F. Supp. 722 (S.D.N.Y. 1982); *Midway Mfg.Co v. Bandai-America, Inc.*, 546 F. Supp. 125 (D.N.J. 1982).

[738] This could be an incorrect construction. See Nimmer, at 13-104 to 13-105. However, for the *Krofft* court's circumspect stance on the interpretation, see *Krofft*, at 1165.

[739] See *Krofft,* at 1164 (extrinsic as based "not on the responses of the trier of fact, but on specific criteria" including the subject matter and the setting, thus, outlining the court's view of 'ideas').

[740] Cf. *Franklin Mint Corp. v. National Wildlife Art Exchange Inc.*, 575 F. 2d 62 (3d Cir. 1978).

[741] See *Krofft,* at 1164, 1165. The intrinsic test was also regarded by the *Krofft* court (in a sense, echoing the related position in *Arnstein)* as particularly well suited for determination by the trier of fact. Cf. *Atari, Inc., v North Am. Philips Consumer Elecs. Corp.*, 672 F. 2d 607 (7th Cir. 1982); *Davis v.*

of comparison of the subjective characteristics of the works that the *Krofft* court's approach to the scope of expression was delineated by the adoption of the doctrine of the 'total concept and feel' inaugurated by *Roth Greeting Cards v. United Card Co.*[742] The *Roth* court held that the following elements, *inter alia*, constitute expression (as a basis to find infringement):

> 'The characters depicted in the art work, the mood they portrayed, the
>
> combination of art work conveying a particular mood with a particular message,
>
> and the arrangement of the words'.[743]

This standard was followed not only in *Krofft,* which might serve as a typical example of an extremely broad view of expression, were the legal notion of expression to exist, but also in such cases as *Reyher*[744] and *See v. Durand*[745]. It has been further conceptualised as the 'look and feel' construct bearing on software copyright case law[746] largely in respect of copyrightability of user interfaces coming under closer scrutiny in a subsection given over to this issue.[747] So far as the dichotomy is concerned, subjectivity and imprecision intrinsic to the 'look and feel'[748] by definition have multiplied the powers of uncertainty and confusion surrounding the idea-expression continuum: the concrete (as a classic general description of

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United Artists, Inc., 547 F Supp. 722 (S.D.N.Y. 1982); *Kamar International, Inc. v. Russ Berrie & Co.,* 657 F.2d 1059 (9th Cir. 1981); *Metro-Goldwyn-Mayer, Inc. v. Showcase Atlanta Coop. Prods, Inc.,* 479 F. Supp. 351 (N.D. Ga. 1979). For comments (including the examination of the expansion of the realm of the trier of fact on this score) see Nimmer, at 13-101 to 13-103. As to software cases, the use of experts is desirable if not indispensable. (See Brinson, at 855; Saltman, R., *Copyright in Computer-Readable Works: Policy Impact of Technological Change*, NBS Special Publication, 1977, at A-10 - A-11, A-62 - A-65.) For a discussion on the role of expert analysis, see *Computer Associates*, at 712-714. See also *Gates Rubber Co v Bando Chemical Industries Ltd., Inc.,* 798 F. Supp 1499 (D. Colo. 1992). The intrinsic test was modified in *Dowson v Hinshaw Music, Inc.,* 905 F. 2d 731 (4th Cir. 1990). Further, the two-step approach was reformulated as 'objective and subjective analysis of *expression*' in the *Shaw* judgment. See *Shaw v Lindheim*, 919 F. 2d 1353,1357 (9th Cir. 1990) (emphasis added).
[742] See *Roth Greeting Cards v. United Card Co.,* 429 F. 2d 1106 (9th Cir. 1970) (hereinafter 'Roth'). See also *Krofft*, at 1167.
[743] *Roth*, at 1110.
[744] See *Reyher v. Children's Television Workshop*, 387 F. Supp. 869 (S.D.N.Y. 1975); 533 F.2d 87, 89-92 (2d Cir. 1976) (hereinafter "*Reyher*").
[745] See *See v. Durang* , 711 F. 2d 141, 144 (9th Cir. 1983).
[746] Cf. *Baumann v Fussell*, 1953 [1979] RPC 485, at 487 (as to the formula 'feeling and artistic character'); *Baumann v Fussell* [1978] RPC 485; *Brooks v Religious Tract Society* (1897) 45 WR 476 (as to the "feeling and character" concept employed in the infringement analysis). See further Copinger, at 439. See also *Harper House*, at 207. For the *Whelan* court construction, see *Whelan,* at 1239. See also Hunter, D., "Protecting the "Look and Feel" of Computer Software in the US and Australia" (1991) 7 Santa Clara Comp. & High Tech. L.J. 96, at 115.
[747] See subs. 4.3.1.C.e, below.
[748] See Russo, V. and Derwin, D., "Copyright in the "Look and Feel" of Computer Software" (1985) 2 The Computer Lawyer 1, at 11. See also Yen, at 414, 420, 429, 432.

expression) is seen in this context as abstract.[749] In this regard, exploring a 'chilling effect' on protected speech brought about by the 'total concept and feel' doctrine, Professor Yen observed that '[a]t the very least, the courts must find some way to concretely define what "total concept and feel" is'.[750]

3.2.6. Reflections on the First Amendment narrative.

The idea-expression distinction has provided a focal point for scholarly and judicial analysis of the conflict identified between the First Amendment[751] and copyright.[752] In the market place of ideas[753] this collision is not insurmountable: copyright to some extent encourages speech by according limited monopolies to authors/owners[754]. This reading, arguably, reflects an equilibrium between copyright and freedom of speech purportedly maintained by the operation of the idea-expression dichotomy and at times taken for granted[755]. This 'definitional balance', it is often opined, is achieved

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[749] If it is but synonymous with the notion of user interface (as it is sometimes understood, see Drexl, at 18), 'look and feel' does not exist as a separate entity or distinct concept and as such, therefore, cannot be a subject of a meaningful discussion. See also Lai, at 65; Johnson, B., "An Analysis of the Copyrightability of the 'Look and Feel' of a Computer Program: *Lotus v Paperback Software*" (1991) 52 Ohio St LJ 947, at 955, 957. Not infrequently, the "look and feel" abstract is employed to cover all 'non-literal' elements. See *Lotus Development Corp. v. Paperback Software Inter*national (1990) 18 IPR 1. Sometimes a distinction is drawn between 'look' (embracing screen displays) and 'feel' (extending to 'non-visual' 'non-literal' elements including 'behaviour'). See further Hayes, D., "A Comprehensive Current Analysis of Software Look and Feel Protection" (1995) 11 CLSR 304. See also subs. 4.3.1.D.e, below.

[750] Yen, at 434.

[751] U.S. Amend. I reads: 'Congress shall make no law… abridging the freedom of speech.' See further Nimmer, at § 1.10.

[752] According to the Copyright Clause of the U.S. Constitution, the Congress is authorized "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." See US Constitution, art. I, § 8, cl. 8. See further Nimmer, at §§ 1.02-1.08. As to the discussed conflict, see Yen, at 394 ("To the extent that copyright dictates the manner in which an author may express herself, it infringes the author's freedom of expression"). See also Loughlan, P., "Looking at the Matrix: Intellectual Property and Expressive Freedom" [2002] EIPR 30; Rubenfeld, J., "The Freedom of Imagination: Copyright's Constitutionality" (2002) 112 The Yale Law Journal 1, at 5, 30; *Universal City Studios v Reimerdes* (2000) US Dist. LEXIS 11696, at paras. 82-83.

[753] See *Krofft,* at 1170.

[754] See Nimmer, M., "Does Copyright Abridge the First Amendment Guarantees of Free Speech and Press?" (1970) 17 UCLA LR 1180, at 1186. Intriguingly, the origins of the First Amendment lie primarily in the separation of powers between the federal government and the individual states and initially (until the 1920s) it restricted only the power of Congress. See Vick, D., "The Internet and the First Amendment" (1998) 5 The Modern Law Rev. 414, at 415.

[755] See, for instance, *Triangle Publications, Inc. v. Knight-Ridder Newspapers, Inc.*, 626 F.2d. 1171 at 1178 (5th Cir. 1980); *Fantasy, Inc. v. Fogerty*, 664 F. Supp. 1345 at 1351 (N.D. Cal. 1987); *Krofft,* at 1170 ("the fact that the idea-expression dichotomy already serves to accommodate the competing interest of copyright and the First Amendment.") See further Nimmer, M., "Does Copyright Abridge the First Amendment Guarantees of Free Speech and Press?" (1970) 17 UCLA LR 1180, at 1190-1193.

by silencing 'only those who merely repeat what others have already expressed'[756] and not granting a monopoly over certain abstract ideas.[757]

Nevertheless, in actuality, the uncertainty explicated above may have deleterious effect on protected speech taking into account that 'an unclear law regulating speech might deter or chill persons from engaging in speech or activity with special protection under the [U.S.] Constitution'.[758] In this context, the application of the dichotomy can be counter-productive. Furthermore, it should be accommodated that the rights conferred on a rightholder are limited. Through this prism, to the extent that copyright dictates the manner of expression, the rightholder's freedom of speech is circumscribed in terms of the described conflict. Thus, in a sense, the artefact of the collision between free speech and copyright creates a vicious circle. It is also to be noted that the principle of free speech may collide with the protection of texts and images, that is features or entities falling within any definition of expression.[759] All in all, the balancing role of the dichotomy is just one of the myths woven into its narrative.

In addition, it is reasoned, the principal concerns in the context of the dichotomy are habitually reposed in the First Amendment considerations and other characteristics of the US approach[760], that is the paradigm onto which the present-day obsession with the dichotomy could be mapped.

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[756] Yen, at 396. See also Nimmer, M., "The Right to Speak from Times to Time: First Amendment Theory Applied to Libel and Misapplied to Privacy" (1968) 56 Cal. L. Rev. 935, at 944-95.

[757] See *Eichel v. Martin*, 241 Fed. 404, 410 (S.D.N.Y. 1917). For analysis, see Nimmer, at §1.10[B][2]. For philosophical aspects of the 'collision' see Hughes, at 313-314. See further *Lee v. Runge* (1971) 404 US 887, at 890-93. In *Runge v. Lee* it was found that the plaintiff's book on face lifting exercises had been infringed by the defendant's book which described the same exercises. However, Douglas J in his dissent from denial of certiorari contended that this might raise 'serious First Amendment questions'. See *Runge v. Lee*, 441 F.2d 579 (9th Cir. 1971). For an examination, see Nimmer, M., "A Comment on the Douglas Dissent in *Lee v. Runge*" (1971) 19 Bul. Cr. Soc. 17, at 68.

[758] Nowak, J., Rotunda, R. and Young, J., *Treatise on Constitutional Law: Substance and Procedure*, West Pub., 2nd ed., 1992, at 846. See also Nowak, J. and Rotunda, R., *Constitutional Law*, West Wadsworth, 6th ed., 2000.

[759] See also Bently and Sherman, 2nd ed., at 210.

[760] The following instruments particularly influential in the field of software are to be mentioned: the Final Report of the National Commission on New Technological Uses of Copyrighted Works (CONTU) 31.07.78, H.R. Rep. No 1307, 96th Cong., 2d Sess. (CONTU, created in 1974, recommended that Congress should amend the 1976 Copyright Act to stipulate the copyrightability of computer programs, and the Computer Software Copyright Act of 1980 defined 'computer program' (see 17 USC § 101); the Report also envisaged free use of the embodied ideas. See CONTU, Final Report, at 40-41); the House Committee Report (H.R. Rep. No 1476, 94th Cong. 2d. Sess 51, 54 (1976) (copyrightable literary works 'include...computer programs to the extent that they incorporate authorship in the programmer's expression of original ideas, as distinguished from the ideas themselves'); Copyright Office's Circular R 61 (May, 1983) ('Copyright protection extends to the literary or textual expression contained in the computer program'). These documents should be borne in mind in elucidating the

Up to a point, the conceptual and structural differences between the US and UK legal systems have resulted in the situation where 'freedom of speech' and the promotion of 'the Progress of Science and useful Arts' have little (or rather, lesser) bearing on the British model of Intellectual Property. Such a disparity does not indicate that no heed is paid to the said principles in Britain[761]. More specifically, the related peculiarities connote a shift of emphasis and the consequential hierarchical transpositions within the existing framework. On these lines, the affected social interests are still taken into account in crystallizing the policies involved.

3.3. EVOLUTION AND METAMORPHOSES OF THE COPYRIGHT DUALITY : UK READINGS IN THE CONTEXT.
3.3.1. Early developments.

It is submitted that the essence of the rationale behind the interpretations placed on the dichotomy in the UK cannot be fathomed without reference to the diverse modes and versions of the distinction or rather certain metamorphoses of conceptual duality within the purview of copyright which could be identified against a backcloth of the history of copyright from the Victorian age on.[762] In seeking to delineate such 'incarnations' we must first give an overview of certain early landmarks in this area.

In the *Kenrick* case[763] it was recognized that such a card as that of the plaintiff was 'practically the only mode of instructing the illiterate voter how to record his vote'. It was further asserted that 'amount of political power which may become vested in the plaintiffs ... [would] be greater than it is possible to estimate'.[764]

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significant role of the dichotomy in the field under consideration. See also *Paperback,* at 2, 14-16, 19-20.

[761] See also *Ashdown v Telegraph Group Ltd* [2002] RPC 235.

[762] With reference to some early indications of the 'dualist' approach, see *Boosey v. Whight* [1899] 1 Ch 836*; Hanfstaengl v. Empire Palace* [1894] 2 Ch 1, CA; *Hollinrake v. Truswell* [1894] 3 Ch 420 (hereinafter "*Hollinrake*"); *Jefferys v. Boosey* [1854] 4 HL C 815; *Kenrick & Co v. Lawrence & Co* [1890] 25 QBD 99 (hereinafter '*Kenrick*'); *Toole v. Young* [1874] LR 9 QB 523; *Walter v. Steinkopff* [1892] 3 Ch 489. It is to be borne in mind that these cases were decided under the law predating the Copyright Act of 1911. It may also be observed that the *Hollinrake* judgment delivered in 1892, in a sense, dragged the 'Trojan horse' of *Baker v Selden* into British copyright as a source of multifarious extrinsic ideas. See *Hollinrake,* at 426-429. As to an examination of other pre-modern interpretations of the subject, see Sherman, B. and Bently, L., *The Making of Modern Intellectual Property Law. The British Experience, 1760-1911*, Cambridge University Press, 1999, at 28-35.

[763] Copyright in the representation of a hand pointing to a square on an electoral voting paper.

[764] This reasoning, it is opined, is distinct from the US '*Baker-Kalpakian*' priority of not granting a monopoly in that the *Kenrick* court referred in its analysis to 'the destinies of the country' thus reinforcing the magnitude of the political context.

Further, Wills J. postulated that 'the mere choice of subject can rarely, if ever, confer upon the author of the drawing an exclusive right to represent the subject.'[765] This was interpreted in the *Total* case where the court took a stand analogous to the constructs of 'merger' and 'functional works' in stipulating that if there is only one way of expressing an idea, no copyright can subsist in it.[766] This proposition, articulated in an interlocutory motion and framed without recourse to cross-examination of the evidence, was disapproved of in the seminal *Ibcos* case applying *LB Plastics* and *British Leyland*.[767] Jacob J., advocating the general idea concept[768], stated that the position of the *Kenrick* court was to rule out infringement in taking the idea of using a picture of a hand showing how to vote, thus not rejecting the dichotomy as such. It would seem that a germ of the modern distinction could be found in another often quoted judgment, *Hollinrake v. Truswell*: 'Copyright ... does not extend to ideas, or schemes, or systems, or methods; it is confined to their expression.'[769]

However, this *obiter dictum* by Lindley LJ was uttered with reference to the Copyright Act 1842 in ascertaining whether a dressmaker's sleeve chart was a 'chart' to satisfy the definition of 'book' as any volume, part or division of a volume, pamphlet, sheet of music, map, chart or plan, separately published.[770] Indeed, 'the law was different before 1911'.[771] Presumably, this proposition is valid largely regarding the notion of 'form' as synonymous with 'medium'.[772] It is reasoned that this could mainly be put down to the fact that the sundry types of copyright works were protected under different statutory instruments passed to benefit different trades: 'These were felt to fall into watertight compartments and one may say that copyright law was media-centred.'[773]

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[765] See *Kenrick*, at 99.
[766] See *Total Information Processing Systems v. Daman* [1992] FSR 171 (hereinafter '*Total*'), at 179.
[767] See *Ibcos Computers Ltd v. Barclays Merchantile High Land* [1994] FSR 275 (hereinafter "*Ibcos*"), at 289-291. See also *LB Plastics v. Swish* [1979] RPC 551 (hereinafter '*LB Plastics* '); *British Leyland v. Armstrong* [1986] RPC 279 (hereinafter '*British Leyland*'), at 296. This decision is primarily notable for its broad interpretation of the 'no derogation from grant' principle. See further Cornish, at 455, 485.
[768] See subs. 3.3.2., below.
[769] *Hollinrake,* at 427. See also *Donoghue v. Allied Newspapers Ltd* [1938] 1 Ch 106. This case is also famous for Davey L J's dictum defining a literary work. See *Hollinrake,* at 428.
[770] The Copyright Act 1842, s. 2 (5 & 6 Vict c45)
[771] Laddie et al, at 62.
[772] See, for example, *Boosey v. Whight* [1899] 1 Ch 836; *Hanfstaengl v. Empire Palace* [1894] 2 Ch 1, CA.
[773] Laddie et al, at 112. See also Cornish, at 299-302.

In this context, our present deliberations turn to the transformations of the copyright duality within the related judicial and scholarly discourse.

3.3.2. Basic oppositions.

Lord Hoffmann observed in the *Designers Guild* case that the distinction between expression and ideas 'needs to be handled with care'[774]. Remarkably, in this decision one can identify at least seven constructions put on the dichotomy and the concept of non-protectability of ideas referred or alluded to as: the idea-expression distinction, the idea-creation distinction, the mental idea-linguistic expression distinction, the original/non-original ideas distinction, the literal/non-literal ideas distinction, the general-detailed ideas distinction, and the idea-form distinction.[775] It is reasoned that the assertion that copyright subsists only in the form in which ideas are expressed[776] cannot withstand close critical examination primarily on two planes.

First, there could be some confusion of protectability of the form as distinct from the idea and the statutory rule that for copyright to subsist in a literary (as well as dramatic or musical) work it is to be recorded.[777] This requirement as a prerequisite of copyright protection does not, however, presuppose that such protection is restricted to the form of 'fixation': it is a work (without 'splitting' this notion) that is protected.[778]

By the same token, we would not subscribe to the view that the above stipulation as to a permanent form could be construed as a corollary of the dichotomy.[779] If the notion of 'idea' can be analysed within this matrix, it would seem reasonable to look on a sort of ephemeral 'something' (or an idea merely existing in someone's mind: an idea *as such*) neither reduced to writing nor otherwise recorded as unprotectable by

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[774] *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2422.
[775] See ibid., at 2422-2425, 2432, 2434. See also Chacksfield, M., "The Hedgehog and the Fox, a Substantial Part of the Law of Copyright?" [2001] EIPR259, at 261; Correa, C., "TRIPs Agreement: Copyright and Related Rights" (1994) 25 IIC 543, at 544.
[776] See, for instance Copinger, at 1. See also *Designers Guild Ltd v Russell Williams (Textiles) Ltd* [2000] FSR 121, at 128. For an example dating back to a different epoch, see *Kelly v. Cinema Houses Ltd* [1928-35] MCC 362, at 367.
[777] See s.3 (2), CDPA.
[778] See s. 1, CDPA. See also *Norowzian v. Arks Ltd* [1998] FSR 394, at 398.
[779] See Cornish, at 345. For an examination of 'a degree of permanence' see Millard, C., "Copyright" in Reed, at 110.

copyright.[780] However, one may incline to the view that 'the distinction between ideas and expression cannot mean anything so trivial as that'[781]. It is submitted that the rules of fixation were established for the sake of certainty[782] and practicability.[783]

The line of cases (*Walter v. Lane - University of London Press - Ladbroke (Football) Ltd*) dealing, *inter alia*, with the notion of originality of ideas and dwelt upon in the preceding chapter should be invoked in this connection. Here it is to be noted as regards the *University of London Press* case, which was, unlike *Walter v. Lane*, decided under the modern copyright law[784], that this key judgment has remained ambiguous not only in respect of its 'rough practical test'.[785] Peterson J stated:

> 'The word "original" does not in this connection mean that the work must be the expression of original or inventive thought. Copyright Acts are not concerned with the originality of ideas, but with the expression of thought, and, in the case of 'literary work', with the expression of thought in print or writing'.[786]

In fact, Lord Reid repeated this passage, or rather posited such as framed in conclusory terms, without explanation, let alone the postulate to the effect that '[t]here is no dispute' on this score.[787] It is reasoned that Peterson's dictum is not to be read as indicating non-protectability of 'ideas' underlying the work. First, both the '[common] stock of knowledge' and 'fresh historical facts', used as alternatives or reflections on the implied copyright duality analysed against a background of originality[788], partake of the characteristics not ascribable to 'expressions' *per se,* that is the elements boiling down to the text as such. Secondly, alluding to the common stock of knowledge as a lawful source to draw on[789], it was not suggested that such a 'stock' could be exploited as unprotectable in principle. (On similar lines, as to infringement, the

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[780] See also *Plix Products Ltd* v. *Frank M. Winstone (Merchants)* [1986] FSR 63, at 93-94. For an opinion about permissibility of 'carbon-memory' records, see Burk, D., "Proprietary Rights in Hypertext Linkages" (1998) June. JILT 1, at 5. See also <http://elj.warwick.ac.uk/jilt/ intprop/98_2burk/>.

[781] *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416*,* at 2422.

[782] See *Tate v. Fullbrook* [1908] 1KB 821, at 832-833.

[783] Cf. Rosen, A., "Reconsidering the Idea/Expression Dichotomy" (1992) 26 UBC LR263 (hereinafter "Rosen"), at 276. See also Lai, at 21. It is also noteworthy that the logical 'distance' between 'recorded' and 'expression' can be perceived as a variation on Derrida's 'differance' referred to as 'slippage of meaning' (here) from term to term in the chain of reasoning. See Derrida, J., *"Speech and Phenomena" and Other Essays on Husserl's Theory of Signs,* Northwestern University Press, 1973.

[784] In addition to the aforementioned features, the Copyright Act of 1911 inaugurated the word 'original' as part of the general formula of protectable subject-matter (s.1(1)).

[785] See *University of London Press*, at 610.

[786] *University of London Press*, at 608.

[787] See *Ladbroke,* at 277.

[788] See *University of London Press*, at 609.

[789] See ibid.

applicability of copyright exceptions and limitations should be allowed for concerning both 'text' and 'ideas' embedded.[790]) Otherwise, it would be lawful to copy (textual) elements attributable to 'non-fresh knowledge' irrespective of the particulars of a given case. Thirdly, even if the term 'idea' is not construed in this context as 'original or inventive thought'[791] in addressing the 'required degree' of originality, the term 'expression' could be understood as 'expressed' in reflecting the notion of 'work'. Along these lines, the phrase 'expressed in print or writing' indicates 'literary work'.[792] As Lord Devlin said in the *Ladbroke* case:

> 'The law has not found it possible to give full protection to the intangible. But it can protect the intangible in certain states, and one of them is when it is expressed in words and print.'[793]

In this landmark case the dichotomy was also alluded to or directly mentioned with reference to different facets of preliminary work as distinct from the actual transcription of a compilation.[794] In this respect, we would concur with the following dictum:

> 'I cannot accept that preparatory work must be excluded in this case so as to draw a line between the effort involved in developing ideas and that minimal effort required in setting those ideas down on paper.'[795]

At the end of the day, in *Ladbroke* the dichotomy was only paid lip-service to. In this context, the characterisation of 'merely ideas *as such*' [796]as 'not the subject of copyright' is of the essence.

Further, it is inferred from the provision of s 17(2) that protection for an original work against copying in any material form implies that copyright in the work is not

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[790] In an infringement case, regardless of the question of exceptions, such issues as subsistence of copyright, substantial taking (see also subs. 4.3.2.A., below), causal connection and prohibited acts could be addressed.

[791] Such an interpretation could be inferred from the wording of the dictum taking account of the positions of the terms within the formula (so that 'originality of ideas' can be read as 'originality inherent in ideas'). In this respect, see also *Walter v Lane,* at 552.

[792] Such a construction of the notion of literary work is reflected in Lord Evershed's dictum in *Ladbroke.* See *Ladbroke,* at 285.

[793] *Ladbroke*, at 291.

[794] See ibid., at 278, 281, 287. 293.

[795] Ibid., at 287 (per Lord Hodson). Cf. Hughes, at 314.

[796] The expression 'ideas as such' is included in the relevant formulae of both TRIPs (Article 9 (2)) and WCT (Article 2). This construction is not, however, used in the wording of Article 1 (2) of the Software Directive.

confined to a particular form of expression.[797] The same conclusion could be drawn from the cumulative effect of the formulations equating the doing of acts restricted by copyright in relation to the work as a whole with the doing of such as to any substantial part of it, either directly or indirectly, and the notion of adaptation.[798] Not only could infringement be found in the event of a translation[799] or a version of a dramatic work converted into a non-dramatic and *vice versa*[800] but also, in accordance with s. 17(3) (regarding artistic works), copying includes the making of a copy in three dimensions of a two-dimensional work and *vice versa*[801]. Moreover, copyright in claimant's plans could be infringed by taking a photograph of the three dimensional reproduction of the plans.[802]

This can give rise to a legitimate inference that if literary, dramatic, musical or artistic copyright 'recognised merely the form in which a work was expressed it would prove an inadequate protection to those claiming copyright in [such a] work'.[803]

So far as 'non-original' types of work[804] are concerned, there are no such formulae as 'reproduction in any material form'[805] and 'the making of an adaptation'. However, the infringement of copyright in a film can consist in publishing a poster[806], the copyright not being restricted to the form as the 'description of work'.[807] In this regard, it is to be observed that a copy is not necessarily by itself a work in which copyright may subsist.[808] However, a single 'still' frame reproduced in the form of a

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[797] 'Copying in relation to a literary, dramatic, musical or artistic work means reproducing the work in any material form.' (S. 17 (2), CDPA.) In the context of software, subsistence of copyright in literal and non-literal elements is discussed in subs. 4.3.1.B, below.

[798] See ss. 3 (a), (b), 21, CDPA. For a distinction between 'substantial part' and 'substantial taking', see subs. 4.3.2.A, below.

[799] See s.21 (3) (a) (i), CDPA. Including the making of a version of a computer program by converting it into or out of a computer language or code or into a different computer language or code. See s. 21 (4), CDPA.

[800] See s. 21 (3) (a) (ii), CDPA. See also *Corelli v. Gray* [1911-16] MCC 107 (CA); *Holland v. Van Damm* [1936- 1945] Mac.C.C. 69.

[801] It is still questionable whether this could be applied to literary works. See Cornish, at 371; Laddie et al, at 107. See also *Anacon v. Environmental Research* [1994] FSR 359. Cf. *King Features Syndicate Inc v. Kleeman* [1940] 1 Ch 523, at 531, on appeal [1940] Ch 806, at 816, 827, approved [1941] AC 417, HL (the generality of the expression 'reproduce in any material form'). The policy reason as to public display of certain artistic works is reflected in s. 62, CDPA.

[802] See *Dorling v. Honnor Marine Ltd* [1965] Ch. 1.

[803] McGee A. and Scanlan, G., "Genre As an Intellectual Property Right" (1999) 4 IPQ 471.

[804] These are enumerated in s.1 (1) (b), (c), CDPA.

[805] Cf. s. 13 (5) (a), Copyright Act 1956.

[806] See *Spelling Goldberg Productions Inc. v. BPC Publishing Ltd* [1981] RPC 283. This conclusion was reached under the Copyright Act of 1956, nevertheless, the same could be inferred with reference to s. 17 (4), CDPA.

[807] In the sense of s. 1 (1), CDPA.

[808] E.g., as a corollary of the provision of s. 17 (6), CDPA.

poster cannot be deemed a 'moving' image.[809] On the other hand, it could be construed that the elements of a film making up the 'expression' are not protected in the case of a remake.[810] Therefore, in relation to the second category of works the notions of 'expression' and 'form' are not synonymous either.[811]

Philosophically speaking, several distinct oppositions could be identified which have been confused with and within the construct of the idea/expression dichotomy[812]: matter and form, form and content, expression and representation, etc..[813]

In part, the attendant perplexity could be mapped onto the purely philosophical nature of such dualities placed outside the ambit of UK copyright which operates in terms of the notions of 'work', 'originality' and 'substantiality'.[814]

There is a line of judicial authority and academic analysis[815] advocating that non-protectability of general ideas[816] and protection for detailed collections of ideas (or idea patterns)[817] could be viable and tenable thus formulating a new opposition.[818]

Of course, 'as the late Professor Joad used to observe, it all depends on what you mean by "ideas".'[819] In turn, drawing the dividing line between general and detailed 'ideas'[820] is a matter of degree.[821] Unlike Ferris J in *Flanders,* adopting the US abstraction test alongside the *Computer Associates* general approach[822], Jacob J in *Ibcos* declined to follow suit.[823] As yet no special procedure has been set down. The

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[809] In the sense of s. 5B (1), CDPA.

[810] See, for instance, *Norowzian v Arks Ltd* [1998] FSR 394, at 400 and an earlier Australian case, *Telmak Teleproducts Australia Pty v. Bond International Pty* [1985] 5 IPR 203.

[811] What is protected in this connection is discussed in the preceding chapter.

[812] Cf. Rosen, at 279.

[813] See Croce, B., *Aesthetic as Science of Expression and General Linguistic*, Transaction Publishers, 1995; Harrison-Barbet, A., *Mastering Philosophy*, Palgrave Macmillan, 2001, at 53-54 (on the categories of Aristotelian Metaphysics, Book Z); Schlick, M., *General Theory of Knowledge*, Open Court Publishing Company, 1985 .

[814] See *Ibcos,* at 288-289.

[815] The principal examples are Laddie et al, at 64 et seq., and *Ibcos*, at 291.

[816] See, for example, *LB (Plastics),* at 619, 629; *Plix Products Ltd v. Frank M Winstone (Merchants)* [1986] FSR 63 at 92-94; upheld [1986] FSR 608 (NZ). See also *Thrustcode Ltd v. WW Computing Ltd* [1983] FSR 502 ('basic ideas').

[817] See, for instance, *Austin v. Columbia Gramophone* [1917-23] MCC 398 at 408; *Natal Picture Framing Co Ltd v. Levin* [1920] WLD 35 (SA fr).

[818] See also Torremans and Holyoak, at 499 ('Jacob J rejects the idea-expression dichotomy ... but reintroduces it as the general-detailed idea dichotomy'). Cf. Rosen, at 279.

[819] *LB (Plastics),* at 629 (per Lord Hailsham).

[820] In Lord Hoffmann's phrase, "copyright law protects foxes better than hedgehogs." See *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2423. See also Chacksfield, M., "The Hedgehog and the Fox, a Substantial Part of the Law of Copyright?" [2001] EIPR259, at 261.

[821] See Laddie et al, at 64; *Ibcos*, at 291, 303; *Fylde Microsystems Ltd v. Key Radio Systems Ltd* [1998] FSR 449, at 456.

[822] See *John Richardson Computers Ltd v. Flanders* [1993] FSR 497, at 527, 549.

[823] See *Ibcos*, at 277, 292. See also Laddie et al, at 838; Torremans, at 503. Cf. Lai, at 23 (n. 86), 25.

attendant vagueness in the context of software could be epitomized by the discussion on the term 'architecture of a computer program' in *Cantor Fitzgerald International v. Tradition (UK) Ltd*[824]. The formula at issue was described by the court as ambiguous and referring to different levels of abstraction.[825] In a sense, the dichotomy resurfaced in *Norowzian* (No 2): without recourse to the concept of degree, filming and editing styles (including various camera positions) were rejected as part of the idea.[826]

Another example could be found in *Robin Ray v. Classic FM PLC*[827] where Lightman J interpreted the *Cala* case[828] and postulated: 'Copyright exists, not in ideas, but the written expression of ideas. A joint author must participate in the writing and share responsibility for the form of expression in the literary work.'[829] On the other hand, the *Pierce* court, examining the question of joint authorship in relation to computer programs, identified a substantial contribution to the detailed idea as a key criterion.[830] A similar view appears to have been adopted with reference to other subject-matters.[831]

It is submitted that, so far as the principal questions (such as copyrightability, the fact of infringement or the status of a joint author) are concerned, the same conclusions could have been reached on the basis of the circumstances of a particular case without resolving the works into general ideas and other elements. For instance, in *Bagge* the contributed element (viewed as idea) was not recognized as original[832]; in *Tate* the suggested elements ('ideas' as to the rough sketch and 'expressed' catch lines, the title, etc.) were deemed negligible; in *Wiseman*[833] the contribution was held not to constitute joint authorship regarding the storyline, characters or written dialogues.

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[824] See *Cantor Fitzgerald International v Tradition (UK) Ltd* [2000] RPC 95. See also *Ibcos*, at 291 (considering a plot as an 'idea').

[825] See ibid.

[826] See *Norowzian v. Arks Ltd (No 2)* [1999] FSR 79, at 89.

[827] See *Robin Ray v Classic FM PLC* [1998] FSR 622 (hereinafter "*Robin Ray*").

[828] See *Cala Homes (South) Ltd v. Alfred McAlpine Homes East Ltd* [1995] FSR 818 (Laddie J). The *Robin Ray* court considered the situation in *Cala* (given the director's detailed input joint authorship was held) as exceptional.

[829] *Robin Ray,* at 636.

[830] See *Pierce v. Promco SA* [1999] IT+CLR 233. The same conclusion could be drawn from the *Fylde* judgment (at 455-457).

[831] See, for example *Bagge v. Miller* [1917-23] MCC 179*; Heptulla* v. *Orient Longman Ltd* [1989] FSR 598, at 609 (Ind.); *Tate* v. *Thomas* [1921] 1 Ch 503.

[832] See also *Kenrick & Co v Lawrence & Co* (1890) 25 QBD 99.

[833] See *Wiseman* v. *Weidenfeld & Nicholson Ltd* [1985] FSR 525.

The same might be true of such situations where 'ideas' are not protected because they lack any connection with the literary, dramatic, musical or artistic nature of the work.[834] Although, a distinction can be drawn between the idea (dealt with or elaborated) *in the work*/*subject matter*[835] and the idea *of the work* (or of its structure and attributes), any element of the subject matter (or work) may end up not copyright if the related criteria of copyright subsistence, including those framed with reference to the nature/domain paradigm, are not met. Therefore, in this context, the dichotomy could have been rendered otiose[836].

This may exemplify in microcosm the potential of the general copyright narrative reflected in the notions of 'original literary (artistic, dramatic, etc.) work' and 'substantial part'.[837]

3.3.3. The software idiom: peculiarities.

Professor Karjala predicated that the dichotomy analysis should be eliminated from software related cases and argued that only in the event of reverse engineering could such a dispute be actionable.[838] This position on actionability in the realm of computer programs can be put down to the US copyright approach to 'functional' works and technology.[839] However, it is reasoned, there is another facet of the correlation between the dichotomy and the concept of reverse analysis.

The notion of reverse engineering could be understood as a process by which ideas embodied in a computer program are obtained by employing the procedures of disassembly or decompilation, or gleaned from observing, studying or testing the operation of a program.

The first form of reverse analysis is enshrined in Article 6 ('Decompilation'[840]) of the Software Directive [841] and s. 50B of CDPA.[842] A decompiler may use 'ideas' (as

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[834] Cf., for instance, *Kleeneze Ltd* v *DRG (UK) Ltd* [1984] FSR 399.

[835] Which in the context of software might be described as placeable in the field of target application. See also 4.3.1.D.e, below.

[836] Cf. *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2423.

[837] See subs. 4.3.2., below.

[838] See Karjala, D., "Copyright, Computer software, and The New Protectionism" (1987) 28 Jurimetrics 33, at 55-57.

[839] Ibid., at 48-50.

[840] The usage of this term in both the EU and UK could be construed to mean either 'disassembly' or 'decompilation' as such.

[841] See Council Directive of 14.05.91 on the legal protection of computer programs. For an analysis see, for example, Czarnota, B. and Hart, R, *Legal Protection of Computer Programs in Europe: A Guide to*

components of 'information' referred to in Article 6) gained by means of the described process, provided the enumerated[843] conditions are met, including 'the permitted objective'[844] of interoperability. This could be construed as a way to restrict the use of 'ideas' thereby in some respect protecting 'ideas' (irrespective of what could be meant by the term and the criterion of degree).[845]

Therefore, paraphrasing the formulae adopted by both EU and UK legislation: only in particular circumstances a user may avail himself or herself of the 'ideas' and 'expressions' of a work.

Pursuant to s. 50BA (1) of CDPA which implements Article 5 (3) of the Software Directive,[846] it is not an infringement of copyright for a lawful user of a copy of a computer program to observe, study or test the functioning of the program to determine the underlying ideas and principles if he does so while carrying out an act he is entitled to do. According to s. 296 A (1) (c) where a person uses a computer program under an agreement, any term or condition purported to prohibit or restrict the above process shall be void. The same rule is applicable to decompilation and making back up copies[847].

This form of reverse analysis 'can give a lesser degree of insight into the basic ideas and flow of the program'.[848] The formulae 'having a right to use a copy' (Art. 5(3)) and 'a lawful user of a copy' (s. 50BA(1)) in conjunction with determining 'ideas' may connote protection of ideas in a way comparable with that conceptualised in the

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the EC Directive, Butterworths Law, 1991 (hereinafter "Czarnota and Hart"); Dreier, T., "The Council Directive of May 14, 1991, on the Legal Protection of Computer Programs" [1991] EIPR 319; Gilbart - Macmillan, K., "Intellectual Property for Reverse Engineering Computer Programs in the European Community" (1993) 9 Santa Clara C & H.T.L.J. 247; Goldstein, P., "The EC Software Directive: A View from the USA" in Lehmann and Tapper, at 203; Palmer, A. and Vinje, T., "The EC Directive on the Legal Protection of Computer Software: New Law Governing Software Development" (1992) 2 Duke J.C. & IL 65; Vinje, T., "The Development of Interoperable Products Under the EC Software Directive" (1991) Nov. Comp. Law 1.

[842] See also Copyright (Computer Programs) Regulations 1992, reg. 8 (SI 1992/3233). For an overview of the UK implementation as an 'adapted version', see Cornish, at 452-53.

[843] Article 6 (1), (2), Software Directive.

[844] The term used in 50B (2) (a), CDPA.

[845] Such an approach buttresses a 'restricted use' with an accent alternately on the first or second part of the expression.

[846] See also Report from the Commission on the implementation and effects of Directive 91/250/EEC on the legal protection of computer programs, COM (2000) 199 final, at 12-14.

[847] See s. 296A (1) (b) and (a), CDPA. Cf. Article 5 (2), Software Directive. See also Goldstein, P., "Copyright and its Substitutes" [1997] Wisc. L.R. 865; Vinje, T., "Copyright Imperilled" [1999] EIPR 192, at 195, 196, 207.

[848] Bainbridge, at 146.

context of decompilation. The agreement (or licence) specified is effectively, in this connection, a licence mediating the use of ideas.[849]

Thus, the above deconstructed texts may reveal from a different aspect that it is an original literary work (and as a variation on a theme: a substantial part thereof) that is protected irrespective of the interpretation of the positions of the elements on the scale of abstraction. Furthermore, in the light of the conventional view, the dichotomy is associated with such areas as algorithms and computer languages covered elsewhere in this study.[850] Here it is to be observed that, taking account of diverse descriptions of algorithms in terms of ideas and expressions[851] and of great social value attached nowadays to computer languages, judgments in these fields may epitomise the dichotomy as just a vehicle for expedient decisions.[852]

3.3.4. The advent of the Internet: reading as browsing.

It is a commonly held opinion that bearing in mind the apparent technical differences 'under copyright law as it was traditionally applied ... merely to study or peruse a work would not have infringed the copyright in it...[but] loading a computer program into memory counts as 'reproduction' - one which vanishes when the machine is switched off.'[853] It should be noted that software is not unique in this context in that the use (here: reading) of a 'traditional' literary work downloaded from a disk or the Net entails copying[854].

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[849] The parallel formulae in respect of back-up copies (Article 5 (2), Software Directive; s. 50A (1), 296A (1) (a), CDPA) permitting copying of a computer program as its expression may corroborate protectability of 'ideas'.

[850] See subs. 4.3.1.C.b., below, and 1.5., above, respectively. See further Hunter, D., "Mind your Language: Copyright in Computer Languages in Australia" [1998] EIPR. 98, at 100, 103, 104; Laddie et al, at 804. See also Czarnota and Hart, at 35; Dreier, T., "The International Development of Copyright Protection For Computer Programs" in Lehmann and Tapper, at 219; Lehmann, M., "The European Directive on the Protection of Computer Programs" in Lehmann and Tapper, at 167.

[851] See further Ogilvie, at 527, 548.

[852] See Knowles and Palmieri, at 128; Nimmer, R. and Krauthaus, P., "Copyright and Software Technology infringement: Defining Third Party Development Rights" (1986) 62 Ind. L.J. 13, at 31-32. In this connection, the dichotomy has been criticized as 'results-orientated'. Cf. *Krofft,* at 1163.

[853] Laddie et al, at 822. See also Drexl, at 80; Millard, C., "Copyright" in Reed, at 129-130; Spoor, J., "The Copyright Approach to Copying on the Internet : (Over)Stretching the Reproduction Right?" in Hugenholtz, P. (ed.), *The Future of Copyright in a Digital Environment*, Kluwer Law International, 1996 (hereinafter "Hugenholtz"), at 75.

[854] Cf. Drexl, at 10, 80.

In the networked environment the notion of browsing and the related tools of caching[855], linking, mirroring and framing[856] are becoming increasingly important from a legal perspective.[857]

The above cyberspace phenomena alongside 'terrestrial'[858] downloading are liable to fall within the generality of the construct of transient or incidental copying.[859] On the other hand, it has been found that browsing could be understood as the functional equivalent of reading[860], and it is a well established reasoning that 'reading on screen may become a primary market'.[861]

Mediating both the use of software and the operation of browsing, the making of evanescent copies reflects the correlation between these processes. In addition, it is submitted that the following interrelated factors should be accommodated:

(1) a Web page as a computer program written in HTML (Java applets or Active X controls could be embedded in HTML document to produce multimedia effects and interactivity, and JavaScript can be used to add basic online functions, etc.);

(2) a computer program as a species of literary works;

(3) rules on browsing informing the general legal environment on the Internet.

The right of communication to the public enshrined in Article 8 of WCT and its equivalent in Article 3 of the Copyright Directive[862] and s. 20 of CDPA supposedly

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[855] When data is read from, or written to, main memory, a copy (along with the corresponding address) is also saved in the cache, it being a small fast memory subsistem that holds recently accessed data. See further Aplin, T., "Contemplating Australia's Digital Future: The Copyright Amendment (Digital Agenda) Act 2000" [2001] EIPR 565, at 571; Hugenholtz, P., "Caching and Copyright: The Right of Temporary Copying" [2000] EIPR 482.

[856] See also Garrote, I., "Linking and Framing: A Comparative Law Approach" [2002] EIPR 184.

[857] See Burk, at 5; Ginsburg, J., "Putting Cars on the 'Information Superhighway': Authors, Exploiters and Copyright in Cyberspace" in Hugenholtz, at 198; Hugenholtz, P., "Adapting Copyright to the Information Superhighway" in Hugenholtz, at 89-90; Kuester, J. and Nives, P., "Hyperlinks, Frames and Meta-Tags: an IP Analysis" (1998) 38 Idea: J.L. & Tech. 243; Litman, J., "The Exclusive Right to Read " (1994) 13 Cardozo Arts. &. Ent. L.J. 29; Ricketson, S., "The Boundaries of Copyright: Its Proper Limitations and Exceptions: International Conventions and Treaties" (1999) 1 IPQ 56, at 85; Weatherall, K., "An End to Private Communications in Copyright? The Expansion of Rights to Communicate Works to the Public" [1999] EIPR 342; EIPR 398.

[858] As an antonym for the 'celestial jukebox', the expression often attributed to Professor Paul Goldstein. However, see Goldstein, P., *Copyright's Highway: The Law and Lore of Copyright from Gutenberg to the Celestial Jukebox,* Hill and Wang, 1994, at 251.

[859] See s. 17 (6), CDPA. See also *May Systems Corp. v. Peak Computer Inc.*, 991 F.2d 511 (9th Cir. 1993) (loading software into RAM constituted the creation of a copy under the US Copyright Act.).

[860] See *Religious Technology Center v. Netcom On-Line Communication Services Inc.*, 907 F. Supp. 1361 (N.D. Cal. 1995). See also MacQueen, H., "Copyright and the Internet" in Edwards, L. and Waelde, C. (eds.), *Law and the Internet. Regulating Cyberspace*, Hart Publishing, 1997, at 79-80.

[861] Weatherall, K., "An End to Private Communications in Copyright? The Expansion of Rights to Communicate Works to the Public: Part 2" [1999] EIPR 398, at 406.

[862] See also Amended proposal for a European Parliament and Council Directive on the harmonisation of certain aspects of copyright and related rights in the Information Society. COM (1999) 250 final; Vinje, T., "Should We Begin Digging Copyright's Grave?" [2000] EIPR 551, at 553.

echo an 'access right' formulated by Van Caenegem and described as going 'beyond the present copyright law'.[863]

K.Weatherall contends that potentially the most serious effect of such a right could be on the distinction between ideas and expression by preventing users 'from deriving facts or ideas from the work'.[864] By the same token, it might also be said that '"copies" of a work may be made in carbon memory whenever a human being reads or views the book'.[865] Further, in this context the fact that reading as a form of use has not been prohibited by copyright is not to be construed to the effect that ideas are not protected. This could be an indication that the use not predicated upon making copies having a detrimental effect on the interests of the right holder is lawful (fair and reasonable at that[866]). If the above reader proceeds to draw upon the antecedent work to create another work (not discriminating between 'ideas' and 'expression') by dint of substantial taking, the relevant infringement case could be made out successfully.

In juxtaposing reverse analysis with some analogous cases with reference to traditional works, it might be observed that, on the one hand, such acts as reading and analysing are not normally prohibited by the law, on the other hand, this framework might to some extent come down to practicability. Moreover, traditional literary works are generally intended to be read. It is submitted that the difference in purpose[867] should not shut a particular type of work out of the ambit of literary copyright.

It is a labour/result system (of a particular nature and in a particular domain) as distinct from intentions that is protected. However, there is to be a correlation between the purpose and the system of protection.[868] This might be linked to the case of a manual that is by definition supposed to be not only read but also followed in practice. Such a set of instructions cannot (unlike a computer program) be used without being

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[863] Van Caenegem, W., "Copyright, Communication and the New Technologies" (1995) 23 Federal Law Rev. 322, at 339.
[864] See Weatherall, K., "An End to Private Communications in Copyright? The Expansion of Rights to Communicate Works to the Public: Part 1" [1999] EIPR 342, at 345.
[865] See Burk, at 5.
[866] These arguments mirror reasoning on the subject of 'ideas merely existing in someone's mind'. See subs. 3.3.2., above.
[867] As distinct form the 'purposive connection'.
[868] The notion of intention might also provide a basis for a concept of implied licence. See further Laddie et al, at 96-98. See also MacQueen, H., "Copyright and the Internet" in Edwards and Waelde, 2nd ed., at 202.

read.[869] Accordingly, if a work can be used without being read, the act of reading (even by a lawful user) might be justifiably restricted, if practicable.[870]

As explicated above, restrictions effectively imposed on the use of ideas in the area of reverse analysis may only corroborate that the idea-expression doctrine is ill-conceived and ill-founded. Paradoxically, so far as the dichotomy is concerned, the only certainty is that copyright law does protect many ideas.[871]

It is also to be noted in this context that although the framework of interoperability (as regards writing a compatible program) in the programming domain would not seem to fit into the traditional mould of, for example, writing a follow-up restricted by copyright, this discrepancy may reflect the corresponding restricted/permitted acts or infringement/defences modes as distinct from the system of copyright subsistence.

It can be appended that reading could very well be interpreted as the exploitation of 'expression', particularly given elaborate philosophical constructs inherent in the discourse. For instance, whilst reading the book one can learn the metaphors, coinage and similes (as subgenera of expression) or any other manifestations of the author's imagination and adopt them afterwards. In this regard, the process of reading/learning is considered a form of 'overborrowing' of the 'expression' or the first stage of the development of a derivative work to the detriment of the owner of the copyright in the pre-existing work. Therefore, in line with deconstruction the logic of traditional and modern readings of 'reading' invites its own refutation.

Accordingly, the idea/expression abstract has not 'dissolved'[872] because it has not existed as a distinct legal phenomenon. In fact, the history of the dichotomy can be viewed as a combination of myth and confusion clothed in pseudo-philosophical terms. Indeed, 'our inability to formulate any clear separation between idea and execution suggests that we should treat them as one'.[873]

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[869] Or otherwise examined if it constitutes a compilation.

[870] Cf. Nimmer, at 2-200.

[871] See also Bently and Sherman, 2nd ed., at 173.

[872] The expression used by Weatherall. See Weatherall, K., "An End to Private Communications in Copyright? The Expansion of Rights to Communicate Works to the Public: Part 1" [1999] EIPR 342, at 345.

[873] See Hughes, at 311. It is a paradox that Hughes in general supported the dichotomy (in equating the idea/expression with the idea/execution dichotomy) and contended that "First amendment considerations define the 'idea' side" as "that which must be kept as a public preserve" and labour "defines the 'expression' side - that which must be rewarded [as] unpleasant activity" (see Hughes, at 314). In reality, both 'definitions', as it has been shown, have failed.

3.4. Completion of the deconstruction: the "blind alley" of the dichotomy.

The idea/expression construct is closely related to the field of copyright subsistence in both historical and thematic terms. Furthermore, the dichotomy admittedly purports to mark out copyright significant principal parts of any 'intellectual material'. In fact, public policy lies at the root of the multifarious forms of the abstract that can be described as 'non-protection of certain ideas'.[874] The rationale behind the dichotomy has been associated with a number of policy considerations ranging from freedom of speech to the free use of functional ideas.[875] However, it is reasoned that most of the relevant policy goals can be achieved without recourse to the idea/expression concept. For example, it is not surprising that frequently the elements of the construct of originality are mixed up with those of non-protection of ideas. The policies underlying these rules partly overlap. More specifically, the public interest in non-protection of historical facts can be satisfied in the light of the 'originated from the author' rule.[876]

This rule coupled with evidential issues could also be of assistance in ensuring that the same topic can be dealt with in new works.[877] There might also be drawn a distinction between the idea of the work (or of its structure and attributes) and the idea dealt with in the work (or its topic). In this connection the concept of 'field of target application', framed here as part of the internal logic of copyright, may come into play as a substratum of the nature/domain reasoning. It is to be noted that the field of target application can be distinguished from the domain not only in the realm of computer programs. In this respect, cookery books or car manuals could be self-explanatory examples of the non-protection of topics which fall within the field of target application (say, cooking or engineering) unless the latter coincides with the copyright domain in question.[878]

A topic might also be rendered not protected in line with the *de minimis* principle or a *de maximis* rule. In analytical terms, the latter, as outlined in this study, mirrors the *de minimis* principle and restores some kind of doctrinal and policy symmetry if, in

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[874] See also *Newspaper Licensing Agency Ltd v Marks & Spencer plc* [2001] 3 WLR 290, at 297.
[875] See further Bently and Sherman, 2nd ed., at 174.
[876] See *Miller v Universal City Studios,* 650 F. 2d 1365, 1368 (5th Cir. 1981). Moreover, strictly speaking, the idea/expression and fact/expression abstracts are not synonymous. See subs. 3.2.4., above. Even if the 'preserving for posterity' reasoning tipped the balance in favour of protection (see Laddie et al, at 217), such an outcom might well be in the best interests of the public.
[877] Cf. *Jones v London Borough of Tower Hamlets* [2001] RPC 407. See also Siebrasse, at 36.
[878] See also Laddie et al, at paras. 2.121, 2.122. Cf. Nimmer, at 2-208.

specific contexts, it is preferred to the arguments for copyright protection put forward under the general justificatory theories.[879] At best, the idea/expression dichotomy fades into the construct of long protection of topics if it exists as a separate policy rule. Moreover, even in such a 'diminutive' form the dichotomy might be justified only if its rationale is not outweighed by the need for incentives which encourage creativity read here as the pursuit of new subject matter.

The nature/domain reasoning in the form of the concept of the field of target application may also determine the non-protection of functional ideas and techniques of production as well as the free practical use of political and economic ideas. Further, the public interest in free expression and free dissemination of ideas should be addressed on the basis of the principle of freedom of expression.[880] Along these lines, some policy issues associated with the dichotomy may be consistently dealt with under the rubric of defences as distinct from copyright subsistence. It is a separate question whether such a solution could fit in with the current regime of exceptions and limitations as regards the public interest in free expression in general.[881] At the same time, the distinction between ideas and expressions does not resolve the conflict between copyright and freedom of expression. However, the language of the dichotomy is often employed in this area. It is noteworthy that the principle of free speech may collide with the protection of texts and images, that is features or entities falling within any definition of expression.[882]

The balancing role of the distinction is just one of the myths woven into its narrative. Paradoxically, so far as the idea/expression abstract is concerned, the only certainty is that copyright law does protect many ideas. In effect, the dichotomy may exist as a general rule in name only. Moreover, the application of the dichotomy in specific policy contexts can be counter-productive.

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[879] See subs. 2.5.3.D., above. See also Bently and Sherman, 2nd ed., at 35-37.

[880] This principle is recognised by Art. 10 of the European Convention for the Protection of Human Rights and Fundamental Freedoms 1950 (ECHR). See further Craig and de Búrca, at 342, 344-345; Bently and Sherman, 2nd ed, at 25, 192; Cornish and Llewelyn, at para. 13-05. See also s. 12, Human Rights Act 1998.

[881] All defences must comply with the 'three-step test' derived from the Berne Convention. See Art. 9 (2), Berne Convention; Art. 13, TRIPs Agreemant; Art. 5 (5), the Copyright Directive. See further Bently and Sherman, 2nd ed., at 191-192; Cornish and Llewelyn, at paras. 9-26, 11-37. See also Recitals 32 ('This Directive provides for an exhaustive enumeration of exceptions and limitations to the reproduction right and the right of communication to the public'), 44, the Copyright Directive. See also Bently and Sherman, 2nd ed, at 190-192, 203; Cornish and Llewelyn, at paras. 13-01, 13-05. Unfortunately, uncertainty has been associated with the existence and scope of the public interest defence developed by the common law and acknowledged by the CDPA. See s. 171 (3), CDPA. See further Bently and Sherman, 2nd ed, at 208-210; Cornish and Llewelyn, at paras. 13-15.

[882] See also Bently and Sherman, 2nd ed, at 210.

At the same time, there remains the crucial argument that 'the non-protection of ideas represents one of the few avenues by which the courts can take account of the individual circumstances and merits of particular decisions'. Nevertheless, if the dichotomy is utilised as a policy and/or conceptual tool, we are likely to encounter further conceptual and doctrinal confusion if not judicial inconsistency, that is conflicting application of the rules by the national courts.

The method used in our investigation into the realm of the dichotomy is described as 'deconstruction' or 'deconstructive reading'. Among other things, it has been applied to the most quoted and indicative US cases to identify the common features predicated upon to build the lines (or genera) of judgments as structural constituents of the proposed classification.

Contrary to popular opinion, it is reasoned, the seminal decisions on the subject (including *Computer Associates*) have failed as yet to determine, and discriminate between, 'ideas' and 'expressions' or elaborate an appropriate test. With both sides of the dichotomy remaining undefined, if definable, the distinction does not exist.

On top of it, *Krofft*-like bifurcated methods and a special role of expert testimony not providing definitions but only mediating the process of identification may only 'palliate' the trouble[883]. To add a rider to it, in *Krofft* the extrinsic test was not carried out and the application of the intrinsic test led to the adoption of the doctrine of the total concept and feel thus confusing the concrete with the abstract.

Furthermore, the notion of 'idea' is often used as some kind of nickname which denotes 'unprotectable' or 'unprotected'. The fact that copyright law protects many ideas overthrows the protected expression/non-protected idea hierarchy as the (non-chronological) structural phase of our deconstructive reading. Further, this allows for the dissonant emergence of the unprotected inside the protected, thus disorganising the received order.[884]

In this context, it has been observed that the interpretation of the concept of 'merger' along with various quantitative tests and criteria, framed as doctrinal ways to define the dichotomy, are flying in the face of common sense and logic.

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[883] See also *FASA Corp. v Playmates Toys, Inc.*, 869 F. Supp 1334,1347 n.19,1352-1353 (N.D. Ill. 1994).

[884] See further Derrida, J., *Positions*, The Athlone Press, 1987, at 41-42.

It is submitted that the related attempts to illuminate the distinction have in effect reinforced the key role of the notion of originality. The essence of the rationale behind the interpretations placed on the dichotomy in the UK cannot be fully understood without reference to the diverse modes and versions of the distinction, or rather certain metamorphoses of the copyright duality which could be identified against a backcloth of the legal history from the Victorian age on.

It is reasoned that the contention that copyright subsists only in the form in which ideas are expressed cannot withstand close critical examination. Firstly, there could be some confusion of protectability of *form* as distinct from *idea* and the statutory rule that for copyright to subsist in a literary work it is to be recorded. If the notion of idea can be analysed within this matrix, it would seem reasonable to look on a sort of ephemeral 'something' (or an idea merely existing in someone's mind: an idea as such, neither reduced to writing nor otherwise recorded) as non-copyrightable. At the same time, the rules of fixation were, presumably, established for the sake of certainty and practicability. This view has also been corroborated by the examination of the line of cases dealing with the notion of originality of ideas.

Further, protection for an original work against copying in any material form implies that copyright in the work is not confined to a particular form of expression. The same conclusion could be drawn from the cumulative effect of protection for a substantial part of a work, either directly or indirectly, and the notion of adaptation.

In relation to 'non-original' types of works, the notions of 'expression' and 'form' are not synonymous either. Philosophically speaking, several distinct oppositions could be identified which have been confused with and within the construct of the idea-expression dichotomy: matter and form, form and content, expression and representation, etc. In part, the attendant perplexity could be mapped onto the purely philosophical nature of such distinctions placed outside the ambit of UK copyright which operates in terms of the notions of work, originality and substantiality.

In this connection, a line of judicial authority and academic analysis advocating non-protectability of general ideas and protection for detailed collections of ideas has been canvassed.

In this respect, it is opined, the dichotomy could have been rendered otiose in that, so far as the principal questions in the cases explored are concerned, the same conclusions could have been reached on the basis of the circumstances of a particular case without resolving the works into general ideas and other elements.

In addition, there are several facets of the correlation between the dichotomy and the concept of reverse engineering coming down to decompilation/disassembly or observing, studying and testing the operation of a program. Paraphrasing the formulae adopted by both EU and UK legislation: only in particular circumstances a user may avail herself or himself of the 'ideas' and 'expressions' of a work. This could be construed as a way to restrict the use of 'ideas' thereby in some respect protecting 'ideas'.

In the networked environment the notion of browsing and the related tools of linking, mirroring and framing are becoming increasingly important from a legal perspective. It has been found that browsing could be understood as the functional equivalent of reading, and it is a well established reasoning that reading on screen may become a primary market.

In this context, the fact that reading as a form of use has not been prohibited by copyright is not to be construed to the effect that ideas are not protected. In juxtaposing reverse analysis with some analogous cases with reference to traditional works, it might be observed that such acts as reading and analysing are not normally prohibited by the law. At the same time, this framework might to some extent come down to practicability. Moreover, traditional literary works are generally intended to be read. It is submitted that the difference in purpose should not shut a particular type of work out of the ambit of literary copyright.

It is a labour/result system (of a particular nature and in a particular domain) as distinct from intentions that is protected. However, there is to be a correlation between the purpose and the system of protection. If a work can be used without being read, the act of reading (even by a lawful user) might be justifiably restricted, if practicable. It may also be observed that certain distinctions existing in this field along the borderline between traditional and 'information age' works may, in fact, reflect the corresponding restricted/permitted acts or infringement/defences modes as distinct from the system of copyright subsistence. It can be appended that reading could very well be viewed as the exploitation of the 'expression'. In this regard, in line with 'deconstructive interpretations', the logic of traditional and modern readings of 'reading' invites its own refutation.

Within this matrix, the idea/expression construct has not existed as a distinct legal phenomenon. In fact, the history of the dichotomy can be viewed as a combination of myth and confusion clothed in pseudo-philosophical terms.

To avoid the aforementioned conflicting application of the rules by the national courts, judicial discretion should be exercised within a coherent framework. On these lines, there is room for conceptual flexibility which should not, however, spell expediency or be read as stretching the meaning of the underlying notions beyond acceptable limits. On the contrary, it should operate on a solid doctrinal foundation. The integrated system of copyright subsistence, which is designed to provide or unveil such a basis, accommodates flexibility. The latter is not restricted to the creative interpretation of the existing categories. The proposed system contains a number of conceptual tools which can be adjusted to specific contexts but still should be utilised according to certain rules. Such constructs embodying an element of choice include the isolated versions and evolving work approaches as well as the text/behaviour reasoning. In addition, this study formulates two conceptual continua: the originality continuum and the part-substantial part-work continuum. By definition, the term 'continuum' implies flexibility. In similar vein, the factor of relevant intention may enter the equation and dramatically influence conclusions. All these conceptualisations are drawn from the analysis of the basic character of the protected subject matter which forms the nucleus of this thesis.

On the whole, the 'deconstructive reading' which has spanned a number of heterogeneous legal texts has revealed from manifold aspects that it is an original literary work (and as a variation on a theme: a substantial part thereof) that is protected whatever may be the interpretation of the positions of the elements on the scale of abstraction and without recourse to any additional doctrine. On these lines, the dichotomy reasoning enters a conceptual and doctrinal '*cul-de-sac*'.

At the same time, the machinery (or rather 'artefact') of worldwide harmonization[885] of legislation on the doctrine (notably as a corollary of the WIPO Copyright Treaty that came into force on 6 March 2002[886]) facilitates, in a way, the role played in this context by Private International Law. Nevertheless, bearing in mind that the end of this process has yet to be achieved, it is reasoned that there is no difference in essence between the dichotomy related and other areas within the

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[885] See also Gerhart, P., "Why Lawmaking for Global Intellectual Property is Unbalanced" [2000] EIPR 309; Vaver, at 627, 635-636.
[886] See further Copinger, at 1171; Ficsor, M., *The Law of Copyright and the Internet: The 1996 WIPO Treaties, Their Interpretation and Implementation,* Oxford University Press, 2002; Reinbothe, J. and Von Lewinski, S., "The WIPO Treaties 1996: Ready to Come into Force" [2002] EIPR 199.

generality of the notion of copyrightability from the perspective of choice of forum and law. These questions, however, are beyond the scope of this study.

CHAPTER 4.

SUBSISTENCE OF COPYRIGHT
IN ELEMENTS OF A COMPUTER PROGRAM:
COMPLETING THE IDEATION. THE NOTION OF SUBSTANTIAL PART.

4.1. Justification and origins of the notion.

From a copyright perspective, it might be asked *purely rhetorically* whether any 'scrap', 'snippet' or 'shard', however worthless, of a copyright work analytically broken into smithereens, could be protected as such. It is also the case that what is protected cannot be doctrinally confined to a distinct and distinctive principal portion of the work, hence a more nuanced approach is to be given way to.

This may justify the raison d'être and operation of the notion 'substantial part'. According to the current statutory provision under UK copyright, references to the doing of an act restricted by the copyright in a work are to the doing of it in relation to the work as a whole or any substantial part of it.[887]

It might be reminded in this context that under s. 1 copyright subsists in copyright works.[888] It is opined that this provision superimposed on the aforesaid formula of s. 16(3)(a) might be construed to indicate that 'substantial part' is a *secondary receptacle for copyright* if 'copyright work' is perceived as a receptacle for copyright as a property right.[889]

It appears axiomatic that the conception of substantial part has played a prominent role in the context of software copyright. In this chapter, we are to get down to the 'anatomy' of computer programs as species of literary works through dissection to various degrees ranging from the identification of substantial part to an element of atomisation of subject mater.

Before that, however, it might be useful to outline the provenance of the concept. Arguably, the seeds of what has become the idea of substantial part could be found

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[887] See s. 16 (3) (a), CDPA. A similar formula was enshrined in s. 49 (1) of the Copyright Act 1956 as part of the supplementary provisions as to interpretation.
[888] See s. 1 (2), CDPA.
[889] For a compelling analysis of the existing theories of property (including the 'bundle of rights' approach and Coase's conception of property as a list of permitted and prohibited uses) as well as somewhat 'missing' dimensions of the institution, see Merrill, T. and Smith, H., "What Happened to Property in Law and Economics?" (2001) 111 The Yale Law Journal 357.

scattered right across the statutory[890] or judicial[891] fields under the pre-1912 law of copyright.

Nevertheless, it was the 1911 Act that ushered in the statutory life-span of the formula 'substantial part'.[892] Pace the editors of *Copinger and Skone James on Copyright*[893], the test was not included as part of the definition of infringement[894] as distinct from the statutory definition of copyright referring to 'the work or any substantial part thereof'.[895]

On the one hand, the convolutions of the concept might be put down to the complexity of the structure of the notion woven out of several, at times tenuous, strands that are to be disentangled in this chapter. On the other hand, the issue contains a plethora of (textual and contextual) detail which results in multifarious confusions that are to be obviated through demystification of their roots.

It is at this point that certain confusions surrounding the notion under discussion come under closer scrutiny.

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[890] The term 'book' in the Literary Copyright Act of 1842 was "construed to mean and include every Volume, Part or Division of a Volume". See s. 2, the Literary Copyright Act 1842. See also Copinger, 13th ed., at 174. The Statute of Anne mentioned the "copy or copies of … book or books, share or shares thereof". See s. 1, the Copyright Act 1709. These provisions might be interpreted as both pointing to a division of rights and indicating the case of copyright for somewhat significant part of what now the term 'work' may denote.

[891] However, primarily with reference to the questions of infringement and fair use. See, for instance, *Bramwell* v *Halcomb* (1836) 3 My. & Cr. 737; *Campbell* v *Scott* (1842) 13 Sim 31, at 39 (not 'the very cream and essence' of the plaintiff's writings but 'attractive in themselves'); *Dickens* v *Lee* (1844) 8 Jur 183; *Dodsley* v *Kinnersely* (1737) 1 Amb 402; *Folsom* v *Marsh* (1841) 2 Story 100, at 116; *Giles* v *Wilcox* (1740) 2 Atk 141; *Hogg* v *Scott* (1874) LR 18 Eq 444, at 451*; Howkesworth* v *Newbery* (1776) Lofft 755; *Kelly* v *Hooper* (1840) 4 Jur 21; *Mawman* v *Tedd* (1826) 2 Russ 385; *Neale* v *Harmer* (1897) 13 TLR 209; *Saunders* v *Smith* (1838) 3 My. & Cr 711; *Scott* v *Stanford* (1867) LR 3 Eq 718, at 722 (a 'considerable portion'), 724 (the 'vital part' of a work); *Tinsley* v *Lacey* (1863) 1 H & M 747; *Warne & Co* v *Seebohm* (1888) 39 Ch.D. 73; *Weatherby & Sons* v *International Horse Agency and Exchange Ltd* (1910) 2 Ch 297; *Wilkins* v *Aikin* (1810) 17 Ves 422.

[892] See s. 1 (2), the Copyright Act 1911.

[893] See Copinger, at 406.

[894] See s. 2, the Copyright Act 1911.

[895] See s. 1 (2), the Copyright Act 1911. However, as indicated elsewhere in this study, this definition listed the elements of 'copyright' construed as the sole right to do certain acts, and thus laid the groundwork for infringement inquiries.

4.2. Ideation of the rationale.

4.2.1. Surrounding confusions: critique.

A. Substantial part/substantial similarity confusion: passing over the UK/US law distinction?

The notion of substantial similarity which has played a prominent part in the US copyright paradigm and the related judicial lore[896] has not been predicated upon any concept of 'substantial part'. Moreover, the latter has not been formulated doctrinally, or of course embodied in Title 17 of the USC or indeed any other act.

On the other hand, the UK notion of substantial part might be seen as a copyrightability bridgehead for the infringement inquiry or as a conception interlinking the copyrightability and infringement analyses.[897] In this connection, it might be observed that being one of the prerequisites for infringement (but of course not 'as' one of such prerequisites), the conceptualised 'substantial part' (as a secondary receptacle for copyright) still falls fair and square under the heading of copyright subsistence. That is, only if the element in question can attract copyright as a substantial part, the investigation may ensue (or rather begin in earnest).[898] This position may be further corroborated by the invocation of such a *locus classicus* as 'a copyright in [a work], or in any material part of it'[899]. In this passage the term 'material', operating as 'substantial', might be deployed to place the issue in its historical context which indicates the germ of the concept of substantial part as a secondary receptacle for copyright and, arguably, of the formula 'copyrightable as' in the delineated sense.

Further, the famous 'rough practical test' formulated in the context of originality in the *University of London Press* case[900] sometimes is tied up with the question of substantiality.[901] In this regard, the issues of copyright subsistence and substantiality are intertwined.[902]

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[896] See further Nimmer, at §13.03.
[897] Cf. *Cantor Fitzgerald International* v *Tradition (UK) Ltd.* [2000] RPC 95 (hereinafter "*Cantor Fitzgerald*"), at para. 73.
[898] See further subs. 4.3.2., below.
[899] *Macmillan*, at 116.
[900] See *University of London Press,* at 610.
[901] See, for example *Ladbroke (Football) Ltd v William Hill (Football) Ltd* [1964] 1 WLR 273 (hereinafter "*Ladbroke*"), at 279, 288, 293; *Warwick Film Productions Ltd* v *Eisinger* [1969] 1 Ch 508, at 533. Cf. *Cantor Fitzgerald*, at para. 76.
[902] Cf. Copinger, at 410.

Nevertheless, it might be plausible that a certain implied interpretative approach to the idea of substantial part could be deduced from the construed signification of the term 'substantial similarity' as doctrinally employed under US copyright law. This may warrant our occasional *mutatis mutandis* invocations to certain US doctrines[903] in seeking to carve out an ideal British approach.

B. The concept 'area of copyright' and the area/core distinction.

In Chapter 2 we coined the term 'area of copyright' defined as a system of copyrightable elements. In addition, some of the facets of the construct could be elucidated as juxtaposed with the notion of 'core of protected (or 'protectible') material'[904] as formulated and applied under US copyright. It might be observed that the formula 'a core of protectable expression' as employed in *Altai*[905] could be seen as formed by fusing together the above 'core of protected material' and 'a substantial similarity of protectible expression'.[906] In this regard, substantiality is equated, notably with reference to software infringement cases, with 'actionability'.[907]

Other metaphors synonymous with the 'core' were used in *Altai* in this context, such as 'a kernel, or possible kernels, of creative expression' and 'the golden nugget' to describe certain elements 'in terms of a work's copyright value' principally

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[903] For differing approaches to this issue see *Ibcos Computers Ltd v Barclays Mercantile Highland Finance Ltd* [1994] FSR 275 (hereinafter "*Ibcos*"), at 292, 302; Laddie et al, at 838. Cf. *John Richardson Computers Ltd* v *Flanders* [1993] FSR 497, at 526-527, 549. Cf. also Lai, at 23.

[904] See further Nimmer, at 13-117, 13-142, 13-143. See also Laddie et al, at 838; Lloyd, at 347; Millard, C., "Copyright" in Reed, at 143.

[905] See *Computer Associates,* at 710. This seminal judgment is often 'regarded as the dominant, albeit not universal, standard' (Nimmer, at 13-118). Some of the aspects of this case are discussed elsewhere in this study. For one of the *Altai*'s precursors see *Autoskill, Inc.* v *National Education Support System, Inc.,* 793 F. Supp. 1557 (D.N.M. 1992). See also *Cooling Systems & Flexibles, Inc.* v *Stuart Radiator, Inc.,* 777 F. 2d 485 (9th Cir. 1985); *Farmers Independent Telephone Co.* v *Thorman,* 648 F. Supp. 457 (W.D. Wis. 1986); *Manufacturers, Technologies, Inc.* v *Cams, Inc.,* 706 F Supp. 984 (D. Conn. 1989). As an example of earlier attempts to devise a comprehensive test (extending to the infringement analysis) in the field under consideration, see *E F Johnson* v *Uniden Corp. of America,* 623 F. Supp. 1485, 1497-1498 (D. Minn. 1985). See further Lai, at 37. As to the progeny of *Altai,* see *Atari Games Corp.* v *Nintendo of America, Inc.,* 975 F. 2nd 832 (Fed. Cir. 1992); *Bateman* v *Mnemonics, Inc.,* 79 F. 3d 1532 (11th Cir. 1996); *Engineering Dynamics, Inc.* v *Structural Software, Inc.,* 26 F. 3d 1335 (5th Cir. 1994); *Gates Rubber Co.* v *Bando Chemical Industries Ltd.,* 9 F. 3d 823 (10th Cir. 1993); *Sega Enterprises Ltd.* V *Accolade, Inc.,* 977 F. 2d 1510 (9th Cir. 1992).

[906] As also worded by Prof. Nimmer. See Nimmer, at 13-116.

[907] See ibid., at 13-8, 13-28.

denoting the results of the 'abstraction' and 'filtration' stages of the Nimmer-*Altai* test[908].

It is to be pointed out that the *Computer Associates* approach incorporates what is called 'substantial similarity' (as opposed to substantial part) test[909]. In fact, only in its final stage, 'comparison'[910], it addresses the issues of substantiality and similarity.

Within UK copyright, applying this doctrine may cast the shadow of confusion, as it were, over the notions of part, substantial part and substantial similarity.[911] If, however, the idea-expression dichotomy is considered conceptually untenable, such a 'core' might be taken to indicate the elements of the subject-mater that are deemed part of the copyright work.[912]

In a sense, the 'core' formula purports to bridge the gap between the meanings attached to the word 'work' in ordinary speech and copyright parlance respectively by *de facto* equating the 'core' with a (copyrightable) work within the subject-matter. The latter is here in fact consistent with ordinary usage, and might be depicted as a *pseudo-work,* 'pretending' that the subject-matter is protectable in its entirety (in this sense being a *quasi-work).* It is only at the stage of an alleged infringement (or rather infringement inquiry) that the 'really'[913] protectable matter is identified.

The 'core' doctrine, set forth in the context of infringement, has employed a bundle of tests that might be questioned, notably within the matrix of UK copyright. Furthermore, the very term 'core' could connote that the rest of the material, although somewhat less important, is also protected.

Further, there could be a certain bewilderment as to implicit significations of such copyright locutions as *work*, subject-matter and copyright work that might be reflected

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[908] See *Computer Associates,* at 706-710. See also Gable, L., "The Feasibility of the Abstraction-Filtration-Comparison Test for Computer Software Copyrightability (and Analysis of Bateman v Mnemonics)" (1998) 14 Ga. St. Univ. L. R. 447 (hereinafter "Gable"), at 463; Lloyd, at 344. See further Derclaye, E., "Software Copyright Protection: Can Europe Learn from American Case Law?" [2000] EIPR 7 (hereinafter "Derclaye"), at 58; Nimmer, at 13-8, 13-28, 13-116. Interestingly, in the context of programming languages, a *kernel* or a *core language* is an essential "linguistic" subset in terms of which other constructs could be defined. The term 'kernel' also refers to the fundamental, closest to the machine part of an operating system. Among other things, it manages memory, files and peripheral devices, allocates system resources, and launches applications. See also *Gates Rubber,* at 839, 841; *Brown Bag Software* v *Symantec Corp.,* 960 F. 2d 1465, 1476-1477 (9th Cir. 1992).
[909] See *Computer Associates,* at 695, 706.
[910] See ibid., at 710. Cf. *Gates Rubber Co.* v *Bando Chemical Industries,* 9 F. 3d 823, 841 (10th Cir. 1993).
[911] See further subs-s. 4.2.1.D., 4.3.2.A. See also *Ibcos,* at 301-302. Cf. *John Richardson Computers Ltd* v *Flanders* [1993] FSR 497, at 526-527, 549. Cf. also Lai, at 23.
[912] Cf. Lai, at 39-40. See also Lloyd, at 335.
[913] Cf. Copinger, at 408 ("the real copyright work").

in assessing the copied portion's relative importance to the plaintiff's overall program in *Computer Associates*[914] without being elaborated or, indeed, repudiated in the Nimmer treatise.[915]

It is reasoned that the concept 'area of copyright' may prove to be a useful instrument of the copyrightability analysis addressing the above issues without being affected by the aforementioned pitfalls that might be associated with the notion of the core of protectable expression.

The identification of the area of copyright reflects the process of drawing the line between copyrightable and non-copyrightable elements. The copyrightable elements might in turn make up various distinct copyright works within the subject mater or a copyright work of the first or second generation of multimedia products.[916]

The term 'area of copyright' may also refer to the distinction between the significations of the word 'work' in popular speech and in copyright respectively as the above process entails the stage of marking out the work perceived in terms of copyright. This may help to visualise the popular speech/copyright distinction in this field as the text/work distinction regarding literary works. In this regard, the 'area' concept might represent an intermediate stratum of the copyrightability analysis between the text and the copyright work.

C. Originality/substantiality confusion.

It is reasoned that the originality analysis in the context of substantiality examination may in fact suggest certain terminological perplexity. For instance, on the one hand, making an inference to the effect that an element is not taken from the work at issue[917] is not probative that the element is original that is not taken from *any* anterior work or from the public domain[918]. On the other hand, one may come to the conclusion that a portion is *not original* because it has been taken from an antecedent

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[914] See *Computer Associates,* at 710. Cf. *Manufacturers Technologies, Inc.* v *Cams, Inc.,* 706 F. Supp. 984, 993, 1002 (D. Conn. 1989).

[915] See Nimmer, at 13-143.

[916] See also in this respect Stamatoudi, I., "To what Extent Are Multimedia Products Databases?" in Stamatoudi and Torremans, at 22. As to the concept "multimedia entity", see also Christie, A., "A Proposal for Simplifying United Kingdom Copyright Law" [2001] EIPR 26, at 30.

[917] Notably, in the context of *similarity* as an issue of the infringement (*taking/substantial taking*) inquiry.

[918] For example, in *Designers Guild* a distinction might be identified between "not copied" as original (see *Designers Guild Ltd v Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2420) and "not taken from the copyright work" (ibid., at 2425).

work (or from the public domain) without reference to the *de minimis* related issues. This privative (as consisting in the *absence* of originality) factor in turn could be construed to the affect that the portion is not a part of the copyright work, then *a fortiori* such an element of the subject-matter does not constitute a substantial part. This approach might be quite useful as ancillary to the infringement (substantial taking) inquiry.

At the same time, as to a possible affirmative conclusion, originality of a feature or discrete portion[919] of the subject-mater is not sufficient to infer even the 'part' status[920]. It is also reasoned that while the originality analysis is congruent with the issue of substantiality, it cannot be asserted that substantiality comes down to originality.[921] In other words, the respective fields are not congruent since some of the questions placed within the ambit of originality (such as whether the result of labour has been taken) are beyond the scope of substantiality as such, and the 'more than *de minimis*' rule, effectively structuring the substantiality frame of reference, is not restricted to originality.

Further, when the question of originality is raised with reference to substantiality, the term 'work' within the meaning of such a formula as 'the presence in the plaintiff's work of unoriginal material'[922] may be understood either in the ordinary non-copyright sense or as referring to the situation where the subject-matter that passed the threshold of 'work' might not necessarily, at least partly, meet the criteria of originality as such. In the latter case, the criteria of 'work' and 'originality' are clearly looked at in isolation which might, if systematically organised, be considered a logically sound approach within the general paradigm of copyright as shown in Chapter 2. However, judging from the actual wording ('Where the plaintiff's work is wholly original'[923]), it might be observed that here a certain element of confusion is present since if the work is 'wholly' original, some kind of partial non-originality within a conceptual framework would seem incongruous.

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[919] See also Laddie et al, at 833.
[920] Cf. *Ladbroke*, at 293.
[921] Cf. Attridge, D., "Copyright Protection for Computer Programs" [2000] EIPR 563, at 567; *Cantor Fitzgerald*, at para. 78; *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2423.
[922] Copinger, at 415.
[923] Copinger, at 415.

D. Part/substantial part confusion.

Some kind of 'unbearable lightness of terminology might be found in the formula 'exclusive rights of the rightholder … shall include the right to do or to authorise the permanent or temporary reproduction of a computer program … in part or in whole'[924] as worded in the Software Directive. It is submitted that on these lines the term 'part' as opposed to 'substantial part'[925] is utterly divested of any conceptual or doctrinal meaning, and, in this sense, 'falls short' of illustrating even conceptual confusion.

Further, if the issue of the originality of the claimant's work is effectively boiled down to the 'nature of the labour or skill'[926], this might be confounding as to the distinct notions of work, originality and nature of skill (or nature/domain). In the context of the role and significations of the notion 'substantial part', such an examination might be further mystifying since, in addressing a material overlap between the elements contributed by the claimant (in terms of 'nature of skill') and those taken by the defendant, the 'part' analysis and its reflections under the rubric of infringement could be thematically and conceptually muddled with substantiality as such.

A certain inconsequence in this field could be seen in such a key British judgment as the *Flanders* decision[927] where Ferris J. stated as follows: 'Whether a part was substantial was to be decided by its quality rather than by its quantity. It was necessary to take into account such considerations as originality and the distinction between idea and expression in assessing the quality, and hence the substantiality, of any part which is said to have been copied. It was also relevant in assessing substantiality to filter out

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[924] Art. 4 (a), Software Directive. See also Art. 5 (a), the Database Directive; Art. 2 (1), the Copyright Directive.
[925] See also Bently and Sherman, 2nd ed., at 161; Laddie et al, at 834.
[926] Copinger, at 415.
[927] See *John Richardson Computers Ltd* v *Flanders* [1993] FCR 497 (hereinafter *'Flanders'*). In this case the plaintiff claimed copyright in a computer program for labelling and stock control for pharmacies designed for BBC computers and alleged that the defendants' program written by the plaintiff's former employee for IBM-compatible computers (the "Chemtec" program) was an infringement of that copyright. It was held that there 'had been some infringement of the plaintiff's copyright although it was fairly minor infringement in a few limited respects' (*Flanders,* at 501. See also *ibid.,* at 559.) including the line editor, amendment routines and dose codes. See *ibid.,* at 558. See also Arnold, R., "Infringement of Copyright in Computer Software by Non-literal Copying: First Decision on Trial by an English Court" [1993] EIPR 250; Attridge, D., "Copyright Protection for Computer Programs" [2000] E.I.P.R. 563, at 566; Lloyd, at 346-350.

elements dictated by efficiency, elements dictated by external factors and elements taken from the public domain'.[928]

It is respectfully submitted that all but one[929] of the concepts mentioned or alluded to in this dictum effectively address the notion of 'part' (as reflected in the issue of infringement) as distinct from those of substantial part and substantiality. Partly, this might be the corollary of struggling to follow suit as to the *Computer Associates* doctrine.[930] On the other hand, a long tradition scarcely conducive to conceptual consistency might be identified in this area, notably when such questions as originality or collocation, which could be raised in marking out constituents, are framed as determining substantiality[931].

4.2.2. Elaboration of the nature/domain approach.

In seeking to resolve the inconsequence impasse, the above description of the related distinctions and confusions leads us to expand upon our nature/domain approach as framed in Chapter 2. It is against this background that the rationale behind the construct of substantial part and the scope of the notion might be silhouetted.

Some works, in terms of the nature of their parts, might be described as homogeneous and some as heterogeneous *stricto sensu.* However, the parts in question must be of the kind that might form a work of a particular type, that is fit into the domain (or sub-domain) under consideration thus illustrating the nature/domain framework.

It would seem unequivocal that coding as writing program instructions in a programming language is of literary nature.[932] In this respect, preparatory design materials as incorporating either traditional literary elements or seemingly not literary ones, to a certain extent differ from a computer program as such as to the specific nature of the related labour/result[933]. Therefore, it might appear logical to place preparatory design material in a different category.

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[928] *Flanders,* at 500. See also ibid., at 548-549.
[929] Namely, the quality/quantity distinction as such that also cannot be restricted to the ambit of substantiality.
[930] See *Flanders,* at 524-527, 549.
[931] Cf. *Ladbroke*, at 293.
[932] See also *Computer Associates Intern., Inc.* v *Altai, Inc.*, 775 F. Supp. 554, 559 (E.D.N.Y. 1991).
[933] See also Derclaye, at 57.

Under British copyright, without going into the actual nature of the labour in question, preparatory design material is of course classified as a discrete species of literary works.[934] This might be put down to the rationale behind the domain/sub-domain approach.[935] Within this matrix, preparatory design materials along with computer programs are to be pigeon-holed as fitting into the programming domain. The latter could in turn be viewed as part of the scientific domain within the ambit of computer science. It is noteworthy that aspects of this branch of science range from programming to artificial intelligence, and creating software can also require considerable expertise in the theory of algorithms, user interface design, etc. Consequently, it would appear that the programming domain is built into the scientific stratum of the literary domain. It is in the light of such a type of intellectual activity as centring upon code-writing as such that this system might be justified.

Arguably, the same is true of the European doctrine reflected in the Software Directive[936] even to a greater extent as the term 'computer programs' under the Directive 'shall include their preparatory design material'.[937] It is reasoned that this formula might also illustrate the 'evolving work' approach whilst the British concept could be seen as indicative of the 'isolated versions' approach[938] thus paradoxically maintaining internal consistency of both the doctrines in the sense that the status of preparatory design material *for a computer program* is accommodated.

It is to be noted that the word 'for' in the CDPA formula[939] implies a purposive connection between design materials in question and a computer program.[940] This is not to be taken to mean unprotectability as to the preparatory design material that has not been worked up into a computer program since such a program should be 'intended'. This reasoning entails the significance of the domain/sub-domain analysis for the purposes of classification. Within this framework, a drawing or a text created not for the purpose of a) developing the intended computer program, b) elucidating its

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[934] Se s. 3 (1) (c), CDPA.
[935] British copyright statutes have not used the term 'domain'. But then, the construct 'nature of labour' is not featuring in the statutory wording either.
[936] See Art. 1 (1), Software Directive.
[937] Ibid.. See also Recital 7, Software Directive. See further Laddie et al, at 807.
[938] See also subs. 2.5.3.F., above.
[939] See s. 3 (1) (c), CDPA.
[940] See also Copinger, at 83-84 (as to an analogous case of a model *for* a building protected as a work of architecture under s. 4 (1) (b), CDPA), 496 (as to the formula "design for" in s. 51, CDPA); Cornish, at 496; Derclaye, at 11.

intended 'behaviour' (as seen, for instance, in a use case[941]) or c) otherwise elaborating the intended process of interaction with prospective users, cannot be deemed (pictorial or textual) part of the preparatory design material in the copyright sense. In other words, the 'result' in question was not produced by the expenditure of labour under consideration, it not being part of the efforts to design the computer program. However, such a subject-matter might be tested for protectability in its own right as an artistic or a literary work respectively. In this regard, a workflow system, invoking individual routines within an application and focused on the related process as a receptacle for all the relevant information, as well as groupware, centred upon information sharing among the users of the software, even supplied as part of a 'package', may hardly be considered as part of the application in the copyright sense for such systems are usually of general purpose and use. However, it cannot be ruled out that the functional and preparatory design material analyses might support a different stance as further maintained in this study.

Bearing in mind that the term 'preparatory' also connotes purposive connection, the wording of the Software Directive does not suggest any discrepancy between the respective doctrines in this respect. Furthermore, both the copyright structures are in conformity with the combination of *the nature of the labour/result analysis* and *the domain approach* as identified within the Berne paradigm. Accordingly, this construct might be elevated to one of the tenets of the system of copyright.

It might also be observed that with reference to preparatory design material certain classificatory complications[942] to some extent mirror the old story of plans' copyright that can be condensed into obvious domain specificity[943] coupled with an element of confusion as to the nature of the related labour.[944]

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[941] A set of all possible system activities and scenarios that have significance to the users. As a methodology, it can be invoked during several stages of software life cycle. See also *Computer Associates Intern., Inc.* v *Altai, Inc.* 775 F. Supp. 544, 559 (E.D.N.Y., 1991). For certain other constructs put on the notion of *software behaviour*, see subs-s 4.3.1.D.d., 4.3.1.D.e., below.

[942] Partly flowing from the preparatory status of the subject-matter so that the latter is tied up with a particular category not necessarily of the same (and often complex) nature.

[943] This, in the latter case, might be identifiable to a lesser degree if the term 'plan' is construed as not restricted to the field of architecture. See also Copinger, at 77, 82. In this respect, the above specificity might be composite.

[944] As a result, plans *unlike drawings* were protected under the 1911 Act (see s. 35 (1), the Copyright Act 1911) as literary works whilst under the 1956 act (see s. 48 (1), the Copyright Act 1956) plans *as drawings* were considered artistic works (see s. 3 (1) (a), the Copyright Act 1956) and under CDPA plans *along with drawings* are classified as artistic works. See s. 4 (2), CDPA. As to maps' copyright that developed along the same lines, albeit without the preparatory status factor, such aspects as domain specificity and the complex nature of the related labour (notably at the stage of preparation) are still to

It is reasoned that the nature/domain paradigm of protectability might be paradoxically reflected in the act of taking from, or making use of, a work of a different, or 'neutral'[945] nature. In disentangling, in this context, the notion of work from that of originality, it might be observed that certain constituent parts of a work might be transferred to a work of a different kind falling into a different domain without being transmuted in respect of their nature. At the same time, one may conceive of a situation where an element being the result of labour of a different (from the rest of the domain) nature still falls into the same domain which in this connection may undergo a certain metamorphosis.

At the end of the day, it is impossible to change the nature of the exerted labour. Along these lines, phenomena representing the notion of domain might be attributed to the 'artificial' side of the framework and tend to remain stable to a lesser degree than those relative to the concept of 'nature'. This might be one of the reasons that ideally the nature of labour analysis would suffice to describe the term 'literary' and its species fully. For example, in the case of maps' copyright where there is room for not only artistic but also literary (compilation) copyright[946] such a disposition echoes the distinction between the respective types of labour of varied nature.

Nevertheless, the role of the domain approach might be spotlighted in view of the preparatory status as reflected in the 'evolving work/isolated versions' distinction (let alone the reality of the domain structure as enshrined in the Berne formula). At the stage of preparation, whether framed as a separate work or otherwise, the labour of a complex nature might go into a work, or an element of a work, of a distinct nature.

This may be seen, for instance, if an algorithm is dissected[947]. It may be observed that an algorithm as part of a software requirement specification (and, specifically, with reference to n-tire system architectures) is normally incorporated in the *business logic* (or a *middle_tier* as 'built in' between the *presentation* and *data* tiers within the 3-tier architecture) constituting the 'brain' of the system as embracing all the solutions.[948]

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be reckoned with whilst only the latter aspect might be present with reference to charts' copyright that is pertinent to the area of preparatory design material. Cf. Laddie et al, at 107, 197 ("The historical genesis of the phrase 'map, chart or plan'").

[945] Certain elements (for instance, a plot) as not manifesting any distinct nature might be called "neutral" and included in works of various kinds.

[946] See Copinger, at 442.

[947] See further subs. 4.3.1.C.b., below.

[948] The terms "tier" and "layer" are employed in this context interchangeably. Bussiness logic may also be depicted as a business application logic layer. A presentation layer is otherwise called user interface

Labour that might be described as artistic (say, as adding an element of visualisation) to some extent may go into an algorithm. However, the actual result of such efforts may hardly constitute an artistic work in its own right because of a certain triviality of the result and, probably, insignificance of the labour if divorced from the non-artistic (as to the nature of it) context. It might also be argued that the labour in question is not to be isolated or even that it would be impossible to extract any visualisation element. Such an ingredient would be irreversibly intertwined with, if not melted into, the process of working out the algorithm. This process may come down to the literary labour virtually shutting out the results of the above artistic (as not coessential) labour. Nonetheless, the visualisation labour might be allowed for within the domain approach.

Further, the nature of the labour expended on preparatory design material might be, in a sense, 'deceptive' or ambiguous in connection with certain ancillary 'artistic' elements[949], whilst the domain analysis would help overcome this complexity placed in the programming sub-domain.

It could be mentioned in this context that with reference to file formatting there is a 'canonical' distinction between 'binary' elements (*i.e.* encoded as a sequence of bits but not consisting of a sequence of printable characters) and *text*. This, however, is an example of jargonisation as for all practical purposes all digital data is binary that is coming down to printable 'zeros and ones' which in turn might be seen as the *lingua franca* of the computer world[950]. In addition, files formatted with a word processor ought to be stored and transmitted as binary files to preserve the formatting.

Interestingly, at first glance it might appear that the ultimate answer to the definitional conundrum in the realm of literary copyright could be lurking in the esoteric field of programming languages since conventional textual languages are not deemed two-dimensional as they are processed by compilers or interpreters as one-dimensional[951] streams of characters. Moreover, it is sometimes pointed out that

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layer. A data tier might be labelled 'database layer'. This tier written by a database administrator might also include an algorithm. As part of an n-tier architecture, there might be a special data access tier that contains generic methods to interface with the data.

[949] Some of these also would not, in their own right, pass the *de minimis* thresholds.

[950] Arguably, save for quantum computing that does not rely on the traditional binary nature of computing. Under this paradigm, data is encoded as a series of quantum-mechanical states. It must also be pointed out that the actual binary format of the machine instruction is specific to the computer (or rather, its central processing unit model or family).

[951] As *e.g.* a straight line that in Euclidian geometry has length only and, accordingly, the dimension one.

naturally visual languages (as opposed to visually transformed ones) have inherent visual expressions which are equivalent to any directly deducible text.

Nonetheless, a solution along these lines might fly in the face of the fact that drawings and icons involved are still to be mapped to certain sequences of zeros and ones not only in the context of such languages as Visual C++ or Visual Basic where only the user interface portion of the environment is visual.

However, taking account of the 'celebrated' fluidity and dynamism of the digital world, we cannot rule out that the above 'dimensional' hypothesis may 'return' a real value, as it were, within this framework. In this regard, the conceptualisation of the domain/sub-domain structure[952] might prove particularly opportune.

As to the dual (source/object code) structure of a computer program, it is sometimes argued that an object code is not clearly considered literary and a source code does not squarely fall within the definition of a computer program[953]. Even if these propositions are taken at face value, the domain approach provides a logically sound basis for considering the above structure copyrightable as a computer program thus reflecting the distinctiveness of programming as a field of intellectual activity. Pinpointing the particularity of coding as a sub-field might notably bear on the CDPA version of a classification of literary works. Further, an instance[954] of the abstract 'work' is to be distinguished not only from 'subject matter' and 'work as a whole' but also from other related instances (or associated works). This might be particularly important so far as the computer program/preparatory design material distinction is concerned if this opposition is not doctrinally destabilised when the 'interspecific' (that is, traced between (copyright) 'species') lines are redrawn after the European blueprint[955].

Accordingly, as also reasoned in Chapter 2, a solution to the categorisation puzzle within the scientific domain tends to lie in the sub-domain structure as rooted in the nature/domain paradigm, notably in UK and EC copyright, indicative of the 'isolated versions' and 'evolving work' approaches respectively thus determining the categorisation of elements.

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[952] See also *Data Access Corp.* v *Powerflex Services Pty Ltd* (1999) 73 ALJR 1435, at 1444-1445.
[953] See further Kremer, B., "Copyright Protection of Computer Programs" [2000] EIPR 292 (hereinafter "Kremer"), at 298. See also subs. 4.3.1.C.d., below.
[954] That is a particular realisation of an abstraction. In this respect, "to instantiate" means "to create an instance".
[955] See art.1 (1), Software Directive.

4.2.3. Software life cycle notions and phenomena: framing the fundamentals of the concept 'part of a computer program'.

A. Reflections on software methodologies: derivation and evolution of copyrightable programmatic entities.

In seeking to avoid a morass of theoretical confusion, it is necessary to determine how the elements of preparatory design material are reflected in a computer program so that the disposition of the elements within software (as a system embracing a computer program as such and its preparatory design material) could be fully understood. On these lines, we should examine what is often called *software life cycle* as a framework embodying multifaceted programming theories and techniques (that are often mathematically based and referred to as formal methods). This concept gives both shape and continuity to various programmatic states, situations, stages, processes and instances navigated through by the pointers suggested in such a scientific discipline as software methodology.[956] We must face up to the fact that along the programming/programmatic pathway one may encounter a plethora of definitional and classificatory sets that, thus, ought to be correlated with those employed in different frameworks reflective, one way or another, of programmers' argot[957], including the idiom illustrated in this study.

Generally, it is submitted, programming and other program-related activities centred upon a given project could be grouped together and divided into two major categories: development and post-development phases. In contradistinction to the latter (encompassing installation, operation, maintenance, and replacement of the system[958]), the former is bound up with the *preparatory design material/computer program* framework. In this connection, development forms and steps should be conceptualised to pave the way for the elucidation of the paradigm under discussion.

The processes of design and construction make up the central phase of software development: *architecture*[959]. This term is frequently employed in such a way that

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[956] See also Lai, at 204. The term "software engineering" denotes a systematic approach in this field.
[957] See also Ogilvie, J., "Defining Computer Program Parts Under Learned Hand's Abstractions Test in Software Copyright Infringement Cases" (1992) 91 Michigan L.R. 526 (hereinafter "Ogilvie"), at 549, 561.
[958] Sometimes such associated processes as quality assurance, marketing and sales are also included.
[959] See further Ogilvie, at 534. Cf. *Pearl System, Inc. v Competition Electronics, Inc.,* 8 USPQ 2d (BNA) 1520, 1522-1525 (S.D. Fla. 1988). See also Grewal, M., "Copyright Protection of Computer Software"[1996] EIPR 454; Gable, at 484; Wilkins, J., "Protecting Computer Programs as

there could be identified a shift of emphasis from a process to the result of such[960]. Architecture is interposed between the pre-design stages of software development and validation (or testing). The latter might be viewed as a sequence of steps finalising the verified arrangement of the elements through the evaluation of the software to ensure that it complies with the requirements. At the same time, we are particularly interested in the pre-design stages entailing preparatory (*stricto sensu*) activities. The related processes (such as formulating, formalising and analysing the user requirements as well as functional and non-functional[961] requirements) and even the attendant documents[962], in a sense, lie along a cline in conceptual and temporal terms. This reflects the intrinsic gradience in the preparatory field or an element of indeterminacy on a graduated scale connecting any analytical steps leading up to a software requirement specification. In such a document, incorporating the inputs to the design process, the requirements and functions are set out and the relevant techniques are pinpointed and tested. Within this framework, a distinction between the specification and implementation construed in a broad sense is often drawn. Alternatively, the term 'implementation' may be perceived as design at a lower ('closer' to the hardware) level or identified with a process of writing a program in a programming language. In this connection, the related design (at both high and low levels) and software requirement specification (encapsulating what might be denoted as 'what' and embryonic 'how' programmatic concepts[963]) may constitute software architecture if a construction different from the above is put on the conception. At all events, a design must satisfy the related specifications, meet the performance and resources requirements, and conform with the target medium and design process restrictions. It is submitted that despite all the limitations involved, the expertise required of the author should be a basis for the originality-determined copyrightability. In this context, originality justifies the boundaries of the copyrightable works. In other words,

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Compilations Under Computer Associates v Altai" (1994) 104 The Yale L.J. 435 (hereinafter "Wilkins"), at 455.

[960] See also *Cantor Fitzgerald*, at paras. 77, 81.

[961] Indicating what the system should include on top of what it is to do.

[962] Where the requirements stated, defined and expatiated upon and the system to meet such requirements is determined. In commercial programming the above requirement-related steps are covered under the rubric of system analysis. In this context, system analysts are normally responsible for systems analysis and design phases, while computer programmers' activities are focused on implementation.

[963] Cf. Ogilvie, at 534.

the original literary work/computer program in question might be doctrinally hewn out of the underlying work/subject-matter[964] along the originality lines.

Ideally, the conceptual relationship between the stages/forms of an instance of software life cycle tends towards congruence. Even bearing in mind 'fuzzy' (in the explained sense) inter-step boundaries, it is pointed out that each of the above processes is ordinarily encapsulated in a single (albeit often *recurring*) stage of the software development. Along these lines, the processes and procedures in question could be described as *horizontal* as opposed to those 'piercing' through several stages and, in this sense, conceived of as *vertical*. For instance, requirement engineering stretches from the initial analysis of the requirements to construction or even validation, thus coming down to attaining accurate representation of the requirements, that is their evolution through all the necessary stages and the consistent embodiment of the requirements and associated techniques in a given system. It might be observed that the name of the game in this context is testability and traceability of the requirements. Here we should mention operational requirements, that is parameters (both qualitative and quantitative) specifying the expected capabilities of a system and serving as a point of departure for determining the operational effectiveness.

Further, the process of framing the specification may usher in the realisation of such methodologies as *synthesis* extending to design or construction (thus accentuating the program deriving (from clear specifications) procedures), and *optimisation* (or program transformation) traversing all the programming steps mainly through preserving program manipulations and leading to (and including) validation. This arrangement reinforces the systematic development processes as forming an efficient integral structure.[965] As a mater of logic, it is clear that such activities entail considerable expertise/skill *bestowed by the author* and, accordingly, may very well be deemed original.

It is sometimes noted that the process of software development frequently tends to run iteratively, rather than linearly, through the above (or conceptually similar) phases. However, in fact, both approaches might be acceptable on a theoretical plane. It is conceived as a methodological principle that the exact scheme deployed to develop or maintain a system ought to be congruent with the characteristics of the

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[964] Most likely, there can be identified conceptual congruence between the work and subject-matter within the discussed framework.
[965] The term "tune" is also frequently used to denote an optimisation of a program/system for a given environment. Thus a programmer can tune, for instance, for time, space or configuration.

project. Interestingly, one of the most commonly used frameworks providing a systematic foundation for programmatic development is often described as a linear sequence of steps and referred to as the 'Waterfall model'. This methodology[966] includes five basic phases: conceptual design (high level project plan is drawn), planning (a system meeting the relevant requirements is designed and implementation is planned), development (the system is coded and tested), implementation (the system is put into use), and system support (the system is monitored). The other side of the coin is that this model may be not necessarily sufficiently susceptible of being redesigned.

B. Object-oriented programming and structural formulae of software in the context of copyright.

The advent of object-oriented programming (or OOP), a revolutionary concept that changed the rules in the field, opened up new vistas of software development including dramatically improved prospects of reusability and redesignability. OOP provides stricter formal rules for developing self-contained software modules[967] than modular programming[968] from which it has evolved. Unlike top-down design[969] (or stepwise refinement) that has grown out of structured programming practices[970] and aims to delineate *functionality* at a very high level which is then partitioned repeatedly into more detailed levels in developing the logic, *object-oriented programming* is revolving around 'objects' and data types[971] as opposed to actions and logic. As further elaborated in subsequent subsections, the term 'object' refers to a unique instance of data structure defined according to its class template, and combined with

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[966] As to the use of the term, cf. *Healthcare Affiliated Services, Inc. v Lippany*, 701 F.Supp. 1142, 1152 (W.D.Pa. 1988). Without clearly defining methodologies and, arguably, to a certain extent implicitly equating them with descriptions of the ways programs operate, the court considered such methodologies as ideas and denied them copyright protection.

[967] See also Ogilvie, at 534.

[968] Where a programming task is simplified by breaking a program into more manageable independently compiled units.

[969] See also Lai, at 203; Ogilvie, at 565, 568. For a contrast between the two methodologies, see Barkan, D., "Software Litigation in the Year 2000: The Effect of Object-Oriented Design Methodologies on Traditional Software Jurisprudence" (1992) 7 High Tech. L.J. 315 (hereinafter "Barkan").

[970] Structured programming comprises various techniques imposing a logical framework on writing processes to produce programs with a degree of modularity or hierarchical structure. See also Wilkins, at 466.

[971] Integers, floating-point (or real) numbers and character strings represent basic data types that most systems support. See also Ogilvie, at 535-538.

specific routines (methods) so that the resultant data/method framework is treated as a discrete entity. Such an object is what is actually run in the computer while a class is the prototype for an object or, put simply, a generalised object determining all the common properties of the related objects. The term 'method' here refers to both a named operation (say, 'PRINT') and the code (as a logic sequence) to perform the operation thus reflecting the text/behaviour concept in this field. In this context, an object 'knows' how to carry out an action, rather than the function (as our hypothetical printing) can be perceived as knowing how to handle a multitude of objects.

It might be particularly interesting from a copyright standpoint, that class definitions are, in a sense, double-reusable as they could be reused not only by the program for which it has been created but also by other object-oriented programs. Again, it is submitted that since these processes are hardly devoid of programming expertise *required of the author,* they should not, *a priori*, be divested of originality and thus of the resultant rights that are to be vested in a given person. However, the concept of intentionality could be deployed to discriminate between copyright 'destinies' (copyright or not copyright) and identities (how copyright) of programmatic pieces benefiting from reusability in the above or similar situations. (In this regard, our formula 'elemental copyright identities' depicts specific copyright significations (such as 'copyright as') of various locutions denoting intellectual entities at elemental level.) At any rate, the construct of data classes does not entail immutable structures. On the contrary, it provides a proving ground for new (as not defined in the programming language) data types created by a computer programmer.

Classes are interrelated in a class hierarchy and, as specifically shown in the context of the abstract class/concrete class distinction[972], a class can be a specialisation of another class so that the former is described as a subclass (or 'derived class') and the latter as a superclass (or 'base class') thus establishing a generalisation-specialisation relationship. If that is the case, a class need only define its own (specific to it, that is not being part of its superclass) methods and variables[973] since a method invoked on

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[972] See subs. 4.3.1.D.d, below.

[973] A variable can be represented as a structure (a symbol or sequence of characters) that holds a value (of some data type) passed to it until a new value is assigned or the program is finished. Data structures consist of variables organised according to a set of rules. (See further Ogilvie, at 537-540.) The term "identifier" is ordinarily used for variable names. A *local variable* is referenced only within the subprogram it was defined in, while a *global variable* can be used by the entire program.

an abject is first looked for in the object's class and then sought out further up the class hierarchy.

As a subclass is derived from a superclass by inheritance so that methods are passed down the hierarchy, the derived class may 'incorporate' all the definitions of its base class. Some features might be redefined in the subclass or added forming a classific superset. In this sense, the terms 'subclass' and 'superclass' could be somewhat bewildering.

The outlined capability to derive new classes from existing ones, or 'inheritance'[974], is a concept of paramount importance in object-oriented programming and may take the form of single inheritance[975] or multiple inheritance.[976] Another requirement of any object-oriented language is polymorphism that is a programming language's capability to process objects subject to their class[977] or, in general terms, to assign a different meaning or usage to an entity in different contexts. This enables a programmer to redefine methods for any number of derived classes. That is to say, as different classes may define methods with the same name, methods may be polymorphic. In a sense, an object might, in such circumstances, change its class as a definition.

Ad-hoc polymorphism[978] is described as overloading (or 'operator overloading') and supported by most object-oriented programming languages. According to this concept, the same syntax could be used with reference to objects of different types. In other words, context determines meaning. For instance, such an operator as '+' would 'behave' differently as applied to real numbers and integers as its operands. In similar fashion, the '-' symbol can be used as a monadic[979] negation operator or as a dyadic[980] subtraction operator.

At any event, an object could be conceived of as a self-contained atom within which such 'particles' as methods and data may interact according to certain rules. These inclusions and combinations are brought about by dint of the techniques of

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[974] See also Wilkins, at 467.
[975] When a subclass is derived from only one "parent".
[976] When a subclass is derived from multiple parent classes not derived one from another.
[977] See also Barkan, at 325.
[978] In this context, polymorphism as such is represented in its retronym form 'parametric polymorphism'.
[979] That is taking one argument, where an argument is a value passed to a routine.
[980] That is taking two arguments.

encapsulation.[981] This concept is closely related to information hiding which is a mechanism reducing complexity and simultaneously providing greater system security. More specifically, on the one hand, programmers' knowledge might be restricted to the required input and expected output (as details of a method are kept 'private') and, on the other hand, when an object is running, the code in question may only access the 'needed' data. Programmatic complexity may also be reduced by employing *abstraction* that, *inter alia,* enables a programmer to pick out common features (as, for instance, functions performing nearly identical tasks) to be combined.

Along these lines, abstraction, information hiding and encapsulation constitute an integrated framework which in turn might be seen as an integral part of object-oriented methodology. So far as this paradigm is concerned, it might be incontrovertible that the work of a programmer may become less laborious[982] without, of course, rendering the related ideas and efforts otiose. Moreover, what may be highlighted in this field is a certain metamorphosis that programming expertise has undergone in shifting towards polygenetic (as springing from multiple origins) and polymorphic (as taking on multiple forms) perseities. This should be taken into consideration in the analysis of relevant labour. Further, as under the information hiding rule the code in question cannot accidentally access any data other than that determined in the class definition of a running object, this characteristic may be of assistance in working out the structural formula of a software entity (in showing the arrangement of the relevant constituents and the bonds between them). The 'genetic' parallel in this area is somewhat reiterated in the context of evolutionary computation. This system utilises computational models of evolutionary processes as pivotal design/implementation elements. Such a model as an evolutionary algorithm maintains populations of structures, or 'individuals', that are normally generated at random and evolve according to a certain set of rules applied to selection, recombination, mutation, and 'survival' in shared environments.

Under another model, a genetic algorithm, 'individuals' are bred from encoded forms referred to as 'chromosomes' through combination and mutation. Copyrightable elements could be distilled from the resultant subject-mater. This process of *copyright condensation* is predicated upon the paradigm of 'labour/skill originated with the

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[981] See also Barkan, at 320-321. On top of it, a programmer can create relationships between objects communicating through well-defined interfaces: *messages* as generalised requests. In the context of polymorphism, a message brings about different results based on the object that it is sent to.
[982] See also Wilkins, at 453.

author' conceived of, as explicated in this study, within the nature/domain framework. An examination carried out along these lines gives special emphasis to the expertise in following the aforesaid 'evolutionary' and 'genetic' tenets even with reference to randomly generated 'individuals'. On the other hand, a claim to protectability of such an 'individual' *per se* stripped of the labour exerted on all the attendant reproduction/modification activities is, most likely, to be refuted.

Consequently, the copyrightability analysis that, within this matrix, hinges on the evolution of software entities may draw upon both the concept of derivative works (including the case of componentware-related derivation) and, as specified in the preceding section with reference to the copyright status of preparatory design material[983], the evolving work/isolated versions distinction. If, in this context, the isolated versions abstract prevails over the evolving work approach, it is reasoned that the principled framework in this area may come down to a variation on the theme 'you do not get a right to stop others copying what you did not create yourself'[984]. The upshot of this is that a programmatic characteristic that is changed is to be regarded as part of the step-bound version preceding the change[985], while the embodied alteration is conceptualised as part of the next (so far as the software life cycle is concerned) step-bound version. On the other hand, it is reasoned, the notion of software life cycle may particularly lend itself to the evolving work construct that in turn might thus be promoted as the principal discursive pathway.

At the same time, bearing in mind the selection/arrangement idiosyncrasies of OOP, there is room for compilation-type approaches in this area. In addition, as the delineated programming complexities right across the field are accommodated, a hybrid compilation/computer program form of protection may also come to the fore[986].

This technology-related rationale in conjunction with the nature/domain approach may form the basis of the paradigm of programmatic copyright. Conceptualisation of various elemental copyright identities is notably reflective of traditional copyright narratives framed in this mode, if informed by fundamental programming concepts.

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[983] See subs. 4.2.2., above.
[984] Laddie et al, at 220.
[985] See also Ogilvie, at 560 (as to characteristics changed during translation from *source code* into *object code*).
[986] See subs. 2.6.3., above. Cf. Wilkins, at 468.

The conceptual attributes of congruence and inheritance, understood not necessarily in the narrow, 'object-oriented' sense, and developed within both linear and non-linear frameworks, may be considered as critical factors so far as the disposition and the process of doctrinal placing of the elements in computer program/preparatory design material systems are concerned. As this logic unfolds, the complex nature of both software and its life cycle perceived along these lines tends to be determinative in this field.

C. Towards *OOP*-modelled paradigm of copyrightability.

It is submitted that object-oriented programming as a theoretical framework can be transposed to the realm of copyright, and utilised in a systematic way as an analytical model of copyright subsistence. Within this matrix the resultant paradigm may 'inherit' from OOP, considered in the abstract, the aforesaid 'susceptibility' to redesign so that new species of works (notably, given the exponential growth of technologies) could be defined and neatly fitted into the integrated system here scrutinised. This approach can strengthen the foundation of this field and thus lend credence to the general doctrine of copyright protection

It is reasoned that the construct of a copyright class, a generalised work or copyright species, might be formulated, along these lines, as a prototype for a copyright object, a work in a broad sense. Such an object is perceived as a discrete entity combining/'encapsulating' an instance of 'data structure', or a (copyrightable) work in a strict sense, with specific 'methods' (here doctrines and concepts) to analytically manipulate the 'data' in copyright terms.

As might be inferred from the above analysis of OOP, doctrines and concepts are to embrace terminologically consistent and logically sound descriptions (hence the need for further systematisation) as well as specific procedures to implement the conceptualisations in the copyright field. This approach, systematically 'supports' the aforementioned reusability (and double-reusability) since various definitions worded in a particular case or with reference to a particular technology could be 'reused' if doctrinally established.

To this end, the current protectability framework could be re-framed as a class hierarchy. It is a work *stricto sensu* as doctrinally stripped of its analytical shell which attracts copyright. The other side of the coin is that a work *stricto sensu* can be

perceived as a value passed to a legislatively enshrined conceptual variable such as a computer program. When a particular computer program is tested for copyright subsistence, a number of 'encapsulated' doctrines and conceptions are to be invoked 'automatically', that is, as a mater of course, to make up a work *lato sensu* conceived within its hierarchy through copyright encapsulation.

Since the copyright class 'computer program' is construed under this categorisation as a class derived from its superclass (literary works) through 'inheritance', those methodological aspects that are not specifically bound up with computer programs should be sought out in the literary genus and then further up the class hierarchy to instantiate the notions of work, originality and nature/domain.

This approach holds good at both macro- and micro (elemental)- levels. In this connection, a hybrid form of protection could be represented as a result of 'multiple inheritance' in that such a subclass as 'compilation/computer program' may be derived from at least two parent classes[987]. It is also to be accommodated that literary (as to their nature) elements may fall under the rubric of 'dramatic work' and certain graphics can be categorised as part of preparatory design material as a literary work by means of the domain/sub-domain analysis as a method within the nature/domain framework[988]. Such doctrinal and conceptual (as definitional) 'transformation' indicating changes of class definitions could be illustrative of copyright *polymorphism*. As a corollary, copyright objects could be 'processed', that is analysed and placed, subject to their class. Through this prism, for example, the doctrine of substantiality could be redefined as re-contextualised.

Along similar polymorphic lines, various conceptions elaborated with reference to traditional literary works[989] are considered generally (*mutatis mutandis*) applicable to computer programs and preparatory design material, thus exemplifying redefinition of method for derived classes. Conceptual polymorphism takes on additional undertones against a backcloth of substantiality as we attempt to illuminate elsewhere in this chapter[990].

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[987] The mechanism of *copyright encapsulation* may also be deployed in this context.
[988] A work (or rather subject-matter) might be shifted around from one category to another on account of certain additional characteristics that lend themselves to a different field of intellectual activity.
[989] See Nimmer, at 13-121.
[990] See subs. 4.3.2.A., below.

It is also possible to draw a parallel between an 'event' (as an occurrence or happening of significance to a task) 'encapsulated' in an object and such a copyright event as adaptation.[991] The latter, being mapped onto certain nature/sub-domain changes, could be 'built into' a copyright object and conceptualised as a bridgehead for the infringement analysis.

Furthermore, certain elements of 'information hiding' are present in specific application of particular doctrines and in keeping details of a *method* 'private' in the upshot of the copyrightability analysis[992], and 'abstraction' is utilised in picking out such 'functions' as the idea-expression dichotomy performing 'tasks' nearly identical to certain other constructs. In this light, an integral system of analytical copyright subsistence is further elaborated.

In addition, various technological aspects might be utilised as subject matter out of which parts and substantial parts are to be carved as couched in copyright parlance. Specific copyright significations of the programmatic terms of art involved are encapsulated in the respective elemental copyright identities.

In the ensuing subsections this conceptualisation is superimposed on both the above genetic/evolutionary analogy and copyrightability paradigm modelled on object-oriented programming. First, we attempt an anatomy of the genus in question considered here a *base class*, while such copyright species as computer programs contain supersets of features, especially in the context of the Internet. In this connection, multifarious related doctrines are to be transvalued.

Along these lines, not only software life cycle determined elements/parts, whether or not framed as abstraction parts[993], but also doctrinal (distinguishing between protectable and unprotectable material[994]) and evidentiary (providing proof of

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[991] See s. 21, CDPA .See also Cornish, at 371-372; Laddie et al, at 834.

[992] As a variation on this theme, bearing in mind the conspicuous absence of formalities (see also Cornish, at 344-345) in the context of copyrightability, various conceptions and doctrines work "in the penumbra" if not contested. The "private" status of a work may also be maintained through copyrightability analysis on an *ad hoc* basis (see also Nimmer, at 13-32) or (alternatively and minimising, in this respect, uncertainty) on the lines of the "in its own right" substantiality reasoning and with reference to elemental structures that could be *identified as contextualised* since within this framework the characteristics in question are "used" only by the object-work at issue, particularly allowing for unique elemental copyright identities of placings. See also Stephens, K. and Summer, J., "Software Objects: A New Trend in Programming and Software Patents" (1995) 12 The Computer Lawyer 15.

[993] Cf. Ogilvie, at 547, 558. See also *E.F. Johnson Co. v Uniden Corp. of America,* 623 F. Supp. 1485, 1494 (D. Minn. 1985). See further Ogilvie, at 551-552.

[994] See also Ogilvie, at 546.

copying[995]) elements could be invoked as definitions within an integrated analytical system[996]. In this regard, only relevant (as applicable and, *inter alia*, hierarchically consistent[997]) notions can 'access' the entity in question (or rather, its copyrightability – including copyright identity – framework). As in the field of infringement elements affected could be associated with different 'abstraction' levels, *part* definitions may overlap[998], notably within the ambit of copyrightability, to fit in with the relevant elemental copyright identities as distinct from the respective programmatic elements as such. These two elemental sets are correlated on the lines of the copyright subsistence analysis.

4.3. Elemental copyright identities of programmatic entities: conceptualisation of the scope and criteria.

4.3.1. The concept of part: software elements/parts in the context of copyright taxonomy.

A. Genus: *original work* as a base class.

a. Ideation of style/idiosyncratic elements.

Certain (programmatic) elements may exist also in the author's[999] antecedent work. It is submitted that if such constituents are viewed as coming down to the author's style[1000] or idiosyncrasies[1001], these are not to be considered taken from the anterior work since the elements in question existed irrespective of such a work[1002]. By definition, the 'ingredients' at issue are not 'taken' from the public domain. It is also to be observed that such elements cannot be regarded original to the author (in the copyright sense) of the antecedent work.

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[995] Here, in the context of the originality analysis. As to the related segment of the infringement analysis, see *E.F. Johnson Co. v Uniden Corp. of America,* 623 F. Supp. 1485, 1493, 1497 (D. Minn. 1985); *SAS Inst., Int. v S. & H. Computer Systems, Inc.,* 605 F. Supp. 816, 829 (M.D. Tenn. 1985).
[996] Cf. Ogilvie, at 563.
[997] That is conceptualised according to the copyright class hierarchy.
[998] Cf. Ogilvie, at 560.
[999] Here, the author as a person.
[1000] See *Ibcos*, at 300, 303. See also Laddie et al, at 837; Ogilvie, at 552-553.
[1001] See also *Spectravest, Inc. v Aperknit Ltd* [1988] FSR 161. See further Laddie et al, at 837; Lai, at 38; Lloyd, at 347, 350. It is a separate issue that "idiosyncrasies are often the sign of copying". See, in this respect, *Harman Pictures v Osborne* [1967] 2 All ER 324; *Ibcos*, at 301. See also Conley, L. and Peterson, D., "The Role of Experts in Software Infringement Cases" (1988) 22 Ga. L. R. 425, at 453-467; Cornish, at 360; *Flanders*, at 553. As to stylistic choices that may serve as evidence of verbatim copying, see Ogilvie, at 547.
[1002] This might also be sufficient to rebut any inference of infringement.

If, nevertheless, there could be identified a work that ushered in the use of the elements in question, the 'derived' components should be deemed taken from such a pre-existing work save for the case where it is possible to show that the elements under consideration are not the result of labour specifically expended on the pre-existing work.[1003] Similar situations on the lines of the infringement analysis may fit into the category of subconscious copying[1004] or 'innocent infringement'[1005] (say, through a defence analogous to 'fair use').

As to the related right of ex-employees, in a sense, to tap their own skills[1006], Professor Cornish, in drawing an analogy between breach of confidence and copyright[1007], suggests that a former employee be permitted to take 'structure' (as opposed to 'details')[1008]. It is submitted that, even bearing in mind an element of doctrinal laxity construed along these lines in the realm of infringement, no change in the copyrightability status of 'structures' is to be read into the foregoing approach. It might thus be corroborated if built into the justificatory reasoning underlying policy considerations in this field. This schema is also warranted if deemed part of the mechanism of defences germane to the issue as distinct from re-framing copyright subsistence.

b. Contextualisation of the doctrines of *merger* and *scènes à faire*.

As indicated above, the doctrine of 'merger' is often understood as rendering an expression of an idea (at both generalised and elemental levels) unprotectable if the idea can only be expressed in a limited number of ways[1009]. This approach is by definition bound up with the idea-expression dichotomy although the abstracts in

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[1003] Cf. *Flanders,* at 498.

[1004] See further Copinger, at 402; Cornish, at 361, 367; Lloyd, at 310; Siebrasse, N., "A Property Rights Theory of the Limits of Copyright" (2001) 51 Univ. of Toronto LJ 1 (hereinafter "Siebrasse"), at 35. See also *Flanders,* at 500; *Industrial Furnaces v Reaves* [1970] RPC 605, at 623-624. Cf. *Francis Day & Hunter v Bron* [1963] 2 All E.R. 16; *LB (Plastics) Ltd v Swish Products Ltd* [1979] RPC 551, at 600-601. See further Adams, J., "Trespass In A Digital Environment" [2000] IPQ 1, at 14.

[1005] See Attridge, D., "Copyright Protection for Computer Programs" [2000] EIPR 563, at 568. See also *Microsoft Corp. v Plato Technology Ltd* [1999] IP & T 1. See further Laddie et al, at 81.

[1006] As regards a literary, dramatic, musical or artistic work, or a film, made by an employee in the course of his or her employment, the employer is the initial owner of any resultant copyright subject to any agreement to the contrary. See s. 11 (2), CDPA. See further Bainbridge, at 57-58, 112, 119; *Cantor Fitzgerald*, at para. 8; Cornish, at 403-404; Laddie et al, at 559-566, 572-573; Torremans, at 206-207.

[1007] See Cornish, at 450. See also ibid., at 277.

[1008] See ibid., at 450.

[1009] See Lai, at 41.

question rest on different policy concerns[1010], and, as explicated on the lines of our 'deconstructive readings', the dichotomy cannot be defined in the light of the construct of 'merger'[1011]. That is also the case so far as the so-called *scènes à faire* doctrine[1012] is concerned. This context-orientated (as distinct from the text-delineative 'merger') construct sometimes is framed as purporting to preclude protectability of elements that necessarily follow from a common theme or setting[1013].

It should be pointed out that, contrary to popular belief, even under American copyright the doctrines of *merger*[1014] and *scènes à faire*[1015] could be deployed only to define the contours of infringement without delimiting the subject-matter of copyright or 'attempting to disqualify certain expressions from protection *per se*'[1016]. Accordingly, the doctrines in question cannot determine (non-) copyrightability. Nonetheless, different conclusions could be drawn from various policy considerations such as those identifiable in the construct of 'an inadvertent monopoly upon the idea'[1017].

Both doctrines are ordinarily associated with the filtration stage of the abstraction-filtration-comparison test in the context of substantial similarity[1018], notably under American copyright. As to the realm of copyright subsistence, some commentators

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[1010] See Ogilvie, at 563.

[1011] Cf. Ogilvie, at 567.

[1012] See *Alexander v Haley,* 460 F. Supp. 40, 45 (S.D.N.Y. 1978); *Atari, Inc. v North American Philips Consumer Electronics Corp.,* 672 F. 2d 607, 616 (7th Cir. 1982); *Cain v Universal Pictures Co.,* 47 F. Supp. 1013, 1017 (S.D. Cal. 1942); *Fryburger v IBM Corp.,* 812 F.2d 525, 530 (9th Cir. 1987); *Gates Rubber*, at 837-838, 842; *Landsberg v Scrabble Crossword Game Players, Inc.,* 736 F.2d 485 (9th Cir. 1984); *Metro-Goldwyn-Mayer, Inc. v American Honda Motor Co.,* 900 F. Supp. 1287, 1294 (C.D. Cal. 1995); *Ring v Estee Lauder, Inc.,* 874 F.2d 109, 110 (2d Cir. 1989); *Sabin v Regardie, Regardie & Bartow,* 770 F. Supp. 5, 8 (D.D.C. 1991); *Schwartz v Universal Pictures Co.,* 85 F. Supp. 270 (S.D. Cal. 1949); *See v Durang,* 711 F.2d 141 (9th Cir. 1983).

[1013] See Goldstein, at 209, 210; Lai, at 41.

[1014] See *Apple Computer, Inc. v Microsoft Corp.,* 759 F. Supp. 1444, 1456 (N.D. Cal. 1991); *CCC Info Services, Inc. v Maclean Hunter Market Reports, Inc.,* 44 F.3d 61, 72 (2d Cir. 1994); *Kregos v Associates Press*, 937 F.2d 700, 705 (2d Cir. 1991); *Mason v Montgomery Data, Inc.,* 967 F. 2d 135, 138 (5th Cir. 1992).Cf. *Atari, Inc. v North American Philips Consumer Electronics Corp.,* 672 F. 2d 607(7th Cir. 1982); *Concrete Machinery Co. v Classic Lawn Ornaments, Inc.*, 843 F. 2d 600, 606, 607 (1st Cir. 1988); *Digital Communications Associates, Inc. v Softklone Distribution Corp.,* 659 F. Supp. 449 (N.D. Ga. 1987); *Franklin Mint Corp. v National Wildlife Art Exchange, Inc.,* 575 F.2d 62 (3d Cir. 1978); *Hart v Dan Chase Taxidermy Supply Co.,* 86 F.3d 320, 322 (2d Cir. 1996); *Morrissey v Procter & Gamble Co.,* 379 F.2d 675, 679 (1st Cir. 1967).

[1015] See *Nash v Columbia Broadcasting Systems, Inc.,* 899 F.2d 1537 (7th Cir. 1990); *Olson v National Broadcasting Co.,* 855 F.2d 1446, 1451 (9th Cir. 1988). Cf. *Black v Gosdin,* 740 F. Supp. 1288, 1293 (N.D. Tenn 1990); *Gates Rubber,* at 838; *Hoehling v Universal City Studios, Inc.,* 618 F.2d 972 (2d Cir. 1980).

[1016] Nimmer, at 2-12, 13-68, 13-73. Cf. Lai, at 35, 41; Millard, C., "Copyright" in Reed, at 138; Nimmer, at 13-116, 13-142.

[1017] Lai, at 42.

[1018] See *Computer Associates,* at 707, 709.

invoke the famous *Ladbroke* and *Warwick Film* cases as implying that 'the principle of filtration for non-originality has been long accepted in English law'[1019]. Nevertheless, it is respectfully submitted, these classic decisions cannot be unequivocally construed to this effect.

For instance, in *Ladbroke* Lord Pearce set out three formulae discussed as synonymous in forming a qualitative estimate of substantiality[1020]. The first conceptualisation might be boiled down to originality in terms of substantiality of a *part* framed in the context of protectability[1021], thus, to a certain extent, mixing up the notions of part and substantial part. The second formula operates in the field of infringement and represents an attempt to frame the role of collocation as a limiting factor[1022]. In this respect, it is further bewildering so far as the concept of part is concerned. On top of it, citing such a judicial observation as 'there is no copyright in some unoriginal part of a whole that is copyright'[1023] might be illustrative of a certain confusion as to the notions of copyright work (as embracing non-copyright elements) and part.

In *Warwick Film*[1024] this threefold judicial reasoning would appear to be distilled into the formulae 'substantial part of the … book'[1025] and 'attracted copyright, as part of the whole book only by reason of its collocation'[1026], notably without setting out to delineate a copyrightability 'back-formation' from the abstract of collocation. In this connection, the word 'part' might refer to a *system* of (trivial) elements that can take on non-triviality if considered as such a system. 'Part' here may also indicate a certain juxtaposition of components.

It is further reasoned that, on the lines of computer programs' copyright, the abstracts of *scènes à faire* and *merger* could be deployed to mark out archetypal standards, or rather standard situations framed either textually or contextually, to be polymorphically redefined in the form of (*de facto*) software standards. By the same

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[1019] Lai, at 18 (n. 45).
[1020] See *Ladbroke,* at 293.
[1021] See ibid..
[1022] See *Ladbroke,* at 293.
[1023] *Ladbroke,* at 293.
[1024] This judgment dealt with the copyright subsisting in an edited version of Oscar Wilde's trials. Plowman J dismissed the action and held that the defendant's film did not reproduce a substantial part of the literary work in question. The plaintiffs also claimed, but had not proved, their title to the copyright in one of the source works on the trials containing an account of the trials and connected proceedings. See *Warwick Film Productions Ltd* v *Eisinger* [1969] 1 Ch 508.
[1025] Ibid., at 533. See also ibid., at 509-510.
[1026] Ibid., at 533-534.

token, elements identified within this framework and the resultant definitions might be placeable in the public domain. Further, reasonings intrinsic or attributable to the *scènes à faire/merger framework* and *the public domain examination* perceived as distinct analytical entities might intersect (as redefined) at the point of conceptualisation of software standards through the mechanism of copyright multiple inheritance so that a new analytical elemental subclass could be derived from the above 'parent classes'.

c. Exclusion of public domain elements: instantiation of *originality.*

As elucidated in the context of the notion of originality, the composite concept 'originated from the author of the work' (framed as a continuum) embraces the requirement of 'not taken from the public domain'. In addition, the threshold of non-commonplace is placed in the realm of originality under the *de minimis* rule. Within this framework, the term 'public domain'[1027] as contextualised refers not only to material not covered by copyright or other ('equivalent') property rights such as a publication right but also to *freely available though protected works* thus indicating an overlap between the criteria of 'not taken from the public domain' and 'not copied from another copyright work' within the originality continuum. This 'broader' approach is particularly significant within the ambit of software copyright.

Furthermore, along the lines of the abstraction-filtration-comparison test at the stage of 'filtration', or as part of the successive filtering method (if 'filtration' serves the purpose of defining the scope of copyright), such programmatic entities as 'freely accessible program exchanges' and routines 'widely utilised and publicised'[1028] were categorised as elements falling within the public domain. It was also predicated that such material, being 'free for the taking', 'cannot be appropriated by a single author even though it is included in a copyrighted work'[1029].

[1027] See also *Gates Rubber*, at 837.
[1028] Lloyd, at 344. See also *Computer Associates,* at 706, 707, 710; *Brown Bag Software* v *Symantec Corp.,* 960 F.2d 1465, 1475 (9th Cir. 1992). See further Nimmer, at 13-113.
[1029] *Computer Associates,* at 710. See also *Autoskill, Inc.* v *National Education Support System, Inc.,* 994 F.2d 1476, 1494 (10th Cir. 1993); *E.F. Johnson Co.* v *Uniden Corp. of America,* 623 F. Supp. 1485, 1499 (D.Minn. 1985); *Micro Consulting, Inc.* v *Zubeldia,* 813 F. Supp. 1514, 1526 (W.D. Okla. 1990); *Sheldon* v *Metro-Goldwyn Pictures Corp.,* 81 F. 2d 49, 54 (2nd Cir. 1936). See further Nimmer, at 13-141.

It is reasoned that this formula applicable to the copyright genus of original work (characterised in this study as a copyright base class), effectively, indicates the process of instantiation of the construct of originality[1030] justified, *inter alia,* by the sanctity of the public domain.[1031] This 'realisation of an abstraction' is carried out in ways analogous to those conceptualised in the light of programming methodologies.

B. Subgenus: *literary work*.

a. 'Back-formation' of *literal* and *non-literal* elements.
Letter-bound elements.

A number of explanatory and justificatory points should be in place to illuminate our choice of copyright class (here *literary works*) in examining the constructs of literal and non-literal elements[1032] that may conceptually obtain if re-contextualised.

Although formulated in broad terms by alluding to dramatic and musical works as well as motion pictures[1033], the literal/non-literal framework effectively operates in the context of literary works, or, at least, parallels this category so far as the nature of the exerted labour and the discussed range of elements are concerned[1034]. In this regard, the nature/domain approach might be invoked to finalise categorisation. A somewhat flexible domain/sub-domain distinction between literary and dramatic works is identifiable under American copyright[1035] and should also be taken into consideration within this matrix. On top of it, it is the implicit redefinition[1036] of the concept in question (on the lines of our OOP-modelled paradigm of analytical copyrightability) under the rubric of literary works that specifically pertains to our present deliberations. This reading highlights the text-orientated character of the current framework. It might also be deployed to further justify the categorisation of computer programs as a sub-class of literary works since the application of such a construct as 'total concept and feel', as its primarily 'audiovisual' genealogy is accommodated,

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[1030] See also *Lauralex Textile Corp.* v *Citation Fabrics Corp.,* 328 F.Supp. 554, 556 (S.D.N.Y. 1971); *Qad, Inc.* v *ALN Associates, Inc.,* 770 F.Supp. 1261 (N.D. Ill. 1991). See further Nimmer, at 13-142.
[1031] See further Lai, at 8.
[1032] See also Correa, C., "TRIPs Agreement: Copyright and Related Rights" (1994) 25 IIC 543, at 544.
[1033] See Nimmer, at 13-33.
[1034] See ibid., at 13-30, 13-34.
[1035] See 17 USC §§ 102 (a), 106 (4), (5) (as to non-dramatic literary works). Cf. 17 USC §§ 110 (2), (3), (4), (8), 601(a). See further Nimmer, at 2-61.
[1036] Here, in a way, in the absence of an *established* super-class definition.

might be rather limited in the realm of software, while the plot-arrangement pattern is conceptually specified in the context of programmatic 'organisation and structure'.[1037]

It is reasoned that in the sphere of copyright the terms 'literal' (as 'verbatim'[1038]) and 'non-literal' should be semantically restricted to the field of similarity-reproduction/copying/infringement[1039]. In this respect, the abstracts of literal and non-literal similarity[1040] are utilised under US copyright as terms of art indicating the true etymological and conceptual origin in giving rise, by some kind of *back-formation*, to such derivative forms as literal and non-literal elements (aspects, components, structures)[1041] in the context of copyrightability. Worded along these lines, the foregoing similarity/infringement[1042] and copyrightability[1043] terminology is imported into British copyright despite the aforesaid semantic inconsequence and certain underlying doctrinal differences.

Nevertheless, by distilling the gist of the matter and abstracting from the above conceptual obstacles, certain analogous constructs could be, philosophically speaking, acquired to be employed within a range of analytical tools (as distinct from postulates of copyright subsistence) in this area. By the same token, various features attributable to letter-bound and deducible (from the text) elements can be encapsulated.

If base-class definitions of letter-bound (or literal) and deducible (or non-literal) elements are established, such conceptualisations could be re-defined in terms of the related constructs and doctrines for any number of derived copyright classes. (To this end, preparatory design material might be, in a sense, instrumental as a heterogeneous class. This, however, lies outside the scope of this study.)

In *Ibcos*[1044] a number of 'more obvious similarities' extended to variables, labels, remarks, and code lines were identified in addressing the issue of 'literal

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[1037] See Nimmer, at 13-36, 13-38, 13-39, 13-114.

[1038] See also ibid., at 13-31. As to "virtual identity", see Gable, at 471.

[1039] As mainly related to framing the abstract of 'copied *de verbo*'. In *Gates Rubber*, "literal question" were included along with non-literal ones on the 'filtration analysis'. See *Gates Rubber*, at 835. See also *Bateman v Mnemonics*, 79 F. 3d 1532 (11th Cir. 1996). Cf. *Data Gen. Corp. v Grumman System Support Corp.,* 803 F. Supp. 487 (D. Mass. 1992).

[1040] See ibid., at 13-30. See also *Computer Associates,* at 700; *Flanders*, at 520, 523, 524; *Microsoft Corp. v Electro-Wide Ltd* [1997] FSR 580, at 590.

[1041] See *Computer Associates*, at 693, 696, 701-703. See also *Nichols v Universal Pictures Co.,* 45 F. 2d 119, 121 (2d Cir. 1930); *Whelan Associates, Inc.* v *Jaslow Dental Laboratory, Inc.,* 797 F. 2d 1222, 1234 (3d Cir. 1986).

[1042] See *Ibcos*, at 302.

[1043] See *Flanders*, at 524, 525. See also Bainbridge, at 119-120; Lai, at 26.

[1044] Described aright as "the first case in the United Kingdom to consider seriously the literal copying of computer software". See Lai, at 25.

similarities'[1045]. The elements in question were deemed to be 'enough in [themselves] to constitute a substantial part'[1046] thus conceptualising substantiality with regard to copyright subsistence as reflected in the field of infringement and 'demarcating' the above letter-bound parts.

Further, the line-by-line analysis played a prominent role in the *Cantor Fitzgerald* judgment[1047]. In examining the programs at issue at system module level[1048], while there were similarities and differences between the systems at the 'architectural' level[1049], it was worked out that the copied code represented 'no more than 3.3%' of the system by number of lines.[1050]

Within this framework, the systems were resolved into such letter-bound elements of a literary character (as centred upon, but not necessarily confined to, the source code[1051]) as variables, statements, identifiers, routines, and modules as well as lines of code framed as basic analytical entities to mark out the copyrightable parts.[1052] By the same token, the doctrinal link between the fields of protectability and infringement is crystallised along 'literal' lines.

b. The linguistic context of elemental copyrightability.

The other side of the 'literary coin' might be framed in terms of the underlying 'textuality' of the fields under consideration. This characteristic not only embraces the respective lexical or vocabular structures but also indicates that various sub-domain (including scientific or technological) phenomena and epiphenomena are apprehended as forming part of an intelligible pattern and as vehicles for creating and conveying information and meaning which can be retrieved and con-textualised.

[1045] See *Ibcos*, at 302, 305, 308. See also Bainbridge, at 140.
[1046] Ibid., at 308.
[1047] An action for infringement of copyright in certain computer programs that formed part of a bond-broking system, and for breach of confidence in relation to those programs. This decision is often invoked in this study in various contexts. See *Cantor Fitzgerald International v Tradition (UK) Ltd* [2000] RPC 95 (throughout this study '*Cantor Fitzgerald*').
[1048] See *Cantor Fitzgerald,* at paras. 77-78, appendices D, G. See also ibid., at F21, H3, H4, H17.
[1049] See ibid., at paras. 8, 77, E1, E3.
[1050] See ibid., at para. 77. The allegations of infringement of copyright and breach of confidence succeeded to the extent indicated in the judgment. See ibid.*,* at para*.* 100.
[1051] It should also be accommodated that in *Ibcos* the data division of a program was considered a substantial part of the program. See *Ibcos*, at 275, 277, 303. Cf. *Total Information Processing Systems Ltd v Daman Ltd* [1992] FSR 171.
[1052] See *Cantor Fitzgerald,* at paras. 77, A13, A22, E10, G27, H5, H8, H17, I3, I6, Appendix G. See also Lai, at 24.

In identifying copyright significant lexemes[1053] with reference to a particular copyright subclass such as computer programs, a three-tiered analytical structure might be conceptualised: the copyright discourse is superimposed (since *elements* of subject-matter may not necessarily coincide with *parts* of copyright works) on the programmatic narrative which, in turn, is mapped onto the literary paradigm framed along general[1054] or 'traditional' lines. Further, copyright analysis might be represented in the light of comparative linguistics, that is the study of language changes over time (particularly, bearing in mind considerable dynamism intrinsic to programming), or the study and comparison of two languages (here copyright and programming, programming and literature) often distinguished as contrastive analysis. The latter, being "synchronic", is concerned with the linguistic phenomena of a single period of time as a unified system. For the purposes of this reasoning the lexicon of elemental literary abstracts (such as 'chapter', 'plot', or 'style') could be assumed to remain stable.

Through this prism, such 'letter-bound' programmatic linguistic units as statements, instructions, expressions, arguments, routines, modules, etc. [1055] could be redefined at any juncture as compared with, and derived from, analogous (superclass) literary components.

Within this matrix, such a term as *routine* could be construed as referring to an elemental subclass (as a specialisation) of a (base-class) literary concept, for instance, 'chapter', 'section' or 'subsection' in the context of 'traditional' works[1056]. On top of it, a routine might be redefined within its derived copyright class as a *method* viewed

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[1053] As distinct items of vocabulary or as words in the abstract sense. In the realm of programming lexemes (or 'tokens') are word-like pieces with no internal syntactic structure representing minimal units of programming language. Interestingly, *literals* constitute a type of lexemes along with identifiers, keywords, punctuation, etc.. In fact, a literal (whether it is a number, a character, or a string of characters) is a value (unlike a constant which is a name) written *exactly as it is meant to be interpreted.*

[1054] If not confined to 'traditional' literary works.

[1055] Statements are, ordinarily, instructions (to perform specified actions) written in a high-level language. A single statement can represent several machine-language instructions. See also Derclaye, at 11. The term 'instruction' is normally reserved for the most rudimentary programming commands most often in machine or assembly language. See also Derclaye, at 11. As to the role of 'commands', see also *Data Access Corporation v Powerflex Services Pty Ltd* (1999) 73 ALJR 1435. Expressions are 'legitimate' combinations of symbols representing values, while arguments are values passed to a routine. In this context, routines are sections of code that can be invoked within a program. Modules are self-contained components (usually comprising several routines) designed to handle specific tasks within a larger program. See also *Cantor Fitzgerald*, at paras. 21, 77, 78.

[1056] Another solution to the problem in question may lie in the notion 'abstract superclass'.

from the standpoint of OOP programming. On the lines of the copyright class hierarchy, the linguistic field is further ploughed in the context of code forms.

c. Deducible (*non-literal*) elements.

It is submitted that elements not immediately 'visible to the naked eye' could be identified in their deducible (or logically/analytically worked out) forms. If the 'spectre' of the idea-expression dichotomy (that ordinarily, in accordance with American copyright law, is tied up with the literal/non-literal construct[1057]) is doctrinally 'exorcised' from the realm of copyright, the guiding principle in this area may come down to the maxim '[copy]right cannot be limited literally to the text'[1058].

In this context, various language neutral elements (existing regardless of, or not determined by, the language of the text) enter the copyrightability equation. As in the field of 'human languages', this primarily structural category elaborated with reference to computer languages does not include syntax. The latter is understood here as the arrangement of words (or word-like entities) in sentences (as well-formed strings or language statements), and the codified rules governing this system[1059]. It might also be observed that syntax can be extremely rigid in the case of, for instance, assembly languages which should be accommodated in the originality analysis. However, all the structural rules of computer languages are, almost by definition, stricter than those characteristic of natural languages. At all events, it is opined, special emphasis should be given to the sub-domain structure of the literary copyright class and the related system of interspecific conceptual reflections that in conjunction with the underlying software technology narrative can be channelled into copyright significant re-definitions and specialisations of 'traditional' literary elements (such as a 'plot'[1060]) as elemental programmatic entities[1061].

[1057] See *Gates Rubber, at 836, 839; Mazer v Stein,* 347 US 201 (1954); *Peter Pan Fabrics, Inc. v Martin Weiner Corp.,* 274 F. 2d 487 (2d Cir. 1960); *Sid & Marty Krofft Television Productions, Inc. v McDonald's Corp.,* 562 F. 2d 1157 (9th Cir. 1977). See also Nimmer, at 13-32.

[1058] *Nichols v Universal Pictures Co.,* 45 F. 2d 119, 121 (2d Cir. 1930). See further Nimmer, at 13-31.

[1059] A formal definition of the syntactic structure of a language is known as its grammar.

[1060] See also Laddie et al, at 74.

[1061] To similar effect, a base-class not restricted to 'traditional' elemental structures could likewise be conceptualised on the footing of the notion of *abstract superclasses*.

C. Species: *computer program* and *preparatory design material.*
a. Polymorphic redefinition of the role of standards.

As pointed out in view of the copyright base class conceptualisation, the abstracts of *merger* and *scènes à faire* could encapsulate references to archetypal standard situations, identifiable either textually or contextually respectively, which might be polymorphically redefined as software standards within the ambit of programmatic copyright. These standards[1062], set down by international bodies or software developers[1063], can be placed in the public domain and thus rendered non-copyright.

It might, however, be tenable that a seemingly standard procedure could be considered part of the work in question, providing that the *de minimis* thresholds are passed (and in the absence of proof that it has been 'taken') as it may well be framed in terms of drawing upon the programmer's knowledge. At the same time, to prove that allegedly infringing subject-matter is the result of 'taking' from the work under consideration might prove thoroughly painstaking, if possible.

It is in this context that *scènes à faire* or *merger* categorisations[1064] categorisations of *de facto* standards could be confusingly associated, notably in the context of the idea-expression dichotomy, with both copyright subsistence and infringement inquiries[1065]. On these lines, the construct of 'dynamic merger'[1066] is invoked as, effectively, an element of policy reasoning to allow copying of elements that are essential to compatibility[1067]. It is to be reiterated that all these concepts *per se* cannot preclude copyrightability but may only be employed as analytical tools in the originality analysis (including the public domain examination) on top of the work

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[1062] See also *Sun Microsystems, Inc. v Microsoft Corp.,* 21 F. Supp. 2d 1109, 1114 (N.D. Cal. 1998); *Sun Microsystems, Inc. v Microsoft Corp.,* 2000 US Dist. LEXIS 1917. See further Laddie et al, at 803; Lemley, M., "Antitrust and the Internet Standardization Problem" (1996) 28 Conn. LR 1041, at 1042, 1046-1051; Patterson, C., "Copyright Misuse and Modified Copyleft: New Solutions to the Challenges of Internet Standardization" (2000) 98 Michigan LR 1351 (hereinafter "Patterson"), at 1359; Vinje, T., "The History of the EC Software Directive" in Lehmann, M. and Tapper, C. (eds.), *A handbook of European Software Law,* Oxford University Press, 1993, at 46-47.
[1063] Notably, so far as software interfaces are concerned. See subs. 4.3.1.C.e, below.
[1064] See Lai, at 59; Menell, P., "An Analysis of the Scope of Copyright Protection for Application Programs" (1989) 41 Stanford LR 1045, at 1101.
[1065] See Lai, at 59. See also Patterson, at 1359, 1364.
[1066] See Teter, T., "Merger and the Machines: An Analysis of the Pro-Compatibility Trend in Computer Software Copyright Cases" (1993) 45 Stanford LR 1061, at 1088.
[1067] See also Laddie et al, at 803, 819. Along policy lines, the solution may also lie within the framework of copyleft without, of course, affecting the copyrightability status. See further Patterson, at 1381-1383.

conceptualisation[1068]. Accordingly, at the point of conceptual placing of software standards, as indicated above, the *scènes à faire/merger* and *public domain* reasonings might be combined through the mechanism of copyright multiple inheritance so that this analytical elemental subclass could be derived to determine copyright subsistence under the rules of copyright hierarchy.

b. Conceptualisation of algorithms.

Ordinarily, an algorithm is understood as a formula or set of steps (or rules), framed in any language, for solving a particular problem. Such a set should be unambiguous and have a clear stopping point[1069]. The term may also mean a small procedure that solves a recurrent problem[1070]. One way or the other, a computer program can be viewed as an (elaborate) algorithm. On the other hand, algorithms may have elemental copyright identities, notably on the lines of the evolving work approach.

In the context of the idea/expression dichotomy, however, algorithms are often construed as representing 'the very essence of abstract ideas'[1071], and, thus, considered remaining in the public domain[1072]. This may reveal the conceptual limitation intrinsic to the construct of the dichotomy in that it but adds to the existing uncertainties, particularly as the copyrightability analysis is boiled down to the line-drawing problem aggravated by some loose, if not incongruous, terminology.

As discordant views and definitional vagueness are characteristic of this field, some courts effectively "mix" algorithms into programmatic structure, sequence and organisation[1073] while others consider a 'listing of the program's steps' as a distinct stage/part[1074]. Further, an element of ambiguity is conspicuously present, as it were, in the formula of Recital 14 of the Software Directive which asserts that to the extent that logic, algorithm and programming languages comprise ideas and principles, those

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[1068] Here construed in terms of investing time/efforts and capital. See also Friedman, D., "Standards as Intellectual Property: An Economic Approach" (1994) 19 Dayton LR 1109, at 1122.
[1069] See also Kremer, at 300; Nimmer, at 13-120; Ogilvie, at 536.
[1070] See also Derclaye, at 13, 63. See further subs. 4.2.2., above.
[1071] Nimmer, at 13-120. See also Millard, C., "Copyright" in Reed, at 129.
[1072] See also Nimmer, at 13-121.
[1073] See *Whelan Associates, Inc. v Jaslow Dental Laboratory, Inc.,* 797 F. 2d 1222, 1224, 1230 (3d Cir. 1986). See further Ogilvie, at 553-554.
[1074] See *Williams Electronics, Inc. v Artic International, Inc.,* 685 F. 2d 870, 876 (3d Cir. 1982). See further Ogilvie, at 547. See also Bainbridge, at 143.

ideas and principles are not protected by copyright[1075]. This wording reflects, admittedly, a certain political compromise[1076] and might owe its origin to the construct of interoperability as a purported technological and policy ideal[1077]. Being an example of 'vague, inconsistent promises'[1078], the formula under discussion, construed in the light of Article 1(2) as designed to foreclose the protectability prospects for 'ideas and principles which underlie any element of a computer program'[1079], still cannot be interpreted to the effect that algorithms *per se* should be uncopyrightable[1080] whether or not the phrase 'ideas and principles' is viewed as a reference to general ideas[1081].

It is submitted that, although conceptual placing of algorithms is likely to hinge on specific contexts, in general terms elemental copyright identities of algorithms are to be predicated upon the copyright class hierarchy. On these lines, the elemental class 'algorithm' could be derived either from such a concrete superclass as ('traditional') *plot*[1082] or from an abstract base-class comprising various definitions/features attributable to both plots and algorithms.

c. Code forms: the nexus. The role of intermediate languages.

A computer program in its original form (as created by a programmer) is described by the term 'source code' (or 'source program'). At the dawn of the computer era programs were written in the so-called *machine language* representing the first generation in the evolution of the programming languages. In fact, conventional computers can only 'understand' such binary sequences[1083]. To facilitate programming there were developed assembly languages[1084] utilising instruction mnemonics (words or acronyms) to represent binary instructions.

[1075] See Recital 14, Software Directive. See also Derclaye, at 67.
[1076] See Laddie et al, at 823.
[1077] See further Hart, M., "Interfaces, Interoperability and Maintenance" [1991] EIPR 111.
[1078] Laddie et al, at 823.
[1079] Art. 1 (2), Software Directive.
[1080] See Dreier, T., "The Council Directive of 14 May 1991 on the Legal Protection of Computer Programs" [1991] EIPR 320. Cf. Derclaye, at 13.
[1081] See Laddie et al, at 829.
[1082] See also *Cantor Fitzgerald*, at para. 77 ("The closest analogy to a plot in a computer program lies perhaps in the algorithms"). See further Torremans, at 527.
[1083] Binary numbers are based on powers of 2 and expressed with the digits "0" and "1".
[1084] Sometimes the term "assembler language" is used to a certain extent confusingly. Assembly languages constitute the second generation of programming languages.

Further down the road of structuring natural languages to gear them for human/computer interactions[1085], high-level (or machine-independent) languages have been employed in this field since the 1950s so that programmers could concentrate on the problem to be solved in terms of logic as distinct from the nuances of the hardware architecture.

It is worth mentioning that archetypal 'real programmers' still contemptuously ignore, if not vehemently abominate, high-level languages, and, on principle, write neither comments nor documentation. Instead, these knights of the digital realm zealously program 'on the bare metal'. They reckon with bit-level peculiarities of a particular hardware design and sidestep the basic input/output system (BIOS) as well as the operating system interface.

It is to be pointed out that although subject-matter produced along these lines is circumscribed by, or rather moulded to, the related technological particularities, the required expertise may hardly be disputed as the fulcrum of the resultant protectability framework, and could be used in 'levering' the work at issue out of the clutches of the theory of choice.

Sometimes, high-level programming languages are described as third-generation languages while the fourth 'linguistic' generation (4GL), primarily focused on accessing databases[1086], is designed to be even closer to natural languages. In this context, programming employing visual or graphical development interfaces allowing a programmer to envisage class hierarchies in the light of OOP can be depicted as a fifth-generation language (or 5GL). However, in different contexts, the *low-level assembly language/high-level language* distinction is said to be sufficient to 'linguistically' characterise the programming field[1087]. It may be viewed as a classificatory point of departure with reference to the existing varieties of computer languages.

Within this framework, a source code ought to be converted into machine language. In the case of a compiled program this process (compilation) is carried out by a utility called a compiler.[1088] The resultant (derivative) form is normally identified as an

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[1085] In this respect, assembly languages programming was marginalized by improved compiler technologies.
[1086] Query languages and 'report writers' are often categorised as fourth-generation languages.
[1087] Cf. Lai, at 209.
[1088] This term is used as such a utility 'looks' at the entire source code, collects and reorganises the instructions. See also Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 214; Lai, at 204.

object code[1089]. If, as might be the case, an object code is in an assembly form[1090], it needs to be translated into machine language by means of an assembler.[1091] The same procedure is performed when a program is initially written in an assembly language. In fact, an assembly code contains the same instructions as a machine code but, to put it simply, names are used in lieu of numbers. Each type (or series) of CPU has 'its own' (hardware dependent) machine language and assembly language.

Although assembly languages utilise the same structures and sets of commands as machine languages, and ordinarily (if macros are not used) each assembly code line produces one machine instruction, (elemental) copyright identities of the two forms under discussion may differ even without recourse to the concept of computer-generated works[1092] for the 'translation' labour/skill enters the equation. When an object code is not identical to a computer's machine code, it might be described as an intermediate form. In this context, the executable code (the 'native' (to the computer) language form)[1093] is produced by a link editor[1094] that links the program in question to a particular environment.

Such a utility combines modules thus narrowing the scope of the required (human as distinct from automated) programming expertise in terms of the interface between the notions of computer program and compilation as copyright terms of art. The

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[1089] The original source code form might be, theoretically, retrieved through *decompilation.* See further Bainbridge, at 140; Lai, at 227.

[1090] See Lai, at 204.

[1091] See also Lai, at 208, 209. The reverse process is called *disassembly.* See further Bainbridge, at 140; Lai, at 226.

[1092] See also Bainbridge, at 145.

[1093] So far as computers utilising programmable microcodes are concerned, machine-language instructions do not make up the lowest-level language. As the microcode directly controls the "brains" of the computer, the microprocessor (this term might either be synonymous with "central processing unit" as in the realm of personal computers, or refer to a CPU housed in a single chip), a single machine-language instruction can be translated into several microcode instructions. Microprogramming is characteristic of some mainframe and minicomputer architectures while in modern PC microprocessors the microcode is hardwired (built into the system by means of logic circuits and cannot be modified). In some RISC ("reduced instruction set computing" supporting fewer instructions then CISC or "complex instruction set computing") designs the microcode level is eliminated. It should also be pointed out that sometimes the terms "microcode" and "firmware" (indicating programming inserted into read-only memory as distinct from random-access memory) are used intercheangably. As to the ROM/RAM distinction, see Lai, at 207. See also Laddie et al, 799. These 'memory' phenomena bear on the notion of 'reproduction in a material form'. For instance, in *Microsoft v Business Boost* decided under Australian copyright, the reproduction of computer programs into RAM (volatile memory that can be read and written to) was held to be a reproduction in a material form. See *Microsoft Corp. v Business Boost Pty* [2000] FCA 1651. Significantly, the principal concept in the definition of 'material form' is considered not duration but storage. See further Fitzgerald, A., "Meaning of Reproduction in a Material Form in Relation to Copying Computer Program on Hard Disk and into RAM" [2001] EIPR N-35.

[1094] Also called a *linker* or *binder.*

underlying conceptual overlap and the rationale behind the discussed complex forms of protection are also highlighted here. As link editors replace symbolic tags (used by programmers) with real (physical) memory addresses and disk locations, even one-module programs are linked. On these lines, all the relevant programmatic pieces are put together, and references between the modules and libraries of subroutines are united. If the source code is written in a language that supports the bytecode/virtual machine approach, a relatively new idea in enhancing program portability, platform-specific versions are beside the point. The term 'bytecode' refers to a cross-platform intermediate form.[1095] A program in this compiled format (thus identifiable as an object code) is processed by another program, viz a *virtual machine*[1096] as opposed to a 'real' hardware processor. Such processing is, in fact, *interpreting* as the bytecode is translated and executed one instruction at a time. Notably, *Java*[1097]*,* an object-oriented programming language derived from C++, introduced by Sun Microsystems in 1995, and specifically designed for the distributed environment of the Web, supports this approach.[1098] A Java bytecode is normally interpreted by a Java Virtual Machine[1099]. As an alternative (and often faster) option, it can be dynamically recompiled by a *just-in-time compiler* at each system platform.

Architectural neutrality is also supported by interpreted (or interpretive) languages[1100] remaining in their original format and fully converted into executable form at runtime one statement at a time by an interpreter program[1101]. Not

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[1095] In certain contexts such a notation as 'pseudo-code' (otherwise depicted as 'pseudo code', 'p-code', or 'pseudo language') is described as an intermediate language. This form, combining some of the structure of a programming language with an informal (omitting much of the detail of the original source code) natural-language description of the intended computation, might be generated by a 'pseudo compiler' as a basis for further coding. See also *Siebersma v Van de Berg,* 64 F.3d 448, 449 (8th Cir. 1995). See further Nimmer, at 13-120.

[1096] A 'theoretical machine' approximating most computer operations.

[1097] See also *Sun Microsystems, Inc. v Microsoft Corp.,* 21 F. Supp. 2d 1109, 1114-1117 (N.D. Cal. 1998). See further Lemley, M. and McGowan, D., "Could Java Change Everything? The Competitive Propriety of a Proprietary Standard" (1998) 43 Antitrust Bulletin 715, at 765; Patterson, at 1353-1354.

[1098] Most Web browsers are Java-compliant. Other languages illustrative of this or a similar framework are *LISP*, used in artificial intelligence applications, and *Visual Basic,* a version of Basic developed by Microsoft for Windows enabling a programmer to use a graphical user interface to choose and modify pre-selected sections of code.

[1099] On the Internet such an interpreter can be either incorporated into a Web browser, or installed in a Web server. See also Patterson, at 1362.

[1100] Sometimes, a language can be both interpreted (for testing an debugging) and compiled for production use. Typically, however, interpreted languages are smaller in scope and function. As to the role of debugging, see Nimmer, at 13-120.1. See also *Computer* Associates, at 698; Whelan *Associates, Inc.* v *Jaslow Dental Laboratory, Inc.,* 797 F. 2d 1222, 1231 (3d Cir. 1986).

[1101] See Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 214.

infrequently such languages are also categorised as scripting languages.[1102] For instance, *JavaScript*, developed by Netscape Communications and Sun Microsystems and loosely related (by adopting some of the same quintessential ideas) to *Java* without being a true object-oriented language, is widely used on the Web to add basic online applications and functions to Web pages in which it is embedded along with the HTML code. Similarly, *Visual Basic, Scripting Edition,* a subset of *Visual Basic for Applications,* is optimised for Web-related programming. Another scripting language is *Perl* devised at NASA's Jet Propulsion Laboratory, *inter alia,* for text manipulation. Along these lines, it is used to write CGI (Common Gateway Interface) scripts to provide interactivity of a Web page.

It is submitted that in the context of interpreted languages the nexus between the above code forms, reflected even in an element of terminological flexibility attributable to the field, is further underlined if the respective inter-formal boundaries are not altogether erased. It is sometimes reasoned that the terms *source code* and *object code* are not applicable to such environments. Nevertheless, it may hardly be construed that in such a case there is only one code form since there could be drawn a distinction between the original code and the physical binary format or the machine language of the target computer.

Within this matrix, an instance of a code form (significantly, with reference to the notion of intermediate languages) might be considered either a distinct work or *part* of such[1103], subject to a conceptual choice between the doctrines of *evolving work* and *isolated versions* as contextualised. This reasoning parallels the framework of copyright identity of algorithms and is further elaborated in the realm of substantiality.

d. Doctrinal focus: the object/source code distinction.

It is sometimes argued that in the first generation of software copyright decisions courts dealt with the literal copying of computer programs.[1104] At the same time, the issue lying at the root of the matter was, admittedly, 'not whether the act of copying … constituted an infringement, but which forms of "computer programs" were

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[1102] Or script languages. The term 'script' here refers to a program that is interpreted rather than compiled, and carried out by another program rather than by a processor.
[1103] See also Recital 7, Software Directive.
[1104] See Lai, at 1.

protected by copyright.[1105] This implies, it is reasoned, that code forms, such as source and object codes, could be categorised as literal (or letter-bound) elements[1106] on top of being programmatic entities as systems of elements.[1107]

Now it cannot be disputed that computer programs in any form (and, specifically, in source and object codes) are literary works.[1108] However, in many jurisdictions this position was not always prevailing, particularly during the above period.[1109]

It has also been established that the source/object code framework of copyrightability extends to microcodes.[1110] In the famous *NEC* v *Intel*[1111] case it was held that the defendant's microprograms[1112] were copyrightable (and protected by good, valid and existing copyright) literary works expressed in words, numbers or other numerical symbols and indicia as sets of statements used directly or indirectly to bring about the result of interpreting the instruction set[1113]. In this connection, the methodology employed in the creation of microcode was considered indistinguishable from that used in writing any computer program.[1114]

Along these lines, it was stated that the assembly language in which the microcode was written might be called 'source code'[1115] while 'in microcode assembly source code is transferred into binary patterns, or object code'[1116]. Within this matrix, the doctrinal focus on the object/source code distinction[1117] is further reinforced in the

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[1105] Ibid.

[1106] Particularly, if the aforesaid 'back-formation' interpretative approach is accommodated. See also Ogilvie, at 553.

[1107] As to the duel (part/system) nature of code, see also Ogilvie, at 541.

[1108] See Art. 4, WCT; Art. 10 (1), TRIPs. See also subs. 4.2.2., above.

[1109] See, for instance, *Computer Edge Pty Ltd* v *Apple Computer, Inc.* (1986) 65 ALR 33. See further Samuelson, P., "CONTU Revisited: The Case Against Copyright Protection For Computer Programs in Machine Readable Form" (1984) Duke LJ 663, at 672-689. See also Lai, at 2.

[1110] See also Millard, C., "Copyright" in Reed, at 133, 135.

[1111] See *NEC Corp.* v *Intel Corp.,* 645 F. Supp. 590 (N.D. Cal. 1986) (hereinafter '*NEC'*). The plaintiffs brought this action for the declaration that the defendant's copyrights were invalid and/or not infringed by the plaintiffs' microcode and injunction against enforcement thereof by the defendant, or alternatively, that the plaintiffs' were licensed under the defendant's copyright. See also Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 214; Stern, R., "NEC v Intel – A New US Approach to Reverse Engineering of Software" [1989] EIPR 172.

[1112] The terms 'microcode' and 'microprogram' were used interchangeably. See *NEC,* at para. 14. Both the defendant's and plaintiffs' microcodes interpreted the Intel 8086/8088 microinstruction set. See ibid., at para. 15M. See also ibid., at para. 15C.

[1113] See *NEC,* at para. 16. See further ibid., at 590, 595. See also 17 USC § 101. Cf. *Apple Computer, Inc.* v *Franklin Computer Corp.,* 714 F.2d 1240 (3rd Cir. 1983).

[1114] See *NEC*, at para. 30. It was also indicated that computers could be microprogrammed not only by manufacturers but also by users. See ibid., at paras. 26-29.

[1115] See *NEC,* at para. 19.

[1116] Ibid., at para. 20. Cf. Correa, C., "TRIPs Agreement: Copyright and Related Rights" (1994) 25 IIC 543, at 546.

[1117] See also *Computer Associates*, at 698.

field of elemental copyrightability of computer programs. Nevertheless, as pointed out above, the sweep of the concept of code forms is not confined to the object/source code construct and its metamorphoses.

    e. Elemental copyright identities of interfaces.
        Conceptual placing of user interfaces, screen displays,
        keystroke sequences and macros.

Not infrequently, user interfaces (or UI)[1118] are framed to be generically inclusive of, if not equated with, screen displays[1119] and key configurations (sequences)[1120]. However, it is technologically accurate and conceptually consistent to distinguish between these interrelated (but not coextensive) phenomena[1121].

In the software sphere, the word 'interface' is employed with reference not only to UI but also to various software entities enabling a program to work with another program (including, it is crucially important, the operating system[1122]), or with the computer's hardware[1123]. In network environments, interfaces are networking or communications standards defining ways of intersystem connection and interaction[1124]. More specifically, a given software system may use such hidden (available only to the system developer) or exposed 'non-user' interfaces (or calling conventions) as install/uninstall interfaces, application programming interfaces[1125] (or

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[1118] Sometimes described as "external" features as distinct from "internal" elements. See further Derclaye, at 57.

[1119] See also *Gates Rubber,* at 843-844.

[1120] See also Lai, at 65.

[1121] See Bainbridge, at 89.

[1122] See also Laddie et al, at 803.

[1123] Sometimes, the concept of 'software interface' is invoked to describe languages and codes used by applications to communicate with each other and the hardware. Interfaces are activated by programming language commands. In a sense, interfaces can always be depicted in terms of language and formats defining inter-system services.

[1124] In this respect, as indicated above, *protocols* (or communications protocols) are sets of rules, formats or standards designed to enable computers to connect with one another and to exchange information. Protocols specify error checking and data compression methods as well as the indications of sending and receiving messages.

[1125] Which might also be spelled as 'application program interface'. It is a set of routines (often written in a scripting language) or formats used by an application to 'direct' the performance of procedures by the computer's OS (or another control program). This allows the system to be controlled programmatically. An API can also provide an interface between a high level language and lower level utilities. While the API defines calls from the application to the OS, the ABI (Application Binary Interface) also defines the machine language format of a particular CPU family thus ensuring run-time compatibility. The term 'API' also refers to routines, protocols and tools for building applications. On these lines, server APIs are used by programmers writing applications interacting with other applications and constituting part of the Web server. Software providing a common API is often

API), floor interfaces[1126], federation interfaces[1127], system management administration interfaces[1128], etc.. In this context, the term 'user interface' refers to a programmatic portion with which users interact[1129], and embraces command-line[1130] and menu-driven interfaces[1131] as well as graphical user interfaces[1132] (GUI). It is also to be accommodated that the notion of *front end* indicates a separate program providing an interface to another (not as 'user-friendly') program 'behind' it. This phenomenon *per se* may hardly be conceptualised at elemental copyright level if not built into an integrated system along the lines of intentionality.

There are no conceptually specific frameworks detrimental to copyrightability inferences so far as underlying codes designated to interfaces in general and UI in particular are concerned. Furthermore, in the famous *Paperback* judgment, discussed in the context of the idea/expression dichotomy, it was held that the user interface of Lotus 1-2-3, notably including the two line moving cursor menus, was copyright.[1133] Similarly, a keying procedure using the 1, 2 and 3 keys in *Autoskill*[1134] and menus and keystrokes in *Brown Bag Software*[1135] were considered copyrightable. Nevertheless, the First Circuit in *Lotus* v *Borland* concluded that the discussed menu command system was a method of operation and thus uncopyrightable pursuant to § 102(b) of USC.[1136]

It is reasoned that under British copyright, in the absence of the 'method of operation' doctrine, operating as a variation on the idea/expression dichotomy, non-

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depicted by the term 'middleware' that may also refer to software 'sitting' and translating information between applications and system software. See also Laddie et al, at 819.

[1126] Defining the system's dependency on another system, or, in a sense, "insulating" the system from multiple environments, allowing for porting. On these lines, portability is the capability to run on more than one computer system or under more than one OS.

[1127] Two systems are federated if they are members of the same family of systems and if they can interoperate to accomplish their function as if they were one system. In this regard, gateway is a kind of glueware that provides federation interfaces, especially across heterogeneous networks. Networks using the same communications protocols are connected through devices called 'bridges'.

[1128] Related to tuning and controlling the system.

[1129] Cf. Larvick, M., "Questioning the Necessity of Copyright Protection for Software Interfaces" (1994) Univ. Ill. LR 187.

[1130] Based solely on textual input/output.

[1131] See also *Gates Rubber,* at 843; *MiTek Holdings, Inc. v Arce Engineering Co.,* 89 F.3d 1548 (11th Cir. 1996). See further Bainbridge, at 90; Derclaye, at 12.

[1132] A type of environment employing (mainly) pictures to represent the input/output framework of a program.

[1133] See *Lotus Development Corp.* v *Paperback Software International* [1990] 18 IPR 1. See further Patterson, at 1359, 1362.

[1134] See *Autoskill, Inc.* v *National Educational Support Systems, Inc.,* 994 F.2d 1476 (10th Cir. 1993).

[1135] See *Brown Bag Software* v *Symantec Corp.,* 960 F. 2d 1465 (9th Cir. 1992).

[1136] See *Lotus Development Corp.* v *Borland International, Inc.* [1997] FSR 61. See further Bainbridge, at 93. See also *MiTek Holdings, Inc. v Arce Engineering Co.,* 89 F.3d 1548, 1558 (11th Cir. 1996).

code entities associated with user interfaces and rooted in a particular code should not be excluded from (programmatic as extending, in this regard, to preparatory design material[1137]) copyright[1138]. If a UI is found a separate work, the compilation doctrine[1139], or rather the hybrid computer program/compilation form of protection, can occupy the conceptual centre-stage in this field. Arguably, it is only on the basis of 'appearance' that a wide range of alternative reasonings may include artistic, musical and literary (in general) works[1140] as well as photographs and films[1141] or visual and audiovisual works under American, Belgian, French and German law[1142].

This approach extends, *inter alia*, to key sequences and macros[1143]. In this connection, a macro is a series of commands, or a symbol, name or key that represents, and is used to execute, such a set stored in a separate file.[1144] In a sense, macros could be viewed as simple programs. However, some applications support sophisticated macros.

Specifically, as to such related visual entities as 'screen displays', under US copyright, it might now be regarded as part of both academic and judicial lore that '[t]wo wholly different programs can generate the same screen output, just as two wholly different motion pictures may each synchronize the same song'[1145]. On copyrightability lines, one may, however, disagree with this position on several counts, notably under EC and UK copyright. First, this parallel was drawn with reference to an evidentiary point[1146] without clarifying the issue of copyright subsistence. Secondly, within such a framework the inclusion of preparatory design

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[1137] See also Bainbridge, at 126-127.

[1138] Cf. Karjala, D., "Recent United States and International Developments in Software Protection" [1994] EIPR 13, at 17; Karjala, D., "The Relative Roles of Patent and Copyright in the Protection of Computer Programs" (1998) 17 Marshal J. Computer & Information Law 41, at 55.

[1139] See *Apple Computer, Inc. v Microsoft Corp.,* 35 F.3d 1435, 1442 (9th Cir. 1994); *Harbor Software, Inc. v Applied Systems, Inc.,* 936 F. Supp. 167, 168, 171 (S.D.N.Y. 1996); *Productivity Software, Inc. v Healthcare Technologies, Inc.* (1995) WL 437526.

[1140] See Derclaye, at 61.

[1141] See *Flanders*, at 499. See further Bainbridge, at 127.

[1142] See further Derclaye, at 65, 67.

[1143] The term originated in early assemblers with reference to structuring and information-hiding devices. See further Patterson, at 1359. "Keyboard Macros", supported in some text editors, are sometimes referred to as macro-like entities.

[1144] See also *Lotus Development Corp.* v *Paperback Software International* [1990] 18 IPR 1. See further Bainbridge, at 90.

[1145] Nimmer, at 13-116 (n. 282). See also *Manufacturers Technologies, Inc. v Cams, Inc.,* 706 F. Supp. 984, 993 (D. Conn. 1989).

[1146] See Nimmer, at 13-116, 13-137. See also *Digital Communication Associates, Inc. v Softklone Distributing Corp.,* 659 F. Supp. 449, 455-456 (N.D. Ga. 1987); *Whelan Associates, Inc.* v *Jaslow Dental Laboratory, Inc.,* 797 F. 2d 1222, 1244 (3d Cir. 1986).

material in a computer program as a literary work[1147] would seem beyond the bounds of doctrinal possibility. Thirdly, the analogy under discussion might not necessarily work out on account of certain differences between the respective industries and products. For instance, such an aspect as 'a causal relationship between the program and the screen outputs'[1148] is unlikely to be found analogous with any characteristic of the above synchronisation. In similar vein, such a cinematic technique, even as reflected in the actual scenario, might resemble the role of preparatory design material only superficially.

It is reasoned that if a computer program as a literary work includes its preparatory design material, any 'screen' is (under the evolving work approach as built into the nature/domain framework), or at least incorporates, a substantial part of the program. Under the isolated versions approach, elements of the subject-matter constituting doctrinal 'foreign bodies' could be separately protected. In this context, further solutions may lie in the text/behaviour distinction[1149] scrutinised in this chapter in redefining certain features along the lines of the copyright class hierarchy. This framing could be further applied to other non-code programmatic entities rooted in UI portions.

D. Internet-bound models and client-server (Web based) architectures: contextualisation of the notion of part and instantiation of general copyrightability concepts.

a. Roles of client/server architectures.

The current 'incarnation' of the Internet is tied up with a client-server software architecture normally used in distributed systems. Such systems comprise heterogeneous (as running different operating systems or network protocols) automata distributed in a transparent (to the user) way mediating a system that appears as one local machine and a homogeneous entity. The term 'distributed computing' implies

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[1147] See Art. 1 (1), Software Directive.
[1148] *Whelan Associates, Inc.* v *Jaslow Dental Laboratory, Inc.,* 797 F. 2d 1222, 1244 (3d Cir. 1986).
In this respect, the terms "screen displays" and "output" overlap as to the results of processing sent to the screen.
[1149] See also Lai, at 2. It may also be pointed out in this connection that in *Flanders* a screen display was considered a product of a program, not the program itself. See *Flanders*, at 499. This position might, in a sense, reflect the *field of target application* reasoning. See subs. 4.3.1.D.e, below.

that programming and data are spread out over a network of computers as opposed to the old-world computer 'glass houses'[1150].

Before getting down to the attributes of such an architecture relative to the concept of part we should sketch out the precepts and stages of the application of the system and the components of the latter.

In this context, a server is a process[1151] (or a computer) that provides some service requested by another process (computer) called a client.[1152] The related interaction might be not only physical, as between client and server machines, but also logical, as between software portions. In the latter case, client and server roles are allotted within a specific framework. Compared to older architectures, the client/server model is more efficient as to the use of power, hardware/software intelligence and information *per se* owing to such an arrangement of splitting tasks and combining efforts. Nowadays, the term 'client/server' is often reserved for 'legacy' systems (that is, inherited from earlier than current languages, platforms and technologies). As regards its former principal 'cutting edge' signification, it is largely superseded by such constructs as 'Web based' or 'Web enabled'.

As to the workings of the Web, a classic example of a client application is a browser such as Internet Explorer or Netscape. When a user starts a Web browser and clicks on a link or submits a form,[1153] or types in an address, the browser sends an HTTP[1154] request to a server (such as Internet Information Server (IIS) or Apache). At this stage the server executes a CGI script[1155], an application program usually written in Perl[1156] and providing interactivity, *inter alia* passing all the necessary (including the user's input) information to the script. The latter returns information to the server

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[1150] In the latter part of the 1980s applications were moved from centralised minicomputers and mainframes to personal computer networks.

[1151] As an instance of a running program or another unit of programming running as an entity defined in some operating systems as a task.

[1152] This system is often likened to customer-supplier relations in the "real" world.

[1153] A structured window with areas for entering or changing information.

[1154] In general terms, a connection with a server is established via HTTP (Hypertext Transfer Protocol) while FTP (File Transfer Protocol) is used on TCP/IP networks in copying files to and from remote computer systems.

[1155] Or, alternatively, a Java servlet. CGI stands for Common Gateway Interface defining communications between a server and resources (databases or applications) on the host computer. IIS is a Microsoft HTTP and FTP server, *i.e.* sending out Web pages or responding to requests for files respectively, with some added capabilities. Generally, servers are classified by their purposes. For example, in addition to HTTP and FTP servers, one might mention NNTP (newsgroups) and SMTP (mail service) servers. Apache is a Unix based HTTP server.

[1156] An interpreted language devised at NASA's Jet Propulsion Laboratory.

that in turn sends it to the client (browser) to be displayed as, say, a Web page that is an HTML file with associated files.[1157]

b. Componentware and program libraries:
technological identities of software parts.

In this connection programming expertise may extend beyond developing server software (of varied complexity) or a browser,[1158] writing a CGI script or coding an HTML document. It may embrace designing middleware[1159] or a small program[1160] like a Java applet[1161] built into an HTML document, a helper application[1162] required by some browsers, or such componentware as plug-ins[1163] or ActiveX controls.[1164]

The concept of componentware might bear particular relevance to the ideation of *part* and copyrightability in general. A computer programmer can use and reuse existing components combining them with other modular software routines in the same or other computers in a distributed network to form a program as an entity (in a sense, Lego-like[1165]) even without figuring out the workings of the component software. However, it is necessary to have cognizance of establishing data exchange

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[1157] Interestingly, a server using a CGI script can generate a Web page dynamically (*i.e.* when and as needed). This may bring into play the notion of computer-generated work. As indicated above (see subs. 2.4.3., above) the relevant criteria principally come down to the concepts of *separability of human contribution* and *direct human control* as to the content and format of the output.

[1158] A certain niche is occupied in this context by proxy gateways that is computers and associated programs (often run on a firewall machine acting as an anti-cracker barrier) passing on a request for a URL from a browser to an outside server and returning the results.

[1159] Here software that manages the process of application/network interaction as regards heterogeneous platforms. Middleware also sits between an application and an operating system.

[1160] It is to be pointed out that the classificatory lines drawn between various types of small programs and componentware are quite loose. Consequently, the software pieces pigeon-holed here are organised into the listed categories mainly for illustrative purposes and to facilitate further examination.

[1161] A Web site is often leavened with such a piece of code written in *Java* and adding background music, real time video displays, animation, and other multimedia effects and interactivity. When a Java program is run from the browser, it is known as an *applet*. When it executes in the server environment as, say, a widespread alternative to a CGI script, it is called a *servlet* (servelet or serverlet) providing server-side processing. It is usually labelled as a *Java application* when it is a stand alone network computer program.

[1162] Such an application (*e.g.* a sound or movie player) is not part of a browser and might be launched by the latter (a second window should be opened) to help out when a downloaded file cannot be processed otherwise.

[1163] Such modular software routines activated within a browser window are used primarily (they are not guaranteed to be portable ("re-hostable") across environments) by Netscape Navigator while facing embedded in an HTML document files presented in "unrecognisable" formats.

[1164] These components (producing multimedia effects and interactive objects or adding specialised functionality to software development tools and desktop applications) are based on ActiveX technologies permitting software components to interact irrespective of their language.

[1165] Development of programs using building blocks larger than lines of code is often called mega-programming.

between the components[1166]. In this connection, as programmatic composition in this field comes down to putting elements together into a larger whole according to some rules, it requires that certain mechanisms be implemented. This is ordinarily achieved by means of the so-called 'glue' or 'glue software' (that might be either not reusable special purpose or reusable general purpose) tying subsystems together. As a corollary, a system derived along these lines is, up to a certain point, conditioned by the functionality, interfaces and implementation of the components.

It is to be pointed out that, supported by object-oriented (in general, component architectures have been built on object-oriented methodologies) or polymorphic functional languages, organised reusability of code has been traditionally achieved through program libraries. Such collections of subroutines (general purpose or designed for a specific function) and functions stored normally in precompiled form can be used in various programs and linked with a particular program to form a complete executable, that is a binary file containing a machine code which can be run by the computer's processor[1167]. To a certain extent, the idea of componentware is rooted in a trend to deconstruct once monolithic systems thus exposing interfaces and, for the purposes of software copyright, technological identities of elemental structures. This deconstructive/constructive practice of factoring, generally perceived as a conceptualised approach to breaking a system or problem into parts, has been accommodated to frame various specifications standardised in the form of such application programming (or program) interfaces[1168] and compound document standards as OpenDoc or OLE[1169].

[1166] That is how to have the components in question call and pass data.

[1167] When an application is running, it can make a myriad of function calls (or requests to use a subroutine) to the operating system. The function in question could be a) written within the program, b) contained in another program (for instance, in the operating system), c) kept in an external library. When the function is called, the operation is performed, and the results are returned as variables or pointers with new values. A concept analogous with "function call" is transcribed and utilised in object technology as a "message".

[1168] An interface (as, *inter alia*, specifying language and message formats) between the operating system (or another control program) and the application program. It defines the applicable parameters and provides a set of routines, protocols and tools for building applications.

[1169] The abbreviation for Object Linking and Embedding developed by Microsoft and based on the Microsoft component object model.

c. Library items and instantiation of copyrightability concepts: *originality continuum, contextual works, labour/result structure, labour in the process of creating the work, evolving/metamorphosing work* and *purposive connection*.

It would seem evident that under the current copyright doctrine library items cannot be original even if incorporated into the computer-program under consideration since they are taken from a pre-existing work composed by a different programmer. In this regard, componentware may form part of the program in the non-copyright sense but in copyright parlance it is not to be considered part of the computer program as an original literary work.

Were, however, our constructs of contextual works and compositions as well as a hybrid compilation/computer program form of protection (notably, in the context of object-oriented programming) to be adopted, both a component of the discussed type *per se*[1170] and placing the components in question could be viewed as *part*. On these lines, originality is lying in the relevant contextualisation while non-original labour might reside elsewhere. More specifically, a component can be described as part in terms of attribution thus reflecting the idea of 'belonging to'. On top of it, a correct intention (to create such a hybrid) should be consistently traceable. Here the intention under discussion, used as a conceptual 'string' to thread all the relevant *parts* on, dominates the reasoning. This is, however, not the only logically and doctrinally possible framework in this area so far as the rationale behind copyright protection is concerned. As other conceptual pathways are explored below, the construct of intentionality might recede (without fading away) into the penumbra, as it were, and yield, up to a certain point, to other factors in being redefined in different circumstances within our polymorphic methodology.

It is noteworthy that unless the 'intentionalised' contextual approach enters the equation, a library component, even if written by the very same programmer, is not original to the author of the work (and accordingly, is not *part*) since the attendant labour/skill has not been exerted by the author in the process of creating the work. In

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[1170] At least, in the case of the first use (by the owner of copyright) of the components in a program of the intended type without recourse to the personality reasoning.

this mode, such software utilities as add-ins[1171] and add-ons[1172], 'enhancing' a primary program, are not to be deemed parts of the main program in the copyright sense.

Within this matrix, if a routine is technically not part of another program (as a helper application is not part of a Web browser), then *a fortiori* the former as such (as distinct from its placing*)* is mapped outside the labour-result structure of the latter, and cannot be regarded as part of such a program within the meaning of the respective copyright terms of art. Such a conclusion is reached without recourse to any form of contextuality as an instance of conceptualised disposition of elements. (In this connection, the construct 'copyright disposition' embraces copyrightability[1173], interspecific (between copyright species) arrangements, and copyright significant elemental structure.)

Along similar lines, in the case of bundled software, *i.e.* smaller programs sold with larger ones normally to increase functionality or visual characteristics, the construct of *the labour in the process of creating the work* may play a prominent role as qualified in the context of software: a (smaller) program grown from separate preparatory design material cannot be regarded as part of another (larger) program even if incorporated in the same suite of programs.

Accordingly, the evolving (or here rather 'metamorphosing') work approach may, within this matrix, outweigh the isolated versions conception since certain preparatory design material might be here seen as the larval form of a computer program (as a species of literary work) within the life cycle of the later.

The conceptualisation of the elements of preparatory design material as computer program parts within copyright discourse might be validated, particularly with reference to the notion of purposive connection, by highlighting a dependency relationship intrinsic to any whole/part structure: a system depends on another system if the latter (or a function as such) is required for the former to perform some or all of its functions. Such a link might be not only mandatory, but also optional in that a related process might be carried out but only in some degraded (probably, in some logical or abstract sense) mode without recourse to the system that is dependent upon. It is submitted that such a correlation is apparently to the point so far as the software

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[1171] For instance, Microsoft Bookshelf is an add-in for Word.

[1172] Various utilities for games, accounting programs, etc. It should be pointed out that the famous Microsoft guideline distinguishing between hardware add-ons and software add-ins is hardly followed industry-wide.

[1173] Disposition is construed, in this respect, as deployment or placing in a particular category.

paradigm is concerned. In this connection, the EC doctrine coming down to the computer program/preparatory design material unity is corroborated.

d. Program (*dynamic link* and *class*) *libraries*, control flow and multithreading: the concept of relevant intention (intentional *placing*) in the context of the text/behaviour distinction, abstract and concrete elemental copyright classes, and discrete elemental copyright identities of *placings.*

As part of an integral framework, the concept of intention to produce a work should be made allowance for (as suggestive of the originating character of the related labour and fitting together the manifestations of the respective stages of software development). As indicated above, the result of the efforts in question, albeit produced inadvertently as to some of the facets of the work, may still be copyright. More specifically, to measure up to the criterion of originating character such efforts must be exerted intentionally on the creation of the work so that an intention to produce a work could be identifiable, and the attendant circumstances or factors could be viewed as mediated by the efforts. Consequently, the result of the efforts should be deployed in the final version not accidentally. Within this framework, the contextualisation (as intentional *placing*) of the elements might be regarded as part of the copyright work. In the realm of software copyright, a detailed analytic appraisal of preparatory design material for a particular program would evidently yield certain insights into the nature and scope of the developer's intentions. In this regard, sometimes a carefully planned feature of a program may become a 'misfeature', being not adequate for an evolved situation, as its long-term consequences were inaccurately predicted. In this light, although the actualised 'behaviour' of the element in question was not intended in its form at the outset, the related piece of code as a result (however accurate) of intentionally exerted efforts (however effectual they are) is to be considered part of the 'afflicted' program.

Another illustration of intentionality in the Web context might be the case of designs, drawings or photographs employed in developing a Web site, for instance, the patterned wallpaper design adopted (digitised) as a 'textured background to the

site'[1174]. It is submitted that such graphics, neither produced in the process of creating the work nor intended as an element of such, cannot be considered part of the work. Nevertheless, the placing of the elements might be deemed 'part' as part of the efforts. At this juncture, the question of substantiality would come into play. It might be observed here that the attendant digitisation is an even less significant candidate for substantiality in this context. It is an altogether different matter whether the copyright at issue is enforceable[1175].

It might seem that contextuality with reference to the identification of part might be beside the point in the case of dynamically linked (or dynamic link) library when a library is linked to an application during its load time and *run time* (as related to carrying out the instructions) rather than compile time so that the same library item (block of code) can be shared between several tasks[1176]. This may have a lot to do with the notion of permanent form for the work as well as the 'automatic' nature of the concomitant library procedure that might rule out any role played by the concept of relevant labour[1177].

However, it is submitted, the above set of criteria of a relevant intention might be met for in such circumstances a programmer's intention to produce a work/program is identified beyond doubt, and the placing of modules is mediated/conditioned, up to a point, by the programmer's efforts (bearing, in this respect, an element of instrumentality in some technical or logical sense). Normally, a programmer is generally aware of, relies upon, and takes into account[1178] various 'behind-the-screens' activities automatically running on a computer without *need* for one's initiation or intervention. Through this prism, the final configuration of parts (within the text frame of the program as distinct from its 'behaviour') is definitely not accidental. In effect, it embodies what might be described as an 'if-then' (or 'branching statement') framework. For example, if a user decides to print a document, then a Word application causes the printer DLL (dynamic link library) file to be loaded and run. This approach might be particularly clear in the case of DLLs written

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[1174] See Gringras, at 178.
[1175] See Laddie et al, at 123.
[1176] A routine that can be used by multiple programs simultaneously is called "reentrant code".
[1177] Cf. Lai, at 209-210; Nimmer, R., *The Law of Computer Technology: Rights, Licenses, Liabilities*, West Group Publishing, 2nd ed., 1992, at 1, 27, 48 (copyrightability as tied up with the idea-expression dichotomy).
[1178] In addition, a library should be of a version compatible with the executable.

for a specific application as distinct from those provided with the Windows operating system.

Similarly, certain programmatic features could be designed to facilitate additions or changes by a user[1179]. To this end, such features should be located in judiciously chosen places. It is submitted that it would be doctrinally sound to consider the *placing* of a 'hooked' additional code as part of the underlying program. As to the copyright status of the piece of code itself, examining the concomitant intention and timing may certainly be of assistance in building on what might be depicted as an *edition analogy*[1180] so that the *de minimis* rule with reference to both *work* and *originality* could be a major determinant[1181]. As the word 'analogy' connotes a correspondence in certain respects between entities otherwise different, the distinction (existing alongside all the obvious similarities) between new editions and altered (or topped-up) versions may lie in both basal technologies and the predetermined placing of the changes, thus further discriminating between the elemental copyright identities of placings and other constituents.

Another library paradigm is a class library which is described as a set of ready-made routines or classes (class definitions written in object-oriented programming languages) that can be employed in building software applications by providing a code and, in the case of, for example, the Microsoft Foundation class library, an overall application development framework. Such a routine is normally defined (named and specified as to the required parameters) and implemented (put into code). Nonetheless, it is an object as an instance of a class that is actually executed in the computer. Therefore, the routine under discussion is instantiated when its particular variation is defined and initialised as the initial real values are assigned to its variables.

Conceptually, a distinction drawn between the constructs of class and object might be compared to that between *virtual* and *real,* or between an architect's plan for a

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[1179] A "techi" term for such a feature is a "hook".
[1180] See also *Ibcos,* at 289 ("in every case where a program was revised or modified enough for a fresh copyright to be created, that copyright is also a relevant work").
[1181] As regards the development of the doctrinal framework of copyright in new editions, see *Black v Murray & Son* (1870) 9 Macph. 341; *Blacklock & Co Ltd v Arthur Pearson Ltd* [1915] 2 Ch 376, at 384; *Cramp & Sons Ltd v Frank Smythson Ltd* [1944] AC 329*; Hedderwick v Griffin* (1841) 3 Dunl. 383; *Interlego A. G. v Tyco Industries Inc.*[1988] RPC 343, at 370, 374; *Leslie v Young & Sons* [1894] AC 335; *Macmillan & Co Ltd v Cooper* (1923) 93 LJPC 113, at 118, 121; *Parry v Moring and Gollancz* [1901-1904] MCC 49; *Thomas v Turner* (1886) 33 Ch. 292. See further Copinger, at 115-116.

house and the actual house.[1182] In a sense, this process of 'reincarnation' of a class in the form of an object can also be boiled down to being loaded into memory by writing a separate (usually quite short) code (which is not as facile as it may seem), thus 'creating' an object.

The work of a programmer dealing with an abstract class (designed to pass on characteristics through inheritance and not suitable for instantiation) is distinctly different both qualitatively and quantitatively. As such a class is developed only as a parent (or master) structure from which 'sibling' subclasses can be derived by 'abstracting out' incomplete sets of common features and then adding variations of the 'missing' pieces, a developer puts considerable effort into working out subclass definitions, writing the code, and creating and *placing* the object. In the realm of copyright, it is a system of abstract class structures (embodying definitions which could be deployed in further 'derived' deliberations) that we attempt to build on the grounds of the proposed analytical copyrightability.

In this fashion, an elemental literary superclass 'chapter' might be designed to pass characteristics down the hierarchy so that such a subclass as 'software routine' could be derived. On the other hand, as a concrete class, 'chapter' could be used to create objects (actual chapters). More importantly in the context of copyright, various attributes of actual chapters could be identified as, among other things, pointing to 'literal' (or 'letter-bound') and 'non-literal'[1183] (or 'deducible') elements as 'chapter' is instantiated. Alternatively, a generic (as related to the genus[1184] of literary works but not specific to 'traditional' descriptions) abstract superclass might be developed within this framework. From such an elemental superclass (not itself suitable for instantiation) a number of concrete subclasses could be derived. On these lines, 'chapter' and 'software routine' could be considered 'sibling' subclasses indicating their respective sub-domains.

Furthermore, even without reference to the construct of componentware, the control flow[1185] as the sequence of execution of instructions of a program is determined at run time by the input data and by the control structure, *e.g.* 'if' statements, of the program.

[1182] Sometimes, this comparison is somewhat "stretched" to echo variations on a theme of Plato's theory of forms (or ideas) as, *inter alia*, contemplating a type that exists independently of whether or not there are things of that type, and so that such separate existents could be perceived as "responsible" for particulars being of the kind they are.

[1183] Such as the resultant disposition of chapters.

[1184] Or sub-genus in the context of original works constituting a base-class.

[1185] See also *Gates Rubber,* at 844; Ogilvie, at 535.

The control flow is perceived here as an attribute of the text as connoting the placing (or invocation, conditioning, triggering, etc.) of the elements as distinct from what the elements actually do[1186].

This approach would not necessarily coincide with the 'standard jargon of programmers' as described in *Computer Associates[1187]*. It is in conformity with both the technical actualities and the purposes of copyright, it is submitted, that the concept of dynamic structure may refer to both textual and behavioural aspects of a computer program[1188]. 'Text', in this regard, indicates the placing (in a sense, virtual) of the elements of a code at run time (as opposed to compile time in the context of the static structure), whilst 'behaviour' is associated with the actions resulting from a task being performed. In some technological contexts the term 'behaviour'[1189] could embrace both placings and actions. Such a run-time mechanism as delegation (or dynamic binding) may be deployed for new 'behaviours' as dependencies to be added to a running system. As this technique is predicated upon class definitions framed in terms of other class definitions, albeit here via a dynamic class hierarchy, it plays a role reminiscent of that of inheritance.

Along similar lines, an actualisation of the concept of multithreading[1190] might be construed in terms of the program's texture (a textual characteristic) as indicating the *placing* (or here rather, concurrent 'placings') of the elements. This technique utilises multiple flows of control (or, in other words, streams of execution or sub-processes) within an instance of a program. Among other things, multithreading enables a user

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[1186] Cf. Kremer, B., "Copyright Protection of Computer Programs" [2000] EIPR 292 (hereinafter "Kremer"), at 300.

[1187] See *Computer Associates Intern., Inc.* v *Altai, Inc.,* 775 F. Supp. 554, 559 (E.D.N.Y. 1991). See also *Computer Associates Intern., Inc.* v *Altai, Inc.,* 982 F. 2d 693, 706 (2nd Cir. 1992). See further Nimmer, at 13-42.

[1188] It may also be pointed out that in the context of object-oriented programming *behaviour* is sometimes identified with *code* (or a set of associated methods) within an object as an encapsulated software unit, while *data* is described as *state.* Effectively, the state of an object is the combination of the original values in the object and any modifications made to them. Class variables, representing the state of an object of a class, determine the *structure* of the class.

[1189] See also Samuelson, P., Davis, R., Kapor, M., and Reichman, J., "A Manifesto Concerning the Legal Protection of Computer Programs" (1994) 94 Colum. LR 2308; Samuelson, P., "Comments on Gerald Dworkin's Article on Copyright, Patent or *Sui Generis* Protection for Computer Programs" in Hansen, at 192-193.

[1190] This phenomenon should not be confused with *multitasking* implying running many tasks simultaneously where the word "task" refers to the combination of an executed program and bookkeeping information (including a task number) attached to it by the operating system. Multitasking as opposed to multithreading describes a one-to-one relationship between the program and the task. Threads, by definition, share more of their execution environment (in fact, they share nearly everything: the process instructions, most of the process data and the address space) than tasks do.

of, say, a graphical user interface to start an independent activity (defined as a thread with a separate identity) without having to wait for another activity to complete[1191].

e. Forms of programmatic behaviour and quasi-behaviour: copyrightability and the nature/domain framework.

In discussing the structure of programmatic behaviour, it is helpful to invoke the notion of operation code (or 'op code') describing the parts of a machine language instruction that determine the computer's actions[1192] as opposed to those fixed bit positions which give the related parameters[1193]. In this connection, one might put forward certain (non-*placing*) *op-code-bound* aspects as apposite examples of the program's behaviour, notably if placeable in the programming domain. It is reasoned that these elements, together with the above *quasi-behavioural* characteristics coming down to *placing*, may account for the respective points along the text-behaviour continuum (or an instance of such). The latter, in turn, coincides with the result side of the underlying work.

Further, the phenomenon that might be veritably depicted as the program's behaviour is obviously not confined to the narrowly perceived op code as put into action. Thereby hangs a tale of 'two copyrights'. Under United States copyright, 'a possible statutory difficulty' is ordinarily overcome, and the 'behavior aspect of a computer program'[1194] is excluded from copyright protection on the grounds of s. 102(b)[1195] since the behaviour at issue 'falls within the statutory terms 'process', 'system' and 'method of operation''.[1196] The question of copyrightability in this context may also be posed in other jurisdictions. Up to a certain point, this question might be answered in the negative even outside the 'non-protectability of process' doctrine. More specifically, purely behavioural aspects (as distinct from the op-code-bound ones) can be characterised as literary in terms of their nature, domain or sub-domains (within this matrix, scientific and programming) only if the field of the

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[1191] When multiple users are using the program in question or if concurrent requests from other programs occur, a thread with a separate identity is created and maintained for each of them.
[1192] Such as 'add', 'input', 'jump', 'branch', 'load', 'store', etc. See also Lai, at 207.
[1193] For example, addresses and registers.
[1194] *Computer Associates Intern., Inc.* v *Altai, Inc.,* 775 F. Supp. 554, 560 (E.D.N.Y. 1991).
[1195] See s. 102 (b), Title 17, USC.
[1196] *Computer Associates Intern., Inc.* v *Altai, Inc.,* 775 F. Supp. 554, 560 (E.D.N.Y. 1991).

program's target application[1197] is generically defined as literature. In such cases, one must differentiate between two works (in terms of labour/result frameworks) within the same domain (sub-domain). So the focal point would be the notion of work as distinct from the nature/domain analysis. Alternatively, the construct of originality may come into play.

Furthermore, even if computer programs are considered functional works[1198], the result of the labour in question is not to be conceptually or doctrinally extended to what the program actually does outside the programming province, as it were, since the behaviour under discussion would fall fair and square under the heading of such a field of target application as, say, engineering, pharmacology, communication or multimedia.[1199] On the other hand, such textual elements as those defined in the preparatory design material and dealt with dynamically are most likely to be considered placeable in the programming domain perceived as code-centred but not code-confined[1200].

At all events, so long as a characteristic of a program can be placed within the programming domain as opposed to the *field of target application* construed in the above sense[1201], it might be regarded as a part of the work under consideration and thus theoretically copyrightable, notably, under the evolving work approach.[1202] As to the Laddiean postulate 'to follow the instructions is not to reproduce them'[1203], that might reflect the discussed problem as transposed to the realm of infringement, the distinction may lie in the related domain dispositions. In particular, as regards the

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[1197] See also *Catnic Components Ltd v Hill & Smith Ltd* [1982] RPC 183, at 223.

[1198] See also *Computer Associates Intern, Inc.* v *Altai, Inc.,* 982 F. 2d 693, 712, 713 (2nd Cir. 1992); *Computer Associates Intern, Inc.* v *Altai, Inc.,* 775 F. Supp. 544, 558 (E.D.N.Y. 1991); *Data Access Corp. v Powerflex Services Pty Ltd* (1999) 73 ALJR 1435*; Ibcos,* at 291; *Lotus Development Corp. v Paperback Software International* [1990] 18 IPR 1, at 25-26; *Religious Technologies Center v Netcom On-line Communication Service, Inc.,* 907 F. Supp.1361 (N.D.Cal. 1995). See further Correa, C., "TRIPs Agreement: Copyright and Related Rights" (1994) 25 IIC 543, at 545; Drexl, at 9-10, 78, 79; Karjala, D., "Copyright, Computer Software, and the New Protectionism" (1987) 28 Jurimetrics 33, at 48-50; Kremer, at 296-297, 300; Lai, 23; Lloyd, at 344, 345, 350; Millard, C., "Copyright" in Reed, at 129; Nimmer, at 13-127, 13-144; Reback, G. and Hayes, D., "The Plain Truth: Program Structure, Input Formats, and Other Functional Works" (1987) 3 Computer Lawyer 1.

[1199] Cf. Kremer, at 299-300. The phrase 'application domain' is also not infrequently employed in the context of modern programming, particularly OOP. It is described in generic terms to embrace manufacturing, healthcare, telecom and finance.

[1200] Cf. Karjala, D., "Recent United States and International Developments in Software Protection" [1994] EIPR 13, at 17; Karjala, D., "The Relative Roles of Patent and Copyright in the Protection of Computer Programs" (1998) 17 Marshal J. Computer & Information Law 41, at 55.

[1201] The *field* thus might coincide with the programming domain in name only.

[1202] As another alternative, a broader reading of behaviour (as not confined to field of target application aspects) might form a basis for patent protection in this context. See also Kremer, at 300.

[1203] Laddie et al, at 107. See also *Computer Edge Pty Ltd v Apple Computer , Inc.* (1986) 161 CLR 171, at 213. See further Kremer, at 300-301.

'culinary'[1204] and mathematical examples[1205] adduced in this context, the *inter-domain boundaries* should be drawn in a way somewhat different from that defined in relation to op code structures. In such cases, the relevant techniques are to focus directly on the demarcation of the (generically) literary.

It has to be observed that so far as possible additional pointers on delineating the scope of behavioural aspects are concerned, a point of departure for a particular discussion is a critical factor. For instance, under the concept of virtual machine software can mimic the performance of, or behave as if it is, a separate computer or hardware device. Owing to this methodology, a program written for an Intel processor can be executed on a PowerPC. Along similar lines, a Java Virtual Machine, a self-contained run-time environment and Java interpreter, converts a bytecode into machine language and runs it without access to the host operating system. Within this framework, 'behaviour' is equated with 'performance'. On the other hand, under object-oriented programming theory, a method, as a logic sequence (procedure or routine) defined as part of a class and incorporated into an instance ('object') of the class, is often conceived of as an element of the object's behaviour. In this mode, the analytical starting-point is the data so that the related behaviour can be described in terms of data manipulations or what 'happens' to the data.

These examples reveal a special link between textual and behavioural aspects and the role - or rather, roles – of behaviour in the system. At the same time, the contours of a resultant copyright work may vary. For instance, in the case of the above emulating software, the (copied) behaviour under consideration cannot be copyright as it could not meet, by definition, the originality requirements even though the related field of target application can be congruent with the immediate purposes of copyright. Accordingly, within the text/behaviour structure (continuum), copyright subsistence might be either confirmed or rejected through different forms (stages) of analysis carried out to identify various materialisations of the notions of work (labour-result systems), originality and/or nature/domain.

[1204] Cf. Nimmer, at 2-208.
[1205] See Laddie et al, at 107.

f. Client/server tasks, peer-to-peer model, network computers, and n-tier architectures: extending the concepts of relevant intention and evolving/ metamorphosing work.

Multifarious data-related factors come to the fore, as it were, in terms of both text (placing parts) and behaviour. For instance, the so-called 'demons' (or 'daemons'[1206]) as parts of a program are not invoked explicitly but lie dormant (or 'run in the background') waiting for some conditions (or 'events') to occur.[1207]

At any rate, even within this framework, the relevant intention of a programmer is present since the placing (and the resultant behaviour) in question is conditioned in some degree by the programmer's efforts expended in writing the program that entails framing the definitions of specific 'reactions' and 'activations' of certain elements. It is reasoned that this might be notably material to the copyright realm of object-oriented programming where placing (as an element of the above hybrid framework) may constitute an increasingly weighty element of a work.

It as also to be accommodated that the aforementioned splitting of software between server and client tasks does not necessarily spell actual division of parts within a particular program since, as indicated above, this architecture may be mediated by the interaction between specifically (client or server) dedicated systems not overlapping as to their principal functions.

Another phenomenon in this context is a peer-to-peer[1208] communication model that does not require dedicated servers. Accordingly, both sides of the communication

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[1206] This word often implies an analogous operating system process (functioning like an extension of the operating system) as distinct from part of an application program. One of the common Internet species of daemon is an HTTP daemon continually waiting for requests to come in from Web clients and handling them within a client/server architecture. The term *daemon* denotes a UNIX construct. Other operating systems, including Windows, support daemons, often employing different locutions.

[1207] For example, an artificial intelligence application might include a number of "demons" that would be activated when a new piece of knowledge affects a particular demon's province. Such a demon would then create new pieces of knowledge by applying its inference rules.

[1208] This term also denotes a file sharing system (such as Gnutella or Napster) where users of the same networking program are enabled to connect and directly access resources stored on one another's hard disk drives. In this connection, we should mention in passing the famous *Napster* litigation primarily concerned with copyright in "musical compositions and sound recordings" (it is thus, by and large, beyond the scope of our research). The record company and music publisher plaintiffs instituted proceedings for contributory and vicarious copyright infringement stemming from Napster's peer-to-peer music file sharing service. The defendant was allegedly engaged in coping, downloading, uploading, transmitting, or distributing plaintiffs' copyrighted works. The related opinions are interspersed with some compelling insights into the subjacent technology. In this respect, see *A & M Records, Inc.* v *Napster, Inc.,* 114 F. Supp. 2d 896, 901, 905-907 (N.D.Cal.2000); *A & M Records, Inc.* v *Napster, Inc.,* 2000 US Dist. LEXIS 6243 (N.D. Cal. 2000); *A & M Records Inc.* v *Napster, Inc.,* 239

have equivalent capabilities and responsibilities for initiating, maintaining and terminating the session. In certain cases, a peer-to-peer communication can be implemented by giving each communication node both server and client capabilities. In a sense, this allows any client to also be a server.[1209]

At the same time, as part of a client/server arrangement, a browser might, theoretically speaking, operate as a local server not reflecting any network process. Conversely, a server could take on client functions both as a local client and a network one if a certain portion of its code is written specifically to this end as automatically supported by the operating system. In such cases client and server portions can be, so long as the rest of the protectability criteria are met, mirrored in the realm of copyright as *part* of a computer program/original literary work.

It might be further observed that, in developing software of various Web forms, it is only the process of designing server or client programs that should require extended knowledge of the nuances and inner workings of the architecture. On these lines, a programmer writing a CGI script is normally given by such a server as Internet Information Server (in this connection, embodying one of the significations of the term 'platform'[1210]) all the necessary information about the attributes of the latter and, consequently, certain technological precepts to comply with. Additional data may also be provided on the subject of 'frequently calling' browsers (clients).

Related disposition of parts as reflected in software life cycle is set according to a different pattern in the case of network computers, *viz* desktop computers designed as 'thin clients' downloading all the applications and drawing all the data from a network server where all the changes are also stored. Bearing in mind that such a system is maintained at the server side, the related processes of installation and upgrading are somewhat 'rooted to the spot' as not dealt with at each client station.

This is depicted as a 'thin storage client' for it carries out processing in the same way as a PC and as distinct from a 'thin processing client' (exemplified by Windows terminals) processing only keyboard input and screen output. Such a machine is contrasted with a 'fat client' performing most or all of the application processing. The

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F. 3d 1004, 1011, 1012 (9th Cir. 2001); *In re Napster, Inc.,* 191 F. Supp. 2d 1087, 1092 (N.D. Cal. 2002). See also McEvedy, V., "The DMCA and the E-Commerce Directive" [2002] EIPR 65, at 71, 73.
[1209] In this mode, however, network performance is not as good as under the client/server framework.
[1210] As the script is written specifically for the server. In varying circumstances, "platform" in the computer context may refer to specific hardware or a combination of hardware and operating system as well as a hardware/compiler system. The term may also connote certain support software for a particular activity. See also Patterson, at 1354.

counterpart to (as complementing within this framework) a 'thin client' is, accordingly, a 'fat server' contrasting in turn with a 'thin server' containing an abbreviated ('trimmed down') version of an operating system, and, by and large, minimized software but sufficient to support a particular function (e.g. Internet access or access to files) shared across a network. A 'thin client' mainly implements graphical interfaces and other presentation services within a three-tier client/server architecture.

Normally, in a client/server environment there might be established either a two-way or three-way interactions materialising the aforesaid concept of n-tier system architecture. In the case of a two-tier client/server the system is organised into two layers in that the user interface is stored in the client and the data in the server whilst the business logic can be stored in either the client or the server. Often within this framework an integrated presentation/business logic tier is defined and structured. Habitually, under the two-tier arrangement, the application and database processing are performed in the file server. As for a three-tier client/server architecture (arguably, the prevailing way of organising a network program), its business logic is stored in one or more (application) servers as distinct from data servers.

Each layer may comprise a number of components. If a special 'presentation logic' tier is identified, within such there could be drawn a distinction between the client and server-side components. So far as such elements 'grown' from the same preparatory design material are concerned, it would seem logical under our *evolving/metamorphosing work* approach to consider the constituents in question as parts of the copyright work so long as the protectability criteria are met. In addition, programming languages and development systems supporting n-tier architectures might allow a program to be organised into pieces (the process known as application partitioning) after its development as a whole that might be depicted in this context as the *origin of pieces*, as it were.

g. Open System Interconnection and programmer's discretion: instantiation of the concept of part.

It should not be overlooked that certain system components running on separate computers may communicate over a network. It is also to be pointed out, in this connection, that n-tier application (system) architectures are part of layer 7 (the

application layer) of the ISO/OSI model. This system, developed by representatives of major computer and telecommunication companies and officially adopted by the International Organization for Standardization (ISO), standardises levels of service and types of interaction for computers exchanging information via a communications network.

In fact, the Open Systems Interconnection (OSI) is the generic term for a series of protocols and specifications defining seven layers of functions that take place at each end of a communication. Each layer[1211] (sometimes composed of sub-layers) uses the layer immediately below it and provides a service to the layer above. Control is passed from one layer to the next starting at the application layer and proceeding down to the bottom (physical) layer in one computer, over the communication path (channel) to the receiving computer, and back up the hierarchy. The application layer is all-important in this context, in that it is application-specific in every detail and focused on program-to-program transfer of information as it interfaces directly to, and performs common application services for, the application processes. Moreover, some applications may carry out application layer functions.

The principles of the ISO/OSI model bear on the programmer's 'latitude' (or discretion) in designing related software. This situation is, of course, not unique in terms of imposing limitations. For instance, programming is conditioned by certain technological precepts within the client/server paradigm. One might also mention an n-tier architecture, where it is up to a software architect to understand (drawing, *inter alia,* upon the related systems analysis) various factors affecting the system and to make judicious decisions within the perceived constraints. Similarly, an application development framework is provided as regards an abstract class.

It is the structure of the relevant layer of the ISO/OSI model that is to a certain (required) degree to be reflected in the composition of server and client programs thus yielding an insight into the actual form of the concept of part in a given case. Even if the OSI model is strictly adhered to, which is not always the case, a limited number of ways to express the idea cannot invalidate the originality of a program even within the 'creativity' framework. Accordingly, an examination of the process of following the above restrictions may refocus the protectability analysis on certain elements (including placing) as receptacles for originality within the pattern elaborated here.

[1211] Namely physical, data link, network, transport, session, presentation (syntax) and application layers.

All in all, a broad spectrum of constructs worked out in the realm of general copyrightability proved to be consistent with the convoluted field of software copyright analysis. Furthermore, multifarious aspects of Web related architectures, albeit often overlooked in this respect, could be drawn upon in carving out and contextualising the concept of part.

Admittedly, given the ever-changing methodological landscape of the software realm, there may not be drawn up an exhaustive list of programmatic constituents or their hard and fast definitions[1212]. Allowing for this metamorphic (as showing changes of form and pointing to the elements formed by alteration) aspect, one should keep one's finger on the pulse of developments in the field. Although 'boundaries in any particular program are drawn in practice through expert testimony'[1213], IP lawyers ought to be ready to pick up analytical tools provided in this mode to identify doctrinally sound 'morphemes' (as meaningful – in copyright terms - elementary units) of the software copyright narrative. To this end, certain conceptual constants are to be worked out. In this connection, the construct of software life cycle is the crux of the matter. It provides a delimiting framework so that the examination may proceed stepwise in orderly sequence, *inter alia,* reducing complexity. The notion of types of programming or programming theories (such as object-oriented programming or top-down design) imparts additional conceptualisation and crystallisation of part definitions. Structural formulae of Web-related software may only be elucidated through the construct of Internet-bound architectures.

Along these lines, we may also arrive at a systematic understanding of the principal character and attributes of the underlying programming labour/skill. Further analysis, built on these conceptions at various junctures, accommodates multiple specifics as conceptual variables, including the workings of software life cycle as currently actualised and new programming theories as set forth and implemented.

This analytical mechanism is to be employed in detecting the elemental copyright identities of the programmatic entities in question without jumbling together definitional and doctrinal (protectability) issues[1214] (which does not preclude the interpretation of such aspects as parts of the same abstract copyright class). The latter,

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[1212] In a sense, adding to a set of conceptual variables.
[1213] Ogilvie, at 561.
[1214] See also ibid., at 569.

in the software copyright field, may only be predicated upon the concept of computer program as an original literary work construed within the nature/domain framework contextualised in relation to certain relevant doctrines. Within this frame of reference, one may further utilise the evolving work/isolated versions distinction and the conception of the relevant labour/skill exerted by the author in the process of creating the work.

Therefore, the aforesaid copyright 'morphemes' and their systems may not necessarily be identical with the underlying software constituents echoing, in this respect, the protectability idiom of work as such.

4.3.2. The construct of substantial part.
A. Facets of substantiality:
contextualisation and polymorphism.

In identifying 'substantial part' within the ambit of copyright subsistence, the issue of comparison (in the *Altai* sense) would seem nearly by definition extraneous[1215] as distinct from substantial similarity under the heading of copying. On the other hand, posing similar questions in the context of substantial part may lead up to imposing a framework different from those ordinarily entailed by the constructs of substantial similarity and substantial taking. This might be attributed to implicit conceptual *polymorphism* along the lines of our OOP-based paradigm of analytical copyrightability.

Accordingly, such issues *per essentiam* are not entirely foreign to the very nature of copyrightability. It is ideational aspects that differ subject to contextualisation. For instance, the notion of comparison may be perceived with reference to the concept of originality and interpreted in the originality/copyrightability analysis as a methodological tool in weighing the relevant elements against the 'not taken' yardstick. There might also be a separate issue of the function of comparison thus discriminating between an action for infringement of copyright and an action for passing off.[1216] Theoretically speaking, the conceptions of comparison and substantiality could be closely entwined when the part in question is assessed for its substantiality as regards the work as such. This in turn might be reflected in the

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[1215] Cf. *Designers Guild Ltd v Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2420.
[1216] See *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2425, 2426.

infringement inquiry[1217] and further delineated as juxtaposed with the comparison between the allegedly infringing and infringed works respectively. Furthermore, the construct of 'more similarity is required when less protectable matter is at issue'[1218] might be transposed to the remit of copyrightability and neatly adjusted to the concept of *substantial part*. More specifically, the closer a work to a 'one-molecule' structure[1219] the less room for manoeuvre might be doctrinally left since if the work at issue 'managed' to narrowly pass the *de minimis* thresholds, the 'gap' may but be narrower still for a part of such to be substantial. (It is noteworthy that 'substantial part' is viewed as a secondary receptacle for copyright.) This reading is even clearer if the standard of substantiality comes down to the 'more than *de minimis* in its own right' rule built on the *part* status.

On top of it, the concept of dissimilarities[1220] as discussed under the rubric of infringement[1221] is paralleled by 'bestow[ing] further labour'[1222] or 'impart[ing] to the product some quality or character which the raw material did not possess'[1223] in the field of subsistence of copyright. It could also be very much to the point in this connection that dissimilarities, as Lord Millett observed *obiter*, 'may indicate an independent source'.[1224] Such an argument in the infringement inquiry might rebut any inference of copying[1225] whilst within the sweep of copyrightability it can be symptomatic of non-originality in the first place. In situational terms, substantial similarity (here as distinct from probative similarity) is often considered 'lacking' when only several slight common errors make up the 'sole point of commonality'[1226]. However, even without recourse to the *de minimis* rule, such elements of the subject-

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[1217] See ibid., at 2431.
[1218] Nimmer, at 13-29. See also *Apple Computer, Inc. v Microsoft Corp.,* 35 F.3d 1435, 1439 (9th Cir. 1994); *MiTek Holdings, Inc. v Arce Engineering Co.,* 89 F.3d 1548, 1558 (11th Cir. 1996).
[1219] Such a work is identical to its substantial part and further splitting would not attract copyright. See also subs. 4.1., above.
[1220] See *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2418, 2422, 2424, 2425, 2434. See also *Baumann v Fussell* [1978] RPC 485; *Biotrading & Financing OY v Biohit Ltd* [1998] FSR 109; *Entec (Pollution Control) Ltd v Abacus Mouldings* [1992] FSR 332; *Spectravest, Inc. v Aperknit Ltd* [1988] FSR 161. See further Bainbridge, at 113; Lloyd, at 347.
[1221] As to evidentiary points along these lines, see Laddie et al, at 833. See also *Ibcos*, at 301.
[1222] As formulated in the context of protectability of piratical works. See Laddie et al, at 123.
[1223] *Macmillan & Co v Cooper* (1923) 93 LJPC 113, at 118.
[1224] *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2425. See also ibid., at 2429 (as to "independent provenance").
[1225] See ibid., at 2425, 2432.
[1226] Nimmer, at 13-133. See further ibid., at 13-74, 13-75, 13-76; Cornish, at 360. See also *Billhöfer Maschinenfabrik GmbH v T.H. Dixon & Co. Ltd* [1990] FSR 105, at 123 ("the resemblance in inessentials"); *Ibcos,* at 297 ("trivial matter which traps a copyist"), 298. This issue is likewise reflected in the context of "idiosyncrasies".

matter are unlikely to constitute a result of skill/labour and thus cannot be regarded as part of the original work.

It is also to be accommodated that there may hardly be any ground for considering the issue of differing permissibility[1227] as affecting the concept of substantiality in the realm of copyright subsistence. Nonetheless, such an issue might be discussed under the headings of infringement and defences. By the same token, a 'taken' portion might be deemed substantial as such without constituting substantial taking (as another facet of substantiality pointing to infringement) owing to certain defences[1228].

Along similar lines, the question of substantiality as regards the defendant's work is beside the point so far as the copyrightability analysis is concerned.[1229] Moreover, it may not be even entertained with regard to the concept of substantial part, while in the copying/infringement analysis such a question may arise, albeit, in all likelihood, being refuted as an argument.[1230] It might be observed in this connection that infringing subject matter is not necessarily a work, let alone an original work, and an infringing act does not always represent an even potentially or theoretically copyrightable work[1231].

Additionally, within the conceptualisation of a substantial part, the nature/domain scheme is used in ascertaining whether the element's domain (sub-domain) coincides with the work's domain to establish the nature/domain compatibility at the elemental level. In particular, such an examination is essential if the 'nature' analysis is conceptually insufficient. On the other hand, when the infringing subject matter is juxtaposed with the infringed work, the respective domains may differ.[1232] On these

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[1227] See Copinger, at 409 ("in the case of some works such as works of reference, it may be that a greater amount of copying is permissible than with other works such as novels").

[1228] This issue is largely beyond the scope of this study. See further Nimmer, at 13-68. 13-69.

[1229] See *Warwick Film Productions Ltd* v *Eisinger* [1969] 1 Ch 508, at 533. See also *Cantor Fitzgerald* , at para. 76; *Ibcos*, at 305. Cf. *Neale v Harmer* (1897) 13 TLR 209. See further Copinger, at 409.

[1230] See also *Atari , Inc.* v *North American Philips Consumer Electronics Corp.,* 672 F. 2d 607 (7th Cir. 1982); *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416, at 2425; *Nikanov v Simon & Schuster,* 2426 F.2d 501 (2d Cir. 1957); *Worth v Selchow & Righter Co.,* 827 F. 2d 569, 570 (9th Cir. 1987). See further Nimmer, at 13-47.

[1231] See ss. 17 (6), 19 (4), CDPA. See also Laddie et al, at 103-104.

[1232] See ss. 17, 21, CDPA. See also Laddie et al, at 104, 405. As to American copyright, see *Computer Associates,* at 701; *Horgan v Macmillan,* 789 F.2d 157, 162 (2d Cir. 1986). The situation might be more complex in the realm of multimedia works. See Stamatoudi, I., *Copyright and Multimedia Products,* Cambridge University Press, 2001, chapters 7 (Computer programs), 9 (Multimedia products and existing categories of copyright works). See also Choe, J., "Interactive Multimadia: A New Technology Tests the Limits of Copyright Law" (1994) 46 Rutgers LR 929; Ginsburg, J., "Domestic and International Copyright Issues Implicated in the Compilation of a Multimadia Product" (1995) 25 Seton Hall LR 101; Hugenholtz, P., "Adapting Copyright to the Information Superhighway" in Hugenholtz, at 81; Perlmutter, S., "Convergence and the Future of Copyright" [2001] EIPR 111, at 115.

lines, a subject matter infringing copyright in a computer program is not always literary in terms of its nature or domain[1233]. Furthermore, an infringing programmatic entity is, by definition, not always a 'computer program' in copyright parlance since it does not necessarily fit the copyrightable description[1234] including the requirement of originality. In specific contexts, the domain analysis may enter the equation on the lines of the infringement investigation. This topic requires a detailed study in its own right. Here it is only to be reiterated that, in a nutshell, the modern paradigm of copyright law may allow the metamorphosis of the subject matter to be traced in the realm of infringement, particularly as regards copying and adaptation. This schema could also re-emphasise certain interspecific connections and distinctions, that is correlations existing between copyright species which can be identified with reference to the domain or sub-domain in question.[1235]

Within this matrix, there could be marked out two groups of notions and analytical mechanisms reflecting the copying/copyrightability distinction within the ambit of substantiality, namely conceptually inapplicable and conceptually *applicable as contextualised* under the 'companion rubric': copying or copyright subsistence respectively. More specifically, certain ideas are unique to either copying or copyright subsistence, whilst the rest of the related constructs, although often tied to one of the areas in question, can be adapted to suit the other. It is the correlations between, and juxtapositions of, copying and subsistence of copyright that further define these areas and largely determine the structure of substantiality.

It is also to be accommodated that, at the stage of infringement, a substantial part of a work (described in this study as a secondary receptacle for copyright) could be affected by any act restricted by copyright in such a work[1236], while the substantial similarity analysis is effectively restricted to acts of copying[1237], hence the concept of

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[1233] See s. 17 (2), CDPA.

[1234] See also Laddie et al, at 806.

[1235] See ss. 17, 21, CDPA. This model operates in legislatively enshrined and doctrinally set patterns. See also *Brigid Foley Ltd v Ellott* [1982] RPC433. See further Bainbridge, D., *Intellectual Property*, Longman, 5th ed., 2002, at 117. The code/language-centred framing of the programmatic sub-domain is also reflected in the related description of the metamorphosis of copyright subject matter under the rubric of adaptation in CDPA. See s. 21 (4), CDPA. See also subs. 4.2.2, above.

[1236] See s. 16 (1), (3) (a), CDPA. Cf. Cornish, at 362. See also *Australian Video Retailers Association Ltd v Warner Home Video Pty Ltd* [2001] FCA 1719 (with reference to a commercial rental right for computer programs). In this respect, see s. 31 (1) (d), the Australian Copyright Act 1968.

[1237] Even if this notion is capaciously construed. In this respect, see Vaver, D., "Intellectual Property: The State of the Art" (2000) 116 LQR 621, at 623. See also Laddie et al, at 85-86, 99 (as to a "sufficient degree" of objective similarity); Bainbridge, at 112. The limitation under discussion is of course particularly clear under US copyright. See further Nimmer, at 13-28 *et seq.*.

substantial copying[1238]. In this connection, as similarity is not evidentiary sufficient and might be put down not only to derivation[1239], the abstract of substantial taking bears on an established act of copying when all the criteria of infringement are met[1240].

Further, it is the central thesis of professor Latman's 'unfinished symphony'[1241] that 'probative similarity' need not be substantial.[1242] In that seminal article the term 'probative similarity' was introduced into the copyright lexicon to avoid 'the confusion inherent in double usage of the term "substantial similarity"'.[1243]

Before this conception was set forth, the construct 'substantial similarity' had been employed to depict both the requirement of 'enough copying'[1244] and indirect proof[1245] of copying as a factual matter[1246], i.e. a similarity that 'under all the circumstances justifies an inference of copying', or 'probative similarity'[1247]. Paradoxically, it is the third element[1248] (protectability of the copied material) of the

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[1238] See Torremans, at 227.

[1239] See Laddie et al, at 84.

[1240] Cf. Cornish, at 362.

[1241] See Latman, A., "'Probative Similarity' as Proof of Copying: Toward Dispelling Some Myths in Copyright Infringement" (1990) 90 Columbia Law Review 1187 (hereinafter "Latman").

[1242] See ibid., at 1188, 1204. Cf. Siebrasse, at 27.

[1243] Latman, at 1204. See also ibid., 1190. As to this ambiguity as pointed up in judicial opinions, see *Stillman* v *Leo Burnett Co.,* 720 F.Supp. 1353, 1358 (N.D. Ill. 1989); *Universal Athletic Sales Co.* v *Salkeld,* 511 F. 2d 904, 907 (3d Cir. 1975). See also *Atari , Inc.* v *North American Philips Consumer Electronics Corp.,* 672 F. 2d 607, 614 (7th Cir. 1982); *Franklin Mint Corp.* v *National Wildlife Art Exchange, Inc.,* 575 F. 2d 62, 65 (3d Cir. 1978); *Gates Rubber,* at 832, 841; *Klitzner Industries* v *H.K. James & Co.,* 535 F. Supp. 1249, 1254 (E.D.Pa. 1982); *Krofft,* at 1162, 1163; *Midway Mfg. Co.* v *Bandai-America, Inc.,* 546 F. Supp. 125, 149 (D.N.J. 1982); *Runstadler Studios, Inc.* v *MCM Ltd Partnership,* 768 F. Supp. 1292, 1296 (N.D. Ill. 1991); *Walker* v *Time Life Films, Inc.,* 784 F. 2d 44, 48 (2d Cir. 1986). Cf. *Kamar International, Inc.* v *Russ Berrie & Co.,* 657 F. 2d 1059, 1062 (9th Cir. 1981); *Kepner-Tregoe, Inc.* v *Leadership Software, Inc.,* 12 F. 3d 527, 537 (5th Cir. 1994); *Novelty Textile Mills* v *Joan Fabrics Corp.,* 558 F. 2d 1090, 1092 (2d Cir. 1977); *Rural Telephone Service Co., Inc.* v *Feist Publications, Inc.,* 663 F.Supp. 214, 218 (D. Kan. 1987).

[1244] See Latman, at 1190. See also *Engineering Dynamics, Inc.* v *Structural Software, Inc.,* 26 F. 3d 1335, 1340 n. 4 (5th Cir. 1994); *Gates Rubber,* at 832; *Johnson* v *Automotive Ventures, Inc.,* 890 F. Supp. 507, 512 (W.D.Va. 1995).

[1245] With reference to proof of access in this context, see Nimmer, at 13-10, 13-12, 13-15, 13-113, 13-114. See also *Arnstein* v *Porter,* 154 F. 2d 464 (2d Cir. 1946); *Autoskill, Inc.* v *National Educational Support Systems, Inc.,* 994 F. 2d 1476, 1490 (10th Cir. 1993); *MacDonald* v *DuMaurier,* 75 F. Supp. 655 (S.D.N.Y. 1965); *Morrissey* v *Procter & Gamble Co.,* 379 F. 2d 675 (1st Cir. 1967). As to the role of direct proof, see *Broderbund Software, Inc.* v *Unison World, Inc.,* 648 F. Supp. 1127, 1135 (N.D. Cal. 1968); *Marshall & Swift* v *BS & A Software,* 871 F. Supp. 952, 959 (W.D. Mich. 1994); *Universal Athletic Sales Co.* v *Salkeld,* 376 F. Supp. 514 (W.D. Pa. 1974). Cf. *Rural Telephone Service Co., Inc.* v *Feist Publications, Inc.,* 663 F. Supp. 214, 218 (D. Kan. 1987).

[1246] See Nimmer, at 13-8, 13-8.1.

[1247] Latman, at 1190. See also *Alexander* v *Haley,* 460 F. Supp. 40, 43 (S.D.N.Y. 1978); *Atari Games Corp.* v *Nintendo of America, Inc.,* 30 USPQ 2d 1401, 1421 (N.D. Cal. 1993); *Castle Rock Entertainment* v *Carol Publishing Group, Inc.,* 955 F. Supp. 260, 264 (S.D.N.Y. 1997); *Wallace Computer Services, Inc.* v *Adams Business Forms, Inc.,* 837 F. Supp. 1413, 1416 (N.D. Ill. 1993).

[1248] Cf. Nimmer, at 13-6.

three-pronged standard for *prima facie* actionable copying that addresses the copyrightability question in the infringement inquiry.[1249] It should be emphasised that the outlined terminology has been assimilated into US copyright doctrine, although not without certain set-backs[1250]. It is also noteworthy that even the Nimmer treatise has changed some passages in this fashion.[1251]

Under British copyright, the current situation in this field might be seen in microcosm in the recent *Designers Guild* litigation[1252] (often quoted in this study with reference to various issues) where the concept of substantiality played a prominent role. Here it might be appropriate to expatiate upon some of the relevant aspects of the underlying dispute including the basic facts and background of the case. There were 'two main issues at the trial'[1253]: first, whether the defender in its Marguerite design had copied the plaintiff's Ixia fabric designs; secondly, whether the copied material amounted to 'whole or substantial part' of the copyright work at issue. It is respectfully submitted that the formula 'substantial part of Ixia'[1254] reflects one of the inconsistencies in the current work/part framework. Specifically, both prior to the copyrightability analysis and indeed with the wisdom of hindsight, the discussed copyright work was not identical to Ixia in that it did not coincide with the 'margins of the text'. Upon completing the examination, it was established that Helen Burke, a designer employed by the plaintiff, had based, for instance, 'her vertical stripes on fabrics appearing in various pictures painted by Matisse'[1255]. The trial judge giving judgment for the plaintiff came to the conclusion that the Marguerite design had been copied from the Ixia design.[1256] This finding of fact was not challenged by the defendants abandoning most of the grounds in their notice of appeal. Unlike the judge[1257] the Court of Appeal concluded (framing this inference in terms of the idea-

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[1249] See Nimmer, at 13-28, 13-113, 13-116, 13-132. See further Latman, at 1189. See also *Hoehling* v *Universal City Studios,* 618 F. 2d 972, 977 (2d Cir. 1980)

[1250] See Nimmer, at 13-12 n. 31.1

[1251] See Nimmer, at 13-12, 13-28. See also *Gates Rubber Co. v Bando Chemical Industries Ltd,* 9 F. 3d 823, 832, 841 (10th Cir. 1993).

[1252] See *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [1998] FSR 803 (hereinafter "*Designers Guild*-1"); *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] FSR 121 (hereinafter "*Designers Guild – CA*"); *Designers Guild Ltd* v *Russell Williams (Textiles) Ltd* [2000] 1 WLR 2416 (hereinafter "*Designers Guild - HL*").

[1253] *Designers Guild – HL,* at 2419.

[1254] Ibid.

[1255] Ibid., at 2430. See also ibid., at 2419.

[1256] See *Designers Guild - 1,* at 815. See also *Designers Guild – HL,* at 2428.

[1257] See *Designers Guild - 1,* at 828

expression dichotomy) that the defendant's design had not involved the copying of substantial part of the plaintiff's copyright work.[1258]

The House of Lords reversed this decision and, speaking through Lord Scott of Foscote, found the Court of Appeal's substantiality approach 'wrong in principle'.[1259] Tellingly, Lord Hoffmann effectively implied the probative similarity/substantiality distinction while stipulating that the question of whether the copied features 'formed a substantial part of the plaintiff's design cannot be decided by revisiting the question of whether it looks like the defendant's'.[1260] It is submitted that an implicit concept of probative similarity could be inferred from the analysis of certain other dicta as formulated in *Designers Guild*.[1261] At the same time, the formula 'sufficiently close, numerous or extensive'[1262], worded in stating the purpose of the examination with reference to the allegedly copied features, would seem to disregard the fact that to 'belie coincidence' probative similarity should not necessarily be extensive or 'striking'.[1263] In addition, one may find certain traces of inconsequence in the analysis tying up probative similarity with such issues as originality and the *de minimis* rule as set forth in a sentiment discarding commonplace and unoriginal similarities in this context.[1264] Accordingly, it is not *per accidens* that, in a sense by passing over the concept of non-extensive similarity, the notions of copying and substantiality are framed as analytically coalescent where 'some but not all the features of the copyright work have been taken'[1265]. Interestingly, the originality and *de minimis* concepts re-emerged within the substantiality/protectability framework, albeit, regrettably, in connection with the idea-expression dichotomy[1266]. In this sense, were it not for the dichotomy, the related elements of the conceptualisation of originality could be, philosophically speaking, restituted to their proper frame of reference under the generic heading of copyright subsistence.

[1258] See *Designers Guild* - CA, at para. 37.
[1259] See *Designers Guild* - HL, at 2434.
[1260] Ibid., at 2421. See also ibid., at 2418 (per Lord Bingham of Cornhill), 2425 (per Lord Millett).
[1261] See ibid., at 2419, 2426, 2431, 2432, 2434, 2435.
[1262] Ibid., at 2425. See also ibid., at 2431, 2432; *Francis Day & Hunter Ltd* v *Bron* [1963] Ch 587, at 623.
[1263] See Latman, at 1204.
[1264] See *Designers Guild –HL, at 2425*.
[1265] Ibid., at 2426. See also ibid., at 2431-2432; *Francis Day & Hunter Ltd* v *Bron* [1963] Ch 587, at 610.
[1266] See *Designers Guild –HL, at 2423*.

B. Functionality and substantiality: critique in the context of elemental copyrightability.

a. *Baker v Selden*: related conceptual pathways.

As programmatic subject-matter can be copyright without being a complete and functioning set of instructions, substantiality of a piece of code is 'not determined by whether the system would work without the code'[1267]. This may further impugn the functionality approach[1268]. In this connection, it might be pointed out that the doctrine of keeping 'copyright out of the functional field'[1269] is often attributed to American copyright.[1270] The doctrine in question is normally traced back to the *Baker* v *Seldon* case (that, incidentally, acceded to its, allegedly, almost unassailable doctrinal ascendancy in the late nineteenth century)[1271], wherein the Supreme Court set down the famously seminal precepts followed in the USA in shaping certain aspects of protectability of works the function of which is solely or primarily utilitarian[1272]. Although under British copyright there is no obligation to toe this line, it might still be useful to entertain some ideas lingering in this field.

It is submitted that there could be identified several distinct conceptual pathways that might at times be conflated. First, the rationale behind the *Selden* doctrine is not to be employed in denying copyrightability to any work even if such is intended for 'an industrial or commercial, rather than an artistic use'[1273]. Secondly, it has been conceptually and doctrinally spelt out that the 'useful article' exception[1274], frequently

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[1267] *Cantor Fitzgerald,* at para. 78. See ibid., at paras. 74 (as to the role of comments written "for the benefit of the human reader and … ignored when the code comes to be compiled"), 75. Cf. Nimmer, at 13-145. Cf. also *Autodesk, Inc. v Dyason* [1992] RPC 575. See also Derclaye, at 64.

[1268] See also *Ibcos*, at 292.

[1269] Ibid.. See further Laddie et al, at 838. In this context, the boundary between copyright and patent is not infrequently highlighted with reference to the concept of the *functional*. See Karjala, D., "Copyright, Computer Software, and the New Protectionism" (1987) 28 Jurimetrics 33; Karjala, D., "Copyright Protection of Computer Documents, Reverse Engineering, and Professor Miller" (1994) 19 Univ. Dayton LR 975, at 976; Karjala, D. and Menell, P., "Brief Amicus Curiae: Applying Fundamental Copyright Principles to *Lotus Development Corp. v Borland International, Inc*." (1995) 10 High Tech. LJ 177; Karjala, D., "The Relative Roles of Patent and Copyright in the Protection of Computer Programs" (1998) 17 Marshal J. Computer & Information Law 41.

[1270] See, for instance, Cornish, at 449, 455. See also *Ibcos*, at 292. Cf. Lai, at 7.

[1271] See *Baker* v *Selden,* 101 US 99 (1879). See also Laddie et al, at 837, 838. Cf. Lai, at 49.

[1272] See further Nimmer, at § 2.18 [B][1]; Weinreb, L., "Copyright for Functional Expression" (1998) 111 Harvard L R 1149, at 1173.

[1273] Nimmer, at 2-204.1. See also Siebrasse, at 52-55.

[1274] See 17 USC § 101. See also 17 USC § 113. As to the prehistory of the rule, see House Report, at 50. Useful articles are articles having an intrinsic utilitarian function (hence, "utilitarian articles" (see House of Representatives Report No 94-1476 (1976) 94th Cogress 2nd Session (hereinafter "House Report"), at 55)) that is not merely to portray the appearance of the article or to convey information.

invoked in this context[1275], is confined to pictorial, graphic, or sculptural works[1276]. In this connection, for instance, '[t]here appear to be no valid grounds why … legal documents should not be protected under the law of copyright.'[1277] This may of course bear on the ever-expanding body of information, including legal forms stored (hypotextually) on the Web.

As to the realm of software, it would appear that whether preparatory design material is considered copyrightable as a distinct species or within the ambit of computer programs protection, various integrated preparatory graphics (falling under our nature/domain approach outside the artistic (or 'pictorial, graphic, or sculptural') category) should not be tied up with the notion of 'useful article'. However, one may stumble over certain complications in this area. Thus, here it might be advisable to step back to take a broader view.

b. Utility, useful articles, and the nature/domain framework.

The idea of utility without functioning, indicating a scientific or technical character[1278] not only as distinct from an artistic (*stricto sensu*) one, may point to the sub-domain structure attributable to a certain conceptual tension between the notions of nature and domain. Taking into account that *domain* is correlative to *nature*, the tension can be conceived as a 'correlating force' productive of various nuanced distinctions. Within this matrix, utility is deduced from the attributes of the respective sub-domains by virtue of the quintessence of the labour/skill pertinently exerted to produce a result placeable in such generally utilitarian domains. A labour/result system of this kind might be utilitarianised, that is made to serve a utilitarian purpose characteristic of applied science. The latter can be described as knowledge that might be put to use for a purpose other than its own end. In this context, sub-domains reflect

See further Nimmer, at 2-94, 2-99, 2-106. See also *Computer Associates Intern., Inc.* v *Altai, Inc.,* 982 F. 2d 693 (2nd Cir. 1992) (hereinafter "*Computer Associates"),* at 704 ("utilitarian works"); *Harper House, Inc.* v *Thomas Nelson, Inc.,* 889 F. 2d 197 (9th Cir. 1989) (hereinafter "*Harper House"*), at 201 ("utilitarian aspects"), 202 ("utilitarian feature", "utilitarian items", "utilitarian object"), 205 ("utilitarian element"), 208 ("useful items"); House Report, at 55 ("utilitarian aspect").
[1275] See Nimmer, at 2-204.11, 2-204.13. See also Lai, at 23.
[1276] See *Harper House,* at 202. See also Nimmer, at § 2.08 [B][3]. Cf. *Computer Associates,* at 704.
[1277] Nimmer, at 2-204.11. See also *Saenger Organization, Inc.* v *Nationwide Ins. Licensing Association, Inc.,* 119 F. 3d 55, 56 (1st Cir. 1997).
[1278] See further Nimmer, at 2-98, 2-111.

some kind of potentiality (and in this sense, practical value), rather than actual application.

Accordingly, 'utilitarian' or 'practical' is construed here as concerned with, or based on, actual practice or usefulness. This reasoning reflects the notion of domain (as a field of knowledge or activity; a subject one is master of[1279]) and the skill/intellectual labour/knowledge–based paradigm as opposed to the mode, act or effectiveness of application.

At times, a broader interpretation is read into the 'useful article' doctrine (or variations thereon) when it is predicated on some kind of design analogy or such 'questionable applications of the "useful article" definition'[1280] as the *Williams* case[1281]. As a result, the doctrine in question may conceptually collide with the nature/domain framework. On these lines, various software-related subject matter can be affected[1282] since, for instance, elements of varied nature are normally integrated into preparatory design material. It might be observed here that the basic rule that every work can only fall within a single category of (original) types of works[1283] is not broken in this context. Generally, it is a subject matter or an object that might be doctrinally 'multilocular', that is containing many conceptual loculi encapsulating works potentially copyrightable under their respective rubrics, which might in turn be multipartite.[1284]

Besides, the nature/domain concept is designed to govern the questions of copyrightability, interspecific arrangements, and elemental structure so far as any multifaceted subject-mater is concerned. The same applies to what may be called multiramified subject matter to depict an integrated preparatory process[1285] that leads to the creation of several distinct works. Through this prism, the copyright disposition of works of complex nature can be rectified.

[1279] As the word "domain" is derived from "dominus", a master.
[1280] Nimmer, at 2-96.
[1281] See *Williams Elecs., Inc* v *Bally Mfg. Corp.,* 568 F. Supp. 1274 (N.D. Ill. 1983). In this litigation the game 'hyperball', that combined certain features of a traditional pinball game with those of a video game, was considered a 'useful article' and not copyrightable.
[1282] See also *Computer Associates,* at 704 (citing *Baker* v *Selden,* 101US 99 (1879); Stone, P., "Software Law – Lessons from America: Filtration for Functionality from Software Copyright" [1997] CLSR 15. Cf. Nimmer, at 2-111 (limitations applicable to works of utility), 2-112, 2-204.11 (invoking the *Selden* case as regards "limiting the scope of copyright protection to "useful articles").
[1283] See further Torremans, 177-178.
[1284] See also Bently and Sherman, at 52.
[1285] As, *e.g.*, relying on a holistic approach confined both spatially and temporally. See *Electronic Techniques (Anglia) Ltd v Critchley Components Ltd* [1997] FSR 401. See also *Norowzian v Arks Ltd (No. 2)* [2000] FSR 363.

By the same token, the formula 'a work falling within one class may encompass works coming within some or all of the other categories'[1286] may be construed as tacitly referring (if not doctrinally presupposing) the nature/domain framework. More specifically, works of heterogeneous nature might be categorised along the domain or nature/domain lines[1287]. It is thus not surprising that, on the one hand, under American copyright, compilations are not classified as literary works[1288], and, on the other hand, for instance, musical and dramatic works 'have fairly settled meanings'[1289] effectively with reference to their sub-domain structure.

To some extent, certain conceptual affinities could be identified between the nature/domain reasoning and the new framing of software protection under Australian copyright law, particularly, as regards the formula 'any literary work that is incorporated in, or associated with, a computer program'[1290].

However, admittedly, the 'effectiveness' (as distinct from 'potentiality') paradigm (or a variation thereon) is implicitly utilised in the second part of the provision of s. 47AB ('essential to the effective operation of a function of that computer program'[1291]). This could be put down not only to the general infringement/exceptions context of the formula, as it operates only with reference to acts not constituting infringement of copyright in computer programs[1292], but also, specifically, to the requirement of interoperability[1293]. On the other hand, an element of 'potentiality' could be traced even on these lines as reflected in such formulae as 'for the purposes of'[1294] and 'in order to achieve'[1295].

[1286] House Report, at 53.
[1287] Cf. Nimmer, at 2-61.
[1288] As to the text/non-textual aspects distinction in the light of the conceptualisation of literary and pictorial compilations, see *Harper House, Inc. v Thomas Nelson, Inc.,* 889 F. 2d 197, 202-203, 205 (9th Cir. 1989); *Harper House, Inc. v Thomas Nelson, Inc.* (1991) US Dist. LEXIS 11790, at paras. 15-16. See also *Fabrica, Inc.* v *El Dorado Corp.,* F. 2d 890, 893 (9th Cir.1983). See further subs. 4.3.2.B.d, below.
[1289] House Report, at 53.
[1290] See s. 47AB (a), the Copyright Act 1968 (inserted by the Copyright Amendment (Digital Agenda) Act 2000).
[1291] See s. 47AB (b), the Copyright Act 1968.
[1292] See Part III, Division 4A, the Copyright Act 1968 (inserted by the Copyright Amendment (Computer Programs) Act 1999).
[1293] See s. 47D (1) (d), the Copyright Act 1968. See further Aplin, T., "Contemplating Australia's Digital Future: The Copyright Amendment (Digital Agenda) Act 2000" [2001] EIPR 565, at 571.
[1294] See ss. 47B-47D, the Copyright Act 1968.
[1295] See also Aplin, T., "Contemplating Australia's Digital Future: The Copyright Amendment (Digital Agenda) Act 2000" [2001] EIPR 565, at 571.

If the nature/domain framework is not fully utilised, combined intellectual efforts may result in a work resolvable into a number of works of specific nature. In this regard, if the criteria of originality are satisfied, the 'parent' work might encompass divers works copyrightable under their respective rubrics. Alternatively, the cumulative effect of the nature/domain schema, the evolving work approach, and the construct of intention should determine the conceptualisation of an integrated work of a complex nature[1296]. If, for instance, a drawing is specifically intended for a compilation and stems from a part of the combined efforts, the resultant literary copyright, within a specific nature/domain (sub-domain[1297]) structure, may extend to the drawing as such in addition to its placing. However, such a set of circumstances is, admittedly, troublesome to trace, particularly taking into account that the required intention could prove ephemeral while the nature of any part of the intellectual labour easily identifiable. (On the other hand, it might be added in parentheses, the concept of compilation may, in this context, again lend itself to a hybrid form of protection owing to the nexus between the works and underlying efforts. Such a form could be construed here as a result of copyright encapsulation, that is the process of combining elements to create a new copyright entity.)

Along similar lines, a chart can be viewed, from the standpoint of copyright, as a part of preparatory design material. Under the isolated versions approach, if the versions at issue are placed in narrowly perceived sub-domains, a programmatic entity may, in terms of copyright, be 'decomposed' into separately copyrightable works, namely a computer program and preparatory design material.

c. Narrowing down the scope of the useful article exception and inductive reading of copyright identities.

A doctrinal clash between the realm of software and the useful article rule was, in a sense, exposed in the *ADA* litigation where copyright protection for such 'useful' software as a word processing program could have been effectively invalidated as the

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[1296] In similar fashion, the nature/domain approach, here focused on the programming sub-domain, may conceptually tie up the so-called 'reserved words' with their underlying source and object codes in the context of computer languages' copyrightability. Cf. *Data Access Corp. v Powerflex Services Pty* (1999) 73 ALJR 1435, at 1448. It is a separate question whether the *de minimis* thresholds are passed in each case, particularly regarding the above 'words' or their systems.
[1297] Notably, if compilations could make up a sub-domain.

Code on Dental Procedures and Nomenclature was held a useful article[1298]. This approach was soundly rejected by the Seventh Circuit[1299].

Nevertheless, additional difficulties lie in wait. In this connection, the work/ material object distinction should be accommodated in the context of utilitarian works (as opposed to 'purely creative compositions'[1300]) if juxtaposed with the notion of 'useful article'[1301], although both the concepts can be doctrinally linked to the *Selden* frame of reference[1302]. In a way, the formula 'a work that portrays a useful article'[1303] may be used to solve the work/object puzzle. Sustaining this projection, doctrinal reasoning on these lines is bound to be predicated upon an assessment of the scope of the construct 'useful (utilitarian) work' and contextualisation of functionality. This in turn might be viewed in terms of another juxtaposition: that of utilitarian works and general functionality framed as copyright terms of art.

Further, the amendatory legislative language[1304] mediating the concept in its current form was adopted and added to the definition of pictorial, graphic and sculptural works, admittedly, to illuminate the 'distinction between works of applied art protectable under the [Copyright Act] and industrial design not subject to copyright protection'[1305]. It is to be reminded in this connection that under British intellectual property law, although '[t]here seems to be a natural overlap between design law and copyright'[1306], the two branches should not be 'tangled up'[1307]. Further afield, there is a (doctrinally and statutorily drawn) distinction between registered designs protected

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[1298] See *American Dental Association* v *Delta Dental Plans Association,* 39 USPQ 2d 1714 (N.D. Ill. 1996).

[1299] See *American Dental Association* v *Delta Dental Plans Association,* 126 F. 3d 977, 978 (7th Cir. 1997). See further Nimmer, at 3-32.

[1300] See House Report, at 53. See also Laddie et al, at 211; Nimmer, at 2-32, 2-33, 2-34. As to the software context of 'utilitarian works'

[1301] See further House Report, at 54. See also *Mazer* v *Stein,* 347 US 201 (1954). Cf. Derclaye, at 12, 62 ("copyright excludes functional articles from its protection"); Karjala, D., "The Relative Roles of Patent and Copyright in the Protection of Computer Programs" (1998) 17 Marshal J. Computer & Information Law 41, at 45-47; Lai, at 23.

[1302] As to the 'utilitarian' software context, in this regard, see *Computer Associates,* at 704-705; *Apple Computer, Inc. v Franklin Computer Corp.,* 714 F.2d 1240, 1251, 1253 (3d Cir. 1983); *Whelan Associates, Inc.* v *Jaslow Dental Laboratory, Inc.,* 797 F. 2d 1222, 1236 (3d Cir. 1986). See further Nimmer, at 2-90, 2-204.12.

[1303] 17 USC § 113 (b).

[1304] See 17 USC § 101.

[1305] House Report, at 54. See also ibid., at 55.

[1306] Torremans, at 295. See also s. 51, CDPA.

[1307] See further Torremans, at 315-316. See also Cornish, at 449, 495; Laddie et al, at 187-188; Lai, at 49, 51; Sherman, B. and Bently, L., *The Making of Modern Intellectual Property Law. The British Experience, 1760-1911,* Cambridge University Press, 1999, at 187. For an examination of the doctrine of *unité de l'art* in this field, see Quaedvlieg, A., "'Style is Free': Designs Beware" [2001] EIPR 445.

under the Registered Designs Act 1949[1308], as amended by the CDPA, and unregistered designs governed by the provisions of Part III of the CDPA wherein the 'design right' is enshrined [1309]. Designs falling into the former category are generally described as 'aesthetic'[1310] while the rubric of 'design right' is principally for non-aesthetic (functional) articles[1311], albeit, again, not without a considerable overlap[1312]. It is in the context of the unregistered design right that certain characteristics of copyright law[1313] are tapped as a conceptual source, thus forming some kind of copyright/registered design 'hybrid'[1314]. Tellingly, the 'dictated solely by the function'[1315]exception is inherent in the statutory corpus of registered design protection[1316] along with the 'method or principle of construction' exception[1317] that could be viewed as a variation on the theme of the idea-expression dichotomy.

Coming back to American copyright law, it should be noted that the House of Representatives Report employs a synonymous (with 'useful article') construction, 'utilitarian article'[1318], to embrace 'textile fabrics, wallpaper, containers, and the like'[1319].

Along these lines, the design of a useful article might be copyright only to the extent that it incorporates certain features that 'can be identified separately from, and capable of existing independently of, the utilitarian aspects of the article'[1320]. This

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[1308] Hereinafter "RDA". See further Cornish, at 486-495; Fellner, C., *Industrial Design Law,* Sweet and Maxwell, 1995 (hereinafter "Fellner"), at paras. 2.01-2.119; Laddie et al, at 1046, 1059 *et seq.*; Torremans, at 300-314.

[1309] The official formula of the right in question. See s. 213, CDPA. See also Torremans, at 316. See further Cornish, at 498-506; Fellner, at paras. 2.220-2.269; Laddie et al, at 1265 *et seq.*; Torremans, at 315-337.

[1310] See further Torremans, at 300, 302.

[1311] See further Cornish, at 498. See also Lai, at 7.

[1312] See Laddie et al, at 1106; Torremans, at 300, 338.

[1313] Such as the concept of originality. See s. 213(1), (4), CDPA. See also Cornish, at 499.

[1314] See further Cornish, at 498.

[1315] Interestingly, as distinct from the formula "sole shape possible for the particular purpose" (Cornish, at 491) which, in a sense, reflects the theory of choice.

[1316] See s. 1 (1) (b) (i), RDA. See further Cornish, at 491; Laddie et al, at 1101-1106.

[1317] See s. 1 (1) (a), RDA. See further Cornish, at 490; Laddie et al, at 1106.

[1318] Along with "industrial products". See also *Fabrica, Inc.* v *El Dorado Corp.,* F. 2d 890 (9th Cir.1983) (hereinafter "*Fabrica*"), at 893.

[1319] House Report, at 55. See also *Custom Chrome, Inc.* v *Ringer,* 35 USPQ 2d 1714 (D.D.C. 1995); *Durham Indus., Inc.* v *Tomy Corp.,* 630 F. 2d 905 (2d Cir. 1980); *Entertainment Res Group, Inc.* v *Genesis Creative Group, Inc.,* 853 F. Supp. 319 (N.D.Cal.1994); *Gay Toys, Inc.* v *Buddy L Corp.,* 522 F.Supp. 622 (E.D. Mich. 1981); *KeelerBrass Co.* v *Continental Brass Co.,* 812 F.2d 1401 (4thCir. 1988); *Norris Indus., Inc.* v *IT&T Corp.,* 696 F. 2d 918 (11th Cir. 1983); *Poe* v *Missing Persons,* 745 F. 2d 1238 (9th Cir.1984); *Vacheron & Constantin-Le-Coultre Watches, Inc* v *Benrus Watch Co.,* 155 F. Supp. 932 (S.D.N.Y. 1957).

[1320] 17 USC § 101. See further House Report, at 54-55.

framework is intended to govern the protectability of physically[1321] or conceptually[1322] separable[1323] elements in their respective sub-domains since the aesthetic/functional distinction regarding the nature of the design does not as such determine copyrightability[1324]. This, in turn, bears on structural formulae and elemental copyright identities of various subject-matter.

In view of this, it is a system of features (such as conceptually identifiable programmatic entities) delineated along similar lines that may form a potentially copyrightable work, thus gaining momentum in the opposite (to the 'element of' paradigm) conceptually determinative direction. The resultant conceptualisation might, in this sense, be described as inductive.

d. *Fabrica* and *Harper House* rules in the context of compilations and integrated works.

Paradoxically, in the light of elemental protectability we should invoke such a controvertable[1325] decision as *Fabrica, Inc.* v *El Dorado Corp.*[1326] where the 'useful article' doctrine was, arguably, misinterpreted. The *Fabrica* court, in a sense, ignored 'an exception to the exception' in holding non-copyrightable the plaintiff's carpet display folders as 'useful articles' despite the fact that the folders' 'intrinsic utilitarian function' was 'merely to portray the appearance of the article or to convey information'[1327]. Nonetheless, in *Fabrica* the Ninth Circuit formulated a seminal approach by revising the prior standards in the field and finally disposing of the 'sole

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[1321] See *Parfums Givenchy, Inc.* v *C & C Beauty Sales, Inc.*, 832 F. Supp. 1378, 1390-1392 (C.D. Cal. 1993). As regards British concepts in this connection, see *Leslie v Young & Sons* [1894] AC 335. See further Laddie et al, at 53, 54 (severability).

[1322] See Denicola, R., "Applied Art and Industrial Design: A Suggested Approach to Copyright in Useful Articles" (1983) 67 Minn. LR 707; Perlmutter, S., "Conceptual Separability and Copyright in the Design of Useful Articles" (1990) 37 J. Copyright Society 339, at 377. See also *Brandir Int., Inc.* v *Cascade Pacific Lumber Co.*, 834 F. 2d 1142, 1144 (2d Cir. 1987); *Carol Barnhart, Inc.* v *Economy Cover Corp.*, 773 F. 2d 411, 422 (2d Cir. 1985); *Custom Chrome, Inc.* v *Ringer*, 35 USPQ 2d 1714, 1718 (D.D.C. 1995).

[1323] See further Nimmer, at 2-95, 2-99. See also *Act Young Imports, Inc.* v *B & E Sales Co.*, 673 F. Supp. 672 (S.D.N.Y. 1987); *Brandir Int., Inc.* v *Cascade Pacific Lumber Co.*, 834 F. 2d 1142, 1145 (2d Cir. 1987); *Kieselstein-Cord* v *Accessories by Pearl, Inc.*, 632 F. 2d 989 (2d Cir. 1980). Cf. *Esquire, Inc.* v *Ringer*, 591 F. 2d 796, 804 (D.C. Cir. 1978).

[1324] See also *Lotus Development Corp. v Paperback Software International*, 740 F. Supp. 37, 54-58 (D. Mass. 1990). See further House Report, at 55; Lloyd, at 351.

[1325] See Nimmer, at 2-96. Cf. *Harper House*, at 202.

[1326] *Fabrica, Inc.* v *El Dorado Corp.*, F. 2d 890, 893 (9th Cir.1983).

[1327] 17 USC § 101. See further Nimmer, at 2-96. Cf. Derclaye, at 12; Karjala, D., "The Relative Roles of Patent and Copyright in the Protection of Computer Programs" (1998) 17 Marshal J. Computer & Information Law 41, at 46-47, 70.

utilitarian function' abstract[1328] in declaring not copyrightable the utilitarian aspects of useful articles.[1329]

Bound by the *Fabrica* interpretations, the Ninth Circuit in its *Harper House* decision reversed the district court's findings in several respects, narrowing the scope of protectability, and held that non-textual utilitarian features of organizers[1330] were not subject to copyright protection since such elements were considered coming within the useful article exception[1331]. It should be pointed out that in the *Harper House* litigation a concept which might be deemed doctrinally foreign to British copyright, was utilised by discriminating between two types of compilations categorised as 'pictorial, graphic, and sculptural works' and 'literary works' respectively[1332]. This distinction is vital to the useful article exception which is intended to be applied only to the former category[1333]. In this connection, it was stipulated that the 'useful article rule does not affect the copyrightability of an integrated work of text and blank forms, but only that of pictorial graphic, or sculptural works'[1334].

The notion of integrated works might be specifically moulded to the nature/domain framework. It is reiterated that grounds for the nature/domain approach could be adduced on both sides of the Atlantic. For instance, the protection of musical works, 'including any accompanying words'[1335], as well as dramatic works, 'including any accompanying music'[1336], is expressly provided for under American copyright. For such accompanying words[1337] and music[1338] to be rendered copyrightable under the respective rubrics, the 'retinue' elements in question should be integrated with the principal subject matter so that physical juxtaposition alone does not suffice.[1339] The

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[1328] See *Fabrica*, at 893. See further Nimmer, at 2-91, 2-92, 2-93, 2-94. See also *Esquire, Inc.* v *Ringer*, 591 F. 2d 796, 803 (D.C. Cir. 1978); *Harper House,* at 202.

[1329] See *Fabrica,* at 893, 894.

[1330] Collections of blank forms and certain other items designed to assist in planning various activities and recording certain types of information.

[1331] See *Harper House,* at 197, 202, 203, 208. See also *Harper House, Inc. v Thomas Nelson, Inc.* (1991) US Dist. LEXIS 11790 (hereinafter "*Harper House –2"),* at paras. 13, 14.

[1332] See *Harper House,* at 203-204; *Harper House-2,* at paras. 17-18.

[1333] See *Harper House,* at 202.

[1334] Ibid., at 203. See also *Cash Dividend Check Corp.* v *Davis,* 247 F. 2d 458-460 (9th Cir. 1957); *Edwin K. Williams & Co.* v *Edwin K. Williams & Co.-East,* 542, F. 2d 1053, 1061 (9th Cir. 1976).

[1335] 17 USC § 102 (a) (2).

[1336] 17 USC § 102 (a) (3).

[1337] See *Corcoran* v *Montgomery Ward & Co.,* 121 F. 2d 572 (9th Cir. 1941). It should also be accommodated that such words looked at in isolation may be copyrightable under the heading "literary works". See further *ABKCO Music, Inc.* v *Stellar Records, Inc.,* 96 F. 3d 60, 63-64 (2d Cir. 1996).

[1338] See *Witmark & Sons* v *Pastime Amusement Co.,* 298 Fed. 490 (E.D.S.C. 1924).

[1339] See further Nimmer, at 2-55, 2-62.

sub-domain structural reading is further substantiated here by the fact that, under US copyright doctrine, the construct 'pictorial, graphic, and sculptural works'[1340] embraces works of a scientific or technical nature[1341].

e. The *Mazer* doctrine and the *part-substantial part-work* continuum.

Although at times experiencing certain changing fortunes of interpretation [1342], the Supreme Court's decision in *Mazer* v *Stein*[1343] has been considered a landmark in this field of American copyright[1344]. Notably, under the *Mazer* doctrine elements capable of standing in their own right as art works separate from the useful article are copyrightable[1345].

This framing of the separability construct[1346] might be read as conducive to, and illustrative of, the formation of some kind of 'non-utilitarian' continuum encompassing such features as identifiable separable parts, substantial parts (as one of the incarnations of the notion) and works without solving the inherent line-drawing problem. It is reasoned that an answer may lie in both the physical/conceptual separability distinction and particular conceptualisations of the forgoing copyright terms of art. Consequentially, conceptual separability extending to mandatory copyrightability may indicate substantiality. On the other hand, if the 'in its own right' rule is not set down in the ethereal realm of the substantial, the above continuum might fall apart without the glue of substantiality or be divested of any copyright significance. Nonetheless, a correlation between the notions of part and work, in this context, is further reinforced in the formula 'an article that is normally a part of a useful article is considered a "useful article"' as codified under American copyright.[1347]

[1340] See 17 USC § 102 (a) (5). See also 17 USC (1909 Act) § 5 (1).
[1341] See House Report, at 54. See further Nimmer, at 2-111. See also *Brock* v *National Electric Supply Co.,* 166 O.G. 985 (1911); *Ideal Aeroplane & Supply Co.* v *Brooks*, 34 USPQ 370 (E.D.N.Y. 1936); *Keeler Brass Co.* v *Continental Brass Co.,* 678 F. Supp. 1185 (M.D.N.C. 1987).
[1342] See Nimmer, at 2-91.
[1343] See *Mazer* v *Stein,* 347 US 201 (1954) (upholding the copyright in a statuette used as a lamp base.
[1344] See House Report, at 54-55; Nimmer, at 2-90.
[1345] See further House Report, at 50.
[1346] See also Derclaye, at 62.
[1347] See 17 USC § 101.

f. Functionality and the idea/expression dichotomy.

If there can be found some conceptual room for the permissibility of copying functionality reducible, arguably, to a (detailed) function,[1348] this issue may turn into a bone of contention between the rival camps[1349] of the idea/expression dichotomy and originality as such, if not lapsing into the theory of choice.[1350]

Certain related conceptual variables may enter the equation. For instance, the construct of 'forms of expression dictated solely by functional consideration'[1351] is often deployed in the context of the requirement of minimal creativity[1352]. Further, a dichotomy, framed by a disjunctive reading of the notions of form and utility, could be inferred from various formulae not only used in such legal instruments as Copyright Office Regulations[1353], but also currently codified under American copyright[1354]. Although at times the 'choice' reasoning is detached from the idea-expression dichotomy in the context of determining functionality[1355], these constructs are, in the ordinary way, conceptually intertwined in this field. Such a nexus often employs or implies the *Selden* doctrine[1356]. But, in fact, as indicated in this study, a clear solution lies in the originality analysis as such.

[1348] See Nimmer, at 2-204.9, 13-127. See also *Data Access Corp. v Powerflex Services Pty Ltd* (1999) 73 ALJR 1435, at 1452, 1454*; Whelan Associates, Inc.* v *Jaslow Dental Laboratory, Inc.,* 797 F. 2d 1222, 1236 (3d Cir. 1986). See further Laddie et al, at 838; Nimmer, at 13-122.

[1349] Cf. Nimmer, at 13-130.

[1350] Or probably the fact/expression distinction including the conceptualisation of factual compilations. See *Lotus Development Corp. v Borland International., Inc.,* 49 F.3d 807 (1st Cir. 1995). See further Lloyd, at 335. See also *Computer Associates,* at 709; Lai, at 23; Nimmer, at 2-202, 2-204.7, 2-204.10, 13-130; Weinreb, L., "Copyright for Functional Expression" (1998) 111 Harvard Law Review 1149, at 1180.

[1351] See also Derclaye, at 62.

[1352] See *CMM Cable Rep, Inc.* v *Ocean Coast Properties, Inc.,* 97 F. 3d 1504, 1519 (1st Cir. 1996); *Consumer Union of US, Inc.* v *Hobart Mfg. Co.,* 199 F. Supp. 860 (S.D.N.Y.1961); *Dow Jones & Co.* v *Board of Trade,* 546 F. Supp. 113 (S.D.N.Y.1982); *Higgins* v *Baker,* 309 F. Supp. 635 (S.D.N.Y.1969); *Morrissey* v *Procter & Gamble Co.,* 379 F. 2d 675 (1st Cir. 1967); *Tate Co.* v *Jiffy Enters., Inc.,* 16 F.R.D. 571 (E.D. Pa. 1954). See further Nimmer, at 2-15, 2-16.

[1353] See, for instance, 37 CFR §202.10 (a) (1959). See further Nimmer, at 2-90.

[1354] See 17 USC § 101 ("form but not … utilitarian aspects").

[1355] *Lotus Development Corp. v Borland International, Inc.,* 49 F.3d 807 (1st Cir. 1995) (comparing the user interface to the buttons of a VCR (considered as "purely functional"), the First Circuit found such to be part of a method of operation (in the context of "many alternatives") and, accordingly, unprotectable under US copyright). See further Derclaye, at 61.

[1356] In this respect, early case law might be particularly illustrative. See also *Apple Computer, Inc. v Franklin Computer Corp.,* 714 F.2d 1240 (3d Cir. 1983)*; Borden v General Motors,* 28 F. Supp. 330 (S.D.N.Y. 1939); *Chautauqua School of Nursing v National School of Nursing,* 238 F. 151 (2d Cir. 1916); *Clair v Philadelphia Storage Battery Co.,* 43 F. Supp. 286 (E.D. Pa. 1941); *Computer Associates,* at 74; *Data Access Corp. v Powerflex Services Pty Ltd* (1999) 73 ALJR 1435; *Kepner-Tregoe, Inc. v Carabio,* 203 USPQ 124 (E.D. Mich. 1979); *Lotus Development Corp. v Borland International, Inc.*(1996) 116 S. Ct. 804; *MiTek Holdings, Inc. v Arce Engineering Co., Inc.,* 89 F.3d

Along these lines, it is respectfully submitted, the construct of functional works[1357] may become doctrinally diluted, if not tenuous[1358]. To utilise 'utility' readings, it is the recurring theme of a special rendering of the nature/domain narrative in the context of American copyright that might be sifted from the ever-nascent welter of functionality, if encountered in other jurisdictions and laced with the above inductive framing of copyright identities with reference to the notions of part, substantial part and work.

C. Choice of substantiality criterion.
a. Spectrum of associated criteria.

It may hardly be disputed that the concept of substantial part is not to be understood as a variation on the theme of the 'main design' embodied in the provisions of s. 64 (as regards artistic works)[1359]. In framing a system of relevant thresholds hierarchically placed below the 'main' line, the issue of substantiality in the form of the notion of substantial part as construed in the context of infringement is often associated with the idea-expression dichotomy[1360] and the 'quality' reasoning[1361]. Whereas both conceptions (particularly, the 'chimaera' of the dichotomy) has been canvassed in this study, we may observe that the quality/quantity distinction[1362] is not only invoked in scrutinising the *de minimis* rule with reference to the concept of general copyright subsistence, but also reflected in many litmus tests devised in the field of elemental copyrightability as discussed in this subsection. By the same token, quality, disentangled from various confusions (still present in this area) and contextualised with reference to certain attributes of the underlying analytical

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1548, 1549, 1555 (11th Cir. 1996). See further Cohen, "Reverse Engineering and the Rise of Electronic Vigilantism: Intellectual Property Implications of "Lock-out" Programs" (1995) 68 S. Cal. L.R. 1091, at 1147; Derclaye, at 14, 64; Drexl, at 9, 21, 78, 79; Karjala, D., "The Relative Roles of Patent and Copyright in the Protection of Computer Programs" (1998) 17 Marshal J. Computer & Information Law 41, at 51, 55, 70; Karjala, D., "Copyright Protection of Computer Program Structure" (1999) 64(2) Brooklyn L.R. 519, at 539; Kremer, B., "Copyright Protection of Computer Programs" [2000] EIPR 292, at 301; Laddie et al, at 838; Nimmer, at 2-204.8; Richardson, M., "Copyright in Trade Marks? On Understanding Trade Mark Dilution" [2000] IPQ 66, at 75.
[1357] See Nimmer, at 13-143, 13-144, 13-144.1.
[1358] See also *NEC*, at 595.
[1359] See s. 64, CDPA. See also *Preston v Tuck* [1926] Ch 667. See further Cornish, at 367.
[1360] See Cornish, at 362; Laddie et al, at 223.
[1361] See *Ladbroke,* at 276, 293.
[1362] See also *Spectravest, Inc. v Aperknit Ltd* [1988] FSR 161, at 170.; *Flanders,* at 548. Cf. *Harbor Software, Inc. v Applied Systems, Inc.,* 936 F. Supp. 167, 172 (S.D.N.Y. 1996).

rationale, is to be built into the very structure of the *substantial*[1363] perceived in copyright terms. The resultant mechanism can be employed in constructing the standards of elemental substantiality.

It is reasoned that the use of the formula 'substantial significance'[1364] in the context of reproduction as to 'that which is taken'[1365] may be reflected along the protectability lines as an indication to the effect that the threshold of copyrightability of part ('substantially significant') is implicitly higher than that applied to work ('not insignificant').

In a sense, this might be maintained in framing the (copyright) class/object distinction, juxtaposing 'not insignificant' in the field (that is, if the work is a computer program, 'non insignificance' is assessed with regard to the attributes of computer programs as copyright species) and 'substantially significant' as weighed against the work. Nevertheless, bearing in mind that even actual functioning, so far as 'functional' works are concerned, cannot be a criterion of protectability, the 'substantial significance to the whole' might hardly be applied in a way distinct from 'non insignificance to the copyright class' at the elemental level. It is also to be taken into account that this may lead to such a situation where, *reductio ad absurdum* and as reflected in the realm of the acts restricted by copyright in a work, copying a (programmatic) piece is prohibited, whereas such an act might be permitted if the very same piece is considered a part.

It is further reasoned that such 'relative' constructions are effectively confined to the concept of work as an element (part) is primarily qualitatively weighed against the cumulative labour/skill imbedded in the underlying work. In this light, it is the work analysis that turns on judgment to a higher degree than the originality reasoning, particularly at the elemental level. Almost by definition, the 'relativity' is beside the point so far as the nature/domain framework is concerned for, in this respect, even the *de minimis* rule is inapplicable.

As to the realm of originality, the 'originated from the author of the work' continuum in its negative ('not copied from another copyright work' and 'not taken from the public domain') or affirmative ('evincing the originating properties') form

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[1363] Sometimes effectively reformulated in the form of the abstracts of "importance" (see *Cantor Fitzgerald,* at para. 77; *Catnic Components Ltd v Hill & Smith Ltd* [1982] RPC 183, at 223), "integral part" (see ibid., at para. 76), "material part" (*Rees v Melville* [1936-45] MCC 168), or the "worth copying" maxim (see *Warwick Film Productions Ltd v Eisinger* [1969] Ch 508, at 533).

[1364] *Ladbroke,* at 283. See also Copinger, at 407. Cf. *Ladbroke*, at 287.

[1365] *Ladbroke*, at 287.

may scarcely entail any role played by comparison. Moreover, stretching the conceptualisation of non-triviality (the *de minimis* standard of originality) to 'relativity' may only belabour the point. For instance, in an evaluation of distinct software routines (here illustrative of technological elements/parts), comparison may be not only conceptually misplaced but also counter-productive if it results in unprotectability of otherwise potentially (in their own right) copyrightable programmatic pieces.

This, nonetheless, does not preclude the use of the construct 'substantial significance' in ancillary mode. Moreover, if workable with reference to certain derived classes, this reasoning along the lines of polymorphic framing of substantiality may displace the corresponding general conceptualisation.

Indicatively, the notion of 'overborrowing of the skill, labour and judgment which went into the copyright work'[1366], was introduced, albeit under the heading of substantial part, to discriminate between a 'mere general' and 'detailed' idea in the context of the idea-expression dichotomy[1367], and worded to fit effectively (and implicitly) into the mould of substantial taking rather than substantial part. Accordingly, the abstract of 'overborrowing' cannot grow into a firmly fashioned criterion, let alone a hard and fast rule, hence the amorphous construct in question. It is worth reminding that it was judicially refuted as merely a substitute term for 'the statutory concept of substantiality without proving any useful criterion in the process'[1368].

It is inferred from our analysis of various 'library' paradigms that if, with reference to a certain (programmatic) portion, collocation determines copyrightability[1369], in a classic case[1370] it is not the portion placed in such a way that is part of a copyright work: the copyright part status should be accorded to the placing which is to be tested for substantiality. In any event, collocation as such cannot be considered a criterion in

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[1366] *Ibcos*, at 302. See also Millard, C., "Copyright" in Reed, at 143; Stone, P., "Software Law – Lessons from America: Filtration for Functionality from Software Copyright" [1997] CLSR 15.
[1367] See *Ibcos*, at 301, 302.
[1368] *Cantor Fitzgerald,* at para. 79. See also Lai, at 18, 26-27; Stone, P., "Software Law - Lessons from America: Filtration for Functionality from Software Copyright" (1997) CLSR 15.
[1369] See *Corelli v Gray* (1913) 29 TLR 570; *Ladbroke*, at 276, 293; *Warwick Film Productions Ltd v Eisinger* [1969] Ch 508, at 533-534. See also *Dagnall v British and Dominions Films Corp. Ltd* [1928-1935] MCC 391, at 396-397; *Kelly v Cinema Houses Ltd* [1928-1935] MCC 362; *Wilden Pump & Engineering Co. v Fusfeld* (1985) 8 IPR 250. See further Copinger, at 407, 408; Laddie et al, at 54, 87-88, 95, 212, 220, 221.
[1370] As to a possible conceptualisation of a hybrid form of protection in this area, see subs-s 2.6.3., 4.2.3.B, above.

this field. This reading may, it is submitted, render the 'robbed of that collocation' reasoning[1371] logically invalid (or, in a sense, ostensible).

In a sense, the abstract of collocation might be conceptually coupled with separability (severability)[1372] to form some kind of conceptual diptych. More specifically, (at least conceptual) separability might be construed as a prerequisite for the doctrinal role of collocation to be even entertained, while the very notion of separability presupposes collocation which is a variation on the theme of contextualisation. In any event, separability *per se* cannot determine substantiality[1373].

It is reasoned that various characteristics essential (as making an entity what it is[1374]) to the 'whole' could often be attributed to the underlying subject matter as opposed to a copyright work. That is, the principal 'ingredients' could be derived from another work or 'taken' from the public domain so that the rest of the material may just pass the *de minimis* threshold. In this connection, the 'essence' criterion[1375] might be unworkable or inoperable. Nonetheless, it can be deployed on ancillary lines and integrated into the *de minimis* analysis of the result of labour at the elemental level to make up for 'insignificance' of the underlying labour/skill. It is opined that such a 'deviation' from the general rule might be justified owing to the very nature of part construed in terms of 'making up a whole'.

The 'copyright in its own right' criterion[1376] might, to some extent, be misleading since various (potentially copyrightable) works could be made out within the boundaries of the same subject matter thus indicating that a certain portion of the subject matter may meet the criteria of copyrightability *per se* without being part of the (copyright) work at issue[1377]. Further, if the element in question is identified as

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[1371] See *Ladbroke*, at 293; *Warwick Film Productions Ltd v Eisinger* [1969] Ch 508, at 533-534. See also *Cantor Fitzgerald,* at para. 76.

[1372] See also Derclaye, at 62. The issue of separability may also be tied up with the possibility of comparison in the context of the infringement analysis. See *Mister B Textiles, Inc. v Woodcrest Fabrics, Inc.,* 523 F. Supp. 21 (S.D.N.Y. 1981). See further Nimmer, at 3-19.

[1373] See also Laddie et al, at 124. As to "functional separability", see *Data Access Corp. v Powerflex Services Pty Ltd* (1999) 73 ALJR 1435, at 1452. See further Kremer, at 296-297. This construct may, theoretically, facilitate the substantiality analysis, notably as a variation on the theme of the *part-and-substantial* conceptualisation.

[1374] At all events, the terms "essential" and "bare bones" ("barebones") as framed in computerspeak cannot be construed as coextensive, although the latter is often viewed as referring to products containing only essential functions. Suffice it to say that, for instance, in the context of "hardware barebones", even a CPU might be optional.

[1375] See Lai, at 24. See also *Cantor Fitzgerald,* at para. 74.

[1376] See also Laddie et al, at 223.

[1377] See also *Anacon Corp Ltd v Environmental Research Technology Ltd* [1994] FSR 659; *Electronic Techniques (Anglia) Ltd v Critchley Components Ltd* [1997] FSR 401; *Norowzian v Arks Ltd (No. 2)* [2000] FSR 363. See further Copinger, at para. 3-04; Torremans, at 177-178.

part of the work, it can hardly be considered useful to gauge whether the part satisfies all the 'in its own right' criteria. At all events, the 'copyright by itself' examination, it being but a 'convenient short cut'[1378], 'should not be used as a substitute for the proper and full test of substantial part'[1379].

b. Ideation of the 'more than *de minimis* in its own right' threshold. The *part-and-substantial* concept.

Arguably, it is the issue of elemental substantiality that is not directly deducible from the copyright status of the work, as is the application of the *de minimis* rule to the element in question. As such, the part might be copyrightable (within the work) without passing the *de minimis* threshold in its own right, whilst the rest of the copyrightability criteria are perforce to be met.

In this connection, the issue of substantiality of a part of the copyright work might be tied up with the 'more than *de minimis*' requirements elaborated on the lines of the 'work' and 'originality' examinations since there could be no proviso *de minimis* as to the concepts 'literary' and 'literary work'. It is also submitted that a programmatic entity representing a stage of software development (for instance, an algorithm) might be construed as a computer program, albeit in its 'larval form', and as an element of such. Further, such code forms (or versions) as source code, object code, or bytecode could be interpreted either as distinct subject-matter/works (particularly, in the light of the isolated versions approach) or elements/*parts*[1380] (notably, in accordance with the evolving work reasoning). In the latter case, the respective technical terms[1381] are analysed in framing copyrightable parts. This analysis might be viewed as a phase of (and as distinct from[1382]) 'condensing' subject-matter into copyright works. Along these lines, the *de minimis* 'in its own right' threshold[1383] could be particularly germane to the elemental copyrightability analysis under the evolving work approach, especially in the realm of software.

[1378] *Ladbroke,* at 277. See also *Cantor Fitzgerald,* at para. 76.
[1379] Copinger, at 408. See also *Ladbroke*, at 277.
[1380] See also Laddie et al, at 804.
[1381] In this context considered *elemental*.
[1382] For the sake of maintaining the conceptual distinction between the notions of general (or holistic) and elemental copyrightability.
[1383] See also Laddie et al, at 470 (with reference to the non-original category of works), 833.

Accordingly, a methodised approach to marking out the boundaries of a work comes down to the application of the copyrightability criteria relative to a particular category so that the *de minimis* principle can be applied to the work without splitting such into parts. The rest of copyright standards should be employed with reference to the elements (discrete portions or characteristics[1384]) thus jettisoning non-copyrightable, or protectable not within the copyright species at issue, components of the subject-matter (the negative analysis, as it were), and identifying the actual parts as well as the copyright work as a system of parts (the affirmative analysis). Subsequently, the *de minimis* rule is to be followed in the context of substantiality on, as a matter of course, a primarily qualitative footing since quality, in the form of non-triviality and non-commonplace, can make up for a dearth of quantity[1385].

To encapsulate, in dealing with the category of 'part' (as distinct from 'substantial part') the *de minimis* rule is not to enter the equation as the elements in question need not pass the threshold of copyright subsistence on their own. But they may not be in conflict with the rest of the subject-matter as to the other copyrightability criteria.

To be specific, an element is, first, to be reckoned the result of a certain part of the labour exerted on the work as a whole; secondly, it is to be originated from the author of the work; and last but not least, it is to be placed in the same sub-domain (perceived within the nature/domain paradigm) to evaluate the subsistence of copyright in the element (of the subject-matter) not 'by itself' but within the copyright work under consideration. To be regarded substantial, the part should pass the *de minimis* thresholds, forming the 'more than *de minimis* in its own right' construct, on top of the described structure.

As to the other criteria discussed here, these, if found facilitating the copyright subsistence analysis, might be geared for such purposes by the trier of fact. Bearing in mind that the fulcrum of the matter would still be the 'part-and-substantial' construct (as a transformed 'copyright by itself' standard), the rest of the list of criteria would be effectively ancillary if not rendered superfluous.[1386]

[1384] See also ibid., at 833.

[1385] See also *M.S. Associates v Power* [1988] FSR 242.

[1386] In this context, we would contend that the substantiality conceptions sifted out in the field of copyrightability (notably, the above "relative" constructs) could admittedly be used in calculating damages to work out the actual proportion of the allegedly taken elements to the whole of the claimant's copyright work. This question is, however, beyond the scope of this thesis.

4.4. Analytical framework of elemental substantiality.

The notion of 'substantial part' is construed in this study as a *secondary receptacle for copyright* while *copyright work* is perceived as a receptacle for copyright as a property right. On these lines, a distinction is drawn between subsistence of copyright and infringement related aspects of substantiality. Within this matrix, a multiform shell of conceptual confusion is removed from the underlying rationale.

In this connection, the seminal formula 'core of protected material' could be understood as designed to bridge the gap between the meanings attached to the word 'work' in ordinary speech and copyright parlance respectively by *de facto* equating the 'core' with a (copyrightable) work within the subject-matter. The latter is thus consistent with ordinary usage, and might be here depicted as a *pseudo-work,* 'pretending' that the subject-matter is protectable in its entirety.

On the other hand, the concept 'area of copyright' is devised as an instrument of the copyrightability analysis addressing the related issues without being affected by the pitfalls associated with the notion of the core of protectable expression. The identification of the area of copyright reflects the process of drawing the line between copyrightable and non-copyrightable elements. The 'area' concept might also represent an intermediate stratum of the copyrightability analysis formed between the text and the copyright work.

Against this background, we expanded upon our nature/domain approach to silhouette the rationale behind the construct of substantial part (as predicated upon the concept of part) and the scope of the notion. It would appear that the programming domain is built into the scientific stratum of the literary domain. It is in the light of such a type of intellectual activity centring upon code-writing that the system of software copyright might be justified.

Further down this conceptual pathway, an instance of the abstract 'work' is to be distinguished not only from 'subject matter' and 'work as a whole' but also from other related instances (or associated works) as might notably be the case so far as the computer program/preparatory design material distinction is concerned if this opposition is not doctrinally destabilised when the 'interspecific' (that is, traced between (copyright) species) lines are redrawn after the European blueprint.

Accordingly, a solution to the categorisation puzzle within the scientific domain tends to lie in the sub-domain structure as rooted in the nature/domain paradigm, notably in UK and EC copyright indicative of the 'isolated versions' and 'evolving work' approaches respectively, thus determining the categorisation of elements.

In seeking to avoid a morass of theoretical confusion, it is necessary to determine how the elements of preparatory design material are reflected in a computer program so that the disposition of the elements within software (as a system embracing a computer program as such and its preparatory design material) could be ascertained. On these lines, we have examined what is often called *software life cycle*. The latter is conceived as a framework mediating multifaceted programming theories and techniques, and giving both shape and continuity to various programmatic states, situations, stages, processes and instances navigated through by the pointers suggested in such a scientific discipline as software methodology.

At all events, a software design must satisfy the related specifications, meet the performance and resources requirements, and conform with the target medium and design process restrictions. It is submitted that despite all the limitations involved, the expertise required of the author should be a basis for the originality-determined subsistence of copyright. In this context, originality justifies the boundaries of the copyrightable works. In other words, the original literary work/computer program in question might be doctrinally hewn out of the underlying work/subject-matter along the originality lines.

Ideally, the conceptual relationship between the stages/forms of an instance of software life cycle tends towards congruence. Even bearing in mind 'fuzzy' (in the explained sense) inter-step boundaries, it is pointed out that each of the processes involved is ordinarily encapsulated in a single (albeit often *recurring*) stage of the software development. Along these lines, the processes and procedures in question could be described as *horizontal* as opposed to those 'piercing' through several stages and, in this sense, conceived of as *vertical*.

The advent of object-oriented programming, a revolutionary concept that changed the rules in the field, opened up new vistas of software development including dramatically improved prospects of reusability and redesignability. It might be particularly interesting from a copyright standpoint, that class definitions are, in a sense, double-reusable for they could be reused not only by the program for which it has been created but also by other object-oriented programs. Again, it is submitted

that since these processes are hardly devoid of programming expertise *required of the author,* they should not, *a priori,* be divested of originality and thus of the resultant rights that are to be vested in a given person. However, the concept of intentionality could be deployed to discriminate between copyright 'destinies' (copyright or not copyright) and identities (how copyright) of programmatic pieces benefiting from reusability in the above or similar situations. Within this framework, our formula 'elemental copyright identities' depicts specific copyright significations (such as 'copyright as') of various technical terms denoting intellectual entities at the elemental level.

The copyrightability analysis that hinges on the evolution of software entities may draw upon both the concept of derivative works (including the case of componentware-related derivation) and the evolving work/isolated versions distinction. If, in this context, the isolated versions abstract prevails over the evolving work approach, it is reasoned that the principled framework in this area may come down to a variation on the theme 'you do not get a right to stop others copying what you did not create yourself'. On these lines, a programmatic characteristic that is changed is to be regarded as part of the step-bound version preceding the change while the embodied alteration is conceptualised as part of the next (so far as the software life cycle is concerned) step-bound version. At the same time, it is reasoned, the notion of software life cycle may particularly lend itself to the evolving work construct that in turn might thus be promoted as the principal discursive pathway in this field.

Bearing in mind the selection/arrangement idiosyncrasies of OOP, there is room for compilation-type approaches in this area. In addition, as the delineated programming complexities right across the field are accommodated, a hybrid compilation/computer program form of protection may also come to the fore.

This technology-related rationale in conjunction with the nature/domain approach may form the basis of the paradigm of programmatic copyright. Conceptualisation of various elemental copyright identities is notably reflective of traditional copyright narratives framed in this mode, if informed by fundamental programming concepts.

The conceptual attributes of congruence and inheritance (understood not necessarily in the narrow, 'object-oriented' sense), developed within both linear and non-linear frameworks, may be considered as critical factors so far as the disposition and the process of doctrinal placing of the elements in computer program/preparatory design

material systems are concerned. As this logic unfolds, the complex nature of both software and its life cycle perceived along these lines tends to be determinative in this field.

Object-oriented programming as a theoretical framework has been transposed here to the realm of copyright, and utilised in a systematic way as an analytical model of copyright subsistence, reconceptualisin the mechanisms of *polymorphism, inheritance, encapsulation,* and *abstraction* as well as the notions of *object, concrete class,* and *abstract class*. Within this matrix conductive to a coherent schema of software copyright protection, the resultant paradigm may 'inherit' from OOP, considered in the abstract, the aforesaid 'susceptibility' to redesign so that new species of works could be defined and neatly fitted into an integrated system.

It is further reasoned that the construct of a copyright class*,* a generalised work or copyright species, might be formulated as a prototype for a copyright object, a work *lato sensu*. Such an object is perceived as a discrete entity combining/'encapsulating' an instance of 'data structure', or a (copyrightable) work *stricto sensu*, with specific 'methods' to analytically manipulate the 'data' in copyright terms.

As might be inferred from the above analysis of OOP, 'doctrines' and 'concepts' are to embrace terminologically consistent and logically sound descriptions (hence the need for further systematisation) as well as specific procedures to implement the conceptualisations in the copyright field. This approach, systematically 'supports' the aforementioned reusability since various definitions worded in a particular case or with reference to a particular technology could be 'reused' if doctrinally established.

To this end, the current protectability framework could be re-framed as a class hierarchy. It is a work *stricto sensu* as doctrinally stripped of its analytical shell, which attracts copyright. The other side of the coin is that a work *stricto sensu* can be viewed as a value passed to a legislatively enshrined conceptual variable such as a computer program. When a particular computer program is tested for copyrightabuility, a number of 'encapsulated' doctrines and conceptions are to be invoked 'automatically' or as a mater of course to make up a work *lato sensu* conceived within its hierarchy through copyright encapsulation.

The copyright class 'computer program' is construed under this categorisation as a class derived from its superclass (literary works) through 'inheritance'. In this light, those methodological aspects that are not specifically bound up with computer

programs should be sought out in the literary genus and then further up the class hierarchy to instantiate the notions of work, originality and nature/domain.

In addition, various technological aspects might be utilised as subject-matter out of which parts and substantial parts are carved as couched in copyright parlance. Specific copyright significations of the technical terms involved are encapsulated in the respective elemental copyright identities.

This conceptualisation is superimposed on both the genetic/evolutionary analogy and copyrightability paradigm modelled on object-oriented programming. In this regard, we have examined the anatomy of the genus 'original work' considered here as a *base class,* while such copyright species as computer programs contain supersets of features, especially in the context of the Internet. As base-class definitions of letter-bound (or literal) and deducible (or non-literal) elements are established in terms of the related constructs and doctrines, such conceptualisations could be re-defined for any number of derived copyright classes.

In identifying copyright significant 'lexemes' with reference to a particular copyright subclass such as *computer programs*, a three-tiered analytical structure might be conceptualised: the copyright discourse is superimposed (since *elements* of subject-matter may not necessarily coincide with *parts* of copyright works) on the programmatic narrative which, in turn, is mapped onto the literary paradigm framed along general or 'traditional' lines. Special emphasis has been given to the sub-domain structure of the literary copyright class and the related system of interspecific conceptual reflections that in conjunction with the underlying software technology narrative can be channelled into copyright significant re-definitions and specialisations of 'traditional' literary elements (such as a 'plot') as elemental programmatic entities.

Within this matrix, an instance of a code form (significantly, with reference to the notion of intermediate languages) might be considered either a distinct work or part subject to a conceptual choice between the doctrines of *evolving work* and *isolated versions* as contextualised. This reasoning parallels the framework of copyright identity of algorithms and is further elaborated in the realm of substantiality.

Under the evolving work approach as built into the nature/domain framework, if a computer program as a literary work includes its preparatory design material, any 'screen' is, or at least incorporates, a substantial part of the program. Under the isolated versions approach, elements of the subject-matter constituting doctrinal

'foreign bodies' could be separately protected. In this context, further solutions may lie in the text/behaviour distinction scrutinised in this chapter in redefining certain features along the lines of the copyright class hierarchy.

In analysing the attributes of the client/server architecture relative to the concept of part we have examined the precepts and stages of the application of this system and the components of such, notably with reference to the notions of componentware and program libraries. Unless the 'intentionalised' contextual approach enters the equation, a library component, even if written by the very same programmer, is not original to the author of the work (and accordingly, is not *part*) since the attendant labour/skill has not been exerted by the author in the process of creating the work. The evolving (or here rather, 'metamorphosing') work approach is set to outweigh the isolated versions conception as certain preparatory design material might be here seen as the larval form of a computer program (as a species of literary work) within the life cycle of the later.

The framing of the elements of preparatory design material as computer program parts within copyright discourse has been validated, particularly with reference to the notion of purposive connection, by highlighting a dependency relationship intrinsic to any whole/part structure. Within this framework, the contextualisation (as intentional *placing*) of the elements might be regarded as a part of the copyright work.

It is submitted that it would be doctrinally sound to consider the *placing* of a 'hooked' additional code as a part of the underlying program. As to the copyright status of the piece of code itself, an examination of the concomitant intention and timing may certainly be of assistance in building on what might be depicted as an edition analogy so that the *de minimis* rule with reference to both *work* and *originality* could be a major determinant.

In discussing the structure of programmatic behaviour, certain non-placing operation-code-bound aspects are put forward as apposite examples of the program's behaviour if placeable in the programming domain. It is reasoned that these elements, together with the *quasi-behavioural* programmatic characteristics coming down to *placing*, may account for the respective points along the text-behaviour continuum. The latter, in turn, coincides with the result side of the underlying work. On these lines, the phenomenon that might be veritably depicted as the program's behaviour is obviously not confined to the narrowly perceived op code as put into action. So long as a characteristic of a program can be placed within the programming domain as

opposed to the *field of target application*, it might be regarded as a part of the work under consideration and thus theoretically copyrightable, in particular, under the evolving work approach. Within the text/behaviour continuum, copyrightability might be either confirmed or rejected through different forms (stages) of analysis carried out to identify various realisations of the notions of work (labour-result systems), originality and/or nature/domain.

Certain conceptual constants have been worked out in developing analytical tools to identify doctrinally sound 'morphemes' (as meaningful – in copyright terms - elementary units) of the software copyright narrative. In this connection, the construct of software life cycle is the crux of the matter, while the notion of types of programming or programming theories (such as object-oriented programming or top-down design) imparts additional crystallisation of part definitions since structural formulae of Web-related software may only be elucidated through the conceptualisation of Internet-bound architectures. This analytical mechanism has been employed in ascertaining the elemental copyright identities of multifarious programmatic entities. Within this matrix, there could be marked out two groups of notions and analytical mechanisms reflecting the copying/copyrightability distinction within the ambit of substantiality, namely conceptually inapplicable and conceptually *applicable as contextualised* under the 'companion rubric': copying or copyright subsistence respectively. More specifically, certain ideas are unique to either copying or copyright subsistence, whilst the rest of the related constructs, although often tied to one of the areas in question, can be adapted to suit the other. It is the correlations between, and juxtapositions of, copying and subsistence of copyright that further define these areas and largely determine the structure of substantiality.

Further, the idea of utility without functioning may point to the sub-domain structure attributable to a certain *conceptual tension* between the notions of nature and domain. Bearing in mind that domain is correlative to nature, the tension can be perceived as a 'correlating force' productive of various nuanced distinctions. It is a system of features (such as conceptually identifiable programmatic entities) delineated along similar lines that may form a (potentially copyrightable) work, thus gaining momentum in the opposite (to the 'element of' paradigm) conceptually determinative direction. The resultant conceptualisation might, in this sense, be described as inductive.

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It is the issue of elemental substantiality that is not directly deducible from the copyright status of the work, as is the application of the *de minimis* rule to the element in question. As such, the part might be copyrightable (within the work) without passing the *de minimis* threshold in its own right, whilst the rest of the copyrightability criteria are perforce to be met. In this connection, the issue of substantiality of a part of the copyright work is tied up with the 'more than *de minimis*' requirements elaborated within the 'work' and 'originality' examinations along the lines of our polymorphic framing of substantiality. This schema is construed in terms of the contextual redefinition of general copyrightability concepts within the ambit of substantiality. It is further specified in redefining the principal conceptualisations of the substantial as regards certain derived copyright classes.

In dealing with the category of 'part' (as distinct from 'substantial part'), the *de minimis* rule is not to enter the equation as the elements in question need not pass the threshold of copyrightability on their own. However, they may not be in conflict with the rest of the subject-matter as to the other copyrightability criteria. An element is, first, to be reckoned the result of a certain part of the labour exerted on the work as a whole; secondly, it is to be originated from the author of the work; and last but not least, it is to be placed in the same sub-domain (conceived within the nature/domain paradigm) to evaluate the subsistence of copyright in the element (of the subject-matter) not 'by itself' but *within the copyright work under consideration.* To be regarded substantial, the part should pass the *de minimis* thresholds, forming the 'more than *de minimis* in its own right' construct, on top of the described structure.

As to the other criteria discussed here, these, if found facilitating the copyright subsistence analysis, might be geared for such purposes by the trier of fact. Bearing in mind that the fulcrum of the matter would still be the 'part-and-substantial' construct (as a transformed 'copyright by itself' standard), the rest of the list of criteria would be effectively ancillary if not rendered superfluous.

With these elemental structures in position we can now turn to weaving together all the conceptual strands of the analytical copyrightability narrative.

CHAPTER 5.

CONCLUSION:

THE PARADIGM OF ANALYTICAL COPYRIGHTABILITY.

5.1. Contours of the discourse.

Firstly, the result of systemisation of copyright subsistence, notably in the realm of software, is described here as analytical copyrightability. This model follows the discursive pathway from general to elemental subsistence of copyright.

Secondly, owing to the nature of the underlying technology (bordering on the unprotectable), software copyrightability analysis is of assistance in marking the fringes of copyright and testing its conceptual flexibility. Furthermore, the categorisation of computer programs as literary works is reflective of the correlative genus/species or superclass/class framework, of literary copyright.

On these lines, copyrightability of programmatic entities has been specifically examined as illustrative, in microcosm, of the general paradigm of copyright subsistence. At the same time, programming theories and methodologies have been drawn upon in seeking to develop useful analytical tools which can be applied to various copyright narratives.

Finally, it has been instrumental in this study that the general and elemental copyright conceptualisations are intertwined and mutually reflective, particularly in the context of Web-related programmatic entities, thus adding a further dimension to the discourse in question.

5.2. General copyrightability.

5.2.1. The concept of *work of a copyrightable description,* and the composite nature of the notion *'original literary work'.*

It has been reasoned in this thesis that the construct 'work (or production) constituting an intellectual creation' in the Berne context may be seen, *mutatis mutandis,* as a conceptual counterpart of 'a work of a copyrightable description' under British copyright for both the formulae depict the stage of the protectability analysis before the examination of the qualification status and without specifying a particular

domain. The notion 'work of a copyrightable description' is seen in this context as an intermediate stratum between the concepts of work and original literary work.

The terms work, original and literary represent distinct identifiable referents and meanings. With reference to the species of the original types of works three interrelated criteria are to be met to attract copyright protection:

1. The threshold of *work* common, *mutatis mutandis,* to both categories.

2. The criterion of the relevant domain construed within the nature/domain template.

3. The requirement of originality.

It may be noted here that varying combinations of the attributes of the last two criteria in this context make up the concept 'copyrightable description' framed on the above lines subject to contextualisation. Among other things*,* the term 'description' connotes that not every work of a particular (copyrightable) description receives copyright protection.

At the same time, the projection of the composite nature of the notion original literary (dramatic, musical or artistic) work is pivotal to piece together the concept of protected subject matter. So far as an original literary work is concerned, conceptual synergy can be achieved by a *modus operandi* which entails passing sequentially the relevant thresholds. Only to the extent that the material passes these thresholds as a system may it acquire copyright.

5.2.2. The extended framework of *work*: categories, criteria, labour/result systems, and the roles of intention and depersonalisation.

It is reasoned that the labour/skill concept, equipped with its own links and criteria and reflected in various notions and analytic formulae, regains its identity and may account for the performative nature of the intangible encapsulated in the process of creation. At the same time, the nexus between labour and result may reconcile the dynamic and the static within the remit of copyright.[1387]

In delineating the notion of 'work' in respect of the first copyright category, it would seem at least plausible that the threshold of non-triviality ('not completely unimportant'), as distinct from the criterion of non-commonplace within the fold of

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[1387] See further Sherman and Bently, at 4, 43, 47, 49, 173-175, 195, 200.

originality proper, may (as a form of the 'non-insignificance' standard) serve as an ingredient of a *de minimis* formula in this context. It is also to be reiterated that the criterion should be met with reference to both labour/skill and the result of such to constitute a work as a not trivial result of not insignificant labour, skill or judgment. 'Trivial', on these lines, is construed as an antonym of 'important' and described in terms of the result or *status* in the domain context. An element of serendipity may also be part of this formula. However, it is reasoned, to secure originality, an intention to produce a work should be identifiable (not necessarily as regards each and every facet of it). It is also submitted that the deployment of financial resources may be made allowance for within this framework.

Judging from the description of 'author' in CDPA, the implied presumption of not insignificant labour as to the second category could be identified and utilised in building up the concept of 'work'. A certain 'depersonalisation' of subject-matter and separation of a work from its originator flowing from the absence of the requirement of originality is logically mediated by the fact that the author of a non-original work is identified according to a legal fiction. The latter is largely for the construct of labour, skill and investment to be distilled into the abstraction which can be read as 'responsibility' utilised to single out the relevant type of person.

This also reflects the concomitant division within the notion of work or a shift of emphasis within the expression 'result of labour'. More specifically, the 'not trivial result' as distinct from 'not insignificant labour' is what is protected directly, whereas the foregoing legal fiction entails labour, skill and investment admittedly residing in the types of persons representing the notion of 'author'.

To encapsulate our reasoning on these lines, in the case of original types of works the accent as a requirement of non-insignificance flows or shifts alternately within the construct 'result of labour'. In this connection, it is the author's 'not insignificant' labour shaping the 'not trivial' result which matters, and it is the 'not trivial' result produced by the 'not insignificant' labour expended by the author which counts. A clearly integral labour/result system is formed on this basis.

It is submitted that this formula as well as the criterion of 'non-insignificance' as such and the systematic elaboration of the elements of copyright subsistence may justify a 'disjunctive' reading of the 'labour, skill or judgment' construct thus suggesting a certain interchangeability as to, say, 'labour' and 'skill'. At the same time, arguably, only in connection with the above 'financial' elements of the formula,

a 'disjunctive' reading may run counter to the underlying trends and the very nature of the modern copyright law. Therefore, such an ingredient as 'capital' might be used on a complementary basis.

At the same time, on account of the *isolation* of the elements of the formula within the ambit of non-original works the 'non-insignificance' requirement is anchored to the result in each case couched in terms of the respective statutory definitions.

Within this template, the above presumption completes the framework: the presumed not necessarily 'independent' labour, being a prerequisite of copyright subsistence, effectively lies dormant for it is not protected directly. It is activated in being protected in the form of the result and in the rights of the author. This schema highlights the link between copyright subsistence and authorship so that the nature of the latter could be described as mediating and delineating the personification of the construct 'labour/skill-responsibility'.

In a sense, the protection limited to signal and image up to a certain point renders the requirement of originality extraneous. By the same token, the absence of the requirement spells a certain depersonalisation thus setting the stage for the direct protection of the result of labour in the form of signal and image. At the same time, the labour is relocated to the realm of authorship through a legal fiction.

5.2.3. Computer-related categories: depersonalisation, definitions, and specific labour/result systems.

In contrast with non-original works, in the case of a computer-generated work the issues of 'non-insignificance' and 'source' of the labour ought to be considered as integral to the status of the material as a *work* and an *original work* respectively.

In this regard, 'depersonalisation' springs not from the absence of the requirement of originality but from a lack of, by definition, 'a human element' or 'person', as it were. From the vantage point of copyright, the nub of this situation is that there is a direct correlation between formulating the notion of computer-generated works and marking out the copyrightable computer-generated material. In coping with some of the attendant perplexities, the category of works of joint authorship should be directly provided for with reference to this category to address the concept of hybrid (human/computer generated) works.

Along these lines, the relevant statutory provision might read:

'Computer-generated', in relation to a work, means that the work is generated by a computer in circumstances such that the human contribution, if any, is separable. This contribution shall not be considered part of a computer-generated work.

To be copyright such works are to satisfy the criteria of the respective types of original works.

If the respective contributions are not distinct from those of the other authors so that at least one of the authors may be identified pursuant to s. 9(3), a work of joint authorship shall be recognized under s. 10(1).

Against this background, the nuances of the computer-related categories are transposed into the realm of copyright subsistence. Consequently, the substantial differences are accentuated in re-emerging as follows: the contribution attributable to a computer within computer-aided subject-matter is not apt to pass the thresholds of both *work* and *originality*.

If the contribution attributable to a computer is not distinct and the notion of work of joint authorship comes into play, it is to be taken into consideration that the quality of being 'not distinct' from the other contributions characterises the *result* of labour, whilst the labour proper is supposed to be somehow shared or divided up between the joint authors. Nonetheless, the labour and skill need not be of the same kind. Therefore, it is the 'non-distinct' (in the above sense) result produced by the shared labour which counts thus reinforcing the interpretation of *work* as the result of labour as a system. It is pointed out that the distinct results of shared labour may constitute a work of co-authorship as a species of collective works.

5.2.4. The originality continuum: principles and criteria.

It has been shown that within the originality framework the formula 'not copied from another work' cannot be equated with 'not copied from the work of another author'. Furthermore, this suggests that 'originality' cannot come down to the concept of 'personality'.

On the other hand, the converse chain of causation (from the absence of the personality doctrine in common law jurisdictions) may also be followed. The non-personality approach is also justified by the fact that the originating person may, in addition, copy some other elements.

So far as the modern publication right is concerned, it is logical that, as to the notion of work, the Copyright and Related Rights Regulations do not discriminate between the works that were in their previous 'incarnations' copyright as the species of the original or non-original categories respectively. It is the characteristics of being taken from the public domain (reflecting its narrower contours) or 'copied from another (here post-copyright) work' which might wipe out the difference coming down to originality.

In the field of software, a computer program may also enter the public domain as free software, 'open source', or public domain software. Within this framework the term 'public domain' may refer not only to material not covered by copyright or other property rights such as the publication right but also to freely available though protected works, notably with reference to the abstract of copyleft.

In this regard, the notions 'copied from another work' and 'taken from the public domain' may, in some measure, overlap and the related subject-matter can be placed on a continuum from infringing to taken from the material which could not attract any intellectual property protection.

On top of it, unlike some of the other reflections of the *de minimis* principle such as 'too small' a subject-matter or 'slight degree of literary composition' the threshold of non-commonplace can be avowedly placed in the realm of originality. Along these lines, 'commonplace' is synonymous with (too) 'frequent' or 'ordinary' and can be read as an antonym of 'original'.

In this connection, imparting to the product the quality of accessibility can be construed as serving to 'originate something' or 'originating'. As a result, the criteria of 'not taken from the public domain' and 'originating' overlap. This extends the aforesaid continuum which is effectively the threshold 'originated from the author of the work' composed of three correlative elements in a sense flowing into one another: 'not copied from another copyright work', 'not taken from the public domain' (the *negative criteria*), and 'evincing the originating properties' (the *affirmative criterion*).

5.2.5. The role of the EC formula of originality.

The European threshold framed as 'the author's own intellectual creation' was introduced in the fields of databases, computer programs, and certain photographs.[1388] This criterion has been transposed into the CDPA 1988 only with reference to databases.[1389] The implementation of a directive does not necessarily require legislative action in each Member State.[1390] In this context, national courts are required to interpret their national law in the light of the wording and the purpose of the directive. It might be argued that the European yardstick of originality was not legislatively implanted into the British formula of computer programs' copyright because the position in the UK prior to the implementation of the Software Directive was already similar to the position required under Community law.[1391]

On these lines, the fact that the originality requirement of the 1988 Act in relation to databases explicitly includes the new formula can be mapped onto the actual origins of this change. More specifically, the Database Directive and the UK Database Regulations introduced a two-tier system: the modified copyright protection for databases with the new originality criterion and a new *sui generis* right known as the database right. It is this juxtaposition of rights that might possibly be responsible for the 'special case' of databases as regards the standard of the author's own intellectual creation. In this context, s.3A(2) of the CDPA points out the principal distinctive feature of the copyright tier.

It is clear from the analysis carried out in this study that the terms constituting the 'author's own intellectual creation' can be construed as consistent with the corresponding elements of the UK standard. It cannot be ruled out that the ECJ will eventually decide on the standard that prevails.[1392] At the same time, the ambiguity of the new requirement in terms of its wording and doctrinal lineage as well as the conspicuous absence of proceedings brought before the ECJ on this subject may indicate that interpretative flexibility was intended by the Community legislator.

[1388] See Art. 1 (3), the Software Directive; Art. 6, Recital 17, the Duration Directive; Art. 3 (1), Recitals 15, 16, the Database Directive. See also Bently and Sherman, 2nd ed., at 88-89, 101-106.
[1389] See s. 3A (2), CDPA. See also reg. 6, the Copyright and Rights in Databases Regulations 1997, SI 1997/3032.
[1390] See further *Commission v Germany*, Case 29/84 [1985] ECR 1661, at para. 23.
[1391] See also Bently and Sherman, 2nd ed., at 103.
[1392] See Bently and Sherman, 2nd ed., at 102.

It is now of paramount importance how the national courts will read the formula. If the ECJ comes up with the final exegesis of the test, British copyright should be prepared for such an eventuality. To minimise possible destructive effects, it is necessary to demystify the identity of domestic copyright law and its internal workings. A clear and accurate representation of the law can be obtained through continuous systematic analysis. In the meantime, we would agree with Professor Karnell that 'national laws are free to develop originality wording at will, as long as the legislators and courts take care [to use] … a prescribed "mantra" for originality'.[1393]

5.2.6. The *isolated versions* and *evolving work* approaches: concepts and contexts.

In drawing the parameters of a protectable original work under the umbrella of copyright nomenclature, not only the notion of 'originality' but also the notion of 'work' as copyright terms of art should not be confused with the use of such words in popular speech. Accordingly, for the purposes of copyright, the boundaries of a literary work do not necessarily coincide with the margins of the text, as it were. It would seem accurate to drop the formula 'copyright as a whole' and replace it with the phrase 'copyright as' subject to the characteristics of the work. It might thus be emphasised that the copyright extends only to the author's contribution (primarily as 'not taken'). In this regard, if all the material is original with the author, copyright subsists in each version in isolation. This schema is here depicted as the 'isolated versions' approach.

Alternatively, there could exist circumstances where a detected intention to produce the work might suggest the originating character of the related labour. If such an ultimate intention is common to the versions in question, these might be considered parts of the same transaction or the embodiments of the same, in essence, labour. That is, the end result, including the elements derived from the antecedent versions, could be deemed original as evolved (remaining essentially the same) through several stages. This reasoning is described in this study as the 'evolving work' approach.

[1393] Karnell, G., "European Originality: A Copyright Chimera" in Kabel and Mom, at 208-209.

It is reasoned that with reference to the criterion of originality, the above 'isolated versions' approach would seem more consistent as not equating the concept 'not copied from another work' with 'not copied from the work of another author' regardless of the circumstances of the case. Only the above intention may 'stick the versions together' and thus tip the balance in favour of the 'evolving work' approach.

5.2.7. Literary works and the term 'literary': definitional mechanism.

In spite of the incorporation of computer programs into the category of literary works the logical tension between the concepts constituting 'original literary work' bears on the status of software not only generally or contextually. That is, the positioning of certain elements within the scope of 'literary' may result in leaving such matters out of the generality of originality *per se* and, by implication, the software originality analysis.

CDPA purports to lay down a synthesised definition of literary work. In this context, the statutory formula is composed of three statements. These sub-definitions may be characterised as follows: negative ostensive, affirmative verbal and affirmative ostensive respectively. (The term 'ostensive' is read here as 'giving explanation via examples'.) It is reasoned that, as to 'literary work' as a term being defined, a viable method of tailoring the conception breaking the impasse should embody a composite expression supplying the definition.

In this connection, the affirmative ostensive element represents the list of borderline cases. Thus, it need not be complete and may conceptually evolve in the course of the development of the Information Society. As regards the second affirmative ingredient, the distinguishing features may be altered and formulated in terms of the feasibility for a work to be printed. This should in turn lead to the inclusion of the term 'artistic' within the formula of the negative ostensive sub-definition thus indicating the interdependence of the defining elements.

The role of the genus ('work') is, arguably, reinforced by the absence of an indication of a distinction between the notions of 'literary work' and 'performance' in the negative ostensive definition for a performance is not a work in the first place. Such a definitional mechanism may be supplemented with a negative verbal component to point out that a literary work need not convey meaning or be in words.

That is to say, there is no necessary connection between 'literary' as a term of art in copyright law and 'meaningful' as 'communicating meaning'.

The delineated framework, in effect, marks out the concept 'literary' resting on the notion 'work' as the depicted genus. This underlines that the synergy of the elements of the general protectability formula does not imply that the facets of the respective constituents could be confounded. At the same time, if the term 'literary' *per se* is not conceptualised and such a formula as 'original mental contribution' represents the protectable subject-matter, there could be created a chain of uncertainties for any formula cannot be understood without perceiving the actual wording. As a corollary, the problem of conceptualisation may but be reintroduced when the general notion is only reformulated.

All in all, the term 'literary' in connection with a work denotes an attribution of such a work to the literary domain as *related to* the matter which is printed or may be potentially printed so long as the other conditions indicated within the above complex definition of 'literary work' are met. Printable is perceived here as connoting transcribable in the sense explicated in this study. On these lines, there could be no proviso *de minimis* with reference to the term 'literary' or the notion of literary work as distinct from the application of the *de minimis* principle to the concepts of 'work' and 'original'.

5.2.8. A *de maximis* rule.

This study also formulates a *de maximis rule*. Generally, such a rule might determine the non-protection of objects that are 'too big' to be protected/privatised. In the realm of IP the *de maximis* rule may be illustrative of the concept of extraordinary ideas.[1394]

In the context of copyright, the *de maximis* in the form of 'too widespread' almost collapses into the *de minimis* 'too commonplace'. Thus, extremes meet, opposites nearly coincide or become two sides of the same coin. Statically, the corresponding test formulae of *de minimis* and *de maximis* could be framed in pairs of semantic mirror images or extremes marking the outer limits of copyright. That is, the *de maximis* criteria of labour, result and originality can be read as antonyms of

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[1394] See further Hughes, at 319-321.

insignificant, trivial and commonplace respectively. Then, each standard is to be further interpreted to the highest degree of the quality in question. More specifically, intellectual labour which can be viewed as *de maximis* should be expended on a certain project on a grand or global scale (estimated qualitatively and/or quantitatively). Similarly, 'trivial' is to be reversed as 'too important', while 'commonplace' can be turned round as 'too unique' or representing singularity.

Without an established *de maximis* tenet it is only fortunate that such an extraordinary idea/work as World Wide Web was declared freely usable. In analytical terms, the *de maximis* concept mirrors the *de minimis* principle and restores some kind of doctrinal and policy symmetry if, in specific circumstances, it is preferred to the arguments for copyright protection put forward under the general justificatory (particularly, incentive-based) theories.

5.2.9. The nature/domain system and sub-domain structures.

The exploration of the literary domain involves the appraisal of the attributes of a particular species of this subgenus. To a certain extent, the role of the term 'domain' in the Berne text and context has been somewhat overlooked. However, generally the domain approach is reflected in the Berne paradigm. It is reasoned in this context that the scientific domain could be stratified as composed of literary and artistic elements. These in turn might be viewed as the appendages (or sub-domains) suggesting the complex structure of the literary and artistic domains respectively and forming the relevant scientific strata thus indicating some kind of 'literary – scientific – artistic' continuum.

Within this framework, the domain formulae are worked out (and, as a result, the subject-matter is placed in the relevant domain) through examination of the related field of intellectual activity as amalgamated with the nature of the labour/result analysis. It is this '*domain/nature' system* that is referred to when the term 'domain' is used in this study.

5.2.10. Elaboration of the *literary*: prospective evolution of compilations.

Compilation analysis gives rise to two schemes of protection in the software context. The first one mediates copyright in a suite of programs irrespective of the

protectability of the individual programs making up the package. On top of it, American copyright doctrine would appear to absorb the idea of compilation-type protection for a computer program as such as well as input formats.

In this context, the British approach to derivative works and compilations should be further refined. Related conceptions, it is submitted, might be to some extent modelled on the US framework with some alterations doctrinally justified under British copyright.

To that end, within the ambit of compilations there could be identified at least two subgenera in addition to a compilation as such. The first might be depicted as '*composition*' coming down to placing an element of a pre-existing work in a different context. As to the second, '*rearrangement*', its merit may reside in an arrangement of the component parts previously juxtaposed in a different way within an antecedent work.

Subject to the emphasis, which can be placed on a work as a system or on a *substantial part* of it, the umbrella terms for the three species of compilations could be, to highlight the related distinctive features, 'combination works' or 'contextual works' respectively. Alternatively, paying special heed to the above categories as receptacles for the described characteristics, compositions and rearrangements could be recognised as separate subgenera of works within the meaning of the proposed generic terms to illuminate the concept of derivative works.

Bearing in mind that under CDPA compilations constitute a separate species of literary works irrespective of the nature of the elements combined, the provisions related exclusively to computer programs are not to be applied to compilations in the realm of software even if selection and arrangement form the only protectable subject-matter.

However, taking into account some peculiarities of software design reflecting the coexistence of top-down and object-oriented methodologies, it would not seem unwarranted to recognise a hybrid compilation/computer program form of protection that may entail extended application of the special provisions. A work, in this regard, is homogeneous as a result of intellectual efforts and heterogeneous as a result of diverse intellectual efforts.

As to the general concept of copyright subsistence, this reasoning may be emblematic of the copyrightability framework within which the conceptualisation of

the elements of the general formula and the combined effect of the constituents are kept in equilibrium.

5.3. Elemental copyrightability.

5.3.1. The idea-expression dichotomy: demystification of the rationale and deconstructive readings.

The idea/expression construct is closely related to the field of copyright subsistence in both historical and thematic terms. Furthermore, the dichotomy admittedly purports to mark out copyright significant principal parts of any 'intellectual material'. In fact, public policy lies at the root of the multifarious forms of the abstract that can be described as 'non-protection of certain ideas'. The rationale behind the dichotomy has been associated with a number of policy considerations ranging from freedom of speech to the free use of functional ideas. However, it is reasoned that most of the relevant policy goals can be achieved without recourse to the idea/expression concept. Moreover, the application of the dichotomy in specific policy contexts can be counter-productive.[1395] In effect, the dichotomy may exist as a general rule in name only. At the same time, there remains the crucial argument that 'the non-protection of ideas represents one of the few avenues by which the courts can take account of the individual circumstances and merits of particular decisions'.[1396] Nevertheless, if the dichotomy is utilised as a policy and/or conceptual tool, we are likely to encounter further conceptual and doctrinal confusion if not judicial inconsistency, that is conflicting application of the rules by the national courts.[1397] To avoid such an undesirable outcome, judicial discretion should be exercised within a coherent framework. On these lines, there is room for conceptual flexibility which should not, however, spell expediency or be read as stretching the meaning of the underlying notions beyond acceptable limits. On the contrary, it should operate on a solid doctrinal foundation. The integrated system of copyright subsistence, which is designed to provide or unveil such a basis, accommodates flexibility. The latter is not restricted to the creative interpretation of the existing categories. The proposed system contains a number of conceptual tools which can be adjusted to specific contexts but

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[1395] See subs. 3.2.6., above.
[1396] Bently and Sherman, 2nd ed., at 175.
[1397] See subs-s 3.2., 3.3., above.

still should be utilised according to certain rules. Such constructs embodying an element of choice include the isolated versions and evolving work approaches as well as the text/behaviour reasoning.[1398] This study also formulates such conceptual continua as the originality continuum and the part-substantial part-work continuum.[1399] By definition, the term 'continuum' implies flexibility. In similar vein, the factor of relevant intention may enter the equation and dramatically influence conclusions.[1400] All these conceptualisations are drawn from the analysis of the basic character of the protected subject matter which forms the nucleus of this thesis.

In the field under consideration there is a plethora of self-contradictory texts from diverse quarters to sift through. The related pieces of legal writing have been subjected to 'turning against themselves' in diagnosing the doctrinally implied nature of the distinction. On these lines, the method used in this context is described as 'deconstruction' or 'deconstructive reading'. Such a mode of analysis is congruent with the myth of the dichotomy that can be construed as reflective (although in rather a philosophically unorthodox way) of fundamental conceptual oppositions.

Contrary to popular opinion, it is reasoned, the seminal decisions on the subject (including *Computer Associates*) have failed as yet to determine, and discriminate between, 'ideas' and 'expressions' or elaborate an appropriate test. With both sides of the dichotomy remaining undefined, if definable, the distinction does not exist.

On top of it, *Krofft*-like bifurcated methods and a special role of expert testimony, not providing definitions but only mediating the process of identification, may only 'palliate' the trouble. To add a rider to it, in *Krofft* the extrinsic test was not carried out and the application of the intrinsic test led to the adoption of the doctrine of the total concept and feel thus confusing the concrete with the abstract.

Furthermore, the notion of 'idea' is often used as some kind of nickname which denotes 'unprotectable' or 'unprotected', taking ideas for unprotected elements or 'unprotected expression'. The fact that copyright law protects many ideas overthrows the protected expression/non-protected idea hierarchy as the (non-chronological) structural phase of our deconstructive reading. Further, this allows for the dissonant

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[1398] See subs-s 2.5.3.B., 4.3.1.D., above.
[1399] See subs-s 2.5.2., 4.3.1.D.c, 4.3.2.B.e, above.
[1400] See subs-s 4.3.1.D.d, 4.3.1.d.f, above.

emergence of the unprotected inside the protected, thus disorganising the received order.[1401]

In this context, it has been observed that the interpretations of the concept of 'merger' along with various quantitative tests and criteria, framed as doctrinal ways to define the dichotomy, are flying in the face of common sense and logic. It is submitted that the related attempts to illuminate the distinction have in effect reinforced the key role of the notion of originality.

5.3.2. The copyright duality: ideational perplexities.

The essence of the rationale behind the interpretations placed on the dichotomy in the UK cannot be fully understood without reference to the diverse modes and versions of the distinction, or rather certain metamorphoses of the copyright duality which could be identified against a backcloth of the legal history from the Victorian age on.

It is reasoned that the contention that copyright subsists only in the form in which ideas are expressed cannot withstand close critical examination. Firstly, there could be some confusion of protectability of *form* as distinct from *idea* and the statutory rule that for copyright to subsist in a literary work it is to be recorded. If the notion of idea can be analysed within this matrix, it would seem reasonable to look on a sort of ephemeral 'something' (or an idea merely existing in someone's mind: an idea as such, neither reduced to writing nor otherwise recorded) as non-copyrightable. At the same time, the rules of fixation were, presumably, established for the sake of certainty and practicability. This view has also been corroborated by the examination of the line of cases dealing with the notion of originality of ideas.

Further, protection for an original work against copying in any material form implies that copyright in the work is not confined to a particular form of expression. The same conclusion could be drawn from the cumulative effect of protection for a *substantial part* of a work, either directly or indirectly, and the notion of adaptation.

In relation to 'non-original' types of works, the notions of 'expression' and 'form' are not synonymous either. Philosophically speaking, several distinct oppositions could be identified which have been confused with and within the construct of the

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[1401] See further Derrida, J., *Positions*, The Athlone Press, 1987, at 41-42.

idea-expression dichotomy: matter and form, form and content, expression and representation, etc. In part, the attendant perplexity could be mapped onto the purely philosophical nature of such dualities placed outside the ambit of UK copyright which operates in terms of the notions of work, originality and substantiality.

In this connection, a line of judicial authority and academic analysis advocating non-protectability of general ideas and protection for detailed collections of ideas has been canvassed. It is opined that the dichotomy could have been rendered otiose in that, so far as the principal questions in the cases explored are concerned, the same conclusions could have been reached on the basis of the circumstances of a particular case without resolving the works into general ideas and other elements.

5.3.3. The dichotomy: further hostile environments.

There are several facets of the correlation between the dichotomy and the concept of reverse engineering coming down to decompilation/disassembly or observing, studying and testing the operation of a program. Paraphrasing the formulae adopted by both EU and UK legislation: only in particular circumstances a user may avail herself or himself of the 'ideas' and 'expressions' of a work. This could be construed as a way to restrict the use of 'ideas' thereby in some respect protecting 'ideas'.

In the networked environment the notion of browsing and the related tools of linking, mirroring and framing are becoming increasingly important from a legal perspective. It has been found that browsing could be understood as the functional equivalent of reading, and it is a well established reasoning that reading on screen may become a primary market.

In this context, the fact that reading as a form of use has not been prohibited by copyright is not to be construed to the effect that ideas are not protected. In juxtaposing reverse analysis with some analogous cases with reference to traditional works, it might be observed that such acts as reading and analysing are not normally prohibited by the law. At the same time, this framework might to some extent come down to practicability. Moreover, traditional literary works are generally intended to be read. It is submitted that the difference in purpose should not shut a particular type of work out of the ambit of literary copyright.

It is a labour/result system (of a particular nature and in a particular domain) as distinct from intentions that is protected. However, there is to be a correlation between the purpose and the system of protection. If a work can be used without being read, the act of reading (even by a lawful user) might be justifiably restricted, if practicable. It may also be observed that certain distinctions existing in this field along the borderline between traditional and 'information age' works may, in fact, reflect the corresponding restricted/permitted acts (or infringement/defences modes) as distinct from the system of copyright subsistence. It can be appended that reading could very well be viewed as the exploitation of the 'expression'. In this regard, in line with 'deconstructive interpretations' the logic of traditional and modern readings of 'reading' invites its own refutation.

Indeed, so far as the idea/expression abstract is concerned, the only certainty is that copyright law does protect many ideas.[1402] All in all, the history of the dichotomy can be viewed as a combination of myth and confusion clothed in pseudo-philosophical terms.

5.3.4. The concept of *substantial part* and the area of copyright.

The notion of 'substantial part' is construed in this study as a *secondary receptacle for copyright*, while *copyright work* is perceived as a receptacle for copyright as a property right. On these lines, a distinction is drawn between subsistence of copyright and infringement related aspects of substantiality. Within this matrix, a multiform shell of conceptual confusion is removed from the underlying rationale.

In this connection, the seminal formula 'core of protected material' could be understood as designed to bridge the gap between the meanings attached to the word 'work' in ordinary speech and copyright parlance respectively by *de facto* equating the 'core' with a (copyrightable) work within the subject-matter. The latter is in fact consistent with ordinary usage, and might be here depicted as a *pseudo-work,* 'pretending' that the subject-matter is protectable in its entirety.

On the other hand, our concept of the 'area of copyright' is devised as an instrument of the copyrightability analysis addressing the related issues without being affected by the pitfalls associated with the notion of the core of protectable expression. The

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[1402] See also Bently and Sherman, 2nd ed., at 173.

identification of the area of copyright reflects the process of drawing the line between copyrightable and non-copyrightable elements. The 'area' concept might also represent an intermediate stratum of the copyrightability analysis formed between the text and the copyright work.

5.3.5. The nature/domain approach: categorisation of elements.

Against this background, we expanded upon our nature/domain approach to silhouette the rationale behind the construct of substantial part (as predicated upon the concept of part) and the scope of the notion. It would appear that the programming domain is built into the scientific stratum of the literary domain. It is in the light of such a type of intellectual activity centring upon code-writing that the system of software copyright might be justified.

Further down this conceptual pathway, an instance of the abstract 'work' is to be distinguished not only from 'subject matter' and 'work as a whole' but also from other related instances (or associated works) as might notably be the case so far as the computer program/preparatory design material distinction is concerned if this opposition is not doctrinally destabilised when the 'interspecific' (that is traced between (copyright) species) lines are redrawn after the European blueprint.

Accordingly, a solution to the categorisation puzzle within the scientific domain tends to lie in the sub-domain structure as rooted in the nature/domain paradigm, notably in UK and EC copyright indicative of the 'isolated versions' and 'evolving work' approaches respectively, thus determining the categorisation of elements. In this connection, the idea of utility without functioning may point to the sub-domain structure attributable to a certain *conceptual tension* between the notions of nature and domain. Bearing in mind that domain is correlative to nature, the tension can be perceived as a 'correlating force' productive of various nuanced distinctions. It is a system of features (such as conceptually identifiable elemental programmatic entities) delineated along similar lines that may form a (potentially copyrightable) work, thus gaining momentum in the opposite (to the 'element of' paradigm) conceptually determinative direction. The resultant conceptualisation might, in this sense, be described as *inductive*.

5.3.6. Software life cycle: conceptual reflections and
computer program/preparatory design material systems.

In seeking to avoid a morass of theoretical confusion, it is necessary to determine how the elements of preparatory design material are reflected in a computer program so that the disposition of the elements within software (as a system embracing a computer program as such and its preparatory design material) could be ascertained. On these lines, we have examined what is often called *software life cycle.* The latter is conceived as a framework mediating multifaceted programming theories and techniques, and giving both shape and continuity to various programmatic states, situations, stages, processes and instances navigated through by the pointers suggested in such a scientific discipline as software methodology.

At all events, a software design must satisfy the related specifications, meet the performance and resources requirements, and conform with the target medium and design process restrictions. It is submitted that despite all the limitations involved, the expertise required of the author should be a basis for the originality-determined subsistence of copyright. In this context, originality justifies the boundaries of the copyrightable works. In other words, the original literary work/computer program in question might be doctrinally hewn out of the underlying work/subject-matter along the originality lines.

Ideally, the conceptual relationship between the stages/forms of an instance of software life cycle tends towards congruence. Even bearing in mind 'fuzzy' (in the explained sense) inter-step boundaries, it is pointed out that each of the processes involved is ordinarily encapsulated in a single (albeit often *recurring*) stage of the software development. Along these lines, the processes and procedures in question could be described as *horizontal* as opposed to those piercing through several stages and, in this sense, conceived of as *vertical.*

5.3.7. Object-oriented programming and elemental copyright identities.

The advent of *object-oriented programming*, a revolutionary concept that changed the rules in the field, opened up new vistas of software development including dramatically improved prospects of reusability and redesignability. It might be

particularly interesting from a copyright standpoint, that class definitions are, in a sense, double-reusable for they could be reused not only by the program for which it has been created but also by other object-oriented programs. Again, it is submitted that since these processes are not devoid of programming expertise *required of the author,* they should not, *a priori*, be divested of originality and thus of the resultant rights that are to be vested in a given person. However, the concept of intentionality could be deployed to discriminate between copyright destinies (copyright or not copyright) and identities (how copyright) of programmatic pieces benefiting from reusability in the above or similar situations. Within this framework, our formula 'elemental copyright identities' depicts specific copyright significations (such as 'copyright as') of various technical terms denoting intellectual entities at the elemental level.

The copyrightability analysis that hinges on the evolution of software entities may draw upon both the concept of derivative works (including the case of componentware-related derivation) and the evolving work/isolated versions distinction. If, in this context, the *isolated versions* abstract prevails over the *evolving work* approach, it is reasoned that the principled framework in this area may come down to a variation on the theme 'you do not get a right to stop others copying what you did not create yourself'. On these lines, a programmatic characteristic that is changed is to be regarded as part of the step-bound version preceding the change, while the embodied alteration is conceptualised as part of the next (so far as the software life cycle is concerned) step-bound version. At the same time, it is reasoned, the notion of *software life cycle* may particularly lend itself to the evolving work construct that in turn might thus be promoted as the principal discursive pathway in this field.

This technology-related rationale in conjunction with the nature/domain approach may form the basis of the *paradigm of programmatic copyright*. Conceptualisation of various elemental copyright identities is notably reflective of traditional copyright narratives ideated in this mode, if informed by fundamental programming concepts.

The conceptual attributes of congruence and inheritance (understood not necessarily in the narrow, 'object-oriented' sense), developed within both linear and non-linear frameworks, may be considered as critical factors so far as the disposition and the process of doctrinal placing of the elements in computer program/preparatory design material systems are concerned. As this logic unfolds, the complex nature of both

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software and its life cycle perceived along these lines tends to be determinative in this field.

5.3.8. The *OOP*-modelled paradigm of copyrightability:
the copyright class hierarchy and the related analytical concepts.

Object-oriented programming as a theoretical framework has been transposed here to the realm of copyright, and utilised in a systematic way as an analytical model of copyright subsistence, reconceptualising the mechanisms of polymorphism, inheritance, encapsulation and abstraction as well as the notions of object, concrete class, and abstract class. Within this matrix conducive to a coherent schema of software copyright protection, the resultant paradigm may 'inherit' from OOP, considered in the abstract, the aforesaid 'susceptibility' to redesign so that new species of works could be defined and neatly fitted into an integrated system.

Along these lines, the construct of a copyright class, a generalised work or copyright species, is formulated as a prototype for a copyright object, a work *lato sensu*. Such an object is perceived as a discrete entity combining/'encapsulating' an instance of 'data structure', or a (copyrightable) work *stricto sensu*, with specific 'methods' to analytically manipulate the 'data' in copyright terms. This reasoning forms the nucleus of analytical copyrightability.

As might be inferred from the above analysis of OOP, doctrines and concepts are to embrace terminologically consistent and logically sound descriptions (hence the need for further systematisation) as well as specific procedures to implement the conceptualisations in the copyright field. This approach, systematically supports the aforementioned reusability since various definitions worded in a particular case or with reference to a particular technology could be 'reused' if doctrinally established.

To this end, the current protectability framework could be re-framed as a class hierarchy. It is a work *stricto sensu* as doctrinally stripped of its analytical shell, which attracts copyright. The other side of the coin is that a work *stricto sensu* can be viewed as a value passed to a legislatively enshrined conceptual variable such as a computer program. When a particular computer program is tested for copyrightability, a number of 'encapsulated' doctrines and conceptions are to be invoked 'automatically' or as a mater of course to make up a work *lato sensu* conceived within its hierarchy through copyright encapsulation.

The copyright class 'computer program' is construed under this categorisation as a class derived from its superclass (literary works) through 'inheritance'. In this light, those methodological aspects that are not specifically bound up with computer programs should be sought out in the literary genus and then further up the class hierarchy to instantiate the notions of work, originality and nature/domain.

5.3.9. Software elements/parts, code forms, and the three-tiered analytical structure.

Various technological aspects can be utilised as subject-matter out of which parts and substantial parts are carved as couched in copyright parlance. Specific copyright significations of the terms of art involved are encapsulated in the respective elemental copyright identities.

This conceptualisation is superimposed on both the above genetic/evolutionary analogy and copyrightability paradigm modelled on object-oriented programming. In this regard, we have examined the anatomy of the genus 'original work' considered here as a *base class,* while such copyright species as computer programs contain supersets of features, especially in the context of the Internet. As base-class definitions of letter-bound (or literal) and deducible (or non-literal) elements are established in terms of the related constructs and doctrines, such conceptualisations could be re-defined for any number of derived copyright classes.

In identifying copyright significant 'lexemes' with reference to a particular copyright subclass such as *computer programs*, a three-tiered analytical structure might be conceptualised: the *copyright discourse* is superimposed on the *programmatic narrative* which, in turn, is mapped onto the *literary paradigm* framed along general or 'traditional' lines. Special emphasis has been given to the sub-domain structure of the literary copyright class and the related system of interspecific conceptual reflections that in conjunction with the underlying software technology narrative can be channelled into copyright significant re-definitions and specialisations of traditional literary elements (such as a 'plot') as elemental programmatic entities thus further utilising the above structure in methodological terms.

Within this pattern, an instance of a code form (significantly, with reference to the notion of intermediate languages) might be considered either a distinct work or *part*, subject to a conceptual choice between the doctrines of *evolving work* and *isolated versions* as contextualised. This reasoning parallels the framework of copyright identity of algorithms and is further elaborated in the realm of substantiality.

Under the evolving work approach as built into the nature/domain framework, if a computer program as a literary work includes its preparatory design material, any 'screen' is, or at least incorporates, a substantial part of the program. Under the isolated versions approach, elements of the subject-matter constituting doctrinal 'foreign bodies' could be separately protected. In this context, further solutions may lie in the text/behaviour distinction scrutinised in this study in redefining certain features along the lines of the copyright class hierarchy.

5.3.10. Copyright conceptualisation of Web-related models and architectures: the metamorphosing work approach, intentional placing, and the text-behaviour continuum.

In analysing the attributes of the client/server architecture relative to the concept of part we have examined the precepts and stages of the application of this system and the components of such, notably with reference to the notions of componentware and program libraries. Unless the 'intentionalised' contextual approach enters the equation, a library component, even if written by the very same programmer, is not original to the author of the work (and accordingly, is not *part*) since the attendant labour/skill has not been exerted by the author in the process of creating the work. The evolving (or here rather, 'metamorphosing') work approach is set to outweigh the isolated versions conception as certain preparatory design material might be here seen as the larval form of a computer program (as a species of literary work) within the life cycle of the later.

The framing of the elements of preparatory design material as computer program parts within copyright discourse has been validated, particularly with reference to the purposive connection conceptualisation, by highlighting a dependency relationship intrinsic to any whole/part structure. Within this framework, the contextualisation (as intentional placing) of the elements might be regarded as a part of the copyright work.

It would be doctrinally sound to consider the placing of a 'hooked' additional code as a part of the underlying program. As to the copyright status of the piece of code itself, an examination of the concomitant intention and timing may certainly be of assistance in building on what might be depicted as an edition analogy so that the *de minimis* rule with reference to both *work* and *originality* could be a major determinant.

Certain non-placing op-code-bound aspects might be put forward as apposite examples of the program's behaviour if placeable in the programming domain. It is reasoned that these elements, together with the *quasi-behavioural* programmatic characteristics coming down to placing, may account for the respective points along the text-behaviour continuum. The latter, in turn, coincides with the result side of the underlying work. On these lines, the phenomenon that might be veritably depicted as the program's behaviour is obviously not confined to the narrowly perceived op code as put into action. So long as a characteristic of a program can be placed within the programming domain as opposed to the *field of target application*, it might be regarded as a part of the work under consideration and thus theoretically copyrightable, in particular, under the evolving work approach. Within the text/behaviour continuum, copyright subsistence might be either confirmed or rejected through different forms (stages) of analysis carried out to identify various realisations of the notions of work (labour-result systems), originality and/or nature/domain.

5.3.11. Elemental substantiality: polymorphic framing.

Various conceptual constants have been worked out in developing analytical tools to identify doctrinally sound 'morphemes' (as meaningful – in copyright terms - elementary units) of the software copyright narrative. In this connection, the construct of software life cycle is the crux of the matter, while the notion of types of programming or programming theories (such as object-oriented programming or top-down design) imparts additional crystallisation of part definitions since structural formulae of Web-related software may only be elucidated through the conceptualisation of Internet-bound architectures. This analytical mechanism has been employed in ascertaining the elemental copyright identities of multifarious programmatic entities. Within this matrix, there could be marked out two groups of notions and analytical mechanisms reflecting the copying/copyrightability distinction within the ambit of substantiality, namely conceptually inapplicable and conceptually

applicable as contextualised under the 'companion rubric': copying or copyright subsistence respectively. More specifically, certain ideas are unique to either copying or copyright subsistence, whilst the rest of the related constructs, although often tied to one of the areas in question, can be adapted to suit the other. It is the correlations between, and juxtapositions of, copying and subsistence of copyright that further define these areas and largely determine the structure of substantiality.

It is the issue of elemental substantiality that is not directly deducible from the copyright status of the work, as is the application of the *de minimis* rule to the element in question. As such, the part might be copyrightable (within the work) without passing the *de minimis* threshold in its own right, whilst the rest of the copyrightability criteria are perforce to be met. In this connection, the issue of substantiality of a part of the copyright work is tied up with the 'more than *de minimis*' requirements elaborated within the 'work' and 'originality' examinations along the lines of our polymorphic framing of substantiality. This schema can be construed in terms of the contextual redefinition of general copyrightability concepts within the ambit of substantiality. It is further specified in redefining the principal conceptualisations of the substantial as regards certain derived copyright classes.

In dealing with the category of 'part' (as distinct from 'substantial part'), the *de minimis* rule is not to enter the equation as the elements in question need not pass the threshold of copyrightability on their own. However, they may not be in conflict with the rest of the subject-matter as to the other copyrightability criteria. An element is, first, to be reckoned the result of a certain part of the labour exerted on the work as a whole; secondly, it is to be originated from the author of the work; and last but not least, it is to be placed in the same sub-domain (perceived within the nature/domain paradigm) to evaluate copyright subsistence in the element (of the subject-matter) not 'by itself' but *within the copyright work under consideration.* To be regarded substantial, the part (construed as the copyright identity of the element) should pass the *de minimis* thresholds, forming the 'more than *de minimis* in its own right' construct, on top of the described structure.

As to the other criteria discussed here, these, if found facilitating the copyright subsistence analysis, might be geared for such purposes by the trier of fact. Bearing in mind that the fulcrum of the matter would still be the 'part-and-substantial' construct (as a transformed 'copyright by itself' standard), the rest of the list of criteria would be effectively ancillary if not rendered superfluous.

5.4. Final discoursal points.

In view of the widely canvassed reforms advanced and enacted in the USA and Australia in conformity with the standards set down in the WIPO Copyright Treaty, it is re-emphasised that not only the present 'individual signatory countries' but also 'prospective' ones should entertain the idea of meeting the systemic challenge posed in the light of the digital agenda and its attendant technological and IP phenomena and narratives.

Arguably, in response to this situation under British law, it might be wise to refrain from sweeping doctrinal changes or 'wholesale' legislative activity in this area, save for certain relatively narrow fields such as compilations and computer-generated works. Instead, all the interested parties may look back and systemically review the existing form of copyright subsistence, which provides a foundation for both the general system of copyright and its possible developments, to test it for conceptual consistency and workability.

By the same token, the conspicuous absence of legislatively enshrined definitions of many principal copyright terms of art, such as work, originality, substantiality, part, literary, domain, etc., creates room for elaborate definitional mechanisms as intermediate points of the copyright systematisation with the ultimate aim of restituting British copyright to its proper frame of reference in the form of an archetypal or ideal paradigm. This study shows that ideally copyright law should be *free of* empty 'spells' ('what is worth copying…'), popular half-truths (for instance, the theory of choice), belying or obsolete formulae (such as 'sweat of the brow'), lingering confusions (originality/substantiality, work/subject-matter, etc.), and phantom doctrines (for example, the idea-expression dichotomy).

Realistically, hybrid forms of protection and other doctrinal impurities are inevitable at the time of international pressure and horse-trading between interest groups and legal regimes. However, changes thus made or envisaged should be analytically purified, that is re-examined within the frame of reference of domestic law to minimise possible conceptual losses. Moreover, the nature of conceptions and phenomena should be understood before they can be adapted to 'new challenges' such as those facing copyright in the Information Society. The resultant understanding, in

turn, determines the ways and fruits of such an adaptation and enables a researcher to accurately perceive new environments.

On the basis of examination of the archetypal stories of copyright, we have attempted to devise various analytical tools, including such concepts as the nature/domain reasoning, isolated versions and evolving work approaches, labour/result systems, and the originality continuum. These recurrent themes of the present study have been elaborated within the proposed integral model of structuring and determining copyright subsistence. Along these lines, a strong case can be made for continuous systematic analysis of the evolution of copyright law and the internal logic of the underlying narratives.

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