

From Time to Action: The Contribution of Whitehead's Philosophy to a Theory of Action

Abstract

Although many authors in the field of sociology and social theory have integrated temporal features into their theories, there is still a lack of theories *based on* time. This is mostly due to the complexity of the phenomenon of time, which not only produces a number of paradoxes, but also spans the complete realm of the natural and social sciences. Moreover, time is often conceptualised in its common sense, Newtonian shape, thus ignoring major theoretical developments of the last 100 years. One philosopher who has attempted to address these shortcomings is A.N. Whitehead. The present contribution draws on his philosophy in order to develop a theory of action based on a post-relativity concept of time.

Time is and has been a recurrent problem for social theory, sociology, and organizational theory. Many authors, especially during the 1970s and 1980s, have attempted to address the phenomenon directly or incorporate it as an element into their theoretical schemes. Even so, Giddens's verdict (Giddens, 1987, 1991, 1984/1993) still holds true: Although time has been recognised as an important factor, there is still no theoretical approach *based on* the intricacies of time. This lack seems less due to the inattention of researchers than to other factors inherent in the phenomenon of time.

First, there are the age-old aporias and paradoxes impeding any attempt at theoretical penetration of the object. Second, time, with its dual nature, lies at the basis of both social and natural sciences. However, instead of bridging the Diltheyan gap between the two traditions, the investigation of time has been torn between them, with social scientists mainly focussing on "social time" and ignoring the knowledge accumulated in the natural sciences or at least portraying it as something derivative from the "original" nature of time¹. Natural scientists, on the other hand, have always regarded culture as a derivative of nature and thus commit the same error in the other direction. This is even more deplorable as the two major 20th century theoretical developments concerning time, viz. Einstein and Heidegger, have thus never come into contact. Moreover, the gap even seems to widen as the years go by: while attempts at fusing philosophic and natural knowledge on time still can be found among many prominent authors up to the 1950s (e.g. Schrödinger, 1944/1993, Heisenberg, 1956/1993), the camps today seem firmly entrenched in their respective traditions. Given the vastness of the knowledge accumulated on both sides during the last century alone, any attempt at crossing the border seems destined to break on the cliffs of specialisation.

Despite these two major obstacles, time is too important and ubiquitous to ignore. Biological rhythms, the allocation and use of time as a resource, the construction of time as a social marker, the importance of the past for collective and individual identity construction, temporal features of social and system integration, to name just a few, are such fundamental features of life that almost no basic theory, whether it concerns culture or nature, can be considered complete without a concept of time or temporality.

The present article will discuss the importance of time for an adequate conceptualisation of action and creativity. As a theoretical basis, it will use the

time conception and metaphysics of Alfred North Whitehead (1927/1959, 1933/1967, 1929/1985). Within the given scope, the analysis must, however, be regarded as a first sketch only, as both Whitehead's theory and developments in the theory of action are too complex to be discussed exhaustively. What it can do is to introduce the major features and most promising focuses, and to invite others to think along the same lines in order to develop such an idea.

1. What's Wrong with Newton

For almost 350 years, Newton's physics (Newton, 1687/1993) have provided the basic paradigm for scientific and lay time conception². In this paradigm, time, together with space, is conceived as the "place" where the movement or change of things occurs. In itself, it is unchangeable, permanent, a background before which everything happens. Due to this function, it provides a solid grid for determining whether an event A is earlier, later, or simultaneous with another event B. Time is also uniform and homogeneous. It can be measured by dividing it into discrete, identical and infinitely small fragments, and is, in its measurement, objective or independent of the observer.

This time conception has, for various reasons, been under attack ever since it was published.

It took, however, another 200 years to dethrone it as the reigning paradigm of physics. Einstein's relativity theory (Einstein, 1917/1993) not only revolutionised physics, but also left a – however vague – impression in the understanding of lay people that "time is relative". This notion refers to Einstein's thesis that time is neither unchangeable nor homogeneous, but depends on space, matter, and the reference system of the observer. Hence, it cannot order things or events temporally in an unequivocal way. For example, two events may appear simultaneous for one observer, but successive for another with a different reference system.

But even without – and long before – Einstein's physical and mathematical insights, logicians have come to the conclusion that a logically sound conception of time can conceive it neither as homogeneous nor as indefinitely divisible nor, as some of Newton's contemporary critics (e.g. Leibniz, 1990) claimed, as a pure relation between events. The battle on the logical front was already opened by the

Greek natural philosopher Zeno, who, with his famous paradoxes, argued against the assumption of time as a continuum and against time as made up of discrete, infinitely small parts or mathematical points (Röd, 1976). It was later joined, with various conclusions, by Aristotle (1993) and St. Augustine (400/1993), Kant (1781/1989) and Leibniz (1703/1971), or Husserl (1929/1966) and McTaggart (1908/1993), to name just a few of the most influential critics. I will follow Hammerschmidt (1984) in his exposition of four basic logical inconsistencies.

1. Assumption: Time is a succession of infinitely small, discrete moments, which are themselves, like mathematical points, not extended.

A serial succession of such moments is not possible as we could always conceive of an even smaller moment going in between the already conceived ones. This can be compared to the attempt of counting from 1 to 10 using real instead of natural numbers: not knowing the first (smallest) positive real number, one could not even get started. Mathematical points only make sense if taken as abstract figures, but lead to paradoxes as soon as one takes them for real. The conclusion *ex negativo* is that if time consists of units (moments), these must be extended.

2. Assumption: Each moment is self-identical.

As we have seen, such a moment must be extended. In order to be extended, it cannot be self-identical as temporal extension implies a “before” and an “after”. On the other hand, something self-identical cannot be before or after itself, or, in other words, if A is A it cannot be later than A. The conclusion *ex negativo* is that moments must be changing or in flux.

3. Assumption: This flux within a moment is homogeneous (i.e. each part of it is like the whole).

In a homogeneous extension, the only differentiating criterion is the length or duration of the extension. This length can be divided, and we get in principle the same argument as in the first assumption: by dividing every part in two parts *ad infinitum*, we cannot proceed from one to the next. The conclusion *ex negativo* is that the flux must be heterogeneous.

4. Assumption: Time is a pure relation of before and after.

Again, the divisibility argument leads to an invalid conclusion. Time could only be a pure relation if it were an unextended point, which we have already excluded. The conclusion *ex negativo* is that time may involve relations, but must also consist of non-relational temporal entities.

2. Whitehead's Proposal

The English mathematician and philosopher Alfred North Whitehead, a contemporary of Einstein, addressed these logical paradoxes in a systematic way developing a theory of time that was, in the course of time, to become the cornerstone of a complete metaphysical system.

Whitehead's answer (Whitehead, 1933/1967, 1929/1985) consisted in conceptualising smallest, atomic units, which he called "Actual Occasions" or "Actual Entities". These Actual Occasions only exist as long as they become, i.e. they are to be conceived as a process. Once this process, which Whitehead called "concrescence", is finished, the Actual Occasions perish as Actual Occasions and become something else. The process of concrescence has several different successive stages or phases (see figure 1). Although these phases succeed each other, they are not temporally ordered, but only in a before-after relation. This idea is not immediately intuitive, but may be compared to the succession of natural numbers, which is also ordered, but not temporal³. In consequence, these Actual Occasions fulfil the above demands for avoiding logical paradoxes, as they are non-temporal, extended, changing, heterogeneous, and not pure relations.

Depending on the complexity of the Actual Occasion, its concrescence consists of one or more phases. Very simple Actual Occasions, like the ones making up purely material objects (e.g. stones), pass through the initial phase of concrescence forming physical relations with other entities, i.e. being physically affected by them. However, even they then pass on to a supplementary phase involving conceptual feelings "however dim", as Whitehead cautions. More complex Actual Occasions master more supplemental phases which involve more intense conceptual and, in the last stage, intellectual activity. This existence of both physical and conceptual feelings in *every* Actual Occasion is central to Whitehead's metaphysical system, as it establishes another sort of "matter" than

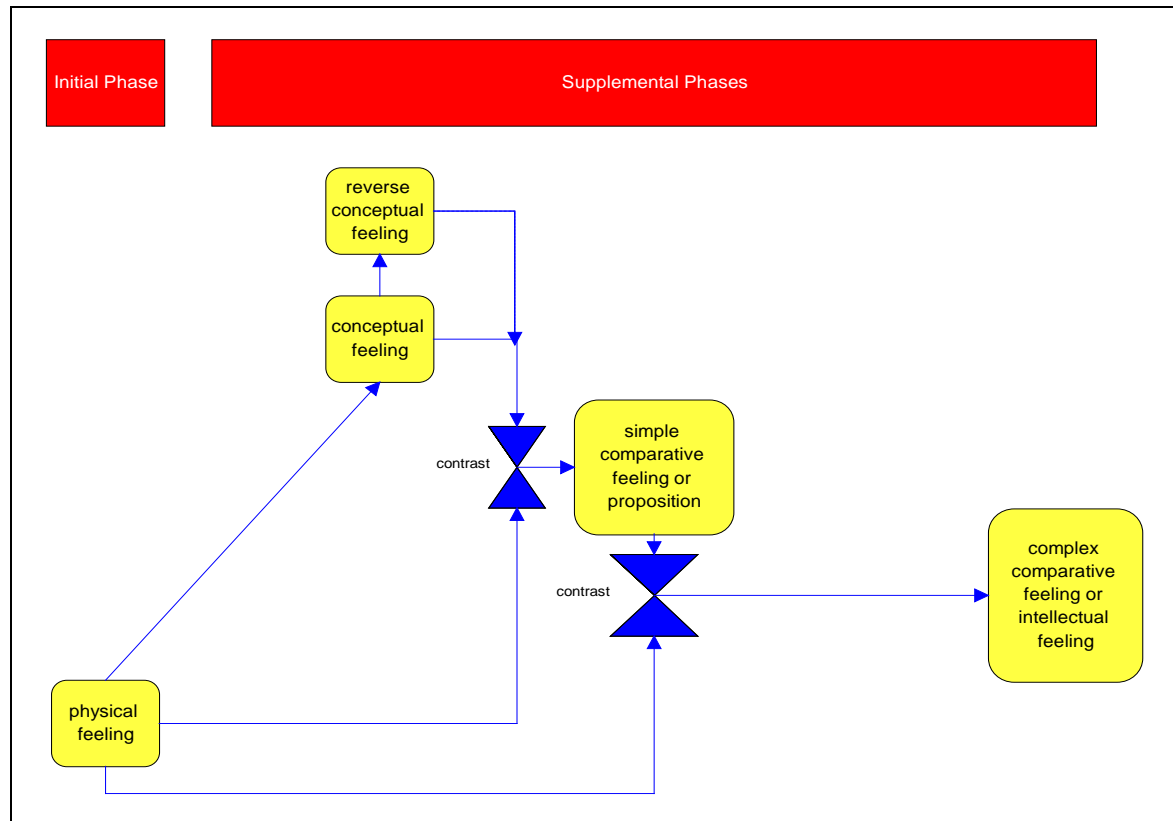


FIGURE 1: THE PROCESS OF CONCRESCENCE

the one we are familiar with. In fact, it is one of Whitehead's major points of critique against classical physics that matter is not "senseless, valueless, purposeless" (Whitehead, 1925/1993:143). For him, physical and conceptual (mental) feelings always go together forming two poles within every entity⁴. Each pole may be of more or less importance to the respective Actual Occasion, but both are always there. In essence, it is their integration, every time different due to antecedent Objective Data and a subjective component, which makes up concrescence. Only with micro organisms of such kind does it make sense to speak of concepts like creativity and process, which by definition demand that particles be "new" in the sense of different from each other.

Once the concrescence of an Actual Occasion is finished, or "satisfied" as Whitehead says, it ceases to be an Actual Occasion and becomes an "Objective Datum". This Objective Datum in some respects resembles a classical substance; most important in the fact that it *is*. Several things may happen to it, it may form a part of a larger entity, but it remains the same particle throughout. Thus, in the

instant of satisfaction, we cross the border between becoming and being in the full Aristotelian sense, which means that from now on the Aristotelian categories (quantity, quality, time, place, etc) apply. The Objective Datum now becomes available for the concrescence of other Actual Occasions (see figure 2). This forms the basis of Whitehead's second major notion, viz. that everything is related to everything. During its concrescence, an Actual Occasion builds up a relation to every Objective Datum in its world.

This relation may be positive, which means that the respective Objective Datum has an effect on the Actual Occasion, or negative, which means that it is "refused" by the Actual Occasion or does not play a role in its concrescence. In this way, there is a progressive, albeit not necessarily linear, succession of Actual Occasions, each taking up the antecedent Actual Occasions in its concrescence and lending itself after its satisfaction to the Actual Occasions succeeding it. It is only this succession of Actual Occasions that makes up time as we know it.

It is quite obvious that Whitehead's account differs from many, if not most, prominent theories of time, mainly because of the assumption of non-temporal units at the basis of time. However, I see his major strength not in the simple difference, but in the capacity for integrating hitherto opposed concepts. This strength is due to his attention on the relation between being and becoming, and permits the combination of substance-based theories of time (like Aristotle's) and process-based theories of time (like Bergson's), thus reconciling our common sense notions about time with the intricacies of a theoretical understanding of time. Thus, on the "micro level" of concrescence, we find processes, permanent change, and relations, while on the "macro level" of Objective Data, we get enduring entities describable in everyday terms. What is more, the shift from one level to the other can be explained in terms of the object, not only in terms of an observer decision not motivated by the object itself.

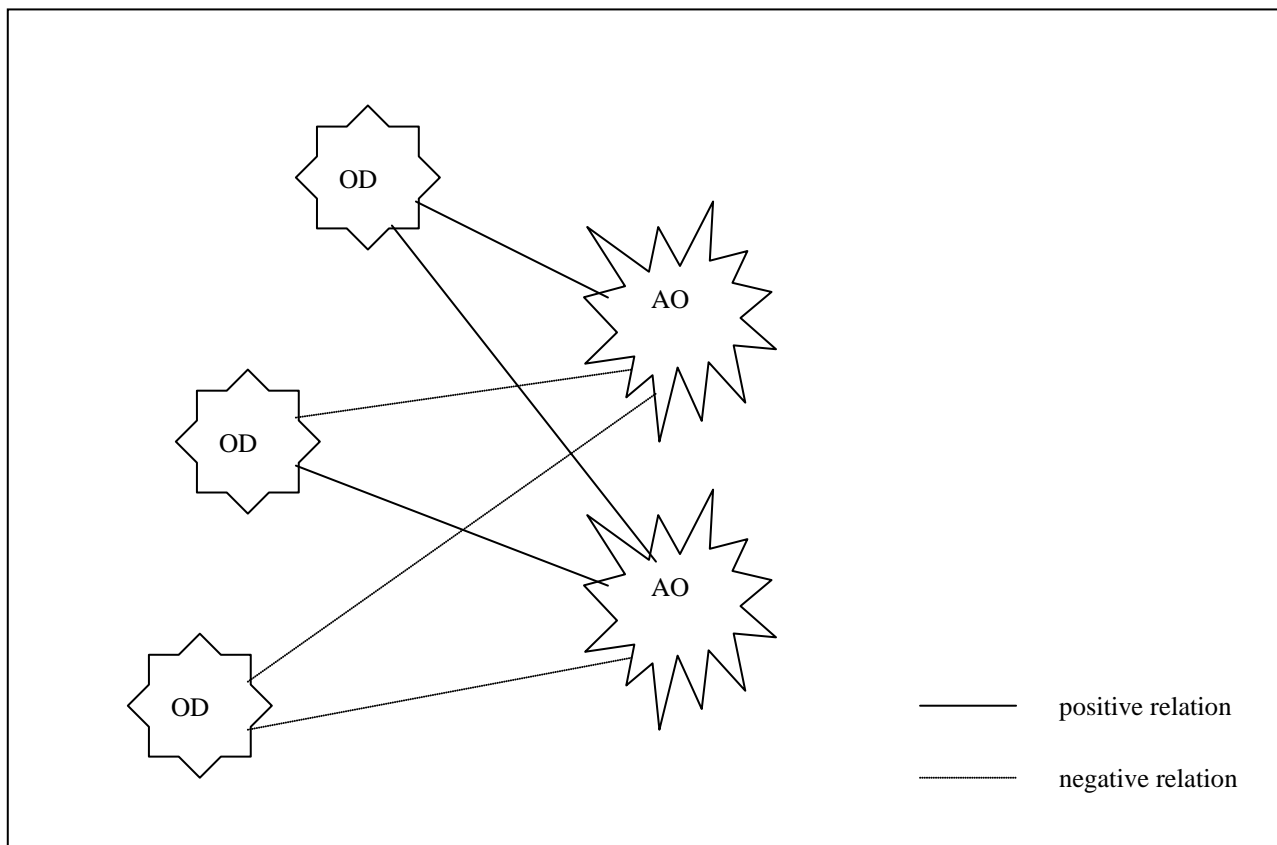


FIGURE 2: OBJECTIVE DATA (OD) AND ACTUAL OCCASIONS (AO)

3. Application to Action Theory

Problems of Action Theory

The scope of contributions in social theory, sociology and organization theory dealing with action or agency is, of course, immense. In the post-war period alone, we have the seminal contributions of Parsons (Parsons et al., 1951), Goffman (1959/1976), Garfinkel (1986), and Habermas (1981/1988) along with very lively discussions in Analytical Philosophy, especially in the 1960s and 1970s (among many others, Anscombe, 1958/1977, Davidson, 1963, von Wright, 1971/1974). These analyses and discussions have, of course, produced a number of results, but repeatedly scholars of action theory have also complained that a number of issues still remain unaddressed. I will focus on the following, which I consider of importance not only for a theory of action, but also for any social analysis:

- **Creativity** (also novelty, chance, emergence): Although one of the most characteristic features of action is its creative power, action theory has been hard pressed to conceptualise it adequately (see, for example, Archer, 1995, Drazin et al., 1999, Joas, 1992/1996, Sibeon, 1999, Elchardus, 1988). The future, inherent in plans and projections as well as consequences of action, is simply neither predictable nor fixed in any other way that could be expressed in a priori terms. Many authors, like Parsons, have collapsed the notion into subjectivity implying that this theoretical shortcoming is intrinsically linked with human freedom of decision-making. Others, like Joas (1992/1996), have taken refuge to weaker forms of analysis, viz. pure description (in his case through metaphors). Still others, like Bergson (1907/1911), have concluded that scientific analysis and theory is no valid instrument at all to get an insight into creative processes.
- **Causality**: Any science which aims at explanation must take note of causal relations and dependencies. It would, however, be reductionist if action theory from the beginning only considered causality in terms of a *causa efficiens*, as action, especially in its human shape, is generally considered to contain a strong measure of intentionality and thus finality. However, intention and finality – or their more recent expression, sense-making – have been considered by many, to be “weaker” forms of connecting events than *causa efficiens* versions, mainly due to the deterministic and mechanistic simplicity of the latter. From this, some authors (e.g. Davidson, 1963, Hempel, 1942) have drawn the conclusion that finality is to be subsumed under efficient causality, while others (e.g. Anscombe, 1958/1977, Kenny, 1963/1977, Melden, 1961/1977) argue for a separation, even up to disciplinary closure, as suggested by Dilthey.
- **Emotion**: For reasons probably deeply hidden at the roots of scientific traditions, emotions have not been a very popular subject in sociology and organisation theory⁵ (Cohen, 1997, van Buskirk and McGrath, 1992, Emirbayer and Goodwin, 1996). Like with creativity, emotions have mostly been subsumed under the catchword “subjectivity”, or been rationalised by classifications. Again, raw, individual emotion seems hard to capture in the language and arguments of science in general, but on the other hand, most

people will agree that emotions play an important role inciting and influencing the course of action.

- **Link to society:** Finally, there is the “missing link” between action theory and theories of society, which, under the different labels of “micro vs. macro”, “structure vs. agency”, “subjective vs. objective” or “individual vs. society”, is probably one of the most discussed issues in social theory during the last two decades. While some scholars (Archer, 1995, Reed, 1988) advocate a clear analytical separation, or dualism, between the two, others (Giddens, 1984/1993, Bourdieu, 1980/1987, Habermas, 1981/1988) try to overcome the gap conceptually. Still others, mostly in the empirical branches of research, simply ignore the whole debate. Of those trying to link the two, the most prominent attempts (Parsons, Habermas, Giddens) argue for a shift in the level of observation⁶, i.e. in oscillating between the two positions.

Whitehead and Action Theory

As we have seen, Whitehead’s theory could be used to introduce time – moreover a modern, post-relativity conception of time - to the core of social theory. Whitehead himself, of course, was no social scientist, and thus his theory would have to be modified in order to address the specific problems of action theory I named above.

BECOMING	BEING
Actual Occasions	Objective Data
Concrescence	Subject to Change
Atemporal	Temporal
Heterogeneous	Describable in Aristotelian Categories
Process	Enduring Entity in Process
Creativity	Stability
Subjective Aim	Causal Efficacy
Present	Past

TABLE 1: BECOMING AND BEING

I propose to use Whitehead's dual conception of becoming and being (see table 1) as starting point for reconceptualising the notion of action. On the left side of the new table 2, we get a flow of action or activity like the ones envisaged by Giddens (1984/1993), Schütz (1962/1973) or Weick (1969), on the right side we get determinate acts or units of action. The flow could be considered a permanent, creative process, which "produces", among other things, time from non-temporal occasions. The individual occasions are linked with each other, thus forming linear sequences or broader strands discernible as persons, societies, etc. (see figure 3). The flow of action is an ongoing process that constitutes the present. With regard to relativity theory, this means that it is free of causal influences except the ones lying in its past⁷. While it exists, it takes up these causal influences and orders them in a specific and novel (subjective) way according to its own necessities or *telos*. In this manner, the past can be said to live on in the present, albeit in a modified way. This freedom from present causal influences also explains why we cannot analyse this flow of action in the "normal" way, for it is physically impossible to receive information from an event happening simultaneously to the observer. Only past events can be perceived and processed; hence we can only analyse the Objective Data as the Actual Occasions have already perished or been transformed. These Objective Data, in the form of acts, now have determinate features because they are fixed and completed. They can be described in the Aristotelian categories of being, including classical notions of time, space, change and causality. If we view the analysis in terms of retrospection, it moreover becomes clear why action is so closely connected with description, a feature often remarked upon in Analytical Philosophy (Anscombe, 1957/1985, Beckermann, 1979, Tuomela and Miller, 1985).

For the aspects mentioned in the preceding section, this proposal offers some valuable insights.

The freedom or **creativity** of the process rests on three postulates. First, Whitehead assumes an ongoing creativity of the universe, which accounts for the simple fact that the world is ever changing. The second postulate, from the theory of relativity, is that simultaneous events are causally independent. Each Actual Occasion thus takes up past data, but develops independently of other contemporary Actual Occasions. This, as Whitehead says, is the ultimate cause of freedom of action. The third postulate concerns the subjective aim of every Actual

Occasion, which decides how Actual Occasions from the past enter each respective concrescence. However, the term “subjective aim” at first sight implies more sophistication than Whitehead is inclined to concede to most Actual Occasions, and perhaps Heidegger’s (1927/1977) “attunement” (*Gestimmtheit*) or even the chemical notion of affinity would describe the idea better. Except for the very few Actual Occasions that involve consciousness or mind, this subjective aim has nothing to do with intention, personality, or any other term referring to the specifics of human decision-making. Every electron, every protozoon, has its subjective aim, which describes the individual reaction to an individual situation. Nothing in the universe is ever exactly the same, but as the subjective aim of, say, a stone, due to its evolutionary stage, can be considered quite undeveloped, its reaction to a certain situation is quite uniform and (for us) predictable. The degree of freedom thus increases with the complexity of the Actual Occasions from strong conformity with natural laws to the imponderabilities of human decision-making.

With the help of this subjective aim, we are also able to anchor both **finality and efficient causality** at the base of action. Whitehead conceptualises the ingression of a past Actual Occasion (now an Objective Datum) in the initial phase of a concrescence as an example of efficient causality. In traditional terms, we could say that the Objective Datum “affects” the concrescing Actual Occasion, in the way a ray of light, for example, physically affects the retina of the eye. In the following stages of concrescence, however, the subjective aim of the Actual Occasion “decides” (to a greater or lesser degree, as we have seen) whether or not to take this objective datum into account and make it part of its concrescence.

BECOMING	FLOW OF ACTION	BEING	ACT
<i>Actual Occasions</i>	Smallest instant of activity or perception	<i>Objective Data</i>	Traditional Unit of Action
<i>Concrescence</i>	Activity of unifying multiple subjective and objective inputs	<i>Subject to Change</i>	Succession of Unified Acts
<i>Atemporal</i>	Similarities with Bergson's <i>durée</i> or Husserl's flow of consciousness	<i>Temporal</i>	Follows (relativistic) physical theory of time
<i>Heterogeneous</i>	Consists of different incomplete stages, which reach completion only through integration in the whole	<i>Describable in Aristotelian Categories</i>	Has duration, fixed position in time (and space)
<i>Process</i>	Ongoing Process	<i>Enduring Entity in Process</i>	Finite Beginning and End
<i>Creativity</i>	Creativity, Novelty	<i>Stability</i>	In Past → Determined Features
<i>Subjective Aim</i>	Emotion, Finality; Subjectivity	<i>Causal Efficacy</i>	Causal Efficacy, Objectivity
<i>Present</i>	Not empirically analyzable, but has logical structure	<i>Past</i>	Retrospective Analysis

TABLE 2: APPLICATION TO ACTION THEORY

Thus every transition from past to present involves both finality and efficient causality. Moreover, Whitehead's conception also takes the transition from present to future into account as the end (or *telos* or future) of every concrescence lies in becoming an Objective Datum, i.e. a causally efficient past for the next Actual Occasion. Whitehead (1933/1967:191ff.) describes this move as a "passage from reenaction to anticipation", with the addition of novel (subjective) content in between.

Emotion, although in a very basic sense, is also at the basis of this process. Whitehead's term for the refusal or acceptance of the different Objective Data by

an Actual Occasion is “feeling”, and again we may be more at ease with attunement. Still, the notion of an individual, situative, in its specific characteristics non-repeatable, decisive influence remains the same. In the case of highly developed, complex Actual Occasions the image is even easier to envisage than in the case of physical objects as it quite closely resembles the common sense notion of emotion⁸. Hence, quite in the Heideggerian sense, this emotion is the condition for any “being-in-the-world” as it enables an exchange with other entities while at the same time preserving some amount of individuality. It is thus not subjective in the objectivist sense, but rather a presupposition of any subjectivity or objectivity. As Whitehead (1929/1985:155) himself sketches one basic tenet of his philosophy of organism: “The philosophies of substance presuppose a subject which then encounters a datum [...]. The philosophy of organism presupposes a datum which is met with feelings, and progressively attains the unity of a subject.” In consequence, people not so much have feelings, but are outcomes of feelings and thus of their relations to other people and objects. This translates into an action theory in which there can be neither major divisive lines between rational and non-rational (emotional) forms of action nor a self-contained, purposive actor at its beginning.

Finally, the **link to society** or macrosocial theory is far more easily forged for this concept of action as action is not conceived as the individual-intentional phenomenon of classic action theory. In his critique of the 17th century concept of matter, most prominently advocated by Descartes (see below and endnote 9), Whitehead also attacks the basic assumption underlying the well-known dichotomies, viz. the distinction between mind and matter or subject and object (for a more detailed discussion see Habermas, 1981/1988, Kaulbach, 1968). Hence, it is not the question if and how action is caused by structure or vice versa, but both emanate from the same source, viz. Actual Occasions. In consequence, they differ in degree or complexity, but not categorically. Being related to one another, Objective Data may form larger entities in the way atoms form material bodies. (Whitehead calls these entities “nexus”.) These nexus may consist of a linear chain of Objective Data, with one succeeding the other, or may extend in both time and space (see figure 3 for a simple illustration of each). Whitehead calls the former way of organization a “personal order” (or “person”), the latter a “society”.

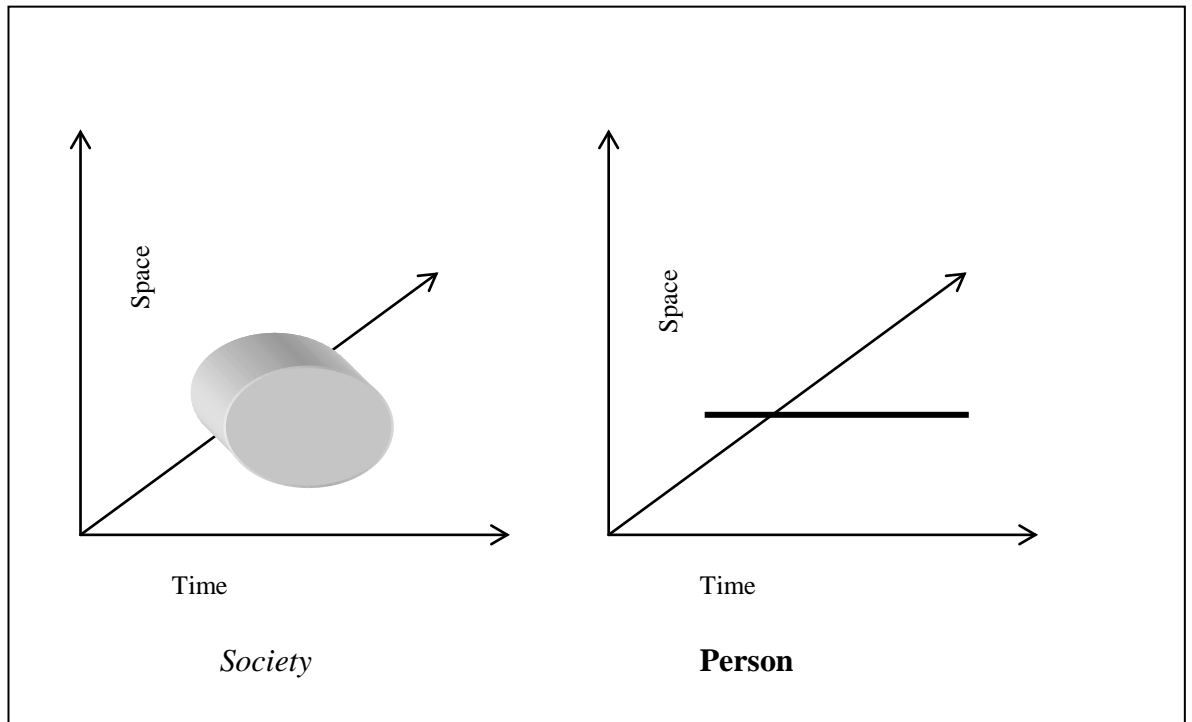


FIGURE 3: PERSONS AND SOCIETIES¹

In consequence, we could claim with Whitehead that both individuals and societies “consist” of a flow of activity, which can retrospectively be analysed as different figurations of this flow – an idea reminiscent of Elias’s figuration theory, although he does not pursue the idea on a philosophical level. Conceptualised in this way, a shift in the level of observation, as demanded by the authors named above, is no longer a jump over an analytical gap but remains in the same theoretical category.

4. Problems Concerning Whitehead

Whitehead’s philosophy is, of course, not without its problems. First and foremost, these problems are connected with the language he uses in order to describe his novel, and in some respects unusual, ideas. Talk of small particles “feeling” others or having a “subjective aim” alienate many scholars because of the implied “panpsychism” (Emmet, 1984) or at least “protopsyichism” (Rensch, 1984). No doubt, Whitehead’s philosophy is based on the idea that mind, however

¹ For reasons of simplicity, space is represented as two-dimensional.

dim, and matter are inseparable even in organisms of the smallest scale. On the other hand, this is a direct consequence of his refusal to accept matter as conceived by 17th century scholars⁹ (Leclerc, 1984); a refusal which is theoretically so well founded that most contemporary scholars would find it hard to disagree. Hence the problem lies less with Whitehead than with us: although we may see that the old concept is untenable, we are so deeply embedded in its tradition that his – or, for that matter, any – alternative seems alien to us. Our everyday knowledge of relativity theory and quantum mechanics has remained on a cognitive-abstract level, but has not (yet) entered the realm of intuition, where Newton still reigns. Still, if we agree that matter in its “soulless” form as usually defined is not the source of being and reality, some thing(s) else must take its place, however unfamiliar they may be. Indeed, to my opinion, Whitehead’s proposals are still modest, especially if they are reformulated in a language more acceptable to a reader 80 years later. If we, as I suggested, for example use “affinity” instead of “feeling”, the idea itself remains unchanged, yet the word sounds more suitable for contemporary ears. The task of reformulating Whitehead in this way has not been completed yet, indeed has hardly even started in earnest. Nevertheless, I am convinced that scholars undertaking this task will not encounter major obstacles, as Whitehead’s primary field of experience and scholarship are exactly *not* the social sciences, but “soulless” mathematics and physics. His use of psychological or sociological terms like “society”, “person” etc. retains the aim of describing physical phenomena and has thus a strong affinity to metaphor. Moreover, he capitalises on the fact that the natural sciences, too, lack precision in defining their basic concepts like energy or force. Hence, this import of socio-psychological terms is not Social Darwinism in reverse, but the attempt to (re-)define notions that, according to Whitehead, lie at the basis of both the natural and the social sciences. The fact that the vocabulary tends more to the social side may simply be due to the neglect of any sort of psychic description on part of the natural sciences¹⁰.

A second task that will go with the first if Whitehead is to be taken seriously in the social sciences, is the linking of his ideas with traditional and contemporary schools of, for example, sociology. Again, his provenience from another discipline has mostly prevented him from recognising and elaborating on notions similar to his own. Still, such a synopsis could be helpful in anchoring

Whitehead's ideas more deeply in the social sciences. Two anchors which spring to mind immediately are his close connections with the Pragmatist tradition¹¹ and Parsons' (Alexander, 1983, Parsons, 1937/1968) methodological use of Whitehead.

An even more serious concern, finally, lies in the epistemology Whitehead uses to avoid the dichotomy between mind and matter or subject and object. Basically, he refuses to accept Kant's (1781/1989) distinction between object-as-perceived and object-for-itself (*Ding an sich*), which is, again, a notion that has become most familiar to us¹². Due to this, some critics (Felt, 1984) have accused him of "naïve realism", i.e. of the error of uncritically taking everything for real the human senses perceive. In fact, Whitehead denies a categorical distinction between the physical world and human (or any other) perception. His reason, shared by pragmatists, is that the latter has evolved out of the former and must thus somehow conform to it. Despite this basic assumption however, his idea of perception is far from naïve, but on the contrary analyses the process of perception in subtle detail (Molina, 1971). Whitehead, in critique of Hume and Kant, even introduces an additional mode of perception called "causal efficacy"¹³, which is supposed to provide a vague, but emotionally charged experience of the immediate past in the environment of an organism (remember that, according to relativity theory, we cannot perceive the present). From the point of view of action theory, this linking of perception and causality addresses two very important strands of argument: the first is the mind-body problem, which plays a prominent role in any theory of action (Barasch, 1993, Beckermann, 1977, Harré, 1979/1993, Rensch, 1984, Gare, 2002), the second concerns the definition of agency as causal power (Emirbayer and Mische, 1998). Again, systematic differences notwithstanding, we may find close ties between Whitehead's thinking and phenomenological philosophy, especially that of Merleau-Ponty (Colapietro, 1992, Doud, 1977, Hamrick, 1974, Cooper, 1993). However, as this article is concerned with time, these connections can only be hinted at.

5. Conclusion and Outlook

The utilisation of the difference between being and becoming, temporality and atemporality for action theory promises a more adequate conceptualisation of action. It moves beyond classic efforts to identify stable dimensions of action by providing a processual venue that seems more apt to capture the subjective, emotional and creative aspects of action. At the same time, it is able to integrate insights of classic action theory by taking into account the perspective of “substance” or “being”, on which classic theory is founded. Moreover, Whitehead’s epistemology sheds new light on the structure-agency problem by providing a metaphysical link between micro and macro entities. His account of time is not only logically sound, but enables a post-relativist concept of time to enter sociological theory. This, in turn, not only changes the way we look at the causality of action, but also disposes of the “container image” of time. If time is not some unchangeable grid in which events happen but emanates from process itself, then we may be able to study not only change *in* time, but also change as ontologically prior to time – which would bring a new and truly processual perspective to one of the most widely discussed topics within the social sciences. At the exploratory stage of the present study, however, the full consequences – both positive and negative - of this utilisation are not yet fully understood. On the “exegetical front”, Whitehead’s concepts need elaboration concerning issues central to (social) action, social structure, and society. Problems inherent in his theoretical scheme must be discussed, again not only on the philosophical level, but with regard to ontological and epistemological concerns of the social sciences. On the “sociological front”, the viability of the being-becoming differentiation must be further tested and discussed. This, however, cannot be a task for a single researcher, but requires a lot of input from different sources and theoretical backgrounds. Hopefully, the present article can provide a point of departure for such a discussion.

Notes

¹ There are, of course, exceptions to this general trend, for example Adam (1988).

² Nobody familiar with the history of science will be surprised to hear that Newton's (1993) conception differed in important aspects (for example, a differentiation between mathematical and empirical time) from „Newton's conception“ anno 2003 (Weik, 1998). This is, however, of minor importance for the argument of this article.

³ In the theory of time, McTaggart (1908/1993) has introduced a similar notion with his A- and B-series. In fact, the interpretation of Whitehead's ideas concerning this point has been one of major difficulty and discussion among Whitehead scholars; cf. the exchange between Rosenthal (1996, 1997) and Ford (1997) as well as the very clearly structured account of van Haeften (2001).

⁴ Hendrichs (1984) interprets this within the frame of biological evolution by assuming a “proto-consciousness” in dead matter, which may account for the development of mental faculties in higher stages of the evolution.

⁵ Except, of course (!), in gender studies

⁶ See (Parsons, 1937/1968, Parsons et al., 1951), Giddens's “bracketing” (Giddens, 1984/1993). Even Habermas, who states the problem most clearly, can avoid the shift only in his ideal type conception of “communicative action”, but not for other forms of action (Habermas, 1981/1988:152ff.).

⁷ The theory of relativity defines an event's past as the set of those events that could have causally influenced the event. As the influence is based on a transmission of information, and as information cannot travel faster than light, the consequence is that the past (relative to an event) is determined by the distance of the events. In especial, it is not possible to exchange information between two simultaneous events; which implies that they are always causally unrelated. (From very different angles, Husserl (1929/1966) and Bergson (1907/1911) as well as Freud and Lacan (Malpas, 1996) have also argued for the impossibility of observing this flow.)

⁸ For the application of Whitehead to human emotion see, for example, Dibben's (2001) study on trust.

⁹ In the 17th century, a new metaphysics evolved, which postulated that everything which is consisted of matter. Although the substance, viz. matter, was new, the basic concept dated back to the Neoplatonic ontology stating that there can only be one source of being, or that being is one and incomposite. In consequence, change always involved composition, and every changing object was to be conceived as consisting of a number of smaller units, which did not change themselves but were recombined in different figurations.

¹⁰ This argument places Psychology on the side of the social sciences, although I am aware that many psychologists will not be happy with this classification.

¹¹ For a comparison of central assumptions in both philosophies see Rosenthal (1999, 1996).

¹² Kant's argument is, of course, not unrelated to the 17th century ontology discussed above. Indeed, the traditional reading of the history of philosophy portrays Kant's argument as the ultimate legitimization of the empiricism that was born out of this ontology (Kaulbach, 1968)

¹³ In line with his argument on causality and against Hume and Kant, Whitehead (Whitehead, 1927/1959, 1929/1985) argues that we are able to perceive causal efficacy immediately, i.e. not via sense perception. As far as human perception is concerned, however, both modes are normally fused into a mode he calls “symbolic reference”.

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