The Basic Concepts of Sociology Involved in System Theory¹

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Samevatting

Hoewel weinig vakwetenskaplikes eksplisiet oor 'n begrip van 'n begrip beskik, hanteer almal van hulle deurlopend uiteenlopende begrippe in hul beoefening van hul onderskeie dissiplines. Hierdie artikel vestig die aandag op die onvermydelike basiese (of: analogiese) grondbegrippe van die Sosiologie as wetenskaplike dissipline. Eerstens word aandag geskenk aan die reaksie van die sisteem-teoretiese benadering op die atomisme (individualisme) en daarna word rekenskap gegee van die eensydige klem op ruimtelike en biotiese analogieë wat in die sisteemteorie aanwesig is. In die behandeling van die idee van differensiasie word, benewens kritiek op tekortkominge, ook positief aansluiting by Münch se spreke van duidelik gedifferensieerde lewensfere gevind, deur hul eie innerlike wette gerig, aangesien hierdie formulering dig nader tot die idee van soewereiniteit-ineie-kring. Ten slotte word ook nog saaklik ingegaan op die dinamiese veldteorie van Sztompka.

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1. Orientation

The title of this article suggests a number of key issues that ought to be distinguished properly and subsequently analyzed in their interconnectedness. Within the context of this section of the XVIth World Congress of Sociology the most familiar parts are obviously the phrase 'system theory' and the word 'sociology'. Perhaps the combination 'basic concepts' is more deceptive, for although most academics intuitively and without any hesitation speak of *concepts* they are not equally comfortable when asked to explain what a *concept* is all about - it seems as if most academics do not have a well-articulated *concept* of a concept! Although this problem cannot be dealt with here, the remaining problem whether there are indeed *basic* concepts in the discipline of sociology will be discussed. In order to understand the concept of a (social) 'system' its reaction to atomism (also known as individualism) will first be highlighted. It will also be shown that alternative theoretical approaches. such as that of sociological conflict theory and the dynamic field theory. are equally conditioned by the inevitable use of the (elementary) basic concepts of sociology found in sociological system theory.

2. System Theory in reaction against atomism

Modern *System Theory* negates all *atomistic* modes of thought, dating back to the atomistic philosophy of nature found in Ancient Greece (Democritus). Eventually the term *atomism* acquired a dual sense. In its narrow sense it indicates the attempt to explain the material world in terms of last indivisible material elements ('atoms') and in its broader (ontological) sense it serves to designate different forms of *pluralism*, or specific ways of understanding reality from its supposed *last units*, ultimate *building blocks* or – in the case of human society – in terms of its constituting *individuals*. Since the Renaissance the initial development of modern philosophy was guided by an atomistic and mechanistic orientation – in which the universe is portrayed as the interplay of particles in motion.

Since 1825 Saint-Simon and his followers (amongst them Auguste Comte) started to employ the term *individualism* to designate the general approach of social philosophy during the 18th century. According to this view society is first broken apart into isolated individuals and only afterwards it is once

¹ Von Bertalanffy accounts for this legacy as follows: "The world view of yesterday, the so-called mechanistic universe, was a world of 'blind laws of nature' and of physical units moving at random. Chaos was the oft-quoted blind play of atoms. It was no less chaos when, in the theory of evolution, the living world appeared as a product of chance, arising by accidental mutations and selection in equally accidental changes of environment" (Von Bertalanffy, 1968:33).

again rationally reconstructed in terms of the theory of a *social contract*.² In the course of the 20^{th} century prominent sociologists, such as Georg Simmel and Max Weber, continued this individualistic legacy.³

From a positivist perspective A.J. Ayer also believes that "the English state, for example ... [is] a logical construction out of individual people" (Ayer, 1967:63), while Karl Popper designates his own approach as "methodological individualism". As opposed to methodological collectivism, Popper believes "that institutions (and traditions) must be analyzed in individualistic terms – that is to say, in terms of the relations of individuals acting in certain situations, and of the unintended consequences of their actions" (Popper, 1966-II:324). According to him this approach "rightly insists that the 'behavior' and 'actions' of collectives, such as states or social groups, must be reduced to the behaviour and to the action of human individuals" (Popper, 1966-II:91).⁴

3. The terms involved in defining a system

By the end of the 18th and the beginning of the 19th century romanticism already introduced the idea of the *organic coherence* of everything within reality. But it was only during the second decade of the 20th century that we witness the first representatives of a *system approach*. Von Bertalanffy is widely acknowledged as one of the founders of system theory, although his initial preference was to put it within the context of his *organismic biology*.

In 1968 Von Bertalanffy points out that in the first German edition of his *Developmental Psychology* (1926), Heinz Werner introduced his organic-developmental approach and thus launched "one of the first programs to overcome the positivistic-mechanistic-behavioristic philosophy domi-

² Of course there are also other variants of *atomism*. Just like the empiricistic legacy of Locke, Berkeley and Hume proceeds from the 'atoms' of sensation, called *perceptions*, logical *atomism* (a phrase coined by Russell in 1920) considers elementary propositions to be basic and not further analysable – they are the *logical atoms* of the world. A similar *atomistic approach* is found in the semantic theory of the linguist, Antal. According to him a *word* as *primary unit* of signification does not contain any *multiplicity* – he transposes the multiple meaning-nuances of a word to the *denotata* (see Antal, 1963: 53, 54, 58). The fictitious *homo economicus* of the classical school in economics (Adam Smith) is the product of an *atomistic approach* to economic life, and so on.

^{3 &}quot;Concepts such as 'state', 'club' ... signify specific kinds of communal human actions ..., that could be reduced to 'understandable' (*verständliches*) actions, and that means that it can, without an exception, be reduced to the actions of the individual human beings (*Einzelmenschen*) concerned" (Weber, 1973:439).

⁴ F.A. Hayek and J.W.N. Watkins are two other prominent proponents of the theory of methodological individualism (cf. O'Neill, 1973).

nating in psychology then and even now" (Von Bertalanffy, 1968:2). In addition, he states the he advocated an 'organismic' conception in biology (found in his 1928 work: *Modern Theories of Development*). It is worth mentioning his *brief summary* of the principles of organismic biology. They were "the conception of the living system as a whole in contrast to the analytical and summative points of view; the dynamic conception in contrast to static and machine-theoretical conceptions; the conception of the organism as a primary activity in contrast to the conception of its primary reactivity" (Von Bertalanffy, 1968:2).

Von Bertalanffy also sketches the overall picture when he writes:

First came the developments of mathematics, and correspondingly philosophies after the pattern of mathematics – *more geometrico* according to Spinoza, Descartes and their contemporaries. This was followed by the rise of physics; classical physics found its world-view in mechanistic philosophy, the play of material units, the world as chaos, as we have discussed. Lately, biology and the sciences of man came to the fore. And here organization appears as the basic concept – an organismic world-view taking account of those aspects of reality which were neglected previously (Von Bertalanffy, 1968:66).

This statement employs an important choice of words – "taking account of those aspects of reality which were neglected previously." But before exploring its significance the author first has to zoom in on the *system* concept. In his postumously published book, *General System Theory*, Von Bertalanffy first of all emphasizes the notion of 'wholeness': "General system theory, then, is scientific exploration of 'wholes' and 'wholeness' which, not so long ago, were considered to be metaphysical notions transcending the boundaries of science" (Von Bertalanffy, 1973:3xviii); he equates 'wholes' with 'systems' (Von Bertalanffy, 1973:3.). But there is more to systems than the whole-parts relation. One of the most important contributions of Von Bertalanffy to *system theory* is indeed given in his *generalization* of the second main law of thermodynamics – from physically *closed systems* to *open systems*.

Although there are many variations of formulation none of them side-step certain key terminological domains. The circle may be completed with reference to a recent definition: "A *system* is composed of regularly interacting or interdependent groups of activities/parts the emergent relationship(s) of which form the (a) whole" (Wikipedia, 2006).

It might provisionally be observed that the overall implication of these ideas incorporates an emphasis on the *unity*, *wholeness*, *endurance* (persistence), and *dynamic equilibrium*⁵ of systems (sometimes accom-

⁵ The German term used by Von Bertalanffy is: "Fliessgleichgewicht"; also known as 'steady state' (1950:23-29).

panied by the idea of *organization* and *emergence*). Particularly within the context of sociological theories organization and systems in general are related to the idea of *differentiation*.

3.1 Key terms and basic concepts

The most striking feature of the terms employed in describing 'systems' is that those who employ them do not realize that they are all *multivocal*. That is to say, each one of them may be used within different contexts.

For example, the relation between a whole and its parts is normally envisaged to be such that the whole is always *greater* than any one of its parts. Yet modern mathematics was shaped by the notion of a *set* and the way in which sets are specified by Bolzano (1851: §20), Dedekind and Cantor (Mathematicians from the 19th century) explicitly states that an (actual) *infinite set* is characterized by the fact that it allows for a one-one mapping between the elements of the set and the elements of a proper subset of the set.

The crucial question is whether there is a domain where the whole-parts relation has its *original* or *primitive seat*? Once the *original meaning* of the whole-parts relation is found an investigation may proceed in which an account is given of *alternative ways* of employing the meaning of this relation. But it is striking that sociologists who support a systems approach to sociological problems are not critically reflecting on alternative usages of the whole-parts relation.

Just consider the way in which the well-known systems theorist, Niklas Luhmann, discusses the importance of the term *differentiation*. He refers to the whole of society as a "differentiated unity" that "has to be distinguished from that of its parts" (Luhmann, 1990:410).⁷ But he does not contemplate what the differences are between a whole and its parts in (1) the *spatial* sense of the phrase, (2) in a physical context and (3) the *organic* sense of the phrase.

⁶ Although (as Galileo already realized in 1638) it seems as if there are less squares (such as 1, 4, 9, 16, 25, ...) than natural numbers (1, 2, 3, 4, 5, ...) it is nonetheless possible to establish a one-one mapping between them – where the number 1 is correlated with 1, the number 2 with its square (2²) 4, the number 3 with 9, and so on. Technically speaking the 'whole' set here is *equivalent* to a 'part' (subset) of it. The two grounds on which Aristotle rejects the idea of actual infinity both turned out to be *defining features* of the actual infinite (cf. *Physica*, 204 a 20ff., *Metaphysica*, 1066 b 11ff., and *Metaphysica*, 1084 a 1ff.). He believes in the first place that accepting the actual infinite will have to be equal to a part and in the second place he argues that such number will be both even and uneven (compare Cantor's reply to the second objection in Cantor, 1962:178-179).

⁷ He draws a distinction between two 'levels' – that of the *whole* and that of the *parts*. According to him these two levels "mirror each other without being reduced to each other" and to this he adds that "this constitutes the paradox" (Luhmann, 1990:410).

3.1.1 The original spatial meaning of a whole and its parts

Any extended spatial figure, such as a straight line, is a whole that is constituted by all its parts. The *continuity* of a straight line entails that every part is *connected* to every other part, that all the parts *cohere* in an uninterrupted *whole* or *totality* (see Strauss, 2002).⁸ The modern mathematical (i.e. set theoretical) theory of continuity highlights two decisive properties, (1) *infinite divisibility* and (2) *taking each point of division twice*, both as *end-point* and as *starting-point*.⁹ Bertrand Russell correctly acknowledges that the "relation of whole and part is, it would seem, an indefinable and ultimate relation" (Russell, 1956:138). He nonetheless did not consider its intrinsic link with the *spatial aspect* or the nature of *spatial continuity*.

3.1.2 The physical meaning of a whole and its parts

Apart from the legitimate generalization of the second law to thermodynamically open systems the inherent *limitations* of the whole-parts relation within a physical context should be clearly realized. For example, the interweaving which exists between the sodium and chlorine atoms that are found in table salt, cannot be accounted for with the help of an unqualified whole-parts perspective. Every *division* of table salt must – that is if we still want to be working with *real parts* of salt – continue to display the same chemical structure of salt, namely *NaCl*.

However, the critical question is if sodium on its own has a salt structure – and the same question applies to chlorine? Are sodium and chlorine true parts of salt? The answer is obviously **no** – because owing to their heterogeneous nature neither, taken by itself, has a *NaCl*-structure. This example uproots an *unqualified* use of the whole-parts relation and it precludes the possibility to speak of everything in reality in terms of a whole and its parts (systems and subsystems).

In addition to this we may briefly mention the fact that there is also a fundamental difference between (1) *mathematical space* and (2) *physical space*. Whereas (1) is continuous and therefore infinitely divisible, (2) is *not* infinitely divisible (because it is bound to the quantum structure of

⁸ Note that all these terms are mere *synonyms* that can replace each other – because the primitive meaning of *spatial continuity* is *indefinable*.

⁹ Cantor introduced his notion of a *perfect* (and *coherent*) set (see Cantor, 1962:184) – but the former is equivalent to a Dedekind *cut* (see Dedekind, 1872: §4). While rejecting the idea of the actual infinite, the (original) spatial orientation of Aristotle nonetheless did specify the same two criteria for continuity. That the Cantor-Dedekind approach, by contrast, approximates spatial continuity in terms of the meaning of number (and that this approximation requires the use of the actual infinite – preferably designated as the *at once infinite*) have been demonstrated in Strauss, 2005:50-53.

energy) and therefore *not* continuous. Yet both mathematical space and physical space are *extended*. In other words there are both *similarities* and *differences* present between (the original, primitive meaning of) mathematical space and physical space. The astonishing feature of this situation is that the differences come to expression in what is similar: physical space and mathematical space are both *extended* – their similarity – but *within* this shared property the *difference* between both evinces itself in the way just explained. The same applies to a biotic whole and its parts and a spatial whole and its parts.

3.1.3 The biotic meaning of a whole and its parts

Whereas as spatial continuum is *homogenous* – in the sense that any part of the whole is the same as any other part (namely infinitely divisible) – a *living entity* is constituted by *heterogeneous* parts (and these parts are functional units incapable of unlimited division).¹⁰ For this reason biologists speak of multifarious ways in which *organic life* is *differentiated*.¹¹

Next to the term *differentiation* holistic biology and sociology employ the term *Gliederung* ('branching'). This notion includes the idea of *mutual* dependence¹² – in anticipation of what recently became known as *irreducibly complex systems* (cf. Behe, 2003 and Dekker, 2005:128 ff.).

What have now been discerned is normally expressed by the idea of an *analogy*. An analogy is supposed to express, within what is similar, what is different - or, phrased the other way around, through an analogy differences are evinced in what is similar.

Alongside physical concepts, such as *physical mass* (an analogy of number within the physical aspect of experience), and *energy constancy* (a kinematic analogy within the physical aspect – a more exact formulation of what is known as the law of energy conservation) the concept of *physical space* represents a spatial analogy within the structure of the physical aspect. These concepts are all *indispensable* elementary (basic) concepts of physics as a discipline.

¹⁰ The neo-vitalistic Biologist, E.W. Sinnott, in his reaction against the predominant mechanistic atomism of modern biology, emphasizes the dynamic-creative and *indivisibly continuous form* of living things (see Sinnott, 1963:199).

¹¹ The term *organic* inherently contains the element of a *multiplicity* of organs, i.e. of a vital (or: biotic) *unity-in-the-multiplicity*. Thus 'the one and the many' inherent in the primitive meaning of number returns analogically within the biotic aspect in the configuration of *integration* (unity/the one) and *differentiation* (multiplicity/the many).

¹² The universalistic (*Ganzheitliche*) sociologist, Othmar Spann, mentions the multiple creation of "Glieder" (branches) through mutual "Gezweihung" ('splitting off') (Spann, 1930:132 ff.). ["Der Vorgang der Schöpfung der Glieder in der Gegenseitigkeit der Gezweihung ist kein einfacher, sondern ein vielfaltiger."]

The outcome of the foregoing considerations may provisionally be summarized by pointing out that the *key terms* captured in the *basic concepts* of scholarly disciplines presuppose both the *uniqueness* of those domains (aspects) and their *mutual coherence* (evinced in the *analogical basic concepts* employed by them). Of course in the back of his mind the author is focused on the terms operative in the concept of a (social) system as it took shape within the discipline of sociology.

In its general formulation the system concept basically differentiates into *physical* systems and *living* (biotic) systems. In the former case key terms such as *unity* (number), *whole* and *parts* (*systems* and *subsystems* – spatial) and *persistence* (kinematic) are *qualified* by a *physical context* – whereas in the latter case they are characterized by the *biotic aspect* of reality.

In order to render a service to sociology as a discipline these multivocal basic concepts ought to acquire their qualification from the *social aspect* of reality. An elaboration of this remark prompts the author to look at the basic concepts of sociology.

3.2 The elementary (analogical) basic concepts of sociology

The naturalistic Sociologist, W.R. Catton, holds the view that both physical forces and social forces are special cases of the general concept *force* (Catton, 1966:233-234). But since every aspectual analogy refers to some or other *specific aspect* where it is found in its original meaning, one does need an account of the original (primitive) meaning of the term *force*. Catton almost saw this when he remarks that one does not need to use the adjective 'physical' when physical force is intended "because physics got there first and has a prior claim on the word 'force'" (Catton, 1966:234). This statement implicitly concedes that whenever the term *force* is used outside a physical context it needs a *non-physical* qualification.

Almost at the same time Talcott Parsons published an examination of the "place of force in the operation of social systems" (Parsons, 1967a:264, 267). His discussion is also ambiguous, for on the one hand he considers the "primary reference for the concept of force" to be "an aspect of social interaction" (Parsons, 1967a:265)¹³ and on the other he sometimes does specify the term 'force' by adding the qualification 'physical' in the phrase "physical force" (Parsons, 1967a:266). In the latter case one should expect that he would have said that the "primary reference for the concept of force" is to the *physical aspect*. One only has to remember that MacIver gave a meaningful account of the concept of *social force* in his work of 1942 on *social causation*.

¹³ He underscores the fact that "[W]e have stated the problem of force in the frame of reference of social interaction" (Parsons, 1967a:267).

But instead of contemplating the difference between the original *physical sense* of the term 'force' and the *analogical meaning* of the phrase *social force*, Parsons's subsequent analysis enters into a discussion of *social control* (and *social power*) (Parsons, 1967a:268 ff.).¹⁴ Implicitly this digression nonetheless highlights something peculiar of the ontic domains to which all the basic (analogical) concepts refer, namely that the meaning of these ontic domains only comes to expression in coherence with other facets of reality. Parsons demonstrates this state of affairs for he realizes that the meaning of *social force* intimately coheres with the nature of *social control* and *social power*.

In order to provide a more comprehensive picture of the different elementary basic concepts of sociology they may be listed briefly as follows: *social order*; *social stratification*; *social constancy*; *social dynamics*; *social differentiation* and *social integration*; *social sensitivity*, *solidarity* and *consciousness*; *social consensus* and *social conflict*; *social power* and *social control*; and *social symbolism*, *social meaning* and *social integration*.

Three observations are needed:

- (1) These elementary basic concepts presuppose distinct but mutually cohering aspects of reality therefore every sociological orientation (implicitly or explicitly) has to employ these concepts they are indispensable ingredients of all theoretical approaches.
- (2) It frequently occurs that the *analogical character* of these elementary basic concepts is not recognized, with the effect that one-sided approaches (paradigms) result that attempt to *reduce* the meaning of the social aspect to some or other non-social facet. Think for a moment of atomistic theories (over-emphasizing the 'summative' point of view, the one and the many), holistic theories

¹⁴ The *mechanistic* main tendency operative in the history of modern physics since the 17th century attempted to reduce all physical phenomena to the (reversible) motions of loaded or unloaded mass-points (cf. Planck, 1910:57). By the end of the 19th century Heinrich Hertz was one of the last representatives of this mechanistic tradition. Restricting himself to number, space and movement (the first three modal aspects of reality) only - represented by the concepts mass, space and time - he rejected the concept force (indeed a physical concept) as something inherently antinomic (cf. Katscher, 1970:329). Russell still continues a similar view in his Principles of Mathematics – the only difference is that he speaks of 'force' as a "mathematical fiction": "The first thing to be remembered is - what physicists now-a-days will scarcely deny – that force is a mathematical fiction, not a physical entity" (Russell, 1956:482; cf. 494 ff.). However, the core meaning of the physical aspect of reality concerns energy operation - physical forces cause certain physical effects. One may therefore see the term 'force' as a shorthand for physical causality - and the latter is irreversible (see Planck, 1910:55).

¹⁵ What is presented in the article is actually articulated in the author's detailed treatment of the elementary and compound basic concepts of sociology (see Strauss, 2006).

(over-emphasizing an unspecified use of the spatial whole-parts relation), conservative (status quo) theoretical stances (overemphasizing the core kinematic meaning of *constancy*), those emphasizing the assumed inherent changefulness of all things (over-emphasizing the dynamic meaning of the physical aspect), the many biologistic (organicistic) trends that view human society as an organism or as the equivalent of a species, psychologistic schools of thought, conflict theories (over-emphasizing the supposed inherent contradictions and tensions within social reality), historicistic views that attempt to explain reality exclusively in terms of its historicity, and those variants of symbolic interactionism over-emphasizing social meaning. social interpretation and social symbolism. The relative merit of each one of these one-sided emphases is that the social aspect of reality indeed reveals its meaning only in coherence with everyone of these analogical moments, but its meaning can never be *reduced* to any non-social aspect.

(3)Aspectual analogies (similarities and differences between aspects of reality) ought to be distinguished from *metaphors*. Metaphors explore analogies (i) between different entities ("the nose of the car"), (ii) between entities and functional aspects (such as the metaphorical descent of an entity designated by its functional ability - i.e. a "fly") and (iii) between aspects and entities (a widespread example is found in evolutionary biology where the biotic facet - with *life* as its core functional meaning - is treated as if it is an entity, for example when biologists speak of the origin of 'life' instead of the genesis of *living entities*). Whereas metaphors may be replaced by totally different ones, modal functional (inter-aspectual) analogies cannot be replaced - at most they could be substituted with synonyms (like when continuous extension is 'synonymized' by phrases like being connected, coherence or even the whole-parts relation).¹⁰

4. Sociological system theory

Against the background of the above-mentioned distinctions we may now look, as an example, at the well-known "four function paradigm" developed in the sociological system theory of Parsons. Its schematic representation is:

¹⁶ The views of Lakoff and Johnson (1999) on "conceptual metaphor" are discussed in Strauss, 2005.



The 'elements' contained in the AGIL scheme of Parsons indeed represent, as Johnson *et al.* point out, concepts that "represent universal, constant features of human action," which implies that the "particular values or contents they have vary historically, and are problems of empirical research" (Johnson *et al.*, 1984:72). But what constitutes this all-pervasive scheme of Parsons's thought? It is clear that his whole *ontological design* comes together in this four function paradigm (adaptation, goal-attainment, integration and latency). Therefore we will have to determine the meaning of these basic concepts.

First of all it is immediately clear that this scheme is constituted by a particular *selection* and *combination* of modal analogical terms. The *biotic analogies* are most prominent, since three of the four terms employed in this scheme have their original seat in the biotical aspect, namely (1) adaptation, (2) goal-attainment, and (3) integration. Behind these three we find another important assumption not made explicit by the scheme itself, namely the nature of *social differentiation*. Luhmann states:

Differentiation is the *fait sociale* simpliciter, the *fait accompli* of modern society (Luhmann, 1990:415);

and in fact he acknowledges the *irreplaceability* of social differentiation: The concept of (social) differentiation simply proved irreplaceable (Luhmann, 1990:409).

In their original organic sense the terms *differentiation* and *integration* are two sides of the same coin. The growth of any living entity entails differentiation, but if this differentiation is not at once integrated the entity concerned will disintegrate and die. Yet we have to point out that although Luhmann implicitly did see something of the *irreplaceability* of the primitive meaning of the biotic aspect, he jumps to *social* differentiation without contemplating what is actually involved in the genuine analogical concepts of sociology.

The true state of affairs is that *differentiation* belongs to the original meaning of the biotic aspect of organic life – it is only within this aspect that we meet its (primitive) meaning as a *fait accompli*. Social differentiation is merely a biotic analogy within the modal (functional) structure of the social aspect. In other words, differentiation is not *original* within the social aspect, just as little as the whole-parts relation (spatial) or the one and the many (quantitative) is original within the social aspect. But we have to articulate our claim that adaptation, goal-attainment and integration find their modal seat within the biotic aspect or reality in some more detail.

Only in the case of thermodynamically open systems that are characterized by the biotic aspect of reality, i.e. only in the case of living entities (plants, animals and human beings), is it meaningful to speak of *adaptation*. Open systems that are physically qualified – such as a glacier and a fire – do not possess the four *physically unique* features of living entities discerned by Karl Trincher¹⁷ – explaining why it is meaningless to speak of adaptation on the physical level *per se*.

Although the emphasis on *finality* (the goal-directedness of living entities) initially was seen as a vitalistic prejudice in biology, various non-vitalistic trends of thought eventually realized that purposiveness represents an inherent feature of living entities, requiring an explanation (or at least recognition) from any possible biological standpoint. For example, the organismic biology of Von Bertalanffy explicitly accounts for phenomena of *equifinality*, i.e. the fact that "the same final state can be reached from different initial conditions and in different ways" (Von Bertalanffy, 1973:79). About one hundred years ago Hans Driesch did important experimental work aimed at supporting his (vitalistic) biology (see Driesch, 1920:117 ff., 131 ff., 139 ff., 434 ff. and 512).

Biotical growth, as has been explained, manifests itself in two distinct but inseparably connected processes: *differentiation* and *integration*. As we have noted, they provide a biotic specification to the spatial whole-parts relation. In contrast to a homogeneous spatial continuum the differentiated parts are heterogenous. Yet they still have to *cohere* with the other parts as long as the living organism persists as an integral vital unity (*integration* analogically reflects the spatial meaning of connectedness/coherence within the biotical aspect; biotical coherence = integration).

¹⁷ He mentions the following four macroscopic characteristics (Trincher, 1985:336): 1) the spatial macroscopy which defines the cell as a spatially delimited surface; 2) the temporal macroscopy, which determines the finite time in which the energy cycle of the cell occurs; 3) the isothermic nature of the cell, which is responsible for the constancy of temperature throughout the cell; and 4) the persistent positive difference between the higher internal temperature of the cell and the lower external temperature of the environment adjacent to the cell surface.

In addition to these three biotical terms employed in Parsons's sociological (system) theory, the phrase *pattern-maintenance* (latency) is also used. In following MacIver, Parsons meant it as an imitation of Galileo's law of inertia. Initially MacIver in a vitalistic sense distinguished between a twofold law: *material* and *vital*. The former is "the law of invariable concomitance or sequence, the fixed order of material nature" and the latter is revealed in "the will of the living, unstable, relative, riddled with changefulness and imperfection" (MacIver, 1917:12). MacIver then proceeds by stating that social facts, as studied by the science of sociology, are *willed relations* (MacIver, 1917:5). Later on, in 1942, MacIver published a work on *Social Causation* and in this work he continued to advance, in a typical Aristotelian fashion, the notion of *sustaining forces*, although he did combine this idea with what he intended to see as an *analogy* of Newton's first law of motion:¹⁸

We postulate a social law roughly corresponding to the physical law of inertia, to the effect that every social system tends to maintain itself, to preserve in its present state, until compelled by some other force to alter that state (MacIver, 1942:173)

It is clear that MacIver confuses *inertia* (a purely kinematic concept) with open systems in a thermodynamic sense (a *physical* concept – recall the above-mentioned idea of Von Bertalanffy regarding a dynamic equilibrium (Von Bertalanffy's *Fliessgleichgewicht*).

Likewise Parsons declares that the "function of pattern-maintenance refers to the imperative of maintaining the stability of the patterns of institutionalized culture defining the structure of the system" (Parsons, 1961:38) and then he adds the following remark:

Pattern-maintenance in this sense plays a part in the theory of social systems, as of other systems of action, comparable to that of the concept of inertia in mechanics. It serves as the most fundamental reference point to which the analysis of other, more viable factors can be related (Parsons, 1961:39).

When Parsons and Bales formulated a law imitating Newton's first law of motion (basically Galileo's law of inertia), they characterized it merely as being "another way of stating one aspect of the fundamental postulate that we are dealing with equilibrating systems" (Parsons & Bales, 1953:100 – this also reflects the influence of Schumpeter). Just as little as MacIver comprehended the difference between the kinematical and the physical aspects was it done by Parsons and Bales. The latter furthermore do not adequately distinguish between *closed* and *open* systems within the physical aspect. Consequently, they, in their characterization of "equilibrating

¹⁸ Newton formulates the law of inertia as follows: "Every body will continue its state of rest or of uniform motion in a straight line except in so far as it is compelled to change that state by impressed force."

systems," mistakenly identify *homeostasis* with the (kinematic) analogy of inertia. *Maintenance* always requires new energy-input (into an open system) – something different from the inertial notion of mere *continuation*.

At this point it turns out that a 'mediating form' is needed in order to configure these biotic and thermodynamic terms properly. Parsons does this by introducing the spatial opposition between what is *internal* and *external*. According to its *internal side* every 'action system' should perform the functions of pattern-maintenance and integration, and according to its *external side* it should perform the functions of adaptation and goal-attainment.

5. Parsons modified: the differentiation theory of Münch

One of the revivals of Parsons's approach is found in the work of the German sociologist Richard Münch. In his fascinating article on *Differentiation, Rationalization, Interpenetration: The Emergence of Modern Society*, Münch concisely assesses the preceding three decades of sociological theorizing. He points out that the 1960's were dominated by the "controversy between *neopositivism* and its more sophisticated successor *critical rationalism*, on the one hand, and the Frankfurt school of critical theory on the other. After a brief focus on Marxism in the late 1960's, the new topic of the 1970's was the discussion between Luhman and Habermas concerning "sociology as a social technology or as a critical theory of society" (1990:441). The 1980's pursued a different goal:

constructing a theory of society and explaining and understanding the basic structures, roots and developments of modern societies. ... The great classics who contributed to a global perspective on modern society have been rediscovered, particularly Weber, Durkheim, and Parsons. They are used as more or less stable building blocks for a theory of society and an understanding of modernity (Münch 1990:442).

According to Münch the starting point of the theoretical debate of the 1980's is "Weber's theory of rationalization of modern society into spheres that are guided to an increasing extent by their own inner laws. This theory of rationalization has been combined – by Schluchter and Habermas – with the theory of functional differentiation as it was formulated by Luhmann" (Münch, 1990:442).

In following Luhmann's systems perspective on differentiation, Münch subsequently discusses the increasing complexity of the process of differentiation. Complexity causes decision-making to differentiate and be confined to "*ever smaller systems* (the author's emphasis – DFMS) of interaction" (1990:443). When Münch proceeds with his analysis by arguing that differentiation is a self-perpetuating process (it increases

¹⁹ Luhmann discerns a basic paradox in this context, namely the paradox of a *unitas multiplex* (Luhmann, 1990:410).

complexity requiring further differentiation), his explanation uses the system approach (system/subsystems; whole/parts) as well as the AGIL scheme of Parsons (see Münch, 1990: 449-450, 460):

Differentiation means the growing autonomy of subsystems of interaction which have their own rules. It is explained by growing complexity (1990: 443). As long as Münch speaks of subsystems an overarching system is presupposed.¹⁹ Accepting an encompassing system (whole) inevitably implies that the differentiated multiplicity of subsystems (parts) of this whole must be integrated within this whole – and therefore to some extent they are ruled by the total system. What then, could be the meaning assigned to the "autonomy of subsystems of interaction which have their own rules"? This question becomes even more pertinent when we read in the same context that due to growing complexity "action and decision-making can no longer claim validity for every sphere of action, every group and every action" (1990:443). If it is true that action and decision-making have no validity for every sphere of interaction, every group and every action, then why does Münch still speak of 'sub'-systems?

This question is partially answered by Münch's reference to Luhmann's notion of *autopoieisis* which indicates for him that society "is compartementalized into a growing number of autopoietical – that is, self-regulating – systems which treat each other as environments to which they have to adapt actively" (Münch, 1990:444).

Münch uses the example of the sphere of intellectual reflection and political procedures and decisions:

they can only be dealt with as environmental facts that have to be processed within the political system according to its own inner laws of effective decision-making (Münch, 1990:444).

He adds to these remarks the above-mentioned approach of Schluchter who combined Luhmann's theory of differentiation with Weber's theory of rationalization. In terms of this perspective "rationalization means ... the development of ever more sharply differentiated spheres of life which are guided by their own inner laws, making them more efficient in solving their problems but at the same time producing effects that appear irrational from the points of view of the other (outside) spheres of action" (Münch, 1990:444-445).

The introduction of the idea of the "own inner laws" is not without problems because the implicit tension between *differentiating subsystems* and the claim that they "have their own rules" now becomes explicit. If rationalization indeed means "the development of ever more sharply differentiated spheres of life which are guided by their *own inner laws*" (the author's emphasis – DFMS), then it seems internally contradictory to subject anyone of these "differentiated spheres of life" to the "own inner laws" of some overarching "system"! There appears to exist a clash between the idea of *own inner laws*

and the unrestricted application of the idea of a (societal) whole and its parts. But before searching for a way out of this dilemma it may be worthwhile to point out that even those theoretical stances within sociological theory that oppose the *structural-functional* or the *social system* approach do not succeed in escaping from the conditioning role of the elementary basic concepts of sociology as a discipline. The position of conflict theory and the dynamic field theory of Sztompka are briefly assessed.

6. Opposing theories do not escape from the same basic concepts

Ralf Dahrendorf also emphasizes the universal presence of conflict as a social fact. According to him structural-functionalism cannot explain conflict at all (Dahrendorf, 1961:114). He points out that sociological functionalism uses the biological concept of function in order to view societies and their "subsystems" in terms of the contributions made by every phenomenon to promote the maintenance and to uphold the equilibrium of the system (Dahrendorf, 1961:114).

In his criticism of Parson's structural-functionalism, Dahrendorf believes that the concept 'dysfunction' is a *residual category*:

No phantasy-escape, not even the residual category 'dysfunction' can cause the balanced and integrated social system to produce serious and systematic conflicts within its structure (Dahrendorf, 1961:96).

Merton, however, denies that the emphasis on static order, on social equilibrium, is inherent in the theory of functional analysis:

The concept of dysfunction, which implies the concept of strain, stress and tension on the structural level, provides an analytical approach to the study of dynamics and change (Merton, 1968:107).

Dahrendorf (referring to the 1957 edition) is not satisfied by this explanation, because he poses the question whether the concept of *dysfunction* truly succeeds in bridging the gap from structural-functional analysis to that of *change* (*Wandel*) (Dahrendorf, 1961:119). In the final analysis, even Merton's usages of the concept of a dysfunction are seen by Dahrendorf as nothing but a residual category (cf. Merton, 1968:120).

L.A. Coser criticizes Parsons and Merton for not having paid systematic attention to the problem of conflict (cf. Coser, 1956). The fact that Coser still starts from the same structural-functionalistic assumptions as Parsons and Merton causes Dahrendorf to maintain his criticism by stating that the acceptance of functioning social systems cannot give an account of the conflicts transcending them (cf. Coser, 1956:124). Coser even goes on to say:

Our concern is mainly with the functions, rather than the dysfunctions, of social conflict, that is to say, with those consequences of social conflict which make for an increase rather than a decrease in the adaptation or adjustment of particular social relationships or groups (Coser, 1956:8).

Dahrendorf's reaction to functionalism forced him to the other extreme. In the absence of a clear distinction between the normative conditions for social life and factual social processes, he identifies *historical change* with *conflict* and by doing that he eliminates the possibility of responsible (i.e. norm-conformative reformational) historical changes:

As a factor in the ongoing process of social change conflict is an ultimate necessity (Dahrendorf, 1961:124).

Later on in the work this identification is explicit:

All of social life is conflict, because it is change (Dahrendorf, 1961:235).

He is convinced that conflict is the creative nucleus of a society and the only chance for freedom (Dahrendorf, 1961:235); a view that is rather close to neo-Marxist thought holding that continued revolution is the only guarantee for freedom.

Coser's reaction to Dahrendorf's stress on historical change is that the latter is guilty of "pan-conflict imperialism" (Coser, 1970:4). Dahrendorf explains these diverging views as follows: "According to the structural-functional theory conflict and change are pathological deviations from the norm of an equilibrating system; in terms of the theory I am defining stability and rigidity reveal the pathology of a society" (Dahrendorf, 1961:127).

If a differentiated social sphere of life has an authority structure of super- and subordination, its presence should be *positively* acknowledged as belonging to the normative conditions of the life form concerned. Only when the basic distinction between *structure* and *direction* is confused, is it possible to see an authority structure *per se* as the source of conflict. Dahrendorf holds this opinion, for according to him the boundary between those in power and those subjected to the power as such forms the starting point for social conflict (Dahrendorf, 1961:126). Zeitlin succinctly mentions the weakness of this view:

For it implies that conflicts are generated by authority differences themselves, rather than by oppression, exploitation, abuse of authority, and other substantive uses (Zeitlin, 1973:119).

Dahrendorf cannot accept the validity of the competence of an office-bearer because he wrongly identifies *power* with *conflict* and finally equates it with *force*. W.L. Bühl is correct when he says that Dahrendorf did not pay attention to the "component of legitimacy of power" (Bühl, 1976:24-25).

Furthermore, the fundamental postulate of Dahrendorf, namely that society is inherently subject to *historical change*, is caught up in the same antinomy that destroys all forms of *historicism*. At least *one* constant and enduring element should be accepted: change itself. Dahrendorf writes:

It is my basic thesis that it is the permanent task, meaning and result of social conflicts to maintain the global change of societies and their parts (Dahrendorf, 1961:124).

This mode of speech shows remarkable similarities with the language-use of functionalism. A certain phenomenon – namely *conflict* – possesses the *function* to maintain something – namely *change*!

This apparently strange result first of all derives from the fact that all historical changes (both normative and anti-normative) are subjected to universal and relatively constant structural conditions, and secondly that it is a consequence of the inevitability of using certain modal aspects as points of entry in order to be able to speak of reality at all. In this case the *kinematic* and *physical* aspects are used as modes of explanation (gateways) – changes can only be detected on the basis of something (relatively) constant.

In the conflict theory of John Rex we find an awareness of different kinds of social interaction – such as *co-operation*, *conflict* and *anomic interaction* – as well as the accusation that Parsons paid attention to the first kind only (see Rex, 1961:89 and Alexander, 1987:131). By also taking the other two into consideration, Rex, for example, wants to explain *integration* as a matter of *domination* and *interest*, thus putting a conflict of interests "at the centre of the mode of existence of the system as a whole" (Rex, 1961:102; Alexander, 1987:136). Alexander's final assessment of Rex's conflict theory comes fairly close to our critical remark about Dahrendorf, namely that the latter uses a mode of expression formally coinciding with that of the functionalist theory which he opposes. With reference to the emergence of a non-class situation exhibiting the property of an integrated social order, Alexander remarks:

This sounds suspiciously like Parsons's own version of the postcapitalist postwar world. While Rex has abandoned a functionalist model in principle, he seems to have adopted the model of a functioning system in fact, that is, in his empirical understanding of postwar society (Alexander, 1987:149).

7. The dynamic field theory of Sztompka

Sztompka attempts to surpass the limitations of the systems model with his model of the "dynamic social field" (Sztompka, 1994:9 ff.). His aim is to develop a sociology of *social change* that supersedes the doubtful validity of "organic-systemic models of society" as well as the very "dichotomy of social statics and social dynamics" (Sztompka, 1994:9). His aim is to explore Whitehead's "processual image," which claims that "change is inherent in the very nature of things" (Sztompka, 1994:9).

Ontologically speaking, Sztompka argues, society as a steady state does not and cannot exist. All social reality is pure dynamics, a flow of changes of various speed, intensity, rhythm and tempo. It is not accidental that we

²⁰ Note that the core of Einstein's theory of relativity is the postulation of the (vacuum) constancy of the velocity of light (see Einstein, Einstein, 1982:30-31 – entailing that he actually developed a theory of constancy (the historicistic *Zeitgeist* at the beginning of the 20th century tempted him to employ the designation "relativity theory").

often speak of "social life" which is perhaps a more fitting metaphor than the old image of a hide-bound, reified super-organism. Because life is nothing else but *movement*, *motion* and *change*, when those stop, there is no more life, but an entirely different condition – nothingness, or as we call it death (Sztompka, 1994:9).

Sztompka does not analyse the primitive meaning of change. Such an exercise would have cautioned him in his extreme "dynamistic" approach. Without something *persistent* or *constant*, it is impossible to detect any changes. He correctly rejects the old dichotomy of "social statics and social dynamics," but he does not see that one cannot avoid the mutual coherence between *constancy* and *change*. That change presupposes something constant is implicitly acknowledged by his introduction of the expression "social field." For example, he distinguishes four levels within (!) the "socio-cultural field" (ideal, normative, interactional and opportunity) and then affirms that each of these levels "is undergoing perpetual change" - thus implicitly affirming the constancy of each one allowing for the changes taking place on the basis of their constancy (cf. Sztompka, 1994:10-11). Without constancy (and identity) no meaning could be attached to the word change. Sztompka nevertheless still thinks that the only reality this new approach deals with is the dynamic one of constant (the author's emphasis – DFMS!) changes.

Asserting that life is "nothing but movement, motion and change" is tantamount to a denial of the reality of phenomena qualified by the biotic aspect, i.e. of anything *alive*. Therefore, "when those stop", to reverse Sztompka's claim, we already have "nothingness and "death!"

Furthermore, if 'life' is really "nothing but" "movement, motion and change" – why not be consistent and say the same about the "social"? By maintaining the qualifying role of the term social in expressions such as the "social field" and "social life," Sztompka implicitly acknowledges the constancy of the social dimension (aspect) of reality. If the structure of this aspect itself is subject to change (i.e. inherently transient), then its qualifying role has to be substituted by whatever non-social phenomenon it changed to!

Such a one-sided emphasis on change cannot but end in insurmountable antinomies.

This result once again confirms that, owing to the irreplaceability of modal analogies (captured in analogical basic concepts), this dimension of scientific concept formation cannot be side-stepped. Those aspects of reality co-conditioning the basic structure of system theory (first of all the aspects of number, space, movement, the physical and the biotic) indeed lie at the basis of every possible social theory. It is only particular selections and groupings of these fundamental conditions (for example as found in the influential AGIL scheme of Parsons) that lead to diverging theoretical emphases and opposing paradigms.

8. Concluding remarks

As soon as it is realized that general system theory first of all defines a system either in physical or biotic terms it must be clear that such a theory cannot be employed in order to find the distinctive feature of societal collectivities transcending the physical and biotic aspects of reality. Above all the system concept cannot be used as a *genus proximum* where diverse applications are specified through differentiated particulars (*differentia specifica*) – for in that case all "(sub-)systems" will have the same qualification as the supposed most encompassing system. Although we speak of "society" in the *singular* it does not necessarily entail that "society" should be envisaged as an encompassing *whole* or *totality* for one may just as well have in mind the interconnections between multiple societal collectivities and relationships that cannot be subsumed under some or other supposed embracing whole. Giddens is sensitive to the extreme consequences of sociological holism by saying that "societies" are "not necessarily unified collectivities" (Giddens, 1986:24).

What is indeed needed is an approach that can side-step the extremes of an individualistic (atomistic) and a universalistic (holistic) orientation.²¹ Social collectivities should be observed in summative terms, as if they are nothing but individuals in interaction and likewise a proper use ought to be made of the (contextually qualified) meaning of the whole-parts relation.

An alternative view has to articulate the insight that the individual *transcends* the multiplicity of functional options open to being human within society. Within human society human beings can assume multiple roles without being exhausted by any one of them. If individual human beings function in all facets of reality, including the *social aspect*, it entails that we don't have to think about 'connecting' individuals to society, for the social aspect of reality is co-constitutive for being human. One simply cannot 'connect' individuals to that which is already constitutive for their existence – i.e. functioning within the social dimension of reality! Without articulating it in terms of basic ontological distinctions, Berger (and Luckmann) stress the same perspective:

Solitary human being is being on the animal level (which, of course, man shares with other animals). As soon as one observes phenomena that are specifically human, one enters the realm of the social. *Homo sapiens* is always, and in the same measure, *homo socuis* (Berger & Luckmann, 1967:51).

One implication of this alternative insight is the recognition of the fact that the "unit of comparison" in an analysis of society should never be sought in "individuals" stripped from their social function. And as soon as the "ontically constituted" social functionality of humans is included in our

²¹ See Strauss, 2002b, 2004, 2006a and 2006b.

analysis of society, the primary focus becomes the different social spheres in which human beings take on different roles.

A demonstration of the untenability of the opposition of individual and society with reference to a familiar variant of it might be: the *individual* versus the *state*.

Surely no individual as such could be identified with the state. As a public form of life called to bind together within one public legal order all the legal interests on its territory, the state as a collectivity transcends being an individual, but it does not exhaust and encompass the existence of any individual fully. A person merely fulfills a particular role within the state, namely as a *citizen*. Comparable with the state are therefore not *individuals*, but other *societal collectivities*! This means that we can differentiate the state only meaningfully from similar social entities *on the same level*, such as business enterprises, universities, churches, families, and so on. As such, a specific societal collectivity always results from the peculiar way in which different (that is, more than one) persons are brought together within the organized limits of the societal collectivity concerned.

To repeat the initial claim: no single individual human person as such is to be seen as a societal collectivity. Why then compare and juxtapose an individual (which is *not* a societal collectivity) with the state (which *is* a societal collectivity)?

This "category-mistake" is part of the broader Western heritage which tends to identify any societal collectivity with its *office-bearers*. Most frequently the term 'state' simply refers to the 'government'. But that is an important distortion of the true nature of the state. There is an additional fallacy present in the unspecified usage of the word 'individual'. The correlate of the government (wrongly designated as the 'state') is found in citizens who are *subjects* to the authority of the government in office. In stead of referring to 'individuals' one should therefore, as we have pointed out, refer to 'citizens' or, more precisely, to 'subjects'.

Being a citizen or a subject of a particular state entails certain public legal competences and responsibilities without, by themselves, exhausting the full human functioning of the 'individual' within human society. Citizenship pertains to a *specific societal function*, which can (and must) be distinguished clearly from other differentiated societal ties a person might have – such as *being a husband/wife, being a student, being a friend, being a colleague*, and so forth.

Everyone of these different societal functions (societal ties/roles) is always *partial* in the sense that it never encompasses all the societal activities of a person *totally*. Being a colleague, being a friend, a citizen, and so on is simply the way in which we designate the diverse, differentiated, societal functions/roles a person may have.

We have mentioned the notion of *integrated spheres of life* with their "own inner laws" – as it was advocated by Münch. However, in the history of scholarly reflection in the West the credit must undoubtedly go to the legal scholar, Johannes Althusius, who for the first time in 1603 pointed out that societal collectivities – such as churches and families – are not *parts* of the state. Everyone of these non-political (non-state) forms of social life is ruled according to its own laws that are specific to its peculiar nature. Althusius declares:

It can be said that individual citizens, families, and collegia are not members of a realm (i.e. the state – DFMS), ... On the other hand, cities, urban communities, and provinces are members of a realm (Althusius, 1603:16).

With respect to social forms of life distinct from the state Althusius holds: Proper laws (leges propriae) are those enactments by which particular associations are ruled. They differ in each species of association according as the nature of each requires (Althusius as translated in Carney, 1965:16).

Although Althusius formulated his ideas within the context of his "symbiotic" view of society, his insights indeed form one of the most important points of connection for an understanding of human society transcending the dilemma of individualism and universalism.

Yet in order to explore his insight in a fruitful way one has to incorporate an adequate theory of the many-sided reality of natural and social entities and processes. In order to arrive at a theoretically articulated understanding of distinct social forms of life the idea of a foundational function and a qualifying proved to be decisive – as developed and extensively articulated by Dooyeweerd (see Dooyeweerd, 1997-III:57-693).

Since each societal collectivity in principle has a function within every aspect of reality it is not sufficient to look for the distinction between (what Parsons has called) the "polity" and the "economy" by employing terms derived from the biotic aspect – *in casu* (collective) *goal-attainment* and *adaptation*. These properties are simply *shared* by the polity and the economy, for next to (collective) goal-attainment the polity also display the feature of (collective) adaptation, and likewise, next to adaptation the economy also has to pursue (collective) goals. It is only when the *jural aspect* is identified as the qualifying function of the "polity" that something distinct is said about it, because the "economy" by contrast is qualified by the *economic aspect* of reality.

The idea of the "own inner laws" of social collectivities (Münch) can escape the fate of a leveling holism (universalism) when it is combined with the idea of unique foundational and qualifying functions.

The implication for sociological system theory is that the foregoing considerations should caution not to extend the notion of a "social system" beyond the limits of social spheres of action with their *own inner laws*, for the moment some or other relationship is elevated to be the encompassing whole of society then the own inner laws of all the other social spheres of life are sacrificed to the privileged one.

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