
The tension between (methodological) individualism and holism

Danie Strauss
School of Philosophy
North-West University
Potchefstroom Campus
dfms@cknet.co.za

Abstract

Schumpeter, a student of Max Weber, introduced the phrase methodological individualism in 1908. For Weber concepts such as 'state', 'club' and 'feudalism' are reducible to 'understandable' actions of individual human beings. Individualism and holism touch deep-seated beliefs, prompting Jellinek to describe them as two opposing world views, an individualistic-atomistic one and a collectivistic-universalistic world view. The modern mechanistic world view has been atomistic by understanding the world in terms of particles in motion. The 'strong' sense of the phrase methodological individualism soon has exceeded the original quantitative meaning of the one and the many. Just compare expressions such as institutional individualism, structural individualism, and supervenience individualism. Ultimately the key terms employed in individualist and holist theories respectively derive from the numerical and spatial aspects of reality. What is required is acknowledging the uniqueness and mutual coherence between number and space, analogous to the foundational role of social relationships in respect of economic activities. In conclusion a brief analysis is given of the complexity involved in characterizing a social form of life, transcending the mutually exclusive opposition between methodological individualism and holism and highlighting the significance of the principle of sphere-sovereignty, one of the cornerstones of a Christian social philosophy.

Key Words

methodological individualism; methodological holism; atomism; holism; individualism; universalism; nominalism; realism; institutional individualism; structural individualism; uniqueness; mutual coherence; basic (analogical) concepts; complex analysis; sphere-sovereignty.

Traditionally, reflection on the relationship between *interacting individuals* and what is known as *human society* generated two opposing views. Udehn refers to them as *methodological individualism* and *methodological holism*. He remarks that this debate started at the turn of the 19th and 20th centuries, was continued after World War II and then once more flourished since the 1980s. According to Udehn the reason for this recurring debate 'is probably that it touches upon our most deep-seated *beliefs* about the nature of the individual and of society, our knowledge about these, and no doubt, also our ideals of the good society' (Udehn, 2002:479). From the German tradition of a 'Staatslehre' (*State-Theory*) a similar assessment is found, for according to Jellinek the discipline *Allgemeine Staatslehre* is dominated by two opposing *world views*, namely an *individualistic-atomistic* and a *collectivistic-universalistic* one, a claim also valid for the Greek-Medieval legacy and the post-Renaissance developments (Jellinek, 1966:174). These assessments indeed acknowledge that reflections on individualism and holism reveal diverging life and world views and the *ultimate commitments* underpinning them.

Although empirical matters are not irrelevant, the difficulties encountered in resolving this issue are 'probably that they are largely of a philosophical nature' (Udehn, 2002:479). In addition, the phrase *methodological individualism* may be understood in an 'ontological sense' (about *reality*), in an 'epistemological sense' (about possible *knowledge*), or in the sense of 'the road to knowledge'. It may be 'necessary to distinguish between *strong* and *weak* versions of methodological individualism' (Udehn, 2002:480).

Coleman's individualism is influenced by Homans, Hobbes and Adam Smith when he declares: 'I will start with an image of man as wholly free: unsocialized, entirely self-interested, not constrained by norms of a system, but only rationally calculating to further his own self-interest' (Coleman, 1964:167).

Ludwig von Mises relates this opposition (between individualism and holism) to the history of the past two hundred years in which we find *individualism*

and *totalitarianism* (the state embracing society as a *whole, holistically*). The first trend was towards ‘freedom, the rights of man, and self-determination’ (Von Mises, 1974:9). On the same page von Mises points out that ‘this individualism resulted in the fall of autocratic government, the establishment of democracy, the evolution of capitalism, technical improvements, and an unprecedented rise in standards of living’ while substituting ‘enlightenment for old superstitions, scientific methods of research for inveterate prejudices’. He also highlights that it was ‘an epoch of great artistic and literary achievements, the age of immortal musicians, painters, writers, and philosophers ... [which] brushed away slavery, serfdom, torture, inquisition, and other remnants of the dark ages’. However, during the second part of this period ‘individualism gave way to another trend, the trend toward state omnipotence . . . [where men] now seem eager to vest all powers in governments, i.e., in the apparatus of social compulsion and coercion ... [aiming] at totalitarianism, that is, conditions in which all human affairs are managed by governments’. More government interference is celebrated as ‘progress toward a more perfect world’ since they are ‘confident that the governments will transform the earth into a paradise’.

Udehn sees in the publication of Alfred Schutz’s work, *Der Sinnhafte Aufbau der Sozialen Welt* (1932) ‘an important source of Mises’s subjectivism’ (Udehn, 2002:485, note 7). For Von Mises subjectivism primarily concerns ontology and epistemology, followed by methodology. Strictly speaking methodological individualism holds that ‘only human beings exist’ and ‘that society is a product of human action’. To this he adds the ‘epistemological thesis that all knowledge about society derives from knowledge about individuals’ (Udehn, 2002:485-486).

Udehn considers the ‘first thesis [as] a special case of nominalism’ defended by Von Mises ‘against the conceptual realism of those who believed that collective concepts refer to real entities in the world. ... Social entities do exist, but only in the minds of individuals’ (Udehn, 2002:486). In general *nominalism* opposes realism in denying universality outside the human mind. This link between *nominalism* and *individualism* reaches back to Callicles (5th century B.C.), who admires the tyrant because the latter breaks through positive laws and subjects the weak to its power as law, thus in a sense anticipating ideas about ‘superman’ formulated much later by Nietzsche in the 19th century. The tyrant alone is entitled to have rights – all the citizens are deprived of any rights and subject to the arbitrariness of the tyrant – similar to the ideas of Hobbes in his *Leviathan* of 1651. Callicles and Thrasymachus are known for challenging conventional morality (see Plato’s dialogues

Gorgias and *Politeia*). In the *Republic* Thrasymachus claims that '[J]ustice is nothing other than the advantage of the stronger' (*Politeia* 338c2–3; see the extensive analysis in Stanford, CT 2011).

The influence of the individualism present in the views of Callicles is further explored by the use of the term 'holism'. Within the development of Greek philosophy the term *individualism* appears as a synonym for *atomism*, explaining why it is opposed to *holism* (a term derived from the Greek word *holon* = whole and related to the Greeks' atomists, Leucippus and Democritus). The fact that the 'atoms' of atomism are at once a discrete multiplicity and indivisible wholes demonstrates the impossibility to escape from spatial terms (the term wholeness) when the one and the many are addressed.

1. The rise of methodological individualism

Many scholars follow J.W.N. Watkins in distinguishing between *methodological individualism* and *methodological holism* – even though 'few social scientists ... describe themselves as methodological holists' (see Stanford, CT 2011 and Watkins, 1952).

The phrase *methodische Individualismus* was first employed by a student of Max Weber, namely Joseph Schumpeter (1908). As a sociologist Schumpeter was not a *methodological individualist* (see Udehn, 2002:484-485) – the theoretical articulation of this idea was developed by Weber himself.

In *Economy and Society*, Weber explains methodological individualism: When discussing social phenomena, we often talk about various 'social collectivities, such as states, associations, business corporations, foundations, as if they were individual persons' (Weber, 1922:13). Weber holds that 'in sociological work ... collectivities must be treated as solely the resultants and modes of organization of the particular acts of individual persons, since these alone can be treated as agents in a course of subjectively understandable action' (Heath, 2015; see Weber, 1922:13). In his *Gesammelte Aufsätze zur Wissenschaftslehre* he states that concepts "such as 'state', 'club' 'feudalism' and 'similar ones' are 'particular kinds of communal human actions' to be reduced 'to 'understandable' (*verständliches*) actions' which 'without an exception' should be reduced to the actions of the individual human beings (*Einzelmenschen*) concerned" (Weber, 1973:439).

2. Atomistic nominalism

The *atomistic* nominalism of Callicles emerges once more in the modern era. Following Galileo's mechanics, Hobbes introduces the idea of a 'moving body' to explain everything. Max Planck remarks that the idea of *particles in motion* gave birth to the mechanistic main tendency of classical physics. He refers to 'atomistic representations' operative in the *mechanistic* view (Planck, 1910:54) and points out that 'all qualitative differences are ultimately explicable by motions' of 'unchangeable, similar mass-points or mass-elements' (Planck, 1973:53).

This modern mechanistic *world view* prompted Planck to mention that Heinrich Hertz expressed a *physical confession of faith* (Planck, 1910:56). According to Von Bertalanffy, developments in mathematics, physics and biology respectively generated the 'more geometrico' world view, that of the 'world as chaos' and more recently 'an organismic world-view' (Von Bertalanffy, 1968:66). The sociologist George Herbert Mead aptly characterized this *mechanistic* tendency: 'The concept of nature which was introduced by Galileo through his doctrine of dynamics, reduced it to a statement of matter in motion' (Mead, 1945:357). Habermas notes that Hobbes wanted to reconstruct the classical theory of politics after the example of modern natural science. In doing this he wants to provide social philosophy with a foundation in the contemporary physics (Habermas, 1971:88).

Arrow remarks that although 'economic thinking since at least the time of Adam Smith has the individual decision-maker at the core, the self-conscious formulation of the individualistic perspective is usually associated with the Austrian school' founded by Carl Menger (Arrow, 1994:2). Later on Homans (with his sociological exchange theory) not only equated methodological individualism and psychologism but also acknowledged that methodological individualism is reductionist in that 'sociological propositions ... can in principle be derived from, reduced to, propositions about the behaviour of individuals' (Homans, 1970:325).

3. The difference between methodological individualism and social contract atomism

Sometimes proper *methodological individualism* is distinguished from the atomism found in modern theories of the social contract. The *Stanford Encyclopedia* is justified in criticizing the 'pre-social' nature of individuals in the kind of atomism found in social contract theories. However, the remark

regarding 'a complete reduction of sociology to psychology' does not realize that both the sensitive-psychic facet of reality ('psychology') and the social side ('sociology') reflect the *quantitative* meaning of the *one and the many*. Hummell and Opp refers in this context to the general thesis, namely that psychology investigates the behavior of *individual persons* and that sociology studies the (social) *interaction between human beings* – which leads to the view that the theoretical concepts of sociology could be completely reduced to psychological concepts (Hummell & Opp, 1971:7). They discuss multiple examples of sociological concepts that could be circumscribed by employing properties of one or more individuals (Hummell & Opp, 1971:36 ff.), but nonetheless oppose a psychological reductionism asserting that it can operate without 'social factors' (Hummell & Opp, 1971:8).

4. Additional qualifications

Popper distinguishes between *methodological individualism* and *methodological collectivism* where the former rightly insists "that the 'behaviour' and the 'actions' of collectives, such as states or social groups, must be reduced to the behaviour and to actions of human individuals." He nonetheless rejects the 'belief that the choice of such an individualistic method implies the choice of a psychological method' (Popper, 1966-II:91). All forms of *individualism* (*atomism*) proceed from a notion of *multiple individuals*. Gunnar Myrdal positions this debate within the context of the opposition of a 'utilitarianistic and liberalistic atomism' on the one hand, and the more 'heterogeneous organic' approach of German political theory on the other (Myrdal, 1932:87).

While disqualifying any reference to *collectives* as a means of explanation, Popper holds that the functioning of 'all social institutions, should always be understood as resulting from the decisions, actions, attitudes, etc., of human individuals, and that we should never be satisfied by an explanation in terms of so-called "'collectives' (states, nations, races etc.)" (Popper, 1966-II:98). Watkins in turn holds that large-scale social phenomena 'must be accounted for by the situations, dispositions and beliefs of individuals. This I call methodological individualism' (see Lukes, 1968:129, note 15). According to Arrow the 'name' given to 'this point of view' is that of 'methodological individualism' – which amounts to the necessity 'to base all accounts of economic interaction on individual behavior' (Arrow, 1994:1).

While focusing on methodological individualism and holism within political science, List and Spiekermann state the problem in similar terms: 'A key point of contention is the status of collective entities such as states, nations,

ethnic groups, cultures, political parties, and other institutions. Are these mere by-products of individual behavior ...?' (List & Spiekermann, 2013:629).

Often times *methodological individualism* commences with 'pre-social' individuals preceding their functioning as *social subjects* within human society. In the social contract theories of the early modern period, such as those of Hobbes, Thomasius, Pufendorf, Locke and Rousseau, the fiction of abstract 'isolated' individuals is *hypothetically* postulated in order to give a *rational* account of the existing *order* within known societies – as if human individuals are only in a derived sense incorporated in *social* interaction. George Herbert Mead rightfully rejects this abstraction by emphasizing that the social context (co-)determines human existence *from the very outset*. He holds that 'selves must be accounted for in terms of the social process' (Mead, 1967:49).

Before we proceed by focussing on the connections between social order and the one and the many, we may reflect that there are different versions of methodological individualism, this time illustrated by what Udehn explains. Udehn distinguishes five versions of methodological individualism, namely social contract theory, general equilibrium theory, Austrian methodological individualism, Popperian methodological individualism; and Coleman's methodological individualism (see Coleman, 1990:5 ff. and Udehn, 2002:499).

5. Social order: the one-and-many

From the perspective of the *one and the many* we can affirm that all human beings function as unitary social subjects within a multiplicity of differentiated social roles. Yet the opposition of 'action' and 'order' may suggest that an individual acts outside the social dimension of reality altogether and that only when the constraints of social order is considered individuals are transformed into *social* beings.

Georg Simmel views society as the *sum* of all the relational forms existing between individuals as a result of the process of *Vergesellschaftung* (*sociation* – see Levine, 1971:7). He considers only these inter-individual relational forms as real and observes in the concept *society* a fatal reification of a mere abstraction (cf. Simmel, 1908:10 ff.; see also Zeigenfuss, 1956:14-15). In his *Beziehungssoziologie* (relational sociology) Leopold von Wiese proceeds by distinguishing between *unity and multiplicity* in two forms: (i) *one – many* and (ii) *uniqueness – plurality*. However, in these opposing pairs of concepts he sees a fundamental *dualism* (Von Wiese, 1959:18-19; see

1926:12). According to him, the social sciences frequently have to trace their problems back to the 'last abstraction' that is given in the 'relationship of the one to the many' (Von Wiese, 1959:19). At least the fusion or combination of unity and multiplicity, according to Von Wiese, should be seen as a presupposition of all civilization and culture. Nevertheless, whoever wants to assign reality to *social forms of life* in the sense of *supra-individual totalities* is accused by him of being a victim of *universalism (holism)* (Von Wiese, 1959:25; cf. 1966:114-117).

In reaction to the individualistic action theories of his former teachers, Talcot Parsons and Florian Znanieki, Bierstedt says: 'I would contend that no one who begins with action ... can easily arrive at a notion of the social order' (Bierstedt, 1970:ix).

Interestingly some methodological individualists want to exceed an individual-centred view. For example, although Popper subscribes to methodological individualism he holds: 'In the case of human actions, this environment is very largely of a social nature; thus our actions cannot be explained without reference to our social environment, to social institutions and to their manner of functioning' (Popper, 1966-II:90). Consequently he is seen as an *institutional individualist*. Udehn believes that as an exception within the English utilitarian tradition the economist Alfred Marshall was already 'more of an institutional individualist' (Udehn, 2002:482, note 4). Marshall discards the classical economic 'general equilibrium' view and accepts dynamics and growth as phenomena of economic life (Schumpeter sees him as the father of the theory of 'imperfect competition' – see Kouwenhoven, 1965:88 ff.).

According to Udehn 'the individualism of the Scottish Enlightenment' differs from 'social contract' theory because it 'knows nothing of asocial individuals in a state of nature ... Individuals are seen as sociocultural beings shaped by social institutions and by the history of society' (Udehn, 2002:482). In section 6 below the ambiguity within this Scottish view will be highlighted.

6. Holism: its constitutive role in defining methodological individualism

However, according to Udehn the 'problem with Popper's' approach is 'that institutionalism is incompatible, not only with psychologism, but with his own methodological individualism as well' (Udehn, 2002:488). This reminds us of the holistic understanding of the *collective conscience* in the approach of Emile Durkheim which inspired his view that '[S]ociology can then be defined

as the science of institutions, their genesis and functioning' (Durkheim, 1972:71). Surely Durkheim is not an individualist: 'every time that a social phenomenon is directly explained by a psychological phenomenon, we may be sure that the explanation is false' (quoted by Lukes, 1968:124).

Although strong individualism may avoid *social wholes* or *social totalities*, it in fact often surrenders to a 'weak' form of individualism, employing expressions such as *psychologistic individualism* (see Udehn, 2002:482, 483, 490), *institutional individualism* (see Udehn, 2002:482, 489, 494 and 496), *structural individualism* (see Udehn, 2002:490, 492, 493, 496, 497), *supervenience individualism* (List, 2013:632) and *atomistic methodological individualism* (Udehn, 2002:500). As a typical feature of microsociological theories Udehn adds *social individualism* found in 'theories such as symbolic interactionism, phenomenology, and ethnomethodology' (Udehn, 2002:500).

We noted that the *Stanford Encyclopedia of Philosophy* positioned *methodological holism* alongside *methodological individualism*. Popper designates methodological holism as *methodological collectivism* (Popper, 1966-II:98). Elster characterizes 'the doctrine that all social phenomena (their structure and their change) are in principle explicable only in terms of individuals', but does not find it incompatible with individuals having goals involving 'the welfare of other individuals' or having beliefs 'about supra-individual entities that are not reducible to beliefs about individuals' (Elster, 1982:454). The underlying issue concerns the irreducibility of number and space – the two modes of explanation one-sidedly explored by individualism and holism – a discrete multiplicity (number) versus wholeness (space).

7. Universalism as synonym for holism

The German philosopher-sociologist-economist, Othmar Spann, equates *individualism* and *universalism* with *atomism* and *holism*. The nineteenth edition of his work on *Economic Theory* dedicates a chapter to the basic problem of sociology, *individualism versus universalism*' (Spann, Chapter four 1930a:59-65). His authentic exposition of this basic opposition is found in his systematic work on sociology, *Gesellschaftslehre* (1930). 'Essential Theories of Society' are discussed in the *First Section* of the *Second Part* which is dedicated to *Der Individualismus oder die Einzelheitslehre* (pages 65-97) and the *Second Part* to *Der Universalismus oder die Ganzheitslehre* (pages 97-184).

In the sense of what is universal and what is individual already Leibniz, in his *Théodicée* (1710), mentions the controversy regarding universality and particularity. Although the term ‘particularism’ in the thought of the sociologist Parsons may reflect the influence of this legacy, we should remember that the German term ‘Einzelheit’ may refer to what is ‘particular’ (as the correlate of *universality*) or to ‘Ganzheit’ (= *a whole* or *totality*). Since the 1930s German *Philosophical Dictionaries* opposes *universalism* and *individualism*, while explaining that universalism understands the universe as a whole to which all particulars are subordinated and from which they are derived (see Schmidt, 1934:384 and Ritter, 1971-2001:204-206).

In the latter volume it is stated that already during the 19th century the term *universalism* was employed in opposition to *individualism* [*Partikularismus*] (page 205) – which shows that ‘particularism’ was indeed used both in opposition to *wholeness* and as the correlate of what is *universal*. A.G.M. van Melsen relates *atomism* to the problem of *unity* and *immutability* versus observing *multiplicity* and *change* (Van Melsen, 1975:346-351). He says that in ‘most forms of atomism, it is a matter of principle that any combination of atoms into a greater unity can only be an aggregate of these atoms’. By contrast, there are holistic tendencies within physics: ‘In modern theories atomic and molecular structures are characterized as associations of many interacting entities that lose their own identity. The resulting aggregate originates from the converging contributions of all its components. Yet, it forms a new entity, which in its turn controls the behaviour of its components’ (Van Melsen, 1975:349).

8. Primitive terms in theorizing about society

The initial ‘strong’ stance of methodological individualism was increasingly weakened by the just-mentioned compromised orientations which relativized the mutual exclusivity of *atomism* (*individualism*) and *holism*. A proper understanding of this issue has to consider the inevitability of employing *primitive terms* and the way in which the use of such terms constitute the basic concepts of the various academic disciplines. It appears that unique primitive terms only reveal their intuitively grasped meaning through their *mutual coherence*. This basic insight was articulated by the foremost logician of the 20th century, Kurt Gödel. Yourgrau explains that Gödel “insisted that to know the *primitive* concepts, one must not only understand their relationships to the other primitives but must grasp them on their own, by a kind of “intuition” (Yourgrau, 2005:169).

The full impact of this insight depends on acknowledging the difference between concrete entities and processes and the various *ontic* aspects of reality within which the former function. It concerns the distinction between the concrete *what* and the *how*. The original Latin root of the term *mode* is found in the phrase *modus quo* – also recognizable in expressions such as *modus operandi* and *modus vivendi*. A *modality* is therefore a *mode of being* (*way of existence*). Academic disciplines, such as mathematics, physics, biology, psychology, linguistics, sociology, economics or the science of law approach reality from distinct *modes of experience* serving as *modes of explanation*.

Yet these *modal aspects* are not restricted to a ‘part’ or ‘section’ of reality, and they are also not properties of individual things, for everything and every process in fact function within all the aspects of reality – including the natural sides (number, space, movement, the physical, biotic and sensitive) and the normed sides (the logical-analytical, the cultural-historical, the sign mode, the social aspect, the economic, aesthetic, jurial, moral and certitudinal). Normative contraries like logical-illogical, historical-unhistorical, polite-impolite, frugal-wasteful, beautiful-ugly and legal-illegal all testify to the fact that *functioning* within these aspects presupposes an *accountable free human will*. Therefore when the theoretical investigation of a special science is delimited by a specific aspect, the special scientist still has access to reality in its totality – viewed from the angle of a particular modal perspective. The physicist, the biologist, the economist or sociologist is not investigating the modal structure (the ‘aspect-structure’) of these delimiting modes since they actually look through the ‘glasses’ of their respective delimiting aspects to whatever is functioning within them. The investigation of the modal structure of an aspect as such belongs to the theoretical foundations of a special science.

Although he did not develop a systematic account of the dimension of modal aspects, the well-known sociologist, Peter Berger, did approximate the insight that *modal abstraction* [‘a special sort of abstraction’] reveals the *distinctive feature* of the scholarly enterprise. He explains:

The sociologist finds his subject matter present in all human activities, but not all aspects of those activities constitute this subject matter. Social interaction is not some specialized sector of what men do with each other. It is rather a certain aspect of all these doings. Another way of putting this is by saying that the sociologist carries a special sort of abstraction (Berger, 1982:39-40).

9. Individualism and universalism – atomism and holism: The uniqueness and mutual coherence of number and space

Understanding the nature of *methodological individualism* and its relation to *holism* has to address the problem of the ‘coherence of irreducibles’ – compare the earlier-mentioned view of Gödel in this regard. We will have to consider the uniqueness of and coherence between the social aspect and the aspects of number, space as well as the foundational position of the social aspect in respect of the economic aspect. Our argument will be that (methodological) individualism (atomism) and universalism (holism) overextends the numerical and spatial analogies within the structure of the social aspect.

Frege has shown that being distinct and displaying a succession reveals the *irreducible core meaning* of number (the one and the many) (see Frege, 1884, § 8-20). With reference to Hegel the famous co-author of the *Principia Mathematica* (alongside A.N. Whitehead), Bertrand Russell, distinguishes a continuous magnitude (*wholeness*) from a *discrete* magnitude (‘different’ instances of the ‘class-concept’). He ‘strongly’ holds ‘that this opposition of identity and diversity in a collection constitutes a fundamental problem of Logic – perhaps even the fundamental problem of philosophy’ (Russell, 1956:346). Already in 1922 Skolem noted that while acknowledging ‘what is indefinable or unprovable’ the ‘first starting points [must be] immediately clear, natural and beyond doubt.’ The ‘concept of an integer and the inferences by induction meet this condition, but it is definitely not met by the set theoretic axioms such as those of Zermelo or similar ones’ (Skolem, 1922:70).

The atomism present in Cantor's set theory inspired his reductionist aim to explain *continuity* purely in arithmetical (set-theoretical) terms (see Cantor, 1962:187 ff.). However, the co-worker of David Hilbert, Paul Bernays, categorically states: ‘The arithmetizing monism within mathematics is an arbitrary thesis. That the field of investigation of mathematics solely derives from representations of number is not at all shown’ (Bernays, 1976:188). Gödel also senses that the nature of a *set* imitates (i.e., *analogically reflects*) something of the meaning of space, for he says that sets are ‘quasi-spatial’ (see Wang, 1988:202). Moreover, remember that Cantor includes in his idea of a set both something numerical (a *multiplicity*) and something spatial (*wholeness*): ‘With the term ‘set’ [Menge] we understand every bringing-together [Zusammenfassung] *M* of specific properly distinct [wohlunterschiedenen] objects *m* of our intuition or thought (which are called the ‘Elements’ of *M*) into a whole’ (Cantor, 1895:481). The idea of an *infinite*

totality or an *infinite whole* is also inherent to Cantor's set theory (see Hilbert, 1925). As a genuine *totality* or *whole* it entails the whole-parts relation, a relation which is, according to Russell, something *primitive*: 'The relation of whole and part is, it would seem, an indefinable and ultimate relation' (Russell, 1956:138). Cantor characterizes continuity in terms of an *infinitely divisible* and *perfect* set ('a perfectly coherent set' – see Strauss, 2014:186), which partially deviates from his arithmetizing aim, for in fact it at once highlights the irreducible *spatial* meaning of the *whole-parts relation*. It is therefore not surprising that Bernays holds that 'a complete arithmetization of the idea of the continuum cannot be justified because this idea in the first place [*ursprünglich*] is a geometrical idea' (Bernays, 1976:188). Bell also emphasizes that continuity entails *wholeness*: 'We are all familiar with the idea of continuity. To be continuous is to constitute an unbroken or uninterrupted whole' (Bell, 2006:13). Some mathematicians continued to emphasize the primary status of the 'continuum'. Longo refers to Thom who believes that continuity precedes discreteness: "For him, as for many mathematicians of the continuum, 'the Continuum precedes ontologically the discrete', for the latter is merely an 'accident coming out of the continuum background', 'a broken line'" (Longo, 2001:6).

Whereas non-standard analysis rests on the basis of *infinite totalities*, what recently became known as *smooth infinitesimal analysis* (SIA) assigns priority to the continuous as 'an autonomous notion, not explicable in terms of the discrete' (Bell, 2006:284). By combining ideas of F.W. Lawvere and *Category Theory* Bell already in the *Introduction* of his 2006 work makes the same point, namely that SIA provides 'an image of the world in which the continuous is an autonomous notion, not explicable in terms of the discrete' (Bell, 2006:18).

From the perspective of the theory of modal aspects it may be said that Cantor's idea of a set must be seen as a spatially deepened numerical theory. In other words, set theory is based upon an imitation of continuity in a spatial sense (technically explained: as a spatial anticipation within the modal structure of the numerical aspect). This statement is equivalent to what we mentioned in quoting that Bernays stated that the idea of the continuum is a geometrical idea which is expressed by analysis in the language of arithmetic (Bernays, 1976:74).

Fraenkel, Bar-Hillel, Levy and Van Dalen address this issue in their 1973 work on the *Foundations of Set Theory*: 'Bridging the gap between the domains of discreteness and of continuity, or between arithmetic and geometry, is a central, presumably even the central problem of the foundation of

mathematics' (Fraenkel, *et al.* 1973:211). Interestingly Herman Weyl left the School of axiomatic formalism of Hilbert and became an adherent of the neo-intuitionism of L.E.J Brouwer.

The spatial whole-parts relation lies at the basis of the reference of Lukes to thinkers from the early nineteenth century who 'accorded priority in explanation' to 'collective phenomena'. He mentions de Bonald who wrote that it is 'society that constitutes man' and Comte who argued that a society was 'no more decomposable into *individuals* than a geometric surface is into lines, or a line into points' (Lukes, 1968:119). Comte advances a *holistic organicism* while Spencer subscribes to an *individualistic organicism*. Spencer believes that the re-organization of society should aim at a decrease of authoritative control, a 'more pronounced individualism, instead of a more pronounced nationalism, is its ideal' (Spencer, 1968:22).

10. Defining atomism and holism

In general we may therefore view *atomism* or *individualism* as over-emphasizing the meaning of the *one and the many*, of a *discrete multiplicity* in the *quantitative* sense of the term, or at least analogical instances of this quantitative meaning within the context of other modes of explanation (modal aspects) in order to comprehend or explain all of reality. Applied to human society, every social collectivity is then simply reduced to its simplest 'elements', the *individuals*.

All variants of *holism (universalism)*, on the other hand, proceed from the employment of the concept of a *whole* (totality) with its *parts* originally presenting itself within the *spatial* aspect. Within the aspect of space the meaning of number is analogically reflected in *dimension* (as an order of extension) and in *magnitude* (as the measure of factual spatial extension) such as *length* in one dimension, *surface* in two dimensions, and *volume* in three dimensions. The irreducible quantitative foundation of number in respect of space is similar to the irreducible foundational position of the social aspect in regard to the economic aspect. This insight provides a basis for criticizing methodological individualism within economic theory. Arrow states categorically: 'every economic model one can think of includes irreducibly social principles and concepts'. On the same page he also mentions that Schumpeter suggests that there is an 'ineradicable social element in the economy' (Arrow, 1994:2).

However, instead of attempting to reduce space (*wholeness*) to number (*discreteness*) or number to space, one should aim at accounting both

for the uniqueness of number and space and for their mutual coherence (remember the above-mentioned remark of Gödel). Bell significantly points out that initially Brouwer, in his dissertation of 1907, 'regards continuity and discreteness as complementary notions, neither of which is reducible to each other' (Bell, 2006:217).

A discrete multiplicity in the quantitative sense of the term (or at least analogical usages of this quantitative meaning within the context of other modes of explanation), is employed by individualism or atomism to comprehend all of reality.

To summarise:

Applied to human society, every social collectivity is simply reduced to its simplest 'elements', the individuals. All variants of holism (universalism), on the other hand, proceed from the employment of the concept of a *whole (totality)* with its parts, particularly during the 19th century combined with the idea of a *biotic* whole and oftentimes accompanied by viewing society as an organism. It should be noted that although holism is 'frequently' opposed to reductionism, it in fact represents another variant of reductionism, present in attempts to elevate one or another whole (the state, the volk, and so on) to embrace whatever else there may be as mere parts – the general shortcoming of universalism or collectivism.

When individualism in a strong sense starts to introduce terms such as *institutional, structural, fully* and even *social individualism*, it is transformed into a 'weak' form of individualism, because it then commences to borrow elements from the 'enemy', namely from the holistic approach's over-emphasizing of the spatial whole-parts relation. The term 'structure' shows its spatial embeddedness in that it is equivalent to or at least entails a *configuration, shape, form* and *wholeness* – all spatial notions.

The metaphor of 'playing different roles' in society, explicitly advanced by the dramaturgical school, correctly emphasizes the factual *unity in the multiplicity* of social functions into which every human being is merged (without ever being fully absorbed by anyone of them).

From the perspective of the elementary (analogical) basic concepts of sociology a much richer and more articulate analysis of the many-sidedness of social wholes is possible. We conclude with a brief summary of what this entails below because exploring this avenue exceeds the confines of the current article.

11. The complexity involved in characterizing a social form of life

The multi-aspectual reality in which societal forms of life is embedded calls for an awareness of the complexities involved in characterizing social forms of life. The nature of a distinctly differentiated social form of life could first of all be characterized by describing it as a societal *unity* (in the multiplicity). As argued above, the perspective of the spatial analogy additionally enables us to say that the unity of such a form of life may be seen as a social *whole* or *totality*. This analogical structural moment actually also enables us to speak of the specific social *domain* of a particular societal *sphere* as well as accounting for the multiple social positions (Udehn holds that social 'structure takes the form of a set of interdependent positions that are prior to the interaction between the individuals occupying these positions' – Udehn, 2002:494). With the aid of the kinematical analogy of uniform movement we can account for the awareness of the social *continuity* (constancy) of such a life form – providing the basis for social *changes* taking place within it (the focus of the physical analogy). The continuous change present in the ongoing functioning of a social form of life – allowing the individual members of that sphere *to come and go* without terminating its existence – analogically reflects the thermodynamics of physically open systems.¹ The continuation, maintenance and social *development* (*social growth*) of a social collectivity frequently require competent social *organs* capable of structuring societal relationships by means of exercising their social ordering *will* in such a way that the internal functioning of the life form concerned may express itself in constructive manifestations of an integrated social *solidarity* and social *awareness* (*sensitivity/consciousness*); the perspective of the sensitive-psychical analogy within the structure of the social aspect. Social accountability, social consensus and conflict reflect the logical-analytical analogy within the social aspect; social power, control and mastery the cultural-historical analogy and social significance, symbol and interpretation lingual analogies within the social aspect.

An analysis of the elementary basic concepts of sociology as a special discipline is a step-by-step process which should make it increasingly clear that every analogical element makes an indispensable contribution to a progressively deepening understanding of the meaning of the social aspect.

1 Ryan fittingly understood this peculiarity: "There are regularities and constancies in the behavior of groups of people which allow us to talk about groups having a stable structure in spite of fluctuating membership, and about the existence of social roles which can be filled by different people at different points in time" (Ryan, 1980:174).

In general the meaning of each modal aspect only reveals itself in coherence with all the other aspects within reality.

At the same time we are also implementing the requirement of showing a sense of critical-solidarity with those positions in theoretical sociology which one-sidedly – and often to the exclusion of other equally important modal analogies – wish to use a single modal analogy or a combination of some modal analogies as definitive explanatory device in their analysis of social reality. Our solidarity is shown through our appreciation that a specific analogical moment was discovered and explored in an analysis of social phenomena. Our critical distance is demonstrated by pointing out to what extent this discovery was hampered by an inherent one-sidedness (exclusivity) and/or denial of the integral coherence of all the analogical structural moments within the social aspect.

12. Sphere-sovereignty opens up an alternative approach

Yet the underlying hypothesis directing an analysis of the basic concepts of the special sciences is found in the *ontic* principle of sphere-sovereignty, both in its application to the various modal aspects of reality and to the dimension of (natural and social) entities. This perspective indeed resolves the tension between *Methodological Individualism* and *Methodological Holism*, for the communities and societal collectivities present in a differentiated society cannot be explained from the vantage point of just one aspect – as it is indeed attempted by methodological individualism and holism. All societal relationships (coordinational, communal or collective) in principle function in all aspects of reality (see Strauss 2006, Chapter 4). Their distinct spheres of competence are embedded in the typical societal principle of sphere-sovereignty which is perhaps one of *the* most fruitful pillars of a Christian view of human society. Discussing the ideas of the key figures in this alternative legacy, namely Althusius, Kuyper and Dooyeweerd, exceeds the confines of the present article.

One final multi-disciplinary remark

Apart from mathematics and physics, the opposition between individualism and universalism is found in the history of all the other academic disciplines as well – we briefly mention some of them:

Biology (physicalism versus vitalism and holism); psychology (atomistic association-psychology versus *Gestalt*-psychology); logical atomism (Russell) and the necessity of an infinite totality to safe-guard the logical principle of the excluded middle – see Strauss, 1991; linguistics [atomistic semantics] (Antal, 1963:53, 54, 58) versus semantic field theory initiated by Trier during the first half of the 20th century(see Trier, 1973:1, 5 ff., 15, and also Geckeler, 1971); the science of law (the nominalistic-individualistic fiction theory of a legal personality developed by Von Savigny versus the organ-theory of Von Gierke).

Bibliography

- ANTAL, L. 1963. *Questions of Meaning*. The Hague: Mouton.
- ARROW, K.J. 1994. Methodological individualism and social knowledge. *American Economic Review* 82(20):1-8.
- BELL, J.L. 2006. *The continuous and the infinitesimal in mathematics and philosophy*. Polimetrica, Corso Milano.
- BERGER, P.L. 1982. *Invitation to Sociology*. A Humanistic Perspective. Penguin Books.
- BERNAYS, P. 1976. *Abhandlungen zur Philosophie der Mathematik*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- BIERSTEDT, R. 1970. *The Social Order*. Ne York: McGraw-Hill.
- BORGER, R., & CIOFFI, F. (Eds.) 1970. *Explanation in the Behavioural Sciences*. Cambridge, UK: Cambridge Univ. Press.
- CALHOUN, C., GERTEIS, J., MOODY, J., PFAFF, S., & VIRK, I. (Eds.). 2002. *Contemporary Sociological Theory*. Oxford: Blackwell Publishing.
- CANTOR, G. 1895. Beiträge zur Begründung der transfiniten Mengenlehre. In: *Mathematische Annalen* (Volume 46:481-512 and 1897 Volume 49:207-246).
- CANTOR, G. 1962. *Gesammelte Abhandlungen Mathematischen und Philosophischen Inhalts*. Hildesheim: Oldenburg Verlag (1932).
- COLEMAN, J.S. 1964. Collective decisions. *Sociological Inquiry*, 34:166-181.
- COLEMAN J.S. 1990. *Foundations of Social Theory*. Cambridge, MA: Harvard Univ. Press.
- DURKHEIM, E. 1972. *Selected Writings*. Edited by A. Giddens. Cambridge University Press.
- ELSTER, J. 1982. The case for methodological individualism. *Theory and Society*, 11:453-482.

-
- FELGNER, U. (Ed.) 1979. *Mengenlehre*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- FRAENKEL, A., BAR-HILLEL, Y., LEVY, A. & VAN DALEN, D. 1973. *Foundations of Set Theory*. 2nd revised edition. Amsterdam: North Holland.
- FREGE, G. 1884. *Grundlagen der Arithmetik*. Breslau: Verlag M & H. Marcus (Unaltered reprint, 1934; Reclam Edition 2001).
- GECKELER, H. 1971. *Strukturelle Semantik und Wordfeldtheorie*. München: Fink.
- HABERMAS, 1971. *Theorie und Praxis, Sozialphilosophische Studien*. 4th revised edition. Berlin: Suhrkamp Taschenbuch.
- HEATH, J. 2015. Methodological Individualism. In: *The Stanford Encyclopedia of Philosophy* (Spring 2015 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/spr2015/entries/methodological-individualism/> (accessed on 28-05-2015).
- HILBERT, D. 1925. Über das Unendliche, In: *Mathematische Annalen*, Vol.95, 1925:161-190.
- HOMANS, G.C. 1970. The relevance of psychology to the explanation of social phenomena. In: Borger and Cioffi, 1970:313-329.
- HUMMELL, H.J. & Opp, K.-D. 1971. *Die Reduzierbarkeit von Soziologie auf Psychologie, Eine These, ihr Test und ihre theoretische Bedeutung*. Braunschweig: Friedrich Vieweg & Sohn.
- JELLINEK, G. 1966. *Allgemeine Staatslehre* (Dritte Auflage). Berlin: Verlag Dr. Max Gehlen.
- KOUWENHOVEN, A. 1965. *Vrijheid en Gelijkheid*. Kampen: J.H. Kok.
- LEVINE, D.M. 1971. *George Simmel, On Individuality and Social Forms*. London: George Allen & Unwin Ltd.
- LIST, C. & SPIEKERMANN, K. 2013. Methodological individualism and holism in political science. *American Political Science Review*, 107(4):629-643).
- LONGO, G. 2001. The mathematical continuum: from intuition to logic. Available from <ftp.di.ens.fr/pub/users/longo/PhilosophyAndCognition/the-continuum.pdf>
- LUKES, S. 1968. Methodological individualism reconsidered. *British Journal of Sociology*, 19(2):119-129.
- MEAD, G.H. 1945. *The Philosophy of the Act*. 2nd edition. Chicago: University of Chicago Press.
- MEAD, G.H. 1967. *Mind, Self, and Society, From a Standpoint of a social behaviorist*. Chicago: University of Chicago Press.
-

- MYRDAL, G. 1932. *Das politische Element in der Nationalökonomischen Doktrinbildung*. Stockholm: Juncker und Dünnhaupt Verlag.
- PLANCK, M. 1910. Die Stellung der neueren Physik zur mechanischen Naturanschauung (Vortrag gehalten am 23. September 1910 auf der 82. Versammlung Deutscher Naturforscher und Ärzte in Königsberg i. Pr.). In: Max Planck, 1973:52-68.
- PLANCK, M. 1973. *Vorträge und Erinnerungen*. 9th reprint of the 5th edition. Darmstadt: Wissenschaftliche Buchgesellschaft.
- POPPER, K. 1966. *The Open Society and its Enemies*, Vol. I & II, London: Routledge & Kegan Paul.
- REID, C. 1970. David Hilbert, New York: Springer.
- RITTER, J. 1971-2001 (Ed.). 2001. *Historisches Wörterbuch der Philosophie*. Volumes 1-12, Darmstadt: Wissenschaftliche Buchgesellschaft. Volume 11:., pp.204-206.
- RUSSELL, B. 1956. *The Principles of Mathematics*. London: George Allen & Unwin. (First published in 1903, second edition 1937, seventh edition 1956).
- RYAN, A. 1980. *The philosophy of the social sciences*. London: Macmillan.
- SCHMIDT, H. 1934. *Philosophisches Wörterbuch*. Leipzig: Alfred Kröner Verlag.
- SCHUTZ, H. 1932. *Der sinnhafte Aufbau der sozialen Welt*. Springer Verlag. Vienna: Julius Springer (Frankfurt am Main: Suhrkamp edition 1974).
- SIMMEL, G. 1908. *Soziologie, Untersuchungen über die Formen der Vergesellschaftung*. Berlin: Duncker und Humblot.
- SIMMEL, G. 1971. In: Levine, 1971.
- SKOLEM, Th. 1922. Einige Bemerkungen zur axiomatischen Begründung der Mengenlehre. In: Felgner, 1979, pp.57-72.
- SPANN, O. 1930. *Gesellschaftslehre*. 3rd revised edition. Leipzig: Verlag Quelle & Meyer.
- SPANN, O.1930a. *Types of Economic Theory*. London: George Allen & Unwin Ltd.
- SPENCER, H. 1968. *Reasons for Dissenting from the Philosophy of Comte and other Essays*. Berkeley: Glendessary Press.
- STANFORD Encyclopedia of Philosophy Archive. Spring 2011. In: *Callicles and Thrasymachus*. First published Wed Aug 11, 2004; substantive revision Thu Oct 27, 2011; [Accessed on 20-06-2015] (referred to as: Stanford, CT, 2011).

-
- STRAUSS, D.F.M. 1991. The Ontological Status of the principle of the excluded middle. In: *Philosophia Mathematica* II, 6(1):73-90.
- STRAUSS, D.F.M. 2006. *Reintegrating Social Theory*. Frankfurt am Main: Peter Lang
- STRAUSS, D.F.M. 2014. What is a Line? *Axiomathes*, 24:181-205
DOI 10.1007/s10516-013-9224-5.
- TRIER, J. 1973. Aufsätze und Vorträge zur Wortfeldtheorie. Edited by von Anthony van der Lee and Oskar Reichmann. The Hague: Mouton.
- UDEHN, L. 2002. 'The changing face of methodological individualism'. *Annual Review of Sociology*, 28:479-507.
- VAN MELSEN, A.G.M. 1975. Atomism. In: *Encyclopedia Britannica*, 15th edition, London, Volume 2:346-351.
- VON BERTALANFFY, L. 1968. *Organismic Psychology and Systems Theory*. Massachusetts: Clarke University Press.
- VON MISES, L. 1974. *Omnipotent Government. The Rise of the Total State and Total War*. Edited and with a Foreword by Bettina Bien Greaves. Indianapolis, Indiana (first edition 1944).
- VON WIESE, L. 1926. *Soziologie, Geschichte und Hauptprobleme*. Berlin: Walter de Gruyter.
- VON WIESE, L. 1959. *Philosophie und Soziologie*. Berlin: Duncker & Humblot.
- VON WIESE, L. 1966. *System der Allgemeinen Soziologie als Lehre von den sozialen prozessen und den sozialen Gebilden der Menschen (Beziehungslehre)*. Berlin: Duncker & Humblot.
- WANG, H. 1988: *Reflections on Gödel*. Cambridge, Massachusetts: MIT Press.
- WATKINS, J.W.N., 1952. Ideal Types and Historical Explanation. In: *The British Journal for the Philosophy of Science*, 3:22-43.
- WEBER, M. 1918. *Parlament und Regierung im neu geordneten Deutschland*. München, Leipzig: Duncker & Humblot.
- WEBER, M. 1922. *Economy and Society*. Eds. Guenther Roth and Claus Wittich. Berkeley: University of California Press (1968).
- WEBER, M. 1973. *Gesammelte Aufsätze zur Wissenschaftslehre*. 4th edition. Tübingen: J.C.B. Mohr.
- WEYL, H. 1921. Ueber die neue Grundlagenkrise der Mathematik, *Mathematische Zeitschrift*, Volume 10 (pp.39-79).
-

WEYL, H. 1970. David Hilbert and His Mathematical Work. In: Reid, 1970 (pp.243-285).

WOLF, K.H. (translator). 1950. *The Sociology of Georg Simmel*. Glencoe, Illinois: The Free Press.

YOURGRAU, P. 2005. *A World Without Time. The forgotten Legacy of Gödel and Einstein*. London: Penguin Books.

ZIEGENFUSS, W. 1956. *Handbuch der Soziologie*. Stuttgart: Ferdinand Enke.