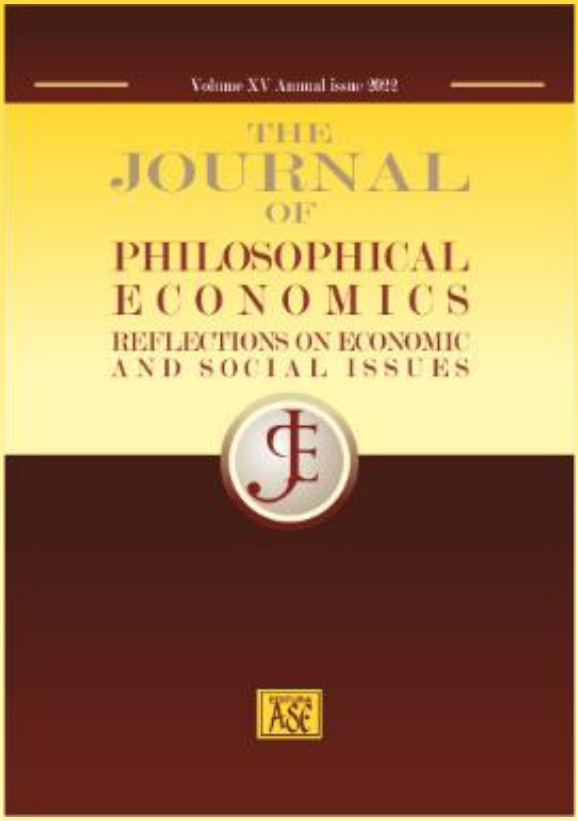
THE JOURNAL OF PHILOSOPHICAL ECONOMICS: REFLECTIONS ON ECONOMIC AND SOCIAL ISSUES
Volume XV Annual issue 2022
ISSN: 1844-8208
ISSN (print): 1843-2298

Paper format: 16.5x23.5 cm



Towards a unity of sense: a critical analysis of the concept of relation in methodological individualism and holism in economics

Giancarlo Ianulardo
Aldo Stella

EDITURA ASE

Giancarlo Ianulardo, Aldo Stella (2022), Towards a unity of sense: a critical analysis of the concept of relation in methodological individualism and holism in economics, *The Journal of Philosophical Economics: Reflections on Economic and Social Issues*, XV (1), 196-226

Towards a unity of sense: a critical analysis of the concept of relation in methodological individualism and holism in economics

Giancarlo Ianulardo
Aldo Stella

Abstract: In the social sciences and, in particular, in economics, the debate on the most adequate model of explanation of social phenomena has been centred around two models: Methodological Individualism and Holism. While Methodological Individualism claims to be the most rigorous attempt to explain social phenomena by reducing them to their ultimate components, Holism stresses the primacy of the social relation, outside of which individuals cannot be understood as analytical units. In the analysis, we will refer to the way the debate has influenced economics education too through the debate on microfoundations and the role of individual preferences. In synthesis, we aim to show that the two explanatory models, rather than being opposed, need to be integrated, because they need each other. But for this to be done, we need to reflect on the role that the concept of 'relation' plays in our understanding of the social structure and of the dynamics that characterises it. Indeed, the holistic systemic model, although privileging the relation, must acknowledge that the relation needs some ultimate elements (individuals), which in turn are prioritised by methodological individualism. But these entities, individuals, in order to be what they are, i.e., each a determinate identity, need each to be referred to other individuals, which are essential to determine the single determinate identity. This means that each individual needs the relation. To prevent a circular explanation, we claim that a correct methodology should understand both the individual and society in the light of the unity of sense that emerges at the end of the process, rather than focusing on its starting point.

Keywords: methodological Individualism, holism, systemism, relation, unity

Introduction

Modern economic science, in its mainstream approach, is characterised by a method of investigation that since Schumpeter has been called 'methodological individualism'. This method starts from the assumption that the explanation of social phenomena must be reduced ultimately to the actions, beliefs, and motivations of individuals in order to be adequately understood. In the social sciences literature, we can distinguish three dimensions of individualism: ontological (only individuals exist, while social bodies do not have an autonomous existence), epistemological (social phenomena can only be understood starting from the behaviour of individuals) and political (concerning the debate between individualistic and organic conceptions of society). In this article, however, we will focus on the debate between methodological individualism and holism only from an ontological and epistemological point of view. Our aim is to show that the concept of relation has not been sufficiently thematised by either method of inquiry and this undermines any attempt to construct a correct methodology of social sciences. We think that the concept of relation, as understood in these methodologies, is problematic and this is reflected in the limitations of both methodologies. Since our focus is on the philosophical concept of relation, our analysis extends to the different forms in which the relation is understood in the social sciences, such as, e.g., 'system', 'holism' or 'structure'. Therefore, a new conceptualisation of the concept of relation is needed to escape the circularity that both methods face. While we do not present in this article the full development of an alternative concept of relation, we indicate the direction that it should take. Our aim is to indicate a difficulty that has been unnoticed in the existing literature and the implications of it for the reconstruction of a different methodology of science.

We will start by internally reconstructing the salient features of the debate between methodological individualism, holism, and the systemic approach (here, holism and systemism are considered together given their opposition to methodological individualism, although as we will see, some authors have distinguished them), showing that, beyond some terminological claims, a 'pure' methodological individualism has never been formulated and we will explain

why this was the case. Then, we will show the theoretical gain brought to the methodological debate by the systemic approach, but also its limitations.

In synthesis, we aim to show that the two explanatory models, rather than being opposed, need to be *integrated*, because they need each other. But for this to be done, we need to reflect on the role that the concept of 'relation' plays in our understanding of the social structure and of the dynamics that characterises it. Indeed, the systemic (i.e., relational) model, although privileging the relation, must acknowledge that the *relation needs some ultimate elements* (individuals), which in turn are prioritised by methodological individualism. But these entities, individuals, in order to be what they are, i.e., each a determinate identity, each need the reference to other individuals, which are essential to determine the single determinate identity. This means that *each individual needs the relation*. As we shall see, the most sophisticated methodological individualists are well aware of the latter.

However, this relationship between the individual and the system, or between agent and structure, which has already been thematised by other scholars, is precisely what we consider to be *problematic*. Indeed, this relationship amounts to a *circle*: the relation presupposes the terms, which in turn must presuppose the relation. This is due to assuming the relation as a construct, i.e., the *mono-dyadic construct* in which *one* nexus binds *two* terms, thus hypostatising the relational nexus, which leads to understand the relation as a *status*. Instead, as we will show, the relation can only be intelligible if the entities (individuals) and society are understood in terms of the *unity of sense* that encompasses them, in which each abandons its pretence to provide an exhaustive explanation. Since we aim to reflect on the concept of relation in economics as a social science, in the next sections we do not aim to provide a systematic review of the literature on methodological individualism and holism, but we intend to focus on the role played by the concept of relation in each of the two methodologies, with particular reference to those authors who have focused on it.

Methodological individualism and neoclassical economics

In highlighting the distinctive features of neoclassical economics, Colander includes methodological individualism, adding: 'Someone must be doing the maximizing, and in neoclassical economics it was the individual. One starts with individual rationality, and the market translates that individual rationality into social rationality' (Colander 2000, p. 134).

The typical method of microeconomics textbooks, as noted by Basu (2008), starts from individual preferences, which in turn determine economic agents' utility functions. Thus, in the standard microfounded approach to economics, individual tastes, preferences, and desires are considered as the *prius*, the starting point of any subsequent economic analysis and explanation. Then, under some rationality assumptions, individuals maximise these utility functions. Individual agents' maximisation allows one to explain how market relations (prices and quantities of goods and services) are determined. From microeconomics one moves to macroeconomics, which makes it possible to explain phenomena such as, among others, unemployment, economic growth, public finance, budgetary policies, etc., starting always from a microeconomic foundation ('microfoundation').

Even if the term was introduced by Schumpeter in 1909 with the expression 'Der metodologische Individualismus' – influenced by Max Weber, according to whom any human action, even social, is 'the behaviour of one or more individual persons' (Weber 2019, p. 89) –, the concept of 'microfoundation', which represents the essence of methodological individualism, can already be found in the founding father of the Austrian School of Economics, Carl Menger. Indeed, Menger, by opposing the Historical School – in what was known as the Methodenstreit – claimed that the theoretical understanding of the origin and change of 'organic' social structures (i.e., those that emerge spontaneously) must be grounded on an 'atomistic' and 'causal-genetic' method of explanation. By this, he meant that social phenomena, which have emerged spontaneously, must be traced back to the forces of human nature acting individually. Indeed, as Menger maintains in his *Principles of Economics*:

> I have endeavored to reduce the complex phenomena of human economic activity to the simplest elements that can still be subjected to accurate

> observation, to apply to these elements the measure corresponding to their nature, and constantly adhering to this measure, to investigate the manner in which the more complex economic phenomena evolve from their elements according to definite principles. (1950, pp. 46-47)

One should note that Menger – one of the founding fathers of the marginalist approach – does not intend to provide a defence of methodological individualism from an ontological point of view, but an explanation of the emergence of social phenomena starting from that which he considers as basic elements, i.e., individuals.

Later, by developing and expanding the Mengerian perspective, Hayek (1979) defines this method as 'compositional' or 'synthetic', since it starts from the actions of individuals, instead of the complex phenomenon, already constituted. By resuming the teachings of the Scottish Enlightenment scholars, Hayek adds to it the *unintentional* nature of social phenomena, which comes out of the intentional actions of individual agents. Although motivated by specific intentions, individuals bring about a social phenomenon that has not been planned by any individual agent.

The ontological nature of individualism becomes here more evident, since it is not only a matter of explaining the emergence of complex social phenomena, but also the emergence of the ontological status of the social structure that is denied to society. This has led some authors such as Blaug to speak, regarding this philosophical position, of ontological individualism, which can be expressed in the 'proposition that individuals create all social institutions and hence that collective phenomena are simply hypothetical abstractions derived from the decisions of real individuals' (Blaug 1992, p. 45).

This version is put forward in particular by philosophers of science in the Popperian tradition, such as Watkins, according to whom only individuals exist while societies do not exist as independent entities. This position has been defined by Zwirn (2007) as 'methodological atomism', even if this atomism must be distinguished from the *genuine methodological atomism*, maintained by Schumpeter, who, as we have seen, does not deny the existence of society, but thinks that it can only be explained starting from the interaction among individuals.

It must be noted that both visions of methodological individualism, while differing in the ontological consideration of social structure, are characterised by their rejection that society is more than the sum of the individuals that compose it. Furthermore, both deny that society is governed by autonomous laws that cannot be derived from the interactions among individuals, i.e., they cannot accept that there are social phenomena that cannot be explained and justified starting from individuals. When the next step is taken, which gives an autonomous existence to society, which can no longer be reduced (or brought back) to the sum of the individual components both in epistemological and ontological terms, methodological individualism gives way to *methodological holism*.

Methodological reductionism, consisting in reducing the explanation of social phenomena to actions, beliefs, and behaviour of individuals, has often been associated with psychologism, which in turn can be reduced to the biological dimension, then the chemical and, finally, physical. Now, in economic analysis, reductionism has usually stopped at the psychological dimension, since (neoclassical) economists have been content with reducing the social to the individual level. But, more recently, as we shall see, the process of reduction has gone further in economics, too.

From methodological atomism to systemism: a critical analysis

While methodological individualism purports to explain social phenomena in terms of the beliefs, desires, and actions of individuals, methodological holism, instead claims that individuals' beliefs, desires, and actions must be explained within the social framework in which they arise. Different versions of these methodologies exist, and sometimes 'weak' or 'strong' versions of either approach are proposed according to whether the explanation *can* or *must* be provided starting from the individual or society. In particular, in a recent review of the debate, Zahle (2016) distinguishes between a 'strong' methodological holism according to which holist explanations alone should be offered in social sciences, meaning they are 'indispensable', and a 'moderate' version, according to which, in some cases, holist explanations should be advanced, while in other cases individualist explanations should be provided. Since our focus is on the concept

of relation in economics and, in particular, the relation between agent and structure, we will not focus on the various internal differences among these approaches, but only on their salient features. And according to Zahle, the key feature of a purely holist explanation is that both the 'explanans and the explanandum are expressed in terms of social phenomena' (Zahle 2016).

As pointed out by Gibril, holism 'is based on the idea that society cannot be reduced solely to its constituent parts – i.e., individuals. Individuals are the product of society, history, economic inequalities, social status, and so on. Therefore, they should be treated as objects that can only be perceived and understood from within. They should be explained through causal mechanisms that go beyond the individuals themselves' (Gibril 2021, p. 167). As proponents of this method, the author cites Durkheim and Marx, but neo-institutionalism could also be added to the list [1].

The implications of adopting a holist methodology of social inquiry are double according to Bhargava:

> First, that a reference to a social entity is inescapable even when social facts are explained in terms of individual actions, because of the necessary presence of a social ingredient in all individual intentions and actions. Second, a reference to individual actions is not even necessary when social facts are explained or understood in terms of social practices. (1998, p. 358)

But beyond the various disputes and differences, there are some points where agreement, according to Bhargava, is undeniable: 'Holists do not believe in supra-individual, social substances. They emphasize *social relations* and their *undeniable constraining effects*. Individualists cannot fault these claims. Individualists, likewise, highlight human agency and show that societies consist in or are a result of people acting' (Bhargava 1998, p. 360, italics added). This is precisely the aspect of holism we are interested in in this article and that deserves further investigation, since the philosophical reflection on the concept of relation has not been thematised in the existing literature on the individualism vs holism debate. In particular, according to Bhargava, holism must be seen as advocating the emergence of supervenient 'social' properties upon individuals' physical and mental properties and these supervenient properties have a 'distinctive causal efficacy' (p. 359).

Thus, according to holism, the individual in a society acquires some additional properties that he (or she) would not possess if considered isolated from society. In economics, this perspective is shared by advocates of *social economics* such as Davis (2015). This author claims that while, according to the mainstream neoclassical economics, the individual is explained 'internally' in terms of his tastes and preferences, social economics instead provides an 'external' explanation of the individuals and their behaviour. Thus, the latter sees 'social life as intrinsic to our understanding of individuals as social beings' (Davis 2015, p. 116). This perspective is articulated through an interesting analysis of the individual's multiple selves that emerge through the different interactions that the individual establishes with different sectors of society. Here we are not following all ramifications of this analysis of the individual, but since our focus is on the concept of relation in economics, we observe that 'social economics' grasps the crucial change that the individual undergoes when he interacts with society, so that an atomistic explanation that sees the individual as a monad fails to provide a satisfactory explanation of the individual himself, since it misses the effect that the relation with the society has on individual tastes, beliefs and preferences.

In this respect, Bunge (2000) highlights the inherent transformation that the elements (i.e., individuals, agents) of a system (structure) undergo when they are considered together, and he proposes to overcome individualism and holism by resorting to an alternative worldview: systemism.

Bunge maintains that, while 'individualists' acknowledge social constraints, they cannot analyse the latter, since they are considered as exogenous, and they treat all aggregates (families, tribes, business firms, schools etc.) as mere collections of individuals. Thus, according to Bunge,

> individualists miss one of the most important and intriguing of all kinds of events in society and nature: the emergence of novelty or, more precisely, the emergence of things with systemic properties, that is, properties that their components or their precursors lack. (2000, p. 148)

Instead, according to him, there are no isolated elements, as it happens in mathematics where 'to be is to be a component of at least one mathematical system' (p. 148).

Bunge's general philosophical perspective is summarised in two statements: '1) Everything, whether concrete or abstract, is a system or an actual or potential component of a system; 2) systems have systemic (emergent) features that their components lack, whence […] all problems should be approached in a systemic rather than in a sectoral fashion' (p.149), and the methodological approach in science should be consequential with this ontological vision, indeed, 'all problems should be approached in a systemic rather than in a sectoral fashion' (ibid.).

This is especially relevant since Bunge criticises methodological individualism for 'overlooking' the set of connections (bonds) among individuals, i.e., their structure. Social sciences, instead, should study not just the social context, but also social bonds, 'for bonds are what hold social systems together' (p. 155). This is what, according to Bunge, systemism does by accounting for both agency and structure, components of a system and systems. One might note that methodological individualists too are concerned with the explanation of the emergence of social bonds, such as formal and informal institutions, and Bunge acknowledges this when he says that 'the emergence, maintenance, repair, or dismantling of any social system can ultimately be explained only in terms of individual preferences, decisions and actions. But in turn, these individual events are largely determined by social context' (p. 154). From this, he concludes saying that 'agency and structure are only two sides of the same coin' (ibid.). This is the crucial tenet of *systemism*, as well as of any systemic consideration of science, and he proposes this view to overcome the strictures of both individualism and holism. However, to anticipate the critique that we will develop in the next sections, this is precisely what is problematic in the systemic view, since if 'agency' and 'structure', or the components of a system and the system, are seen as two entities (or determinate identities), then this leads to the circle of presupposition. In Bunge's example, it is true that individual preferences are determined by the social context, but so is the latter by the former. And, this would make any explanation circular.

Bunge has centred his analysis on the notion of relation (system) and, in particular, the relation between agent and structure claiming that according to *systemism* 'everything is either a system or a component of a system, and every system has peculiar (emergent) properties that its components lack' (p. 147). One might argue that this interpretation is in line with the way in which many holists

would see their methodological approach, and Bunge is refraining from calling it 'holism', because it can be confused with the 'obsolete holism of Comte, Marx, Durkheim and Parsons' (ibid.) who have hypostatised some imaginary collective entities as 'collective memory, national spirit and nations that allegedly hover above individuals' (ibid.). In the present study, we want to focus precisely on this version of holism, which Bunge would call *systemism*, because it allows to focus our attention on the key concept of relation, which is not further investigated by Bunge, nor by other authors. Thus, we shall not distinguish between holism and systemism, leaving aside from the discussion the hypostatisation of collective entities that Bunge ascribes to holism [2], although Bunge too comes close to this hypostatisation when he maintains that 'social systems are concrete things' (p. 155).

Before doing this, however, we want to show that, contrary to Bunge's claim that methodological individualists have neglected the systemic dimension, many methodological individualists in economics were well aware of the emergence of new properties. In other words, a 'pure' methodological individualism has never existed, and we shall discuss next why this was the case. Bunge acknowledges that 'few social scientists practiced' (p. 149) consistent individualism or holism, but this is viewed more as an inconsistency than an impossibility, which, instead, we think it is the case.

The concept of relation in methodological individualism or why individualism needs reference to the other

Since we aim to investigate the role played by the concept of relation in the social field and, more specifically, in economics, we think that it is now important to reflect on Hodgson's (2007) contribution to the debate. Indeed, Hodgson has directly tackled the conceptual premises of methodological individualism in economics, criticising it from a neo-institutionalist point of view. Hodgson's analysis seems to be particularly relevant to us, because it is one of the few contributions from economists focusing on the concept of relation, which is considered as the discriminating factor for a correct economic explanation.

Hodgson notes that the debate on methodological individualism is undermined by a fundamental misunderstanding, which has often been overlooked in economics. Indeed, according to 'whether methodological individualism means one or other of the following: (a) social phenomena should be explained entirely in terms of individuals *alone*; or (b) social phenomena should be explained in terms of individuals *plus* relations between individuals' (Hodgson 2007, p. 220), completely different implications follow for economic analysis. In particular, Hodgson observes that an explanation in terms of individuals only has never been provided in economics and shows that even the most important representatives of methodological individualism such as Schumpeter, Mises and Hayek were well aware of the transformative nature of individuals' interactions.

For example, Hayek, who is often considered as one of the leading representatives of methodological individualism, maintains that:

> The overall order of actions in a group is in two respects more than the totality of regularities observable in the actions of the individuals and cannot be wholly reduced to them. It is so not only in the trivial sense in which the whole is more than the mere sum of its parts but presupposes also that these elements are related to each other in a particular manner. It is more also because the existence of those relations which are essential for the existence of the whole cannot be accounted for wholly by the interaction of the parts but only by their interaction with an outside world both of the individual parts and the whole. (1967, pp. 70-71)

First of all, this shows how 'pure' reductionism was problematic also according to a methodological individualist as Hayek, but, importantly, the quote from Hayek also highlights the 'essential' nature of relations for the existence of the whole [3], which cannot be reduced to the single components that constitute it. Concerning the 'whole-parts' relation and the relation between the components of the (social) whole and 'external world' regarding the whole, we should observe that for Hayek, as Hodgson notes, 'society consists not merely of individuals, but also of interactions between individuals, plus interactions between individuals and other aspects of their environment including, presumably, both the natural world and other socio-economic systems' (2007, p. 215).

This relation, understood as an interaction between individuals in the social space leading to the emergence of a social order, has been stressed recently also by authors who support methodological individualism, such as Boettke and Candela, who maintain that 'the fundamental question of the social sciences is the following: what is the relationship between individuals, collective entities, and social order?' (2015, p. 5).

According to these authors, the aim of an analysis grounded on methodological individualism does not consist in denying the existence of collective entities or the emergence of social institutions such as money, language, law, but in tracing back these phenomena to the individual action, making explicit and intelligible the intentional ('purposive') nature and meaning of individual actions.

Indeed, Boettke and Candela reject methodological atomism and vindicate the 'institutional filter' (2015, p. 7) within which economic agents' self-interested behaviour leads to the emergence of a spontaneous market order, not planned by individuals. However, if individuals have a natural propensity to commerce and exchange, this means that they are in relation from the outset.

Moreover, Boettke and Candela acknowledge that a transformation occurs in the individual himself, as a result of the social interaction. Indeed, they state:

> Trade indirectly promotes peace through the exchange of customs, languages, and ideas. By engaging in exchange, individuals who may originally have been strangers have a greater incentive not only to tolerate each other's customs and culture, but also adopt those that, on the margin, signal greater trustworthiness and good-will toward each other to reinforce trade relations. (2015, p. 8)

This exchange relationship, which since Whately (1832) was named 'catallactics' [4], reveals not only the 'exchange' activity, but, as referred by Hayek, also the acceptance of a stranger within a society. Thus, the stranger is no longer an enemy but becomes a friend of the society. This yields a public good, i.e., peace, which benefits the entire society (thus, the existence of exchange produces a positive externality).

The point we would like to make is the following: if, as Boettke and Candela maintain, by following the lead of Adam Smith and other classical economists,

individuals have a natural propensity to exchange and if, on the other hand, exchange produces 'greater incentives', by modifying the behaviour, uses and habits, knowledge and, ultimately, the actions of individuals, then it is misleading to speak of an individual existing outside the exchange that can serve as the ultimate unit of the analysis.

The exchange occurs within a framework of formal or informal rules that are shared, a language that allows communication, a system of property rights that are in some way guaranteed or recognized. In other words, exchange presupposes structured relations between individuals and between individuals and social institutions.

As Hayek has shown in various of his writings (1937, 1945), the market produces information, which economic agents exploit in their investment and consumption decisions. As investigated by Mises (1949) and Kirzner (1973), entrepreneurial activity, understood as the activity of any economic agent, is grounded precisely on the capacity of individual agents to grasp these profit opportunities that emerge out of market relations and to exploit them. This will in turn generate new information in the market in an endless process. Thus, as correctly pointed out by Hodgson, 'cognition is a social as well as an individual process. Individual choice is impossible without these institutions and interactions' (2007, p. 218).

We think that this aspect has been correctly highlighted by the economist Kenneth Arrow, who, investigating the role played by 'social knowledge' and the formation mechanism of market prices in general equilibrium theory, maintains that 'individual behavior is always mediated by social relations. These are as much a part of the description of reality as is individual behavior' (1994, p. 5).

In fact, Arrow notes that the base model used by economists, i.e., the general competitive equilibrium model, seems to refer to the decisions of individuals and firms that assume prices as *given*. Indeed, individuals, as consumers, demand goods and services under a budget constraint and, as producers, supply labour under a time constraint; on the other hand, firms supply goods and services under the constraint that outputs are produced starting from the inputs of the productive process.

These decisions are taken based on preferences, tastes, risk attitudes, beliefs system, expectations, etc., which economists consider as a '*prius*' of the analysis

and thus they cannot be further investigated. These factors are considered as a property of the individual. However, Arrow observes that even admitting this, in the model of general equilibrium, there is an element which is not individual (in the sense previously discussed, i.e., as a property of the individual): the vector of market prices that individuals and firms encounter in their relations.

These prices, indeed, 'are determined on (not by) social institutions known as markets, which equate supply and demand' (Arrow 1994, p. 4). In other words, even assuming the exogeneity of preferences, tastes, expectations, and knowledge, which is far from being accepted by every economist (in particular, economists who adopt a holistic vision would deny this), in the general equilibrium model, decisions depend on a variable that is endogenous to the system: market prices. Indeed, Arrow concludes saying that 'the failure to give an individualistic explanation of price formation has proved to be surprisingly hard to cure' (1994, p. 4). Even in game theory, where players start from a defined set of strategies and payoffs, as Arrow observes, the outcome depends on the expectations and the 'rules of the game', but these rules are social and are 'constructed […] by a partly social process' (1994, p. 5).

The same applies, according to Arrow, to technical knowledge. Indeed, this is acquired either through the observation of nature or through other individuals (such as intentional learning or through observation). However, it is transmitted through various channels (educational systems, books, apprenticeship, but also the production of a new good or the introduction of a new service, etc.) which are feasible only if there are institutions which make this knowledge possible. This produces externalities, which benefit the entire society, and which would not be possible without the social structure that serves as a support.

But it is precisely within this structure that economic agents take their decisions and make their choices, which thus can no longer be regarded as autonomous and independent from the social structure. As an example, one may think of the role played by patent laws, which, depending on the level of protection that they provide for intellectual property in different institutional contexts, generate different incentives to economic agents.

Co-essentiality of individuals and structures in Hodgson's institutional approach

After showing that in the history of thought there have been no 'pure' methodological individualists and, if this had occurred, this would not have produced valid economic explanations, Hodgson (2007) investigates the second meaning of methodological individualism, i.e., the one referring to the 'relations among individuals', claiming that this is not incorrect, but that we can no longer speak of it as a form of 'individualism'.

Indeed, regarding sociological theories, he maintains that these 'are typically defined as sets of interactive relations between individuals' (2007, p. 220) and these include roles or positions that are taken by individuals, as, for example, being a prime minister or a teacher or policeman. When an individual plays a social role, he no longer contributes to society with his personal dispositions, but 'acquires additional qualities or powers associated with that position, by virtue of relations with others' (2007, p. 220).

Now, Hodgson, a neo-institutionalist, adds that 'institutions may be treated as a special case of social structure, involving systems of widely observed rules' (2007, p. 220). This way, he links his position to the philosophical literature on emerging properties, according to which new properties emerge from the interaction among entities that are not owned by entities in isolation.

Thus, by applying this theory to methodological individualism in its 'second' meaning, we obtain that 'the admission of 'interactive relations between individuals' in the definition of methodological individualism opens the door to properties that are emergent, and not the properties of individuals, taken severally' (2007, p. 220). Therefore, Hodgson concludes that if social relations are equivalent to relations among individuals, the abovementioned '*b*' thesis on methodological individualism is equivalent to the thesis that Hodgson names '*b*≠', i.e., 'social phenomena should be explained in terms of individuals and social structures' (2007, p. 220).

He accepts this definition, but he adds that, in this sense, there is no reason why this position should be called 'methodological individualism' rather than 'methodological structuralism' or 'methodological institutionalism' (2007, p. 221).

He summarises his position thus: 'All such descriptions are misleading. We *always* have to start from structures *and* individuals. There is no other viable explanatory strategy' (2007, p. 221).

However, according to Hodgson, it would be a mistake to think that social structures imply something more than the relations among individuals, and he shares the individualists' position when he states that 'if all individuals disappeared, then all structures would disappear as well' (2007, p. 221). According to him, this implies only the rejection of the reification of society, not that the society (i.e., the interaction among individuals) does not give rise to emerging properties. Indeed, he maintains that

> Structures and isolated individuals are different things because interacting and isolated individuals are different things. By definition, isolated individuals have no causal interaction with other individuals. Structures depend on interacting individuals and would cease to exist if all the individuals or all their interactions disappeared. (2007, p. 221)

Sophisticated methodological individualists, as Hodgson acknowledges, are aware that the individual is a social being, being born in a world of pre-existing structures and having to relate to other individuals (in fact, since the time of Aristotle philosophical thought had matured the awareness of man as a 'political animal', '*zōón politikón*'). The claim of methodological individualism that structures (i.e., relations) cannot exist without individuals, while individuals can do without structures, so much so that isolated individuals exist, is criticised by Hodgson arguing that it is not only a mistake to reify a society, but it is equally wrong to assume individuals as if they were entities which are not *structurally* related.

The objection that one can address to Hodgson's argument is that, if the individual cannot be considered as an abstract entity, at the same time, also the relation (*nexus*) between individuals cannot be reified, so that this relation should not be understood as a *medium*, but it is to be understood in the light of this unity of sense that is reflected in the dialectic that is established between the individual and society, as we shall explain in more detail next.

To anticipate this theme, we can say that if, as Hodgson acknowledges, the individuals within a structure are 'different things' from the same individuals

'severally', then a problem emerges concerning the identity of the individual and the relation existing between the two types of individuals ('inside' and 'outside' the structure). But this – as it is well-known since Plato's *Parmenides* (1966) in which the argument later defined as 'third man' was first presented – leads to a *regressus in indefinitum*. But to take this further step, which is not taken by Hodgson, nor we think, by any other in the debate between methodological individualism, holism, and systemism, one needs to radically question the *relational construct*, as constituted in (social) science explanations.

Indeed, we cannot stop at the claim that the isolated individual should be removed from the *explanantia* in a scientific explanation and substituted with an individual-in-relation, considered as the true *explanans*. Indeed, the individual-in-relation does not exist outside the structure (or institution, in the context of Hodgson's analysis) and the latter, in turn, does not exist without the individuals, as Hodgson himself acknowledges, so that the terms 'agent' and 'structure' (or 'individual' and 'system/society') constitute nothing more than a vicious circle, if one intends to start from the one to explain the other.

Theoretical limitations of the reductionist model

We have seen in the previous sections that the reductionist program of methodological individualism has not been pursued to the full and cannot be pursued to its extreme consequences even within the neoclassical school. Now, we aim to show that this is a theoretical impossibility, and, in order to do so, we need to reflect on the basic terms at stake: entity and system (or agent and structure) in the light of the *concept of relation*.

Indeed, any element of the system, i.e., any entity, is posited *in the system* because it is *in relation* to any other element. As observed by Spinoza, *'determinatio est negatio*', i.e., 'a determination is a negation' (2016, p. 407), that is, each determination is such because it denies every other. This concept, which is of fundamental importance, was taken up by Hegel himself, in his *Science of Logic*, in which he has shown that every determinate identity rests on its own difference. Indeed, by referring to Spinoza, he claims: 'Determinateness is negation posited as affirmative and is the proposition of Spinoza: *omnis*

determinatio est negatio. This proposition is infinitely important' (1969, p. 113). And soon after, Hegel drawing the implications of Spinoza's proposition adds:

> The substantiality of individuals cannot persist in the face of that proposition. The individual is a relation-to-self through its setting limits to everything else; but these limits are thereby also limits of itself, relations to an other, it does not possess its determinate being within itself. (1969, pp. 113-114)

The intrinsically relational structure of the determinate identity is also highlighted in Heidegger's famous *Identity and Difference*:

> The more fitting formula for the principle of identity "A = A" would accordingly mean not only that every A is itself the same; but rather that every A is itself the same with itself. Sameness implies the relation of 'with', that is, a mediation, a connection, a synthesis: a unification into a unity. This is why throughout the history of Western thought, identity appears as unity. But that unity is by no means stale emptiness of that which, in itself without relation, persists in monotony. (1969, pp. 24-25)

This ontological conception of the intrinsically relational nature of the determinate identity has the necessary consequence that the components of the system are mutually bound, and precisely for this reason they constitute a system. Since these components of the system are reciprocally bound among them, they constitute, indeed, a system. Therefore, relations among entities can also be defined as *external*, in the sense that, at first, they exist *between* an entity and another entity.

If we focus on the individual entity, considered as isolated, e.g., the individual atomistically understood, by assuming that it is independent from the relation to other entities, it is possible to observe that it is analysable, so that it too is constituted *in se* by relations. We have previously seen, for example, that knowledge and social incentives are social phenomena. Relations that are *external* to the entity can be defined as *inter-objectual*, while those *internal* to it can be defined as *intra-objectual*.

However, the crucial point that must be stressed is this: without *relating itself* to another entity (or individual being), no entity can be constituted as such.

Without its relation to another entity (i.e., individual), indeed, no entity can be constituted since any entity represents a determinate (de-*limited*) identity.

The *limit*, therefore, is what circumscribes the determinate identity and, if, from a certain point of view, it isolates it from any other identity, from another point of view, it refers it to the other from it. The limit, in fact, has two inseparable faces, one looking towards what is limited and the other looking towards what is limiting. This means that the determined identity arises only in relation to the difference.

This amounts to saying: the difference (i.e., the *other* individual) is not only external to the individual, but, since it is essential to its constitution as an individual, it cannot be internal and, therefore, must be considered as *intrinsic* and constitutive of its identity. If the individual, atomistically understood, is analysed, a double abstraction is produced. The *first* abstraction consists in the fact that the individual is considered regardless of the relations that bind him to other individuals and, therefore, to society. The *second* abstraction, on the other hand, is linked to the fact that, by means of the analytical procedure, the internal components of the individual are obtained, but not all components. In fact, this analytical method disregards the *difference* from it, which, as we have seen, is *present in it* (i.e., in the individual entity) precisely because it is essential to it. Abstracting from this aspect precludes the possibility of grasping the influence that that difference exerts on the individual entity and its components, which are analytically detected.

Some examples could be used to clarify this. Consider the theme of the individual's preferences, which are considered the *prius* of economic analysis. Indeed, if we consider a modern microeconomic textbook as Muñoz-García (2017), it starts with a discussion of preferences and how they are 'used' in the analysis to determine the optimal consumption decision. Indeed, the preference-based approach 'explores how the individual uses his preferences to choose an element (or elements) from a set of alternatives, X' (p. 2). Starting from this, some further behavioural assumptions are imposed as completeness and transitivity. But the point that we want to highlight here is that individual preferences are treated as exogenous as well as the set of alternatives. Other textbooks at the undergraduate level, such as Varian (2016), or at the graduate level, such as MasColell et al. (1995), follow a similar pattern. Indeed, according

to the latter 'the analysis of consumer behaviour begins by specifying the consumer's preferences over the commodity bundle in the consumption set' (p. 41). Some authors, such as Hirshleifer et al. (2005), at least mention the problem of the 'sources of preferences', but this crucial theme is explained away by referring to extra-economic sources as physical aspects, claiming that

> On the most fundamental level, human beings resemble other animals who seek (and so can be said to have preferences for) survival and comfort. We like to keep our skins intact, our body parts connected up, and our blood temperatures close to 98.6◦F. Physical considerations such as these broadly explain human desires for food, shelter, and protection against injury. (2005, pp. 86-87)

Although the authors admit that 'it is not immediately clear how evolutionary considerations translate into specific likes or dislikes for three-piece suits or Levi's, pizza or sushi, split-level houses or mobile homes. Cultural and accidental elements are also involved' (Hirshleifer et al. 2005, p. 87). Despite being aware of the problem of the origin of preferences, which is absent in many other textbooks, this is only mentioned *en passant* and, in any case, it is left out of the economic analysis that is developed in the book. But all factors discussed by the authors, from the physical to the psychological and cultural considerations, would open the door to many attempts at endogenizing individual preferences, starting from the relation of the individual with his own internal and external difference.

Instead, it is clear from our analysis that preferences are not solely dependent on the individual, that is, they are not only a function of the individual, but they also depend on the presence of the other in it. Precisely for this reason, preferences arise already influenced by this presence, which, it might even be said, tends to evoke and orient the same individual preferences. Thus, they cannot be considered as the starting point of microeconomic analysis (and micro-founded macroeconomics).

The *other*, which we are referring to here, defined as being within the individual, is, first of all, another from an ontological point of view, because it intrinsically constitutes the being of the individual. However, this other ontological also translates at the *psychological* level: what Freud calls *unconscious*, in fact, is

precisely the other that the self carries within itself and with which it must know how to enter into dialogue. If the self does not learn to dialogue with the other within, it will never succeed in establishing a good dialogue with the other outside. Precisely, this ontological and psychological difference must also be taken into account in the economic sphere, because only in this way it is possible to explain preferences, tastes, motivations, and choices that are made by the individual but are influenced by both the external and the internal other. Despite being unaware of these aspects, they contribute to generating the self's own inclinations.

These examples show that the aim of a scientific explanation is to analyse the relations, internal and external, of an entity to make explicit the ultimate components, to grasp those non-structured entities, i.e., simple entities, which are the starting point for an explanation of the structure (or, system).

However, this reductionist program has some limits, which we have seen in the secular dispute on methodological individualism. They are rooted on some basic assumptions, which we would like to make explicit in what follows.

First of all, the reductionist process, aiming to attain the ultimate constituents of social structure, should not stop at individual preferences considered as prius, but more consistently should then investigate the psychological genesis of these preferences; then, from this, it should move to the biological dimension and, subsequently, to the chemical and, finally, to the physical level. In the end, the classical 'mind-body dualism', which has been the subject matter of many disputes in philosophy, has its origin in the assumption that the individual (which originally indicated a non-divided entity) can be decomposed into two distinct entities, mind and body, which would then become two new objects of research.

This may probably explain why part of the current research in economics from Simon to Kahneman and Tversky has promoted the psychological approach to the point of proposing, recently, a new stream that is called 'neuroeconomics' [5]. Here we want to stress that this approach, despite pretending to be critical of the neoclassical method, in reality, pushes its reductionism one step further, attaining some form of eliminative physicalism [6].

However, the point is that even in physics scholars are still debating on the ultimate constituents of matter. Atom's decomposition has given rise to protons, neutrons, and electrons; these have been decomposed into other particles, ending with quarks and, finally, strings. But not even the latter (quarks and strings) can be considered as simple, because quarks have some specific properties (the so-called 'colours') that highlight their differences, and strings – to express it in simple terms – can be considered as 'vibration of structure'.

This shows the difficulty of grasping the simple: if we start from something that is extended, then it is difficult to move to the *unextended* through a 'physical journey', i.e., through successive analyses.

Besides this practical difficulty, one should then ask what remains of a social science when radical reductionism leads to materialistic monism. The reductionist analysis here goes from the social to the physical, not because physics has determined the ultimate simple constituents, but because one assumes (i.e., takes for granted without further effective verification) that in physics one can find these ultimate elements. In other words, one proceeds *as if* the latter should exist, and one looks inside the matter to discover the place where they can be found.

Another problematic aspect of reductionism consists in the assumption that, after having decomposed the entity (and the same could apply to the decomposition of the structure or system) into its simplest components, it is then possible to reobtain it by recomposing its constitutive elements.

Here too, an implicit assumption is at work, i.e., that isolated components, which are independent from their relation to other components, do not undergo any change or alteration after having entered into a relation. We have seen that in the social domain, even methodological individualists were aware of the feedback effect of structure on the individual, and how the social structure, constituted by individuals, generates, in turn, incentives, rules, norms, prices and other social variables that affect the behaviour of the individual.

As a consequence of this analysis, the fundamental limit of reductionism emerges since it is grasped at the *ontological* level, i.e., going beyond the methodological and epistemological level. Indeed, if any entity is constituted by its internal and external relations, it amounts to a system which is represented

by its elements. But each element is, at the same time, both an entity and a system, and so on to infinity.

This, however, does not allow an ontology to be configured indicating the entities belonging to it. But if one intends to proceed in this direction and identify the various levels in which it is organised and structured, then one should each time *either* abstract from the unitary nature of the entity, to enhance its structural dimension (i.e., its internal relations), *as if* the entity were not a unity, and this would amount to an ontology of the 'complex' or 'structures'; *or*, conversely, one should abstract from the structural dimension, as if the entity were not a structure, to enhance the identity of the entity, and this would amount to an ontology of 'elementary components' or an ontology of the 'simple'. But each of these two approaches will only be partial and will rely on some fundamental assumptions which necessarily make their position only 'relative'. This notwithstanding, these assumptions are necessary to be able to think about both the entity and the system. Indeed, only by assuming something as an entity, e.g., the individual, it is possible to define the system that includes it and, vice versa, only by assuming something as a system, it is possible to define the elements that compose it.

It thus follows from the foregoing that the entity and the system (and, at the methodological level, individualism and holism) must not be viewed as in opposition to each other, i.e., as mutually exclusive, but must be considered together, since each entity is at the same time also a system (given its being constituted by internal relations) and each system is also an entity (given its unitary nature as a system, inscribed in a wider system that includes it).

Beyond methodological individualism and holism: a critique of reductionism and of the systemic model

The analysis carried out so far, focusing on the concepts of entity and system, has allowed us to grasp the implicit assumptions and limitations of the reductionist approach of methodological individualism. On the other hand, as seen above, institutionalist approaches in economics and, more generally, systemic approaches in science have grasped the limitations of methodological

reductionism and shown that an adequate understanding of the individual himself requires that the latter be included in the social structure.

The systemic model has, in fact, had the merit of enhancing emerging properties, as seen in Hodgson's institutionalist analysis, which in the reductionist model could not emerge. Now, what we are interested in discussing here is that the systemic conception, proposed by the supporters of the institutionalist approach, rather than being opposed to the reductionism of methodological individualism, must complement it. But this cannot happen without an analysis of the concept of 'relation', i.e., the bond (*nexus*) that binds the components of the system.

Indeed, the systemic model assigns primacy to the relation existing between the terms, which are in turn given priority in the reductionist model. However, we should note that there are no terms without relation, nor relation without its terms. As seen above, the determinate identity itself is constituted only by virtue of the *internal* and *external* relations between entities. On the other hand, we should also note that a system necessarily requires the terms that compose it. If we stop at this preliminary level of investigation, by granting primacy to the relation, *the systemic model does not represent an answer to the inadequcies of methodological individualism*, *but amounts to nothing else than the vicious circle of presupposing*.

If methodological individualism, with its reductionism, led to psychologism and, then, ultimately, to physicalism, in the pretence of finding an ultimate element which could no further be decomposed, the systemic model, instead, leads to a *functionalist conception*, according to which the terms of a relation apply only to the function that they perform within the system. Not surprisingly, institutionalist social theories, as we saw above, emphasise the 'role' played by an individual in a specific institutional context. This approach, therefore, tends to favour not the *element* of the system, but the *relations* between the elements, which must be measured as accurately as possible, using highly sophisticated computational methods to this aim.

This is reflected in some recent approaches in 'computational economics' which, in its applications to the economy and to economic agents' behaviour, uses the most sophisticated tools available in information technology. In particular, 'Agent-based computational economics' (ACE) is a field in computational

economics that studies economic processes understood as dynamic systems of agents interacting in space and time. It considers economics as an *adaptive complex system*. As Page, a leading representative of this approach, claims in an entry on ACE in *The New Palgrave Dictionary of Economics*, 'agent-based models consist not of real people but of computational objects that interact according to rules' (2018, p. 107).

Contrary to the reductionism of methodological individualism, these models are characterised by the assumption of agents being embedded in interactive structures: 'The four main features of agent-based models [i.e., learning, networks, externalities, and heterogeneity] are diverse agents, situated in an interaction structure, whose actions create interactive effects (externalities), which Agent-Based Models adapt, evolve or learn, each contribute to the level of complexity a model produce' (2018, pp. 111-112). The specific nature of the individual, here, gives way to the interactive dimension which contributes to and is defined by the complexity of the system, i.e., the relations between the components of the system.

These different perspectives, some emphasising the individualist approach, while others the systemic dimension, reveal the partiality of these visions. Indeed, if the reductionist model assigns primacy to the *elements*, downplaying the *relations* that bind them, the systemic model, instead, assigns priority to the *relations*, downplaying the *elements*, which are of interest only for their interactive aspect.

Although in different forms, both approaches reveal a form of reductionism that tends to undervalue, in turn, the *element* or the *structure*. However, what we want to emphasise strongly is that this is inevitable, at least until the *relation is conceived as a hypostasis* and *is considered as a mono-dyadic construct*.

When the relation is understood in this way, it is regarded as a nexus between the terms and, therefore, it is extrinsic to their identity. If, on the other hand, the relation is understood as the mutual influence that exists between the terms, that is to say, as their being coessential, then a sense of unity will emerge that constitutes the ultimate essence and the value of the relation itself. Precisely because they are coessential, the terms can never be taken separately (independently) from each other, since they are in fact a single reality.

Translated into economic-social terms, this conception of the relation means that the relation that binds individuals and that binds each individual to society, understood as the whole, cannot be thought of as a mere connection that maintains the difference between individual and individual or between the individual and society, but must allow the emergence of the sense of unity that exists between them.

This sense of unity that is immanent in the relation is reflected on the individual side, in its drive towards others, which is expressed in its existential project that also includes the social role that the individual intends to play. The project can be considered as an internal push for the individual to go beyond himself and to create a unity with others, a communion that goes to constitute the society itself. On the other hand, society, understood as the other term of the relation to the individual, cannot only be opposed to it, but must also be conceived as that communion, that is to say, that unity, in which the individual intends to achieve himself. At the limit, it could be said that the full realization of the individual is achieved when, by integrating himself perfectly into society, he achieves a unity with it and, at least ideally (i.e., *intentionally*), tends to lose in it his individuality, that is, his being 'different', his own diversity from it.

Therefore, a correct methodology of social inquiry should make it possible to read both the individual and society in the light of this unity of sense, which is reflected in the dialectic that is established between them and that would amount to interpreting the social process not so much in the light of the starting point, that is to say the difference that exists between the individual and society, as both methodological individualism and holism tend to do, but in the light of the *end* point, that is to say, the *telos* of the process itself and that is from the *perspective of the unity of the individual and society*. From this *teleological* perspective, it is possible to throw new light and meaning on each stage of the process.

This perspective needs to be developed and spelled out in more specific investigations that tackle this emergent sense of unity that arises from each individual's self-transcendence, i.e., his attempt to go beyond himself at the very moment in which he tries to identify himself. In this article, we wanted to dig deeper into a fundamental economic category, i.e., the concept of relation, and

show how its neglect has not allowed to overcome the vicious circle affecting some prevailing methodologies of social sciences. This should be a matter of concern for any social scientist relying on these methodologies of social inquiry. We have also indicated where the problem lies in the existing concept of relation, i.e., its mono-dyadic structure, that is adopted in sciences and what should be, instead, the intentional teleological character of inquiry that would make it possible to escape the vicious circle, because it does not *pretend* to ground the inquiry on a mythical starting point, but by grasping the limit of the determinate identity of the starting point, it *intends* to achieve the unity of sense that enlivens the research itself. In future research, this unity of sense needs to be more fully articulated at the level of the transcendental act of consciousness that grasps the limits of any determination and is one and the same act for all determinations (i.e., determinate identities). It is this unity of sense that allows us to know the dynamicity of the individual and society. As clearly stated by the Stagirite: 'For it is insofar as they are one and the same thing, and insofar as something universal belongs to them, that we know all things' (Aristotle 2016, p. 39).

Endnotes

[1] Since our aim is reflecting on the concept of relation in economics, in individualistic or holistic methodologies, we do not discuss, in this article, the different variants of old and neo-institutional economics, which have already been admirably investigated by Rutherford (1996), in his classic work. In addition to these streams of Institutional Economics, more recently, Ambrosino, Fontana and Gigante (2018) have shed new light on the most recent developments in Institutional Economics, including Cognitive Institutional Economics, that developed from the cross-fertilisation of Old Institutional Economics, New Institutional Economics and the Hayekian contribution to the emergence of institutions based on his theory of mind, knowledge and information.

[2] We will not discuss in this article whether ascribing this view to philosophers such as Hegel is correct or rather a caricature of an author whose system could probably provide insights to those who adhere to systemism or holism.

[3] We must note, however, that, to speak rigorously, theoretically one cannot think of the whole as structured by relations, since the whole cannot be reduced to a compound, i.e., a whole-of-parts. This would lead to the circle of presupposition, which we analyse later.

[4] Later, this term has been used also by other methodological individualists such as Mises, Hayek, and Buchanan to indicate the very essence of the economic process, i.e., the central category of economics.

[5] See Glimcher (2011) for an informed discussion on neuroeconomics.

[6] This aspect is further and more exhaustively explored in Crespo (2017).

Conflict of Interest Statement

The authors declare that there is no conflict of interest.

References

Ambrosino, A., Fontana, M. and Gigante, A.A. (2018), 'Shifting boundaries in economics: the institutional cognitive strand and the future of institutional economics', *Journal of Economic Surveys*, 32 (3), 767–791.

Aristotle (2016), *Metaphysics*, translated with introduction and notes by C.D.C. Reeves, Indianapolis/Cambridge: Hackett Publishing.

Arrow, K. J. (1994), 'Methodological individualism and social knowledge, *American Economic Review*, 84(2), 1-9.

Basu, K. (2008), 'Methodological individualism', in S. N. Durlauf and L. E. Blume (eds.), *The New Palgrave Dictionary of Economics*, 2nd ed., vol. 5, Basingstoke: Palgrave MacMillan, pp. 586-590.

Bhargava, R. (1998), 'Holism and individualism in history and social science', in Craig, E. (ed.) *Routledge Encyclopaedia of Philosophy*, London: Routledge, pp. 358-362.

Blaug, M. (1992), *Methodology of economics. Or how economists explain*, 2nd ed., Cambridge: Cambridge University Press.

Boettke, P. J. and R. Candela (2015), 'What is old should be new again: methodological individualism, institutional analysis and spontaneous Order', *Sociologia*, 49 (2), 5-14.

Bunge, M. (2000), 'Systemism: the alternative to individualism and holism', *The Journal of Socio-Economics*, 29, 147-157.

Colander, D. (2000), 'The death of neoclassical economics', *Journal of the History of Economic Thought*, 22 (2), 127-143.

Crespo, R. (2017), 'Aristotelian hylomorphism: a framework for non-physicalist philosophers about philosophy of mind', in P.Á. Gargiulo and H.L. Mesones-Arroyo (eds.), *Psychiatry and Neuroscience Update - Vol. II, A translational approach*, Cham: Springer, pp. 37-46.

Davis J. B. (2015), 'The conception of the socially embedded individual', in J. B Davis and W. Dolfsma (eds.), *The Elgar Companion to Social Economics*, Edward Elgar, pp. 116-130.

Gibril, S. (2021), 'Methodological individualism and holism', in Morin, J-F., C. Olsson, and E. O. Atikcan (eds.), *Research Methods in the Social Sciences: An A-Z of Key Concepts*, Oxford: Oxford University Press, pp. 166-169.

Glimcher, P. W. (2011), *Foundations of Neuroeconomics*, New York: Oxford University Press.

Hayek, F. A. von (1937), 'Economics and knowledge', *Economica*, 4 (13), 33–54.

Hayek, F. A. von (1945), 'The use of knowledge in society', *American Economic Review*, 35 (4), 519-530.

Hayek, F. A. von (1967), *Studies in Philosophy, Politics and Economics*. London: Routledge and Kegan Paul.

Hayek, F. A. von ([1952] 1979), *The Counter-revolution of Science. Studies on the Abuse of Reason*, Indianapolis: Liberty Fund.

Hegel, G. W. F. ([1816] 1969), *Hegel's Science of Logic*, translated by A. V. Miller, foreword by J.N. Findlay, New York: Prometheus Books.

Heidegger, M. ([1957] 1969), *Identity and Difference*, translated and with an introduction by Joan Staumbaugh, Chicago/London: Chicago University Press.

Hirshleifer, J., A. Glazer, and D. Hirshleifer (2005), *Price Theory and Applications. Decisions, Markets, and Information*, 7th ed., Cambridge (UK): Cambridge University Press.

Hodgson, G. M. (2007), 'Meanings of methodological individualism', *Journal of Economic Methodology*, 14(2), 211–226.

Kirzner, I. (1973), *Competition and Entrepreneurship*, Chicago: University of Chicago Press.

MasColell, A., M. D. Whinston, and J. Green (1995), *Microeconomic Theory*, Oxford: Oxford University Press.

Mises, L. von (1949), *Human Action: A Treatise on Economics*, 1st ed., London and New Haven, CT: William Hodge and Yale University Press.

Menger, C. ([1871] 1950), *Principles of Economics*, edited and translated by J. Dingwall and B. Hoselitz, Glencoe: The Free Press.

Muñoz-García, F. (2017), *Advanced Microeconomic Theory. An Intuitive Approach with Examples*. Cambridge (MA): The MIT Press.

Page, S. E. (2018), 'Agent-based models' in Macmillan Publishers Ltd (ed.) *The New Palgrave Dictionary of Economics*, 3rd ed., London: Palgrave MacMillan, pp. 107-113.

Plato (1996), *Parmenides*, ed. by A. K. Whitaker, Indianapolis/Cambridge: Hackett Publishing Company.

Rutherford, M. (1996), *Institutions in Economics. The Old and the New Institutionalism*. Cambridge (MA): Cambridge University Press.

Schumpeter, J. A. (1909), 'On the concept of social value', *Quarterly Journal of Economics*, 23(2), 213–32.

Spinoza, ([1674] 2016), 'Letter 50 to Jarig Jellis', in: *The Collected Works of Spinoza*, vol. II, translated by E. Curley, Princeton/Oxford: Princeton University Press, pp. 369–370.

Varian, H. R. (2010), *Intermediate Microeconomics. A Modern Approach*, 8th ed., New York: W. W. Norton & Company, Inc.

Weber, M. ([1922] 2019), *Economy and Society*, edited and translated by K. Tribe, Cambridge, MA: Harvard University Press.

Whately, R. ([1831] 1832), *Introductory Lectures on Political Economy*, 2nd and enlarged edition, delivered in Easter Term 1831, London: B. Fellowes.

Zahle, J. (2016), 'Methodological holism in the social sciences', in E. N. Zalta (ed.) *The Stanford Encyclopedia of Philosophy*. Online: https://plato.stanford.edu/archives/sum2016/entries/holism-social/.

Zwirn, G. (2007), 'Methodological individualism or methodological atomism: the case of Friedrich Hayek', *History of Political Economy*, 39(1), 47-80.

Giancarlo Ianulardo, PhD, is Senior Lecturer in Economics at the University of Exeter, Exeter (UK) (g.ianulardo@exeter.ac.uk).

Aldo Stella is Professor and teaches at the Università per Stranieri di Perugia (Italy), as well as at Università degli Studi di Perugia (Italy) (aldo.stella@unistrapg.it).