Causality, Teleology and Explanation in Social Sciences

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Abstract: This paper argues that four analytical levels may be found in social sciences, including economics –namely, a) a statistical descriptive level, b) a causal explanatory level, c) a teleological explicative level, and d) a prescriptive teleological level. Typically, social sciences only consider levels a) and b). The exclusion of level c) may lead to viewing behaviors that do not respect theories like the rational choice theory or the expected utility theory –theories which adopt "instrumental rationality"—as "anomalies". Including level c) entails considering "practical rationality" and makes those anomalies reasonable. The paper adopts Aristotle's causality notion and teleology as a theoretical framework. The first section introduces these notions, while the second section explores contemporary views on causality and teleology. These discussions pave the way for the introduction of the afore-mentioned four analytical levels. Specifically, in the case of economics, this discussion is based on Carl Menger's classification of economic disciplines.

Causality and explanation are hot topics in the contemporary philosophy of natural and social sciences. The dissatisfaction with some "classical" accounts of scientific explanation (such as the deductive-nomological or covering law model, or the inductive and deductive statistical explanation) leads philosophers of science to probe the possibilities of causal explanations. However, instead of unanimous notions on causation and explanation, a plethora of concepts emerged.[2] This paper argues that four analytical levels may be found in social sciences, including economics –namely, a) a statistical descriptive level, b) a causal explanatory level, c) a teleological explicative level and d) a prescriptive teleological level. Social sciences ordinarily only consider levels a) and b). The exclusion of level c) may lead to viewing behaviors that do not respect theories such as the rational choice theory or the expected utility theory –theories which adopt "instrumental rationality"— as "anomalies". Including level c) entails factoring "practical rationality" in and makes those anomalies reasonable. Once level c) is included, level d) "automatically" applies. For reasons that will become clear as this paper unfolds, this analysis adopts Aristotle's notions on causality, teleology and practical reason as a theoretical framework. For the sake of the proposal outlined here, it is convenient to preserve Aristotle's notions in their original form, avoiding the changes introduced in modern times. The first section introduces the Aristotelian notions of causality and teleology, while the second section explores contemporary views on them. The third section discusses the four analytical levels of social sciences, relying on Carl Menger's classification of economic disciplines in the case of economics.

1. Aristotle's Views on Causality and Explanation

For Aristotle, explanation is based on causes; causes are really existent, and the ontological and explicative priority within them belongs to the cause 'for the sake of which', later called "final cause". In *Metaphysics* (I, 3-7), Aristotle reviewed the earlier Greek tradition on the nature of investigations into any reality or event, which focused on a search for underlying causes. Proper knowledge hinges on knowing the causes or why something happens. He then elaborated on his stance on causality (*Physics* II, 3 and 7; *Metaphysics* I, 10 and V, 5): "a doctrine of four becauses" (J. L. Ackrill 1981, p. 36), finding answers to these questions: what is this made of? Why is this this thing and not another? Who made it? And for the sake of what

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[2] Sosa and Tooley's (1993) compilation is classical. See also Scheines (2004). Pluralist views on causation have been sustained in social sciences. See a review in Reiss 2009, pp. 21-26. See also Sthatis Psillos 2009.

is this made? (later respectively called material, formal, efficient and final causes, respectively.) Aristotle introduced this doctrine in *Physics* (II, 3 194b 16-35; see also *Metaphysics* I, 3, 983a 26-33):

> In one sense, then, (1) that out of which a thing comes to be and persists is called ´cause'—e.g., the bronze of the statue (...). In another sense (2) the form or the archetype, i.e., the statement of the essence, and its genera, are called 'causes' (...). Again (3), the primary source of change or coming to rest; e.g., the man who gave advice is a cause, the father is the cause of the child (...). Again (4) in the sense of end or 'that for the sake of which' a thing is done (...)

This last cause is a *telos* (perfection), and Aristotle views it as the primary cause: "First is evidently the one we call for the sake of something" (*Parts of Animals* I, 639b 14). The final cause is ontologically –though not chronologically– prior to the efficient cause and compatible with it: the final cause triggers the action of the efficient cause. As Aristotle states, "generation is for the sake of substance, not substance for the sake of generation" (*Parts of Animals* I, 640a 18-19). Without an end, there is no action in either the natural or human realms. Aristotle asserts: "Nature does nothing in vain. For all things that exist by nature, exist for an end" (*On the Soul* II, 12, 434a 31-33).

Final cause also comes first in an explanation. Johnson (2005, p. 167) explains, "the cause for the sake of which is not an efficient cause [...] [it] provides the explanation of the end-oriented activity which necessitates 'efficient causal' (moving and material) processes." Aristotle argues that the final cause must be determined firstly (*Parts of Animals* I, 639b 11-21). Johnson (2005, p. 180) elaborates, "an explanation of a natural kind has to specify not just, and not first, the capacities, but rather the activities and that for the sake of which the capacities exist and become active."[3] For Aristotle, "explanation cannot even begin until the for the sake of which has been identified [...] To put it into ontological terms: were there no for the sake of which, there would be no powers, potentials, or mechanisms" (Johnson 2005, pp. 185 and 186; see also Falcon 2012, pp. 7-9). Consequently, the teleological explanation is the ultimate explanation, and it is necessary for a full explanation.

Nonetheless, while Aristotle regards the final cause of an event as the "primary" (*Metaphysics* I, 3 983a 25-26) cause and explanation, he also considers the possibility of an event with no final cause: in this case, the primary cause is efficient, amounting to its explanation (*Metaphysics* VIII, 4, 1044b 13-15 –he uses an eclipse as example).[4]

Aristotle's thinking on explanation and causes is also flexible, as he considers several degrees of necessity/contingency and universality/particularity in the explanation by causes, depending on the reality to be explained –"generic effects should be assigned to generic causes, particular effects to particular causes" (*Physics* II, 3, 195b 25-26)– and on explainers' concerns (*Physics* II, 2, 194a 36 - b7; Sorabji 1980 pp. 58-59). Additionally, one or a combination of all four kinds of causes may be more appropriate, also depending on the event to be explained. However, as noted earlier, the "primary cause" (*Physics* II, 2, 194a 20; Metaphysics I, 3, 983a 25-16) –the final cause– remains the priority. This cause is intimately related to the formal cause, because the nature or essence (formal cause) of something pertains to its end (final cause). Such, for example, is the case of the *ergon* (function)

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[3] According to G. H. von Wright, for Aristotle (as well as for Hegel), "explanation consists in making phenomena teleologically intelligible rather than predictable from knowledge of their efficient causes" (1971, p. 8).

[4] G. H. von Wright (1971, p. 170) states: "Although there is a strong emphasis on teleology in Aristotle and in "Aristotelian" science, by no means all explanations characteristic of their way of thinking are teleological."

argument to determine the definition of *eudaimonia* in *Nicomachean Ethics* (I, 7; see Johnson 2005, pp. 218-22; Reeve 1995, pp. 123-4).

Aristotle's emphasis on looking for causes to make an explanation does not mean that he did not take into account other purposes of science. Depending on the subject, he stressed the relevance of data collection, the usefulness of predictions, and the normative –technical or ethical– role of some sciences. Yet, while keeping in mind other purposes, he viewed causal explanation as the most important.

Modern criticism of the reality of final causes, especially in the natural and biological realms, has a very long history: defending final causes has been considered an anthropomorphist position. Even some Aristotelians have thus reduced the final cause to efficient, material or formal causes. They were criticized on both literal and philosophical grounds.[5] In the human realm, the reality of final causes, as different from all other causes, proves more evident than in natural sciences. As Johnson (2005, p. 211) asserts, "teleological explanations [based on final causes] play a special role in the case of humans, because here we are dealing with a kind of living thing capable of deliberate and intentional action in pursuit of ends."[6] Human beings also generalize and institutionalize ends: ends do not only pertain to individuals, but also to societies and all kind of communities.

Aristotle writes in *Nicomachean Ethics* (VI, 2, 1139a32-36),

> The principle of action –the source of motion, and not the goal [that for the sake of which]– is decision [choice]; the principle of decision is desire and goal-directed reason [reasoning for the sake of something]. That is why decision requires understanding and thought [nou kai dianoias], and also a state of character;[7]

In other words, practical reason shows the end, which is the final cause, and will decides, thus acting as efficient cause; there is something (a final cause) desired or willed thus driving this choice, which is the efficient cause of action.[8] It is important to keep these two causes –final and efficient– separate because, in Aristotle's indeterminist world, this real distinction guarantees freedom.[9]

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[5] For example, Johnson (2005, pp. 182-7) mentions and criticizes the "heuristic" interpretation posited by Theodor Gomperz, Jean Marie Le Blond, Wolfgang Wieland, Allan Gotthelf, and John Cooper. Rich Cameron (2003 and 2010) also mentions Wieland, Martha Nussbaum and Richard Sorabji as "eliminativists". Cameron regards the following Aristotelian scholars as "reductionists": David Balme, Fred Miller, and Mohan Matthen (reduction to material cause), David Charles and John Cooper (formal cause), as well as David Furley and Terence Irwin (efficient cause; both them also mentioned in this sense by Natali 1999).

[6] However, this does not mean that natural teleology is of a "second class". As Charlotte Witt emphasizes, Aristotle maintains a "unified theory of causal powers": "without the teleological thread, it is unclear on what basis it makes sense to extend a realist theory of causal powers from natural causation to human activity" (2008, p. 137).

[7] I used Irwin's translation and added under brackets some terms used in Ross' translation.

[8] Cf. Aquinas [1964], n. 1133, p. 311 and [1949], p. 409: "intellectus movet voluntatem per modum quo finis movere dicitur, in quantum scilicet praeconcipit rationem finis, et eam voluntati proponit. Sed movere pero modum causae agentis est voluntatis, et non intellectus".

[9] In Crespo (2013a, pp. 23-25) I distinguish in Aristotle: 1. "Ontological" indeterminism: necessity in nature is not absolute but hypothetical. The essential causes of things and events (material, formal) might not act. They are like Anscombe's non-necessitating causes, or causes "that can fail of [their] effect without the intervention of anything to frustrate it" (1971: 101). 2. "Accidental" indeterminism: luck (*týche*) and spontaneity (*automáto*) (*Metaphysics* XII, 3, and VII, 7). Both terms express an event that results from coincidence (*Physics* II, 8). But, it does not rule out causality; however, causes are "indefinite" (*Physics* II, 5).

For humans, ends adopt a normative character, because, in spite of the existence of naturally appropriate human ends (the *ergon*'s argument), as for all natural realities (inanimate or animate), humans do not "automatically" pursue these ends: we are *akratic* and free. Normativity does not only apply to individuals but also to societies. Aristotle writes against Plato in *Eudemian Ethics* (I, 8, 1218b 7-16 –Johnson's translation: 2005, p. 217),

> The good itself that we are seeking is neither the idea of good nor the good as universal; for the idea is unchanging and not practical, and the universal, though changing, is still not practical. But for the sake of which, as an end, is best, and a cause of everything under it, and first of all goods. This would be the good itself, the end of human actions. And this is the good under the master art of all. And this is politics, economics, and prudence.

This presentation of Aristotle's notions on causality and explanation supports the explanation levels mentioned in the introduction. For Aristotle, today's statistical work would serve as a first step in the induction process –for him, induction (*epagoge*) is more than present-day induction, because it captures the essence or causes.[10] The second level, causal explanation, pertains to efficient causes, but, when there is a final cause, the explanation picking up this cause –the third level– will be prior and more complete. In the human field, the end is the good (see, e.g., *Nicomachean Ethics*, I, 1) which is discerned by practical reason. Finally, the human realm also calls for a last level: the normative teleological explanation. It is time to look at contemporary conceptions of causality and explanation from the point of view of this Aristotelian framework.

2. Causality and Teleology Today

The Aristotelian tradition of cause-based scientific explanation lasted many centuries. Nancy Cartwright (1992, pp. 47ff.) even sustains that, in spite of some modern thinkers' attack against the possibility of knowing real causality, current science continues to rely on causes for explanations (or 'natures' or 'powers', in Cartwright's 1992 terminology). Cartwright also uses the term 'capacities', defining them as real, stable causes and viewing them as the actual springs of events that must be discovered. Phyllis McKay Illari, Federica Russo and Jon Williamson also assert that, in fact, despite modern critiques on causality, scientists have always looked for causes (2011, p. 3):

> Causality never really went away: scientists' claims were always intended to inform policy, experiment and technology, and such applications require causation, rather than mere association which tells us nothing about what happens when we intervene to change the world.

Final causes are no exception. Regardless of the mentioned criticism, they are present in scientific explanation, especially in some disciplines like biology and human sciences. Moreover, the current literature on teleology is vast. Starting in the 1960s, teleology has been

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Physical indeterminism is indispensable for human freedom. However, as Anscombe asserts, "the physically undetermined is not thereby 'free'. For freedom at least involves the power of acting according to an idea", and this goes beyond mere non-predetermination of an indeterministic physics (1971: 102). Rational powers "produce both the contrary effects" (*Metaphysics* 1046b).

[10] J. Hintikka (1992: 34) explains the difference very well: "For Aristotle, the problem of induction was not first and foremost a problem of inference from particulars to a generalization. It was a problem of concept formation. Particular cases were stepping-stones to the concepts or forms 'induced' to be realized in the soul [...] Hence, there is no such [Humean] problem as the justification of induction for Aristotle."

applied to a number of fields. The emergent problem is described by Mark Perlman (2004, pp. 46-47):

> There is still not a unified philosophical approach to functions and teleology –the topic of functions crosses from biological functions to the functions of artifacts, and affects such diverse areas as biology, psychology, psychiatry, neuroscience, medicine (causes or origins of disease), sociology, anthropology (and archaeology), artificial intelligence, engineering sciences, ancient and medieval philosophy (especially Aristotle), philosophy of science, philosophy of mind, philosophy of language, metaphysics, and even phenomenology. It is no wonder things are still in a state of flux. But there is great excitement that modern teleology, properly naturalized, can explain things which have thus far resisted adequate explanation.

However, though widely used in science, modern philosophers' notions on cause and teleology differ from Aristotle's. When Aristotle speaks about causality, he doesn't mean the same as modern thinkers. He views causes primarily as internal principles of substance constitution and, only derivatively, as those principles' subsequent active role.[11] This also applies to the final cause, as Aristotle asserts: "For natural things are those which do move continuously, in virtue of a principle inherent in themselves, towards a determined goal" (*Physics* 2, 8, 199b 15-17). Instead, modern thinkers regard causality as a relation between two events –cause and effect– emphasizing the efficient role of causes.[12] As Werner Heisenberg (1962, p. 40) argues, "only the *causa efficiens* approximately corresponds to that we today designate by the term cause." As a result of this reduction, the term "cause" today usually means only the efficient cause, at most. When a final cause is considered, other expressions are used –for example, reasons or "functions"– to refer to something like it, but not the same, as I will explain. Additionally, the debate on causality has shifted from its metaphysical scope to its epistemological and methodological aspects, drawing away from ontological concerns about its existence and nature.

In line with modern reductionist views on causality, most of the literature on functions or teleology largely tends to do away with final causes or to reduce them to efficient causes, also narrowing teleological explanations down to "causal" explanations (in the restricted modern sense of the term, i.e., by efficient causes). The legitimacy of teleological explanations becomes dependent on their reducibility to claims about causal systems (Turner, p. 30).

According to Bigelow and Pargetter (1987 and 1990, pp. 325-333), three main currents follow this trend, diluting "functions" into the modern causal framework.[13] First, "eliminativism" does not view functions as genuine existing properties of a thing or character, but merely as future effects that we can specify and talk about. These authors mention Robert Cummins (1975) as an example of this position (also noted as eliminativist by Cameron 2003, p. 164, but see Perlman 2004, pp. 12-15), with his rejection of teleology clearly revealed in his "Neo-Teleology" (2002). David Buller (1999, p. 14) remarks:

> Cummins' analysis of the concept of function makes the function of an item merely its causal contribution to a complex process. While this certainly succeeds in avoiding appeals to anything other than efficient causation, it does so at the cost of empting the concept of function of all its teleological content.

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[11] On the contemporary rebirth of the belief on the internal character of causal powers, see the papers collected in Grof 2008, Marmodoro 2010, Handfield 2009, and Mumford and Anjum 2011. These views rely on Aristotle's notions on causality.

[12] See e. g., Psillos (2004), p. 280.

[13] See also Perlman's taxonomy of teleological theories (2004, pp. 5ff.). For the aim of this paper I prefer to use the simpler taxonomy of Bigelow and Pargetter, adding some information from Perlman.

Perlman (2004, p. 12) adds Daniel Dennett and the Churchlands (Paul and Patricia) to the list of eliminativists.

Second, Bigelow and Pargetter refer to "representational" theories, especially applicable to the attribution of functions to artifacts. According to these theories, we can speak of functions when there is a plan, previous to the existence of a character and its future effects, referring to these effects. They mention Andrew Woodfield's *Teleology* (1976) as illustrating this stance.

Finally, "etiological" theories uphold that functions are causes (in the modern sense): teleological behaviors have been evolutionarily selected because they have been historically successful. The representative author mentioned is Larry Wright (1973). Perlman especially considers Ruth Millikan (1984). As David Buller (p. 12) explains, "Wright's analysis takes *the fact that y is an effect of x* to be among the (antecedent) efficient causes of x, and thus provides an efficient causal explanation of the existence of x in terms of its producing y."

After criticizing these positions, Bigelow and Pargetter provide theirs, relying on a "propensity theory" (1990, pp. 333-341) to show how and why "Aristotle's final causes have a place in science, both in culture and in nature" (1990, p. 341). They make functions "forward-looking" by considering them as dispositions (see Perlman 2004, p. 21).

Thomas Nagel has recently analyzed biological evolutionism, offering three possible explanations for the emergence of conscious organisms in the universe: the efficient causal, natural teleological, and intentional explanations. He provides arguments, as it were almost an inference to the best explanation, for the second, citing "natural teleological laws governing the development of organization over time, in addition to the familiar kind governing the behavior of the elements" (2012, p. 66). Then, it seems that he avoids the reductionism of the final cause to the efficient cause.

Regardless of their differences, the following currents and authors that I include under the rubric of "organizational teleology" seem to be other exceptions to this reductionism of the final to the efficient cause. Evan Thompson (2004) narrates how Francisco Varela –who had developed together with Humberto Maturana the *autopoiesis* system approach to biological life– in his 2002 paper with Andreas Weber (Weber and Varela 2002) recognized that teleology is involved in this process: organisms are concerned with their own being and preservation. Some philosophical antecedents of these positions are the works of Maurice Merleau-Ponty on the human body and of Hans Jonas on the living organism.[14]

Specifically, David Witherington (2011 and forthcoming), basing his organismic-contextualist dynamic system perspective on the previous authors and their ideas, but also in von Bertalanfy's systems theory, assign a fundamental role in the process of self-organization to the Aristotelian formal and final causes avoiding any reduction to the efficient and material causes. I quote from him:

> Unlike the temporal antecedent or propelling force explanations captured through efficient cause, formal and final causes –[...]– are atemporal, organizational levels of explanation that lend meaning to the temporal cause-effect sequences of efficient cause [(...)]. Whereas efficient cause necessarily presupposes a temporal context, formal and final explanations invoke abstraction itself as a means of partial explanation [...]. Formal explanations abstract a pattern –a form, structure, organization– from the phenomenon, and that pattern functions as a partial explanation for the phenomenon. Final explanations abstract a function, future-end or purpose from the particular, real-time dynamic content of a phenomenon

[14] More recent elaborations following this thread of thought are, for example, Di Paolo 2005, Mossio, Saborido and Moreno 2009, and Di Paolo and Thompson 2014.

to explain the phenomenon [...] Whereas efficient causes serves to contextualize – in bottom-up fashion– our understanding of an organism's specific activity in terms of the events and conditions that temporarily and regularly precede that activity, formal and final explanations are not meant tom identify the antecedent circumstances for such activity or to account for its variable content. Instead, formal and final explanations serve to contextualize –in top-down fashion– our understanding of an organism's specific activity in terms of the organization and directional purpose which that activity evinces as a whole (forthcoming, p. 70).

He speaks of a circular causation process in which the four Aristotelian causes have their role both in the process and in its explanation, according to "Aristotle's explanatory pluralism" (p. 70) and causal pluralism (2011, p. 73). Abstract does not mean unreal. Modern science tendency, he adds, is to reify the abstract structures and functional causes provided by formal and final causes. Structures and goals thus become concrete entities that are viewed as directly efficiently causing the specific organism's performance: "such structural reification allows for formal and final cause to be set up as a straw men and summarily rejected since abstractions cannot possibly operate in this fashion" (2011, p. 74). The possibility of recognizing formal and final causes entails acknowledging the real existence of the entities abstracted, something alien to a positivistic mentality, as that of the modern science. However, this recognition is important to understand the whole process:

> formal and final causes [...] provide an abstract explanatory framework within which specific actions in specific contexts can be systematically organized and examined [...] In effect, efficient causality becomes meaningful only in the presence of formal and final cause via the organizational complexity that characterizes the system qua system (2011, p. 75).

Structure and goals provoke a "downward causation" electing and guiding the action of a "bottom-up causation" of the efficient cause on the material cause. In the same vein Sarah Waterlow explains: "for Aristotle the concept of 'end' provides not an *additional explanation*, nor one that can eventually be dispensed with, but the *only* explanation of some*thing additional* (to the materials) in the phenomenon to be explained" (italics in the original, 1988, p. 71). The explanation by the material and efficient causes is not enough because we need to know the final cause –intrinsically related to the formal cause– which functions as the criterion for the action of the former causes. Both inanimate and living things are organized in a special manner determined by their structure and subsequently by their end. Without this order that orients them they could behave in whatever way. As Johnson (2005, p. 187) states, "the material and moving factors have a role to play only in the context of a teleological explanation".

In the human field, where things seem to be clear and where, thus, a recognition of final causes might be expected, the reductionist position also prevails.[15] G. H. von Wright (1971, p. 16) refers to this stance as "the 'causalist' account of purposefulness", naming some respected causalist authors (see also pp. 28 and 181 –note 80). Donald Davidson (1963) is a paradigmatic example, as he believes reason-based explanations must adopt the form of causal explanations. He upholds the thesis that the primary reason for an action is its cause (always in the modern sense, 1963, p. 686): a patent reduction of the final cause to the efficient cause. This position has had vast influence. For instance, after considering Aristotle's four kinds of causes, John Searle asserts (2001, p. 41, italics in the original):

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[15] As von Wright argues, "the attitude toward finalistic explanations, i.e. towards attempts to account for facts in terms of intentions, goals, purposes, is either to reject them as unscientific or to try to show that they can, when duly purified of 'animist' or 'vitalist' remains, be transformed into causal explana-tions" (1971, p. 4).

> There is only one kind of causation, and it is efficient causation. However, within efficient causation, there is an important subcategory having to do with mental causation. [...] And within the category of mental causation, there is yet another subcategory, that of *intentional causation*.

Davidson's reductionist view has been challenged. G. F. Schueler (2003, see especially chapters 1 and 3) presents a comprehensive criticism (see also Sehon 2005, Chapter 6 and pp. 156-160), including J. L. Mackie's (1974, pp. 274-5) genuinely teleological assertions and concluding that "there might be causes of an irreducibly teleological sort, different from other, efficient, causes" (2003, p. 20). Sehon shows how teleological and causal explanations support different counterfactuals, thus suggesting that teleological explanations are not reducible to causal explanations (2005, pp. 157-160). Von Wright is clearly against considering the will or intention as a Humean cause of action (see 1971, pp. 93-95), quoting Charles Taylor (1964, p. 33) to share his view. Natali (1999, p. 54) maintains that to say that the final cause is an aspect of or is included in the efficient cause because the end is present in the motor as a desired object, and without end we do not have action, is like saying that the son is an aspect of the father because the latter cannot be father if he does not have children.

There are other exceptions to the reductionist thrust, especially in the social field, where Raymond Boudon and François Bourricaud seem to be one such exception. They state:

> A teleological explanation for a phenomenon is therefore one which is based in explaining it through the goal aimed at by an individual, a group, or a system [...] many social phenomena can clearly be properly analyzed only if actors' final ends are taken into account (1989, p. 405).

Austrian School economists belong to a tradition different from the authors just mentioned. However, they hold a teleological view of human action. Ludwig con Mises, starts his *Human Action* stating that "human action is purposeful behavior. Or we may say: Action is will put into operation and transformed into agency, is aiming at ends and goals" ([1949] 1998, p. 11). He then asserts that "society is concerted action. Society is the outcome of conscious and purposeful behavior" (id., p. 143). Although avoiding using the term "teleological" for its "socialist" implications, Friedrich von Hayek stresses the subjective and intentional character of human action. He exclaims "that the objects of economic activity cannot be defined in objective terms but only with reference to a human purpose goes without saying" ([1952] 1979, pp. 52-53). He adds that this is the case not only for economics, but for "all the disciplines which deal with the results of conscious human action" (id, p. 57). He thinks that we must start from the understanding of human intentions to discover some patterns of social relations.

Psychologists Brent Slife and Richard Williams also adhere to a genuinely Aristotelian view when they argue that "[t]eleologists hold that intentions and purposes are the causes of the actions that accompany them; they do not result from an efficient causal chain of events that precede them" (1995, p. 115). This does not imply that efficient cause explanations are not useful –they are, and, in most cases, they suffice as an explanation, but they provide a partial explanation: they explain "how" but not "why". Von Wright wonders whether there is room for causal explanations in social sciences and comes to the conclusion that there certainly is – but in a specific and subordinated place (1971, p. 135).

For example, rational choice theory (RCT) assumes that individuals are purposive and have preferences; however, it does not analyze the content of these preferences (a teleological analysis), not even the cognitive process involved. It only requires consistency of choices.[16] In other words, the only form of rationality considered by RCT is instrumental, but reasons or

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[16] On the limitations of RCT, see Reiss 2013, Chapter 3.

final causes are crucial in the human realm, and, thus, an axiological rationality (which is teleological) approach is required. Inquiring about final causes completes the understanding of phenomena. To open the black box of preferences includes knowing the "why" or reasons of them;[17] it is necessary to get to an ultimate cause –i.e., "an unmoved mover that explains outcomes" (Mahoney 2003, p. 5).[18] If this ultimate cause is not unearthed, "the result is an absence of theoretical integration, which in turn contributes to fragmentation in the social sciences" (id, p. 3). Boudon (1998, p. 172) elaborates,

> 'Explaining' means 'finding the causes.' Explaining a social phenomenon means identifying its cause(s). In most cases, the explanation takes the form of a more or less complicated set of causal statements. The relations between the elements of the set can be more or less complex; they can be linear, recursive, include feedback loops, and so on. The set is what we usually call a 'social mechanism' (SM). A SM is, in other words, the well-articulated set of causes responsible for a given social phenomenon. With the exception of typical simple ones, SMs tend to be idiosyncratic and singular.

However, he proposes a general framework –broader than RCT– to analyze social phenomena, as "action should be analyzed as grounded on reasons" (id., p. 174). If this is so, we then need a framework that includes not only the means-end rationality (instrumental) but also the end rationality itself: "Social actors can have strong reasons to endorse normative beliefs, without these reasons being of the cost-benefit type, and more generally, without these reasons being of the 'consequential' type" (id., p. 188). Boudon argues that actions, decisions and beliefs are meaningful to agents, in the sense that these elements are grounded on reasons, concluding that "rationality is not exclusively instrumental" (id., p. 199). He considers axiological and cognitive dimensions of rationality as well as the role of "irrationality" in human actions: "'traditional' and 'affective' actions also exist. Moreover, all actions rest on a ground of instincts" (id., p. 200; see also 1999 and 2009). The social mechanism thus includes final and efficient causes.[19] Justin Garson (2013) has recently highlighted "the functional sense of mechanisms."[20] Mechanisms, he states, serve functions, and the functional sense of mechanisms is ubiquitous (in biology, biomedicine and psychology) and useful: "it yields valuable epistemic benefits for researchers" (2013, p. 318). It is also interesting to note that Garson asserts that "conjoining the functional sense of mechanism with some version of the CR [causal role] theory is to effectively renounce the epistemic benefit of the functional sense of mechanism" (2013, p. 319). He mentions Cummins (1975), among others. In addition, I think that von Wright is lucid when he asserts that "it is thanks to its teleological background that the mechanism of making agents do things becomes operative" –this regardless of the

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[17] Behavioral economics does (or might do) this. Neuroeconomics also opens the "black box" but mostly providing a type of reductionist materialist explanation in which there is no place for final causes.

[18] For Aristotle the unmoved moving cause (final cause) of human action is the practical good (*On the Soul* II, 11, 433b 17).

[19] Johnson 2013 explains the compatibility of Aristotelian teleological explanations with mechanistic explanations. Alvin Goldman (1969) has held "the compatibility of mechanism and purpose", albeit on the basis of the possibility of "simultaneous nomic equivalents". As I understand it, this proposal actually implies the consideration of purposes as efficient causes. He opposes his view to Norman Malcom's (1968), who finds a mechanism inconceivable because it is incompatible with a reason-based explanation of actions. The problem seems to lie on taking for granted a physicalist conception of mechanisms, in which all causes and explanations are reduced to physical causes and explanations. Admitting the metaphysical character of causes and the existence of final causes would enable this compatibility. A related discussion revolves around the compatibility (or lack thereof) of causal determinism and free will –on this, see the essays in O'Connor (1995).

[20] My gratitude goes to H. Hasrum, who sent me this paper.

fact that "the teleological background can be more or less remote from the individual case in which the mechanism operates" (1971, pp. 149-150).

Mario Bunge (1997: 413) asserts:

> To be sure, some human actions are purposive, but indicating their (known or conjectured) purpose, function, or usefulness performs only part of the job. We also need to know (or guess) something about the mechanism(s) likely to bring about the desired goal.

Then, we have a purpose –the desired end, which is a final cause– and a specific mechanism to achieve this end –an efficient cause, which starts, as Aristotle points out, with a choice. Consider also the following passages in Cartwright:

> In building the machine, we compose causes to produce the targeted effect (1999, p. 65). [...] you give me a component with a special feature and a desired outcome, and I will design you a machine where the first is followed by the second with total reliability (1999, p. 72). ... [W]e always need a machine [...] to get laws – [...]. Sometimes God supplies the arrangements –as in the planetary systems– but very often we must supply them ourselves, in courtrooms and churches, institutions and factories (1999, p. 122).

Again, we find the "desired outcome" and the machine. We may have a desired outcome and still lack the designed machine or the decision to act. We often witness this situation: freedom, *akrasia*, forgetfulness, a change of heart, or other impediments might come into play. This is why final and efficient causes are different. Searle (2001, pp. 13-15 and 50-51) speaks about three gaps between the reasons to act and the actual action: first, between the reasons [final causes] and the decision; second, between the decision and the action; and, finally, between the initiation of the action and its continuation to completion: "This gap," he asserts (2001, p. 13), "has a traditional name. It is called 'freedom of the will'." We may have the goal of losing weight (as an individual), or downsizing a firm (at the corporate level), or addressing climate change (at the level of society), but we all know how difficult may be to implement these goals. The "abstract goal" or final cause orients the election and action of specific means or efficient causes. Efficient causes, as Peter Geach (1975, p. 93) notes, cannot be even described without the idea of tendency, a teleological notion; we cannot account for an agent characteristic behavior, unless describing it as acting in order that something may happen.

Among practical reason supporters, many share these kinds of teleological perspectives. For them, the ultimate spring of action is a reasoned target, different from the immediate efficient cause. For example, Bent Flyvbjerg's proposal of a "phronetic social science" (see, e.g., 2001) has had significant impact. "Phronetic social scientists" maintain that social sciences are better at producing "intimate knowledge of localized understandings of subjective human relationships" (Schram 2012: 17). This is practical reason, context-dependent, practice-focused knowledge, and its method is mixed.

Over the past 30 years, experimental and behavioral economics have unveiled a lot of "anomalies" in human behaviors. However, these anomalies pertain to a narrow rationality notion. As mentioned, RCT (and Expected Utility Theory –EUT– as well) continues to focus on efficient causal explanations, considering only instrumental maximizing rationality –an adaptation of means (efficient causes) to given ends– without delving into the content of the latter. The ends are final causes, and their rationality is practical ("axiological" –for Boudon– "phronetic" –for Flyvbjerg). Ends are especially labile, idiosyncratic and singular –as the ad goes, 'every individual is a world' (this is why ends are difficult to be known and managed, and are thus usually cast aside by social researchers). Yet, this does not mean that they are

not rational. We may call them "reasonable", given the strong reductivist connotation carried today by the word "rational".

In short, currently not all the teleological explanations, even in the human realm, are genuinely teleological in the sense of Aristotle's final cause. While explanations based on final causes are the primary and more complete explanations,[21] they have been systematically excluded in economics, which considers ends as given and requiring no explanation. This exclusion is the reason why economists do not understand many human behaviors, regarding them as irrational, instead of looking for their logic or rationale. Still, there are conceptions of economics that make room for teleological explanations, as discussed below.

3. Analysis Levels in Economics

It is not easy to find economists with an ample view of their discipline. Defining the economy or economics is not a task at which economics has excelled (see Backhouse and Medema 2009; my paper 2013b). Scattered definitions are usually partial. I consider that one exception is the comprehensive notion of political economy provided by Austrian School Founder Carl Menger, who makes a distinction among:

- "The *historical* sciences (history) and the statistics of economy, which have the task of investigating and describing the individual nature and the individual connection of economic phenomena" ([1883] 1985, pp. 38-9; see also Appendix IV, pp. 206-13; all italics in the original text).
- *Theoretical* economics, aiming at discovering the general nature and connection of economic phenomena (cf. Ibid.).
- *Practical* sciences of national economy, aiming at stating basic principles of action (cf. Ibid.) with a normative purpose (id., p. 99).

Menger concludes, "By *political economy*, however, we will understand that totality of the theoretical-practical sciences of national economy" (id, pp. 39-40). It is a theoretical-practical science (id., p. 97).

History and statistics describe and classify developments, but "uncritical compilations, or merely superficial arrangements of statistical material lacking higher unity do not come within the domain of scientific description" (id., p. 38). Theoretical economics, instead, looks for "a deeper understanding", "extending beyond immediate observation" (id., p. 36; see also 55). Theoretical economics seeks causal explanations: "scire est per causas scire" (id., p. 93). We need to know the "genetic element" (id., p. 94) –the efficient cause. However, Menger goes further: "[t]he goal of scholarly research is not only the *cognition*, but also the *understanding* of phenomena" (id., p. 43, always Menger's italics). "We understand it [a phenomenon] when we have recognized the reason for its existence and for its characteristic quality (the reason for its *being* and for its *being as it is*)" (ibid.) –the final cause.[22] Indeed, while the theoretical branch does not explicitly consider this, Menger does "admit quite unreservedly that *real* human phenomena are not strictly typical" (id., p. 214). The reasons for this are human beings' free will and error (cf. id., p. 214): "volition, error, and other influences can, on the contrary, and actually do, bring it about that human agents take different roads from a strictly set starting point to a just as strictly determined goal of their action" (id., p. 217). Reasons associated with human intentions and goals deviate theoretically determined behaviors from

[21] This paper does not analyze the differences between teleological explanations at individual and social levels. The social level clearly involves a more difficult task and a more complex methodology.
[22] Here, I will not delve into Menger's proposed distinction between theoretical economics' empirical-realistic and exact orientations, their characterizations and their problems. I am only picking up some of his general ideas that pertain to my argument.

their intended direction. For Menger, both designed and unintentional social phenomena have to be analyzed on the basis of individual efforts, purposes, or unit functions (id., pp. 91, 129, 133, 143, 159):

> [S]ome social phenomena are the result of a *common will* directed toward their establishment (agreement, positive legislation, etc.), while others are the unintended result of human efforts aimed at attaining essentially *individual* goals (the unintended results of these). In the first case social phenomena result from the *common will* directed toward their establishment (they are its *intended* products). In the second case social phenomena come about as the unintended result of individual human efforts (pursuing *individual interests*) without a *common will* directed toward their establishment.

Thus, according to Menger, will, intention, goals, and interests are all final ends that explain social phenomena –and often induce deviations from typical conducts.

Based on Menger's classifications, we can go a step further to distinguish the following explanation levels of in social sciences, including economics:

- 1. Statistics' descriptive and classificatory level.

- 2. The level of theoretical causal explanation, focusing on matching means and ends –part of Menger's theoretical economics; it is the place of explanations by efficient causes.

- 3. The teleological explanation level, seeking the reasons (final causes) for our actions –i.e., the rational explanation of preferences, also part of Menger's theoretical economics.

- 4. The level of normative principles dealing with preferences and the means to attain them.

Levels 1 and 2 seem to require no additional clarifications, as they are standard statistics and standard economics, respectively. Concerning level 3, examples are provided by Sen's capability approach and happiness economics. These two recent currents try to explain economic phenomena based on their ends or reasons –opportunities ["capabilities"] and happiness– and not by their efficient causes, which rely on immediate –rather than deep or ultimate– causes to explain phenomena. These may be construed as teleological perspectives, but, unfortunately, these new approaches are plagued by serious problems (for example, the lack of operational character of the capability approach and the doubtful character of happiness data and of the notion of happiness adopted –subjective well-being[23]). It is easy to manage RCT or EUT's utility maximization of a set of consistent preferences as an end encompassing all ends, but this does not allow for an inner analysis of the actual motivations underlying human action.

Finally, level 4 is implied in level 3, because, if ends are rational, we are consequently forced to look for them. As Hausman and McPherson (1996, p. 7; see also 29, 38ff.) argue, rationality is normative. Nicholas Rescher asserts,

> A narrowly construed 'economic rationality' based on unevaluated desires and mere preferences as such is rationality in name only; it can be altogether irrational. Rationality is a matter of appropriate alignment all along the line –not just choices with preferences but of preferences with evaluations and of evaluations with values. True rationality demands the pursuit of appropriate ends based on valid human interests, rather than that of unevaluated wants or preferences (1988: 115).

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[23] For a criticism of this concept of happiness and proposal of a new construct (flourishing), see Crespo and Mesurado 2014.

Teleological explanations are normative: normative judgments prescribing actions underlie teleological explanations (see Mark Bedau 1992, Schueler 2003, Scott Sehon 1005, pp. 58-59 and 2010). The evaluative nature of an end explains why we ought to act in order to attain it, and this applies not only to human action. Mark Bedau (1992, p. 48) explains,

> the theory of teleology appeals not to specifically ethical values but to goodness – the idea that certain kinds on entities have interests (…) that are promoted by certain kind of states of affairs. For the plant, water is not right or just or fair but simply good; it makes it better off.

Justin Garson applies the normativity of functions to mechanisms: "the normativity of function explains the normativity of mechanism" (2013, p. 325), adding that the former provides a very good explanation for the latter (2013, p. 326). Thus, level 3 is prior to level 2 in explanation.

4. Conclusion

The final cause has been considered as a natural gravitation towards a determinate ordination. The efficient cause would not produce a determinate effect if it not were oriented by a final cause. As a result, the modern reduction of final causes to efficient causes leaves things partially unexplained. Acknowledging the existence of final causes of things and events, especially in the human realm, paves the way to two often neglected explanation levels encompassing teleological and normative teleological explanations. By opening the black box of preferences in economics –as behavioral economics, the capability approach and happiness economics do– it is possible to reach a deeper explanation level for social phenomena, going beyond statistical and merely causal analyses. We expand our conception of rationality by adding practical reasonability to the narrow instrumental rationality, easing our way into a better, though more complex, understanding of human behaviors. This also justifies a normative, value-relevant social science. Values have been shunned from science but remain implicitly present. Leo Strauss warns of the perils of denying the links between values and facts in science (1959, p. 21):[24]

> It is impossible to study social phenomena, i.e., all important social phenomena, without making value judgments. […] Generally speaking, it is impossible to understand thought or action or work without evaluating it. If we are unable to evaluate adequately, as we very frequently are, we have not yet succeeded in understanding adequately. The value judgments which are forbidden to enter through the front door of political science, sociology or economics, enter these disciplines through the back door.

If these values are not rationally recognized and established, put over the table, ideology may take over. The Frankfurt School's diagnosis of modernity –a critique of instrumental reason– seeks a role for practical reason. Max Horkheimer ([1967] 1974, p. 21), for example, argues that reason aims at much more than the mere task of regulating the relationship between means and ends: it intends to understand ends themselves.

Value embeddedness entails a re-interpretation of the role of the value-free scientific requirement. Value-neutrality should not mean casting values aside but reasoning about them. Neutrality in social sciences' selection of concepts can only be achieved by means of the scientific determination of standards for rational practical reasonableness (see Finnis 1982: 12). That is, the way to manage the value-free ideal is not to push values away but rather to

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[24] There is an ample bibliography on this entanglement. See, for example, Putnam (2002) and Taylor (1985).

reason about them, rationally determining which *should* be pursued. This is the task of practical science. Once the values contained in final causes are recognized, we naturally move from the "is-propositions" to the "ought-propositions" –the last level of social science.

Reconsidering final causes in explanation is a source of hope, the hope of better explaining and also orienting human action.

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