2 THE MARKET AS AN ISOLATED CAUSAL PROCESS: A METAPHYSICAL GROUND FOR REALISM

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Introduction

The battlefield of rival economic theories and approaches is colored by obscure assessments of whether this or that theory is "realistic" or "unrealistic" and whether it is legitimately so. It seems that, for the most part, economists espousing so-called Austrian theories think of those theories as being realistic, or at least more realistic than typical theories within neoclassical mainstream economics. I find two features disturbing in such assessments. First, the very predicates, "is realistic" and "is unrealistic," are extremely ambiguous, and although economists typically are content with living with this ambiguity, it has harmful consequences for the quality of the controversies in which they are involved. I have elsewhere attempted to dispel some of these ambiguities.[1] Secondly, the grounds for economists' assessments of the realisticness of a given theory are far from being completely clear and well grounded. More often than not, unreflected commonsense experience plays a crucial role in such assessments without having been accorded that role by sound methodological argument. The present chapter suggests that analyses of the metaphysical structure of theories might also play a relevant role in this game.

This chapter does not deal with the issue of *realisticness* directly in the special sense of trying to answer the questions of whether Austrian theory is true and whether its postulated entities exist—that is, whether it is realistic in two important senses of the term. Instead, I am concerned

with its potential realisticness, that is, whether these two questions are the kind that are worthwhile asking, with some measure of optimism about the answers. In other words, this chapter proposes a strategy of beginning with an analysis of the preparatory question of whether *realism* is an appropriate philosophy for Austrian theory. My problem is whether Austrian theory is the kind of theory that may be true and the logically prior question of whether the entities it postulates may exist.

More particularly, I ask whether there are grounds for realism about Austrian theory that would be rooted in the general metaphysical structure and contents of the theory itself. It is suggested that there is indeed such a ground, and that it is related to the envisioning of the market as a discovery and communication process, and the emphatic rejection of the depiction of the market entirely in terms of the conditions of equilibrium states. I argue that in holding this theory, Austrian economists commit themselves to a special causalist and processual metaphysics, and that the theory has the structure of what may be called a *causal process theory*. It is then suggested that causal process theories are particularly appropriate for a realist interpretation. The underlying premise behind the reasoning is that we are more entitled to consider believing in the existence of the entities and properties postulated in a coherent and comprehensive causal process account than in the postulations of a static equilibrium account focusing on end states.

In earlier work I have argued, first, that Austrian invisible-hand explanations have a *causal* structure (Mäki, 1990a, 1991a). In particular, I have suggested that even though the outcomes of invisible-hand processes (such as the institution of money or a given structure of relative prices in an economy) are not the intended results of that action, they, nevertheless, are its causal consequences and, therefore, have to be causally explained (by theoretically redescribing them as such causal consequences). Secondly, I have also suggested that the total architecture of Austrian theory and its several elements are compatible with a *realist* theory of science with essentialist leanings (Mäki, 1989, 1990a, 1990b, 1991d). For example, I have argued that Austrian economics subscribes to commonsense realism about the economic actor and scientific realism about the invisible hand. In particular, I have suggested that Menger's theory of money invites an interpretation in terms of a realism about universals, real essence, causal powers, and necessities.

The present chapter combines these two suggestions about causality and realism. It analyzes in more detail the causal structure of the Austrian theory of the market process and suggests how this structure gives support to a realist philosophy of Austrian economics.

The Austrian theory of the market process does not tell the whole truth about the world. The causal process it proposes to depict is, at most, an isolated slice of what in fact takes place in the social world. For instance, it excludes factors such as the moral feelings of the market participants and state intervention in its various forms. In a sense, Austrian theory deforms our image of social reality by ignoring a vast number of ingredients in the total situation and by focusing exclusively on some others. In one important sense, then, Austrian theory is unrealistic. This feature of the theory will be met as a challenge to a realist interpretation of it. I will argue that the main suggestion of the paper survives this challenge, provided the theory of the market process is understood as a purportedly realistic representation of the essence of the market. This is my second major suggestion.

In sum, it is argued that even given its strongly isolative character the causal and processual structure of the Austrian theory of the market invites a realist reading. We have to be very careful with the import of this claim. It is not argued that the Austrian theory is thereby established as the true account of the market economy, but rather that the relatively detailed causal contents of the theory lend support to a realist reading of the theory. Finding ways of assessing the truth of the theory is another difficult problem. The following pages keep silent about this question that has preoccupied most commentators on the methodology of Austrian economics. The last section suggests briefly why such commentaries are misguided.

It is important to note that the general argument advanced in the present chapter can, in principle at least, be used for defending a realist reading of what also appear as causal process theories in other streams of economics, such as the post-Keynesian theory, the so-called real business cycle theories, and some strands of institutionalism. Austrian theory, with its consistent emphasis on the theoretical centrality of process, gives us an exceptionally good opportunity for pursuing this line of argument. Of course, this is not to say that there is something like a well-developed understanding of the concept of process available in Austrian economics (or elsewhere in economics, for that matter). Some clarification work has to be done on the notion of process itself.

"Ground for Realism"

It is advisable to begin with a brief clarification of the notion of *ground for realism* in or about an economic theory or a school of economic

thought. The first important component in need of clarification in this notion is *realism*. By realism, in or about a theory or an approach generating such a theory, I here mean what may be called a *realist reading* of that theory. By a "realist reading" of a theory I mean an interpretation of the theory as putatively referring to entities that exist and as a systematic representation of the features of those entities, such that the theory has a chance of being either true, close to the truth, or carrying the promise of getting us closer to the truth of what it represents. Thus, a realist reading of a theory does not in itself entail the belief that the theory is true. It only entails the belief that the theory has a chance of being true, that is, that it is the kind of theory to which the vocabulary of veracity may sensibly apply. This means that the theory can be taken seriously as a candidate for capturing the truth of what exists and takes place in the world. In sum, a realist reading of T implies taking the objects of T as candidates for real existents and the major statements of T as candidates for true statements.

The distinction between realism and realisticness may help dispel any remaining confusion. It is one thing to hold realism about T and another to believe in the realisticness of T (at least on the standard specifications of "realisticness," such as truth). It is one thing to believe that T is the kind of theory to which the vocabulary of "true" and "false" may be legitimately applied, and it is another thing to believe that T is true. Of course, the latter belief implies the former, but not vice versa. The grounds for the two kinds of belief may also differ. The grounds for realism may consist of metaphysical considerations, while the grounds for belief in the truth of a theory should usually comprise other kinds of evidence as well.

Let us then clarify what I mean by the notion of a *ground* for realism. It is easier first to say what is *not* meant by this idea. I do not mean to ground a realist reading of a theory in appealing to the explicit meta-theoretical declarations of its proponents. It is not difficult to find interpretations of Austrian theory among the Austrian economists that would count as realist, or to find even more radical and ambitious allegations to the effect that the Austrian theory is *the true account* of the market economy. Such self-interpretations do not count here. By taking this stance I do not intend to deny that the self-understanding of economists may have something to do with the real nature of the objects of such self-understanding. I am here simply interested in a different kind of evidence for a realist reading of Austrian theory.

The relevant evidence has to do with *the general metaphysical structure of the theory* in question and *the kind of claims it appears to make or is*

used to make about the world. It is here that the fact that Austrian theory appears to provide causal claims about the market process becomes relevant to the question of whether there are grounds for a realist reading of the theory. Note that I am talking about the *kind* or *type* of claims a given theory makes rather than about its specific claims.

This feature of the argument pursued here has an important consequence, namely: *the argument is neutral with respect to the detailed theoretical variations and controversies within and without Austrian economics*. I do not have to take sides in the debates about the adequacy of this or that particular detail in the theory of entrepreneurship or about whether the market process is ultimately teleologically convergent. Therefore, the fact that I use Israel Kirzner's version as an example should not be taken to imply anything like an idea of its superiority over alternatives. My argument stands or falls irrespective of the ultimate fate of Kirzner's version. The argument can be attempted in the case of all economic theories of the same metaphysical kind. It is the causal and processual character of a theory that suffices for my purposes; the evaluation of its many other, more specific, features may be bracketed at this stage, while keeping in mind that *they become crucial when assessing its truth*.

This strategy implies that *the grounds for realism are theory-type specific or approach-type specific*. This runs counter to those formulations and allegations concerning scientific realism according to which realism stands or falls as an overall thesis about all of science. I do not think that science, or the set of scientific theories, is homogenous enough to warrant such a globalizing attitude. As a descriptive thesis at least, I do not buy scientific realism as a universal thesis. A more local approach in checking its soundness seems more attractive. It is another question whether we have good grounds for espousing realism as a universal normative idea about science. In this essay I am interested in economics as it is.

Causal Process Theories

There are two necessary conditions for a theory to count as a causal process theory. First, it has to provide an account of a *process* as a sequence of events. Second, it has to depict the driving forces that set and keep the process in motion, that is, the *causes* of the motion from one event to another in the sequence. Not all descriptions of processes are causal descriptions and not all descriptions of causation are descriptions of process (even if it were the case that all processes are causal processes and that all causation involves process). Both the necessary conditions

have to be satisfied in order for a theory to be categorized as a causal process account.

In order to understand the metaphysics of causal process theories, we need a perspective from which the concepts of process and cause mingle. This brings in some clarification concerning both of the key categories. Here we can draw upon Wesley Salmon's recent work on causation. He makes a distinction between two concepts of causation, namely that between "production" and "propagation" (Salmon, 1980; 1984, 139f.).

The following are examples of *causal production*. "When we say that the blow of a hammer drives a nail, we mean that the impact produces penetration of the nail into the wood. When we say that a horse pulls a cart, we mean that the force exerted by the horse produces the motion of the cart. When we say that lightning ignites a forest, we mean that the electrical discharge produces a fire." (Salmon, 1984, 139.) Causal production is a matter of bringing about effects. In our reconstructive interpretation of Austrian theory, it seems fruitful to view causal production as something generated by *causal agents*, that is, entities equipped with *causal powers*. Causal powers, ascribable to things of various kinds, are powers to bring about effects in the world.

Causal propagation is in question when, for example, "[e]xperiences that we had earlier in our lives affect our current behavior. By means of memory, the influence of these past events is transmitted to the present . . . A sonic boom makes us aware of the passage of a jet airplane overhead; a disturbance in the air is propagated from the upper atmosphere to our location on the ground. Signals transmitted from a broadcasting station are received by the radio in our home. News or music reaches us because electromagnetic waves are propagated from the transmitter to the receiver." (Ibid.) Causal propagation is a matter of transmitting influences from one spatio-temporal location to another.

Causal processes, then, involve both causal production and causal propagation, both agency and transmission. There are several important characteristics that causal processes possess. Two of them are particularly relevant to our interpretation of Austrian theory. First, causal processes are *capable of transmitting signals or information* (ibid., 141). Not surprisingly, this will have a significant role in our interpretation of the notion of the market process. Second, causal processes are *self-determined* in that they are not parasitic upon causal influences exterior to the process itself (ibid., 144–145). Again, this will be crucial for our attempt to interpret a theory which has radically pro-market implications.

Salmon has much to say about the role of propagation in causal processes, but he is not very clear about the role of agency or production

in such processes. It seems obvious, however, that we need both concepts of causation in theorizing about causal processes. We need to have an idea of a driving force pushing and keeping the self-sustained process in motion, and we need to have an idea of how the influences of the driving force are transmitted along the causal chain constituting the process. The first is causal production, the second is causal propagation. News or music does not reach us merely "because electromagnetic waves are propagated from the transmitter to the receiver" but also because those waves were generated and sent in the first place and because our radio is capable of receiving them and transforming them into intelligible sounds.

As I will show, the Austrian theory of the market process involves both notions of causation. Entrepreneurship involves causal power which serves as a productive agent; hence, causation as production is involved. Market prices function as carriers of the signals that transmit causal influences from one part of the economy to another; hence, causation as propagation is involved.

Austrian Theory of the Market as a Causal Process Theory

We then have to examine whether Austrian theory is a causal process theory in the above sense, since the suggestion that it invites a realist reading hinges upon its being such a theory. I argue that Austrian theory of the market process is a causal process theory in the required sense. It comprises both the idea of causal agency and the idea of causal propagation. Actors equipped with entrepreneurial alertness are the causal agents of the process, while price signals serve to transmit information across the economy. This means that it is the combination of the Misesian and Hayekian heritages that provides the composite notion of causal process. Note again that, given the character of my problem, I may keep silent about many of the disputed details of the economic theories under discussion; it is their general metaphysical characteristics that matter.

Let us begin with a brief examination of the notion of causal agency. A thing is a causal agent if it possesses a power to bring about effects in the world; therefore we have to clarify the concept of causal power (see, e.g., Harré & Madden, 1975). Having the power to act in a certain way is to be capable of acting that way; it is to be in a state of readiness to act that way; it is to act that way if the appropriate conditions obtain; and it is to act that way by virtue of an intrinsic nature. Causal powers in this sense are akin to tendencies, drives, capacities, propensities and the like. Things

equipped with such powers are capable of causal production. Human powers, when embedded in preferences and plans, beliefs and expectations, make them causally efficacious. They are essential for defining ourselves as human agents.

On an earlier occasion, I have suggested that Kirzner's version of the Austrian theory of entrepreneurship postulates a causal power, namely entrepreneurial alertness (Mäki, 1991a, 158–161). I here repeat the grounds for this suggestion, drawing upon Kirzner's writings. He nowhere explicitly says that entrepreneurship involves a causal power, but I interpret his statements so as to make them support the suggestion, on each of the four conditions of the ascription of causal power:

1. *Having the power to act in a certain way is to be capable of acting that way*. This is what Kirzner is implying when he writes, for example, the following: "Entrepreneurial alertness consists, after all, in the *ability* to notice without search opportunities that have been hitherto overlooked." (Kirzner, 1979, 148; emphasis added.)
2. *Having the power to act in a certain way is to be in a state of readiness to act that way*. This condition seems to be satisfied by statements such as this: "Purposive human action involves a posture of alertness toward the discovery of as yet unperceived opportunities and their exploitation." (Kirzner, 1979, 109.)
3. *Having the power to act in a certain way is to act that way if the appropriate conditions obtain, that is, if the propensity is triggered or stimulated*. Again, textual support is available. Kirzner writes that entrepreneurial alertness is something that can be "*inspired*" by "the lure of market profits" (Kirzner, 1985, 61) and by "freedom of entrepreneurial entry" (ibid., 91); it can be "*tapped*" (ibid., 25) or "*switched on*" by the incentive of "the pure gain..." (ibid., 58–59; emphases added).
4. *Having the power to act in a certain way is to act that way by virtue of an intrinsic nature*. Kirzner does not have much to say about an intrinsic basis for the causal propensity built in entrepreneurship, but he does seem to imply that there is such a psychic basis when he talks about "the qualities that make for entrepreneurial alertness" and refers to "restive temperament, thirst for adventure, ambition, and imagination" (Kirzner, 1985, 26, 89), as well as "vision, boldness, determination, and creativity" (ibid., 64).

It would seem, then, that the notion of entrepreneurial alertness satisfies the conditions of purportedly denoting a causal power. If this is correct,

then entrepreneurial alertness may be treated as a causal power, and human beings presumably having this property as causal agents. These agents are depicted as the producers of causal effects in the market process. Next, we have to examine how the idea of causal propagation is exemplified in Austrian theory.

The obvious candidate for the substance being propagated is information. Here the theory of entrepreneurship has to be combined with the Hayekian insight of the market process as a communication and learning process (Hayek, 1948). The actual market prices are exchange ratios in disequilibrium situations that are characterized by discoordination of the plans and actions of individuals and by the existence of price divergences. These price divergences are reflections of error and ignorance and asymmetric information among market participants; these gaps in prices deliver information about gaps in knowledge, functioning as signals of discoordination. The entrepreneur is alert to discover and utilize these profit opportunities, and by so doing she disseminates knowledge in society. "The market entrepreneur bridges the gaps in mutual knowledge, gaps that would otherwise permit prices to diverge with complete freedom." (Kirzner, 1985, 60).

Disequilibrium market prices are vehicles of conveying information across time and space. "On the one hand, these exchange ratios with all their imperfections reflect the discoveries made up until this moment by profit-seeking entrepreneurs. On the other hand, these ratios express entrepreneurial errors currently being made." (Kirzner, 1985, 133.) By engaging in profit-seeking activities, entrepreneurs, without intending to do so, both receive and send messages, that is, information of the relative scarcities, actual or anticipated, of goods and services now and in the future, and the past and present errors involved. By utilizing this information entrepreneurs thereby help correct the errors. This gives direction to the market process: the market process is a learning process. Agents learn that their expectations have been too optimistic or too pessimistic. The market process is a communication process whereby prices and price differentials transmit information which is utilized by alert entrepreneurs. Their profit-seeking actions unintentionally drive the process and give it direction.

While the accounts of causal process theories in physics usually depict energy as the substance being propagated, I am suggesting that in the Austrian picture of the economy the substance propagated is information. It is the transmission or communication via price signals of information from one part of the market to another that constitutes the aspect of causal propagation in the Austrian theory of the market process. It

therefore seems that Austrian theory also satisfies the second condition of causal process theory.

It is also clear that the Austrian theory of the market process is supposed to preserve the idea of the self-determination of the process. "Our identification of decision making with alert, entrepreneurial human action has provided us with *an explanation for the market process that does not, in principle, depend for its general pattern, upon any extraeconomic factual considerations whatsoever*. The market process emerges as the necessary implication of the circumstances that people act, and that in their actions they err, discover their errors, and tend to revise their actions in a direction likely to be less erroneous than before." (Kirzner, 1979, 30; emphasis in the original.) "Spontaneous order," a popular term among Austrian economists, aptly captures the idea of self-determination. The market allegedly generates a spontaneous, reproductive order without the help of any external causal agent. The market process is represented as a self-supporting process.

In sum, the Austrian theory of the market process seems to be a genuine causal process theory in the required sense.

Theoretical Redescription of the Market Process

Let us refine the above interpretation of Austrian theory by employing the idea of *theoretical redescription*. Theoretical redescription is a matter of redescribing, in theoretical terms, what is already empirically or "phenomenologically" described, as really being something else—this something else constituting the "essence" of the object of (re)description. Take another look at Salmon's example: "When we say that lightning ignites a forest, we mean that the electrical discharge produces a fire." (Salmon, 1984, 139). Here, it is suggested that a causal agent be identified by theoretically redescribing as an electrical discharge a phenomenon that is empirically described as lightning. I suggest that both elements in the Austrian theory of the market as a causal process, namely, the notions of causal agency and causal propagation, involve such theoretical redescriptions. *The reason for the need for theoretical redescription is that the market does not appear to the common sense as a causal process of the kind conceptualized in Austrian theory.*[2]

The commonsense notion of the market is, I think, best formulated in terms of selling and buying. Selling and buying are intentional actions. They are directed to an end in the mind of the seller or buyer. In other words, selling and buying are accompanied by specific "spheres of intendedness", that is, sets of ends, which it is the intention of market transactors

to bring about by performing acts of exchange. The spheres of intendedness of the transactors belong to the realm of the common sense. This is the realm of phenomenological or empirical descriptions of what it is that takes place in the market. However, these descriptions do not capture all the essential facts about selling and buying. There is also a sphere of unintended facts involved in market exchange, that is, the sphere of the invisible hand. This is the proper realm of scientific theory. (See Mäki 1991a, 161–165). In other words, an empirical description of the market in terms of selling and buying does not make it evident that the market is a causal process of the Austrian kind. This can only be revealed by redescribing selling and buying as really being something else, namely, as exercises of entrepreneurial alertness and as discovery and communication of information.

Thus, the action of market agents is theoretically redescribed as a manifestation of entrepreneurial alertness and as a form of the communication of information. Only in this way can the causal contents of the notion of the market be revealed. Let me formulate the two redescriptions in the form of two *ontological identification statements*, one for causal agency, the other for causal propagation. It is the task of such identification statements to describe what, from the point of view of system coordination, *really or ultimately* takes place in the market, when acts of selling and buying *appear* to take place. An analogous identification statement asserts that "Lightning *is* a manifestation of an electrical discharge." Such statements maintain that the objects of the empirical description (lightning or selling and buying) really are the objects of the theoretical redescription following the expressions "is" or "are". "Are" (or in the singular, "is") means "are really", "are at bottom", "are ultimately", etc.

(CA) Selling and buying in the market *are* manifestations of the causal agency of entrepreneurship.

(CP) Selling and buying in the market *are* forms of the causal propagation of information.

Identification statement (CA) is meant to refer to those forms of selling and buying that involve arbitrage or speculation, that is, those that drive the causal process of the market. It may be taken to concern either actual selling and buying which manifest both entrepreneurial and "Robbinsian," and possibly other elements, or else pure entrepreneurial selling and buying, in which case they manifest nothing but entrepreneurial elements. In both cases, Kirzner's account subscribes to (CA).

Identification statement (CP) is meant to concern those cases of im-

personal selling and buying where the exchange ratios approximately reflect the relative scarcities of goods. Again, it is these cases that are relevant for the idea of the market as a causal process. The statement reformulates the Hayekian idea of the market as a telecommunication process. On this interpretation, when Hayek suggested that the market is a discovery and communication process, by that token he subscribed to the theoretical redescription employing (CP).

In Contrast: Equilibrium Theory as a Model Theory

The above argument can be clarified by contrasting Austrian theory with Walrasian general equilibrium theory in its standard formulation. There are two assumptions characteristic of the latter which render it incompatible with the Austrian vision of process. One is the assumption that actors are equipped with complete information. Since it is the state of general equilibrium that is characterized by full information, there is no room and no need for the notion of the market process as a learning or discovery process. Another assumption that effectively excludes the idea of process is that of one (equilibrium) price on which all exchanges take place. In the Austrian theory it is vital that the market envisage a multiplicity of prices for one good. It is these price differentials that provide entrepreneurs with opportunities for arbitrage gain and thus stimulate them to generate the market process.

Before entering on a discussion of the connection between causal process theories and realism, let us introduce a simple contrast between two kinds of theories. This is the philosopher Brian Ellis's distinction between *model theory* and causal process theory. Ellis says that "causal process theories attempt to describe the basic causal processes of nature [... whereas] model theories define norms of behavior against which actual behavior may be compared and explained" (Ellis, 1985, 55; see also Ellis, 1957).

I have argued that Austrian theory is an example of causal process theory. There is a well-known interpretation of general equilibrium theory which makes it an obvious case of model theory in the above sense. I have in mind Frank Hahn's view that the Arrow-Debreu construction of general equilibrium "makes no formal or explicit causal claims at all" and that "no description of any particular process is involved" (Hahn, 1973, 7). Hahn then argues for a reading of the theory as what I would like to call a *critical ideal type*: since the theory is, he thinks, an adequate formalization of the notion of the invisible hand, it can be used to undermine claims about the blessings of the free market by showing that

those claims thereby presuppose the premises of the theory, which we know are very far from the truth. "This negative role of Arrow-Debreu equilibrium I consider almost to be sufficient justification for it, since practical men and ill-trained theorists everywhere in the world do not understand what they are claiming to be the case when they claim a beneficent and coherent role for the invisible hand" (ibid., 14–15). In other words, it is not the task of the Arrow-Debreu construction to provide a true account of the workings of the world, but instead to inform us about what the world would need to be like for the "invisible hand," or rather what Hahn conceives of as the invisible hand, to hold. The problems with Hahn's suggestion notwithstanding, it fits well with the idea that the Arrow-Debreu construction is a model theory in Ellis's sense.

It should be noted that it does not follow from the above suggestion that Hahn's nonrealist reading of general equilibrium theory as a model theory is the only possible reading of all of its versions. For instance, in his numerous writings, Donald Walker (e.g., 1988) has argued, contrary to many other interpretations of Walras, that this founding father himself held a non-Hahnian view of his version of general equilibrium theory. Walker argues that Walras regarded his theory as a true representation of the processes of pricing and adjustment and the ultimate convergence to equilibrium in real markets, these processes involving essentially the role of entrepreneur. This is to suggest that Walras was a realist about his theory. If this is correct and if Walras was justified in holding this view, then it follows that the standard Austrian dichotomy between process theories and end-state theories of the market cannot be used for criticizing Walras's theory.

Causal Process Theories and Realism

There is a simple sense in which some market process theories are more "realistic" than equilibrium state theories: they add a further slice of economic reality to our theoretical picture of the economy, viz. the process connecting equilibrium states. Process theories are not at all, or not merely, about equilibria as end states but also, or merely, about the processes that tend to bring these states about and the driving forces that put the process in motion. Some process theories are therefore richer or more encompassing than equilibrium theories and in this special sense more "realistic." However, it is doubtful whether this circumstance, as such, is a virtue at all from a *realist* point of view. There has to be something special about the element of causal process to make it count when considering the prospects of realism in Austrian economics. I argue

that there is something especially apt in the notion of causal process.

Let us take a look at what Brian Ellis has to say on this matter.

> Now, the argument for scientific realism, insofar as it concerns the reality of theoretical entities, derives whatever force it has from taking causal process theories to be typical of scientific theories generally. For to accept that *A* is the cause of *B* is to accept that both *A* and *B* are real existents .... But no such argument applies to the theoretical entities of model theories, for the hypothetical entities of model theories are not the postulated *causes* of anything. Consequently, there is no parallel argument that to accept a model theory involves the belief that the entities to which it apparently refers really exist. ... Consequently, it does not matter whether these theories are literally true or false. What matters is whether they are adequate to the task for which they were devised. (Ellis, 1985, 55–56)

Thus, Ellis maintains that in the case of causal process theories, "the postulated causes of the phenomena must be supposed to exist if the theory is to be accepted as doing what it purports to do" (ibid., 57). I have three specifications to add to this.

First, Ellis lacks an analysis of the notion of causal process, but we already have one in rough outline. In its light, we may specify the idea of the commitment to the existence of causes so as to make it apply to causes in the twin roles of production and propagation.

Second, causes are to be taken as the proper objects of relevant theoretical redescriptions that tell us what ultimately takes place in our research object. Just as lightning is to be redescribed as electrical discharge, buying and selling are to be redescribed by means of ontological identification statements (CA) and (CP) in order to capture the causal structure of the respective processes.

Third, Ellis does not explicitly provide us with a general criterion of existence, one that would discriminate between the objects of model theories and causal process theories. The obvious candidate, of course, is this: for something to exist, it has to be able to cause effects. The notion of causation, of course, can be variously specified, but ours—causation as comprising both production and propagation—can be used to provide a particularly strong criterion of existence or hypothetical existence. Note that the accomplishment of the task of the present essay does not require a criterion of existence, but one of hypothetical existence. Since Ellis talks about the acceptance of or belief in a theory, he needs the former. Since we are interested in the grounds for a realist reading of a theory, we may be content with the latter. Such a criterion seems to underlie the intuitively plausible argument that, unlike model theories, causal process theories invite a realist reading.

Causal process theories have been constructed for the purpose of

providing accounts of the more or less detailed workings of the world with the promise or hope of delivering the truth about the causal agents and causal propagation. This is why such theories invite a realist reading. Other virtues such as coherence, predictive power, and heuristic suggestiveness may be possessed by theories which make no claims to truth. That certain statements logically cohere, that they help predict occurrences in the world, that they suggest strategies of modelling, or that they help uncover divergencies between the actual and the ideal—none of this compels or even encourages scientists literally to believe in or even to attempt to test the truth of the picture given by the theory composed of such statements.

On the other hand, the objects of causal process theories are candidates for real existents that hold definite roles in the causal order of the world. Acceptance of such a theory implies a belief in (at least the plausible possibility of) the existence of the things and properties postulated by the theory. Causal process theories hold the promise of capturing what exists in a particularly strong way in that they are not content with citing causes and effects within an event ontology, but instead give a detailed account of relevant causal powers and connections, consisting of both production and propagation. In other words, such theories inform us about *what* there is in the causes that make them able to generate certain effects and *how* they manage to generate those effects. Such theories are obvious candidates for true accounts of what really takes place in the world.[3]

Austrian Process Theory and Realism

I have argued that the Austrian theory of the market process is a causal process theory in the required sense. It involves a conception of the causal agent or the driving force of the process as well as a notion of the causal propagation of information along with the process. I am arguing that as a result Austrian theory invites a realist reading.

To make this argument more concrete, I now proceed to develop further the suggestion I have made earlier that Austrian economics subscribes to a combination of commonsense realism (in its conception of the economic agent) and scientific realism (in its conception of the invisible hand). (See Mäki 1990a, 336–338; 1990b, 301–304, 307–308.) The specification of this idea utilizes the suggested analysis of the causal and processual metaphysics of Austrian theory.

The set of questions relevant to realism comprises not only the question of existence and truth, pure and simple, but also that of the *causal relevance* or causal role of the presumed existents in the order of things.

We may be convinced that there are human beings and that they are equipped with faculties such as purposefulness, ignorance, alertness, and learning capacities. At the same time, we have little reason to doubt that humans are prone to reflexive and routine behavior and are often incapable of discovering opportunities or learning from errors. These judgements are based on commonsense experience; no scientific theory is required to inform us about such familiar facts about human beings. However, commonsense understanding alone does not provide us with much aid in deciding which of the human propensities are *causally relevant* for the emergence of the social entities with which our explanatory theories are concerned. In other words, our commonsense understanding is not sufficient for conceptualizing human beings as the causal agents of invisible-hand processes. It is here in our quest for understanding the role of facts about humans in the social order of things that we have to appeal to an explanatory scientific theory. In deciding on the causal relevance of this or that set of human propensities, we need a theory that links those propensities to a set of social outcomes as our *explananda*. A causal process theory serves precisely this purpose. It shows how a set of human propensities operating within a social framework brings about a process, possibly with potentialities for social outcomes of this or that kind.

The specification I have in mind should now be obvious. Austrian economics involves commonsense realism in its conception of economic actors in that it shares the folk psychological conceptualization of human action in intentional terms regarded as genuinely referential. That human beings exist and that they act purposefully and alertly to opportunities, commit errors and learn from them, buy and sell goods in the market, make profits and losses, and so on; all this is nothing new from the point of view of our commonsense view about humans. Of course, on the same commonsense basis, humans may truthfully be claimed to possess many other properties and to engage in many other activities as well. The simple attribution of existence and certain propensities and actions to human beings goes together with commonsense realism.

However, making such claims of existence and truth, pure and simple, within commonsense realism does not yet enable us to make any reliable judgements concerning the causal relevance of any of those existents from the point of view of the explanatory tasks of economics. To be able to attribute the further quality of causal relevance to some of the human propensities and actions, that is, in ascribing to them a crucial causal role in the social order of things, we need a scientific theory understood in a realist fashion. Austrian economists claim to possess this ability, and in doing so they subscribe to scientific realism. The existence of an invisible-hand process as a causal process is not an obvious fact from a commonsense

point of view. The attribution of causal relevance and scientific realism thus go together.

Let the above distinction be misunderstood, let it be added that attributions of causal relevance belong also to the purview of folk psychology: the beliefs and desires of actors may be regarded as the causes of their actions, irrespective of what these beliefs, desires, and actions ultimately are, in neurophysiological or other noncommonsense terms. Economics, however, seems to have little interest in this circumstance as such, so I have ignored it here. Instead, I use "causal relevance" as a shorthand for "causal relevance in regard to the market process." It is the causal relevance of those mental qualities that help push and keep the market process in motion that are of interest here.

It is precisely the point of the theoretical redescription of buying and selling by means of identification statements (CA) and (CP) to specify those aspects of market transaction that are believed to have causal relevance. A materialist may identify market transaction with (or redescribe it as) certain kinds of neurophysiological process. This would not, however, reveal those aspects of transactions that would be regarded by Austrian economists as causally relevant to the market process. Similarly, redescribing lightning as Aristotle did would not be regarded by modern scientists as revealing the causation of a forest fire. It is the redescription of lightning as electrical discharge that is needed. Similarly, entrepreneurship and the discovery and communication of information are the relevant aspects of selling and buying in the causal process of the market.

The case of (observed) lightning identified with a manifestation of an (unobserved) electrical discharge is a matter of scientific realism. The question is whether electrical discharge as a theoretical entity exists and whether a theory about it comes close to the truth. The situation in regard to entrepreneurship and the discovery and communication of information as the theoretical entities of Austrian theory is different. The question of existence in this case is a matter of commonsense realism involved in folk psychology. It is the question of their causal relevance for the market process shaped by the invisible hand that is a matter of scientific realism. *This* is what I mean by suggesting that Austrian economics subscribes to a combination of commonsense realism and scientific realism.

Austrian Theory as an Isolative Theory

Causal process theories are hypothetical descriptions of causal processes in the world. By representing the causal history of an *explanandum*, or the causal process that results in the *explanandum*, a causal process

theory provides us with a causal explanation. Not all scientific theories are causal process theories. Recall Brian Ellis's suggestion that there are other kinds of theory, such as those that he calls "model theories" (or, using the vocabulary familiar to the social scientist, we might call them also "ideal type theories"). They provide ideal norms of the state or behavior of some system. It is against these ideals which actual states or behavior may be compared so that the possible divergence between the two can be explained if required. (Ellis, 1985.)

It seems clear that on Hahn's interpretation, Walrasian general equilibrium theory is a model theory in the above sense. What is interesting about the Austrian process theory is that, as I will show next, it appears to have features characteristic of both model theories and causal process theories in the sense Ellis uses these terms. This has two interesting implications. First, it calls for a qualification in the distinction between causal process theory and model theory as a dichotomous distinction. Secondly, and more interestingly from our present point of view, the obvious fact that Austrian theory bears features of model theory poses a challenge to our realist reading. I am suggesting that the Austrian theory appears as a model theory in that the market process is described by the theory as an isolated process, as an "ideal norm".

Austrian theory isolates the market process from various "disturbing" influences, most notably from various kinds of state intervention. It is a theory of a causal process that is self-determined and able to bring about coordination in the economy, only provided no other significant causes intervene. In Kirzner's words, "an entrepreneurial discovery process . . ., in the absence of external changes in underlying conditions, fuels a tendency toward equilibrium" (Kirzner, 1985, 12). This is an implication of the allegation of the self-sustaining or spontaneously beneficial character of the market process. As a matter of actual fact, however, the market is hardly ever allowed to do its work spontaneously, undisturbed by intervening influences such as monetary expansion by the central bank, minimum-wage legislation, or rent control. Yet, the theory isolates the process from those influences. This is one feature characteristic of model theories shared by Austrian theory.[4]

Two kinds of empirical investigation practised by Austrian economists reflect the character of the theory as an isolative model theory. First, much research in Austrian economics addresses itself to explaining states and tendencies of discoordination in the economy as divergences from what the market process would allegedly have generated in isolation. This is accomplished by referring to those external influences that have actually intervened in the market process—a feature shared by model theories, according to Ellis.

There is another category of empirical research that reflects the character of the Austrian theory as an isolative theory. It is not mentioned by Ellis, but it is practised by Austrian economists. I have in mind the attempts to find actual cases in economic history where the major isolative assumptions of the theory have been true or close to the truth, that is, where the relevant isolations have actually materialized themselves or where the intervening influences have been negligible. One then attempts to show that in these cases the outcomes of the market process are spontaneously coordinated.

Now, it may be suggested that due to the fact that Austrian process theory is similar to neoclassical equilibrium theory, in that it has a strongly isolating and idealizing character, it has no more right to a realist reading than neoclassical equilibrium theory. This objection questions whether there is any genuine difference between Walrasian general equilibrium theory and Austrian theory in metaphysical and semantic terms. Both are, after all, representations of a counterfactual case, are they not? While Walrasian equilibrium theory describes an ideal state, Austrian theory describes an ideal process. The causal process represented by Austrian theory is often counterfactual in that, for example, the process takes place in the absence of state intervention, even though in actual economies the state more often than not intervenes in one way or another. As a consequence, there usually is a dicrepancy between the ideal process represented by the theory and the actual process. What is it that justifies our claiming that Austrian theory invites an interpretation as a hypothetical description of a real economic process?

In order to understand the difference between Walrasian theory in Hahn's interpretation and Austrian theory we have to see the distinction between real causal powers and tendencies on the one hand and their actual manifestations on the other. Austrian theory is about the market process as a causal process in the following sense. It depicts the fundamental driving forces or the causal powers and the tendencies they give rise to, and it follows the propagation of their influences through the market process, isolated from all disturbing factors. The actual process is not effectively or materially isolated, but is also moulded by many other factors, except for those that are included in the theory. Given such a reading of Austrian theory, it may be taken as a candidate for a true representation of real powers and tendencies and the process they would generate in the absence of intervening factors. The truth of Austrian theory would not be shattered merely by its being about the tendential features of the economy.

What about Walrasian theory in Hahn's interpretation? Why would it not be appropriate to interpret it in realist terms as well? Its counterfactual

character should not in itself prevent such a reading, if it does not do so in the case of Austrian theory. It would appear that the crucial problem with equilibrium theory is that it is difficult to construe it as a theory about tendencies, for example, about the tendency towards the state of general equilibrium. The theory appears to be about a possible, nonactual state. The theory itself says nothing about whether there is a tendency inherent in the real forces of the economy towards the equilibrium or some other state. *Tendencies* may fail to actualize themselves without making theories of those tendencies false. But the permanent nonactuality of possible *states* as the sole objects of a theory does not give strong support to the idea that the theory might turn out to be true, or that truth is a relevant category in its context.

I will now suggest an essentialist specification of the idea pursued above. Let us take a look at a passage by Israel Kirzner in which he states that

> the dominant [equilibrium] theory, by emphasizing certain features of the market to the exclusion of others, has constructed a mental picture of the market that has virtually left out a number of elements that are of critical importance to a full understanding of its operation (Kirzner 1973, 4).

What is suggested here? Neoclassical equilibrium theory has excluded a number of elements of the market; the theory is isolative and in this sense unrealistic. But this would not serve as an effective criticism of the theory; any theory, Austrian theory included, is unrealistic in this sense. The crucial point is that neoclassical theory has excluded elements that are of "critical importance" to an understanding of the market. Kirzner expresses his point by saying that what is at stake is a "full understanding" of the market. There may be a possibility of misunderstanding here. I suggest the attribute "full" be understood as meaning not comprehensive or wide, but deep. It is ontological depth, not merely width, that is claimed to be gained by revising the isolations of neoclassical theory. The inclusion of emotions and moral feelings (or the shoe sizes) of market agents in the isolated field of the theory would increase its width, but Austrian economists refuse to take this step. Why? Because, I suggest, they think this would not increase the ontological depth of our theoretical account of the market. In other words, emotions, moral feelings, and shoe sizes are not regarded as causally relevant for the market process.

On the other hand, it is the inclusion of entrepreneurship in the isolated field of the theory that is believed to do the trick. Entrepreneurship is supposed to be constitutive of the essence of the market. By excluding entrepreneurship, neoclassical theory is alleged to lose the chance of

understanding the essence of the market. I suggest the following: *The Austrian theory of the market process is a theory of the essence of the market*. The strongly isolative character of the theory serves precisely this idea. Instead of detaching the theory from reality, the revised isolation allegedly brings it closer to the essential aspects of reality. *Far from being in conflict with a realist reading of the theory, its isolative character in fact strengthens my case*. This argument also implies that we have to distinguish between model theories in Ellis's nonrealist sense and isolative theories in the present realist sense. Those features of Austrian theory that we have discussed suggest that it is not a model theory but only appears as such.

There are other deforming assumptions in some formulations of the theory that do not appear to have similar essentialist grounding. To these belongs the decision

> to view the market, in a world of production, *as if all* entrepreneurial activity were in fact carried on by producers; in other words, it now becomes convenient to think of resource owners and consumers as passive price-takers, exercising no entrepreneurial judgement of their own and simply reacting passively to the opportunities to sell and buy which the producer-entrepreneurs hold out to them directly. (Kirzner 1973, 18.)

Let us formulate this assumption as follows:

(P) All entrepreneurial activity is carried on by producers.

It would seem from the above quotation that the decision to accept (P) is not primarily dictated by the beliefs of the Austrian economist about the structure of the world. Indeed, Kirzner states more explicitly that "[o]f course this is only an analytical convenience, but it will simplify much of the discussion and will help lay bare the inner workings of the market in the complex world of production." (ibid.) If this were the case, that is, if (P) were nothing but a simplification device, it would follow that (P) would not distort the theoretical image of the essence of the market.

The situation is a little more complicated though. Kirzner also says that producers constitute "a built-in group of entrepreneurs" and that "production involves a necessarily entrepreneurial type of market activity" (ibid.). This seems to imply that beliefs about the structure of reality do play a role in the decision to accept (P) after all, that is, assuming (P) is not a matter of mere theoretical convenience. All this is related to the concern about the essence of the market. The statement, "production involves a necessarily entrepreneurial type of market activity" says that production and entrepreneurship are connected by the relation of necessity.

We have to be careful with what this means. *Production necessarily involves entrepreneurial action. Entrepreneurial action does not necessarily involve production.* On the other hand, *consumption does not necessarily involve entrepreneurial action*, although it most often does, more or less. Entrepreneurship, then, is part of the essence of production. Production, on the other hand, is not part of the essence of entrepreneurship. But because entrepreneurship is not part of the essence of consumption, (P) is more in accord with reality than the assumption

(E) All entrepreneurial activity is carried on by consumers.

We may then say that there is an important sense in which (P) is more realistic than (E). In any case, the conclusion is the same as with the premise that (P) is nothing but a simplifying device. The idea in both cases is that assumption (P) will not in any way distort the suggested theoretical comprehension of the essence of the market. On the contrary, the deforming assumption is introduced in order to help us see more clearly the role of entrepreneurship in the real constitution of the market process.

Conclusion

I have argued that (a) the Austrian theory of the market has the character of a causal process theory; (b) this supports a realist reading of the theory; and (c) the realist reading is not undermined by the theory also having the character of an isolative theory. Recall that the argument is not dependent on the details of the version of Austrian theory we have discussed. Any economic theory of the same metaphysical character should qualify for similar treatment.

We may ask how these suggestions relate to the standard discussion on the methodology of Austrian economics. As in economic methodology in general, this discussion has been mainly concerned with the issue of epistemic appraisal. The received view of the methodological character of Austrian economic theory is that it is accompanied by dogmatic insulation from criticism, that it is made immune to falsification and intact by empirical evidence (see, e.g., Blaug, 1980; Hutchison, 1981). Since such an epistemology of dogmatic nonfallibilism may be regarded as inconsistent with the fundamental standards of science, Austrian economics may appear as unscientific from such a perspective. On the other hand, since

no consensus amongst economic methodologists or philosophers of science obtains over what the fundamental standards of science are, we may feel justified in adopting a less dogmatic call for critical appraisal, following Bruce Caldwell's "critical pluralism" (Caldwell, 1984, 1986; see the reactions by Rotwein, 1986 and Hirsch, 1986).

The suggestions of the present chapter can be used to support Caldwell's line and to specify it in the case of Austrian economics. If claims (a) to (c) are correct, then it follows that (i) metaphysical evidence (not merely empirical evidence) can be used to discriminate between theories as to the appropriate "reading," supposed to disclose their general character, and that (ii) the selection of whatever further evidence (including empirical evidence) is judged relevant for assessing a theory should depend on its "reading" as well as its detailed assertions. An assessment of a theory should depend on what it is.

To restate a point made on an earlier occasion (Mäki, 1990a, 338–339): if it is part of the character of the Austrian theory of the market that it is a purportedly true and explanatory, but nonpredictive isolative representation of causal processes that actually occur in open, nonisolated circumstances, then it should be assessed as such an attempt, and not as if it involved the pursuit of something else. If the metaphysically grounded realist reading is correct, then the further evidence should be such that it can be used to judge whether the Austrian theory has the realist virtues of being relevantly true or close to the relevant truth from an explanatory point of view.

It is one thing to appraise theories as to *how well* they attain the ends they are used to pursue; it is another thing to appraise *how good* those ends are. Before either of these tasks can be accomplished, we have to tackle the third problem of understanding *what* those ends are and *how* they are pursued. The foregoing is an attempt to promote such an understanding. It is also suggested that this idea should be more generally acknowledged in economic methodology.

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Notes

1. I distinguish between realism (as a philosophical doctrine) and realisticness (as an attribute of representations)—and nonrealism and unrealisticness, respectively—and their numerous varieties. For an analysis of some of the kinds of and interrelations between realism and realisticness, see Mäki, 1989, 1991b, 1992.

2. For a lengthy discussion of the idea of theoretical redescription in the context of Austrian explanation, see Mäki, 1990a.

3. My views are interestingly related to those of Nancy Cartwright's in her *How the Laws of Physics Lie* (1983). She argues that if an entity holds a causal role in our account of the world, this may be taken as a reason for believing in its existence. This much I am inclined to share with Cartwright. However, when she maintains that it is a characteristic of explanatory theories that they are false, our ways depart. It seems that this difference is at least partly rooted in different conceptions of the relation of truth to theoretical isolation, to be discussed in the section on "Austrian Theory as an Isolative Theory" below (see also Mäki, 1991c, 1992).

4. For a general discussion of the method of isolation and the related idealizations in economic theorizing, see Mäki, 1991d.

References

Blaug, Mark. 1980. *The Methodology of Economics: Or How Economists Explain*. Cambridge: Cambridge University Press.

Caldwell, Bruce. 1984. "Praxeology and its Critics: an Appraisal," *History of Political Economy* 16, 363–379.

Caldwell, Bruce. 1986. "Towards a broader conception of criticism," *History of Political Economy* 18, 675–681.

Cartwright, Nancy. 1983. *How the Laws of Physics Lie*. Oxford: Oxford University Press.

Ellis, Brian. 1957. "A Comparison of Process and Non-process Theories in the Physical Sciences," *British Journal for the Philosophy of Science* 8, 45–56.

Ellis, Brian. 1985. "What Science Aims to Do." In *Images of Science*, P. M. Churchland and C. A. Hooker, (eds.) Chicago: Chicago University Press.

Hahn, Frank. 1973. *On the Notion of Equilibrium in Economics*. Cambridge: Cambridge University Press.

Harré, R. and E. Madden. 1975. *Causal Powers*. Oxford: Basil Blackwell.

Hayek, F. A. 1948. Individualism and Economic Order. Chicago: University of Chicago Press.

Hirsch, Abraham. 1986. "Caldwell on Praxeology and its Critics: A Reappraisal," *History of Political Economy* 18, 661–668.

Hutchison, Terence. 1981. *The Politics and Philosophy of Economics*. Oxford: Basil Blackwell.

Kirzner, Israel. 1973. *Competition and Entrepreneurship*. Chicago: University of Chicago Press.

Kirzner, Israel. 1979. *Perception, Opportunity, and Profit*. Chicago: University of Chicago Press.

Kirzner, Israel. 1985. *Discovery and the Capitalist Process*. Chicago: University of Chicago Press.

Mäki, Uskali. 1989. "On the Problem of Realism in Economics," *Ricerche Economiche*, 43, 176–198. (To be reprinted in *The Philosophy and Methodology of Economics*, edited by Bruce Caldwell. Edward Elgar.)

Mäki, Uskali. 1990a. "Scientific Realism and Austrian Explanation," *Review of Political Economy* 2, 310–344.

Mäki, Uskali. 1990b. "Mengerian Economics in Realist Perspective." In *Carl Menger and His Legacy in Economics*, B. J. Caldwell, (e.d.) Annual Supplement to *History of Political Economy* 22, 289–310.

Mäki, Uskali. 1991a. "Practical Syllogism, Entrepreneurship, and the Invisible Hand." In *Economics and Hermeneutics*, D. Lavoie, (ed.) London: Routledge, 149–176.

Mäki, Uskali. 1991b. "Friedman and Realism," *Research in the History of Economic Thought and Methodology* 10: (forthcoming).

Mäki, Uskali. 1991c. "Comment on Hands." In *Appraising Modern Economics: Studies in the Methodology of Scientific Research Programmes*. Mark Blaug and Neil de Marchi, (eds.) Aldershot, UK: Edward Elgar, 85–90.

Mäki, Uskali. 1991d. "Universals and the *Methodenstreit*: Carl Menger's Conception of Economics as an Exact Science." Mimeo.

Mäki, Uskali. 1992. "On the Method of Isolation in Economics." In *Poznan Studies in the Philosophy of the Sciences and the Humanities* 25, Special issue on *Intelligibility in Science*, Craig Dilworth, (ed.), 319–354.

Rotwein, Eugene. 1986. "Flirting with Apriorism: Caldwell on Mises," *History of Political Economy* 18, 669–673.

Salmon, Wesley C. 1980. "Causality: Production and Propagation," *PSA 1980*, 2, 49–69.

Salmon, Wesley C. 1984. *Scientific Explanation and the Causal Structure of the World*. Princeton: Princeton University Press.

Walker, Donald. 1988. "Iteration in Walras's theory of tatonnement," *De Economist* 136, 299–316.