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FACTS AND COUNTERFACTUALS IN ECONOMIC LAW

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Ludwig von Mises emphasized that economics is the foremost political science of our age. As such, the clarification of the facts on which this science is built, and of the way political conclusions are based on them, is of the greatest practical importance.[1]

The same spirit of a practical-minded interest for the epistemology and methodology of economic science motivates the present paper. I will argue that the nature of human choice jeopardises the mainstream approach to analysing human action, and then show that the difficulties of analysing choice can be overcome once it is recognised that a whole class of economic laws are counterfactual laws. They concern the relationship between what human beings actually do (their behaviour, their thoughts) and what they could have done instead. These laws can be applied in counterfactual analyses of the real world, which consist in comparing observed human behaviour and its unrealised choice alternatives in various (e.g., quantitative) terms.[2]

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[1]See Ludwig von Mises, *Epistemological Problems of Economics*, 3rd ed. (Auburn, Ala.: Ludwig von Mises Institute, 2003), p. xvii; and Ludwig von Mises, *Human Action*, scholar's ed. (Auburn, Ala.: Ludwig von Mises Institute, 1998), pp. 6f.

[2]For a case study in the economics of profit, loss, and equilibrium, see Jörg Guido Hülsmann, "A Realist Approach to Equilibrium Analysis," *Quarterly Journal of Austrian Economics* 3, no. 4 (Winter 2000), where I defend the

FACTS, LAWS, AND SCIENCE

Let us first make some general observations about common scientific ground, to put into perspective both the criticism of mainstream economics and our exposition of the nature of the laws of choice.

Carl Menger and Ludwig von Mises both rejected *methodological monism*, emphasising the need to take account of the special features of human action by a special method of economic enquiry. They insisted that economic science had a distinct logical and epistemological character. It was in this regard different from both history and the natural sciences.[3] But this does not mean that Austrian economists could not subscribe to some broadly conceived *scientific monism* that

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thesis that equilibrium analysis is the method of explaining observed success by contrasting it to counterfactual failure, and observed failure by contrasting it to counterfactual success.

[3]See Carl Menger, *Grundsätze der Volkswirtschaftslehre* (Vienna: Braumüller, 1871); Carl Menger, *Untersuchungen zur Methode der Socialwissenschaften und der politischen Oekonomie insbesondere* (Leipzig: Duncker & Humblot, 1883); Mises, *Epistemological Problems of Economics*; Ludwig von Mises, *Nationalökonomie* (Geneva: Union, 1940); Mises, *Human Action*; Ludwig von Mises, *Theory and History*, 3rd ed. (Auburn, Ala.: Ludwig von Mises Institute, 1985); and Ludwig von Mises, *The Ultimate Foundation of Economic Science* (Princeton, N.J.: Van Nostrand, 1962).

Of all of Mises's contributions, his methodological works are probably least understood and least appreciated, even by many Austrian economists. The *pars detruens* of these works addressed the two paradigms (and major variants thereof) that have dominated economic science almost from its very inception: historicism, which is based on the assumption that there are no laws of human action; and positivism, which claims that the observation-based methods of the natural sciences are suitable to uncover all laws in any field of knowledge.

More recently, Mises's point that human action cannot be modeled in the same way as physicists model the universe of dead matter has been reinforced. See Hans-Hermann Hoppe, *Kritik der kausalwissenschaftlichen Sozialforschung* (Opladen: Westdeutscher Verlag, 1982); Hans-Hermann Hoppe, *The Economics and Ethics of Private Property* (Boston: Kluwer, 1993), chap. 7; Hans-Hermann Hoppe, *Praxeology and Economic Science* (Auburn, Ala.: Mises Institute, 1995).

In the *pars construens* of his methodological work, Mises argued that economic science deals with *a priori* laws that cannot possibly be refuted or confirmed by observation-based methods. This article will lend additional support to this thesis.

stresses common features of all sciences. Nothing in Menger's and Mises's writings contradicts scientific monism in the broad sense of a belief that all types of scientific enquiry seek to explain certain empirical facts, "empirical" meaning that these facts are ascertainable by human senses or human reason. In all sciences, to explain such a fact means to relate it (the *explicandum*) in a special way to another fact (the *explicans*). The special relationship that links the two facts and thereby puts us in a position to explain the one through the other is commonly called a "law."

Any relationship between facts is itself a fact, but only those relationships that we call laws transcend the individual case under consideration, which is why they are "special" relationships. For example, when applying the law of gravity to explain why an apple has just fallen from the tree to the ground, we do not have in mind a relationship that applies merely to this particular apple at this particular point of time and space. Rather, the law holds for all apples and for all other objects located on the surface of the earth; in fact, it holds for *any* two bodies, situated anywhere in the known universe. Any two bodies, by the mere virtue of their masses, attract one another.

By virtue of what is it that a law transcends the individual cases in which it applies? Let us consider again the law of gravity. This law is a relationship between *any* two masses, that is, its application is conditioned by the mere existence of two distinguishable masses. All things that have the *property* of having a mass are, therefore, subject to the law of gravity. And because this property of having a mass does not pertain merely to one unique thing in the universe, but to very many things, all these things are subject to the law of gravity. One can express the same state of affairs from a slightly different angle, by saying that it is the *nature* of masses to be subject to the law of gravity.

The same thing holds true, *mutatis mutandis*, for all laws. Each law is a relationship between certain properties of things (properties being distinguishable qualities of distinguishable things), and each law therefore applies wherever the properties that the law relates to one another are given. And again, in a slightly different expression: laws—that is, *all* laws, whether they refer to a physical, biological, social, or praxeological nature—are *essential relationships* between distinguishable facts. For any fact is subject to laws if, by its very *nature* (by its properties), it is related through the law to other facts.

The systematic search for facts and laws seems to characterise scientific endeavours in all fields of knowledge—it constitutes what we

called above "scientific monism."[4] Science, at least as it is traditionally understood, seeks to uncover laws in the sense of such essential relationships between distinguishable facts. For the knowledge (scientia) of laws can be applied to a much larger class of phenomena than to the comparatively few facts of which the scientist has immediate personal experience. It is clear that, as soon as we leave the realm of laws and enter the realm of mere accidental relationships, no such generalised applications are possible without wreaking havoc. For example, while Mr Jones's house might have one bedroom that is 213.2 square feet large, it is not commendable to equip all bedrooms in the world as if they had that size, or to plan all houses in the world on the premise that they will have exactly one bedroom of that size. And although a power shortage in California might occur on the same day that Californian utilities are privatised, it is not commendable to delay any privatisation of utilities if power shortages are to be prevented. To sum up, one can establish virtually any number of *accidental* relationships, and some mystics and daydreamers actually rejoice in such "discoveries." But the purpose of science is a different one.

Let us emphasise that our "broad" vision of science involves a large notion of what an empirical fact is. Above we said that such facts are ascertainable by human senses or human reason, thus stressing that *not all* empirical facts are perceptible or ascertainable by the human senses. This is widely acknowledged in fields such as psychology and in other fields of enquiry based on psychological analysis. In neo-classical microeconomics, for example, the individual's degree

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[4]See, for example, Mises, *Epistemological Problems of Economics*, pp. 1ff.; Carl Hempel, *Aspects of Scientific Explanation and Other Essays in the Philosophy of Science* (New York: Free Press, 1965), pp. 331ff.; Karl Popper, "Die Zielsetzung der Erfahrungswissenschaft," in *Theorie und Realität—Ausgewählte Aufsätze zur Wissenschaftslehre der Sozialwissenschaften*, ed. H. Albert (Tübingen: Mohr, 1964), pp. 73–86; Karl Popper, "Falsifizierbarket, zwei Bedeutungen von," in *Handlexikon zur Wissenschaftstheorie*, ed. H. Seiffert and G. Radnitzky (München: Ehrenwirt, 1989), pp. 82–86; Gerard Radnitzky, "Explikation," in *Handlexikon zur Wissenschaftstheorie*, pp. 73-80; and Jean Largeault, *Introduction à la philosophie réaliste* (Paris, 1985), pp. 18f.

We can neglect at this point the question of how laws in general relate to reality, that is, whether they exist independent of experienced reality (platonic laws *ante rem*), in reality (realist laws *in re*), or have no existence at all, but are mere names to summarise our hypotheses about certain relationships (nominal laws *post rem*). In any event, we shall see that counterfactual economic laws are laws *in re*.

of satisfaction is one of the constitutive elements of the theory of prices.

It will be crucial for our argument that there are different types of empirical facts. However, there is no need for us to venture toward some sophisticated ontology of facts since, for our purposes, it suffices to identify and distinguish between four types of facts.

First, there are facts that we can ascertain by our senses. These facts are invariably extended in time (they are "events") for otherwise we could not perceive them through our ears, eyes, and other senses. Examples are horses, colours, houses, cheese, melodies, clouds, the smell of vinegar, the taste of red vine, etc.

Second, there are facts that we ascertain through our feelings and psychological introspection. These facts are also extended in time ("events") and differ from those of the first type only in that they are not experienced through our sense organs, but by means of "interior" perception. Examples are feelings of joy, pain, sorrow, excitement, thought processes, dreams, intentions, etc.

Third, there are facts that we ascertain through an exercise of our unaided reason and that, although the process through which we come to know them takes time, are not themselves extended in time. Examples are circles, rectangles, and points, but also, as we shall see, human choice and its manifold aspects and modifications like ends, means, success, error, bankruptcy, value, etc.

Fourth, there are laws that we ascertain through an exercise of our unaided reason and that, although the process through which we come to know them takes time, are not themselves extended in time. Examples are the geometrical relationships described by the Pythagorean Theorem or by the number π, and also, as we shall see, various relationships of human action.

CHOICE

In the light of these preliminary observations, let us now turn to the fundamental fact and object of the social sciences, namely, human choice. Most difficulties in the theoretical social sciences stem from the problems raised in analysing human decision-making, and the very same difficulties oppose attempts at methodological clarification.

The very first thing to emphasise about choice is that it exists; it *is* a fact. Human beings do choose, and the capacity to make choices

is an essential feature of human nature. This fundamental point must be stressed at the outset since it makes no sense to discuss the implications of a fact if one does not agree on this fact itself.[5]

Choice always manifests some engagement of our human faculties. It always establishes a fact extended in time. In particular, we choose to think about something or another, thus manifesting our choice in the way we engage our intellectual faculties; or we choose to behave in a certain way, thus manifesting our choice in the way we use our body. There seems to be nothing unusual about choice, then, as far as the factual analysis of its manifestations is concerned. The observable movements of the human body through time and space seem to be amenable to the same type of explanation given in all other sciences, in which the observed fact is referred back to (determined by) some other observed fact. But if we take a closer look at human choice, we discover that it is impossible to fully explain it in terms of other observed events, and moreover that this impossibility stems from the very nature of choice. The fundamental truth about choice is that it is impossible to explain it as *exclusively* related to simultaneous, previous, or subsequent events X, Y, and Z.

Suppose that in our analysis of human action, we are able to give a complete enumeration of all the conditions under which human action takes place, and this for every single action. Then we would still not be able to formulate a law according to which any observed behaviour results from one of these conditions, or from a combination thereof. The reason is the existence of choice. A man who finds himself twice

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[5]Antony Flew, in *Equality in Liberty and Justice* (New Brunswick, N.J.: Transaction, 2001), p. 11, writes: "we have the most direct and the most expugnable certain experience . . . of being, on some occasions, able to do other than we do do." See also Antony Flew, *Thinking About Social Thinking*, 2nd ed. (Amherst, N.Y.: Prometheus, 1995), pp. 122ff., where he speaks of the "inescapable reality of choice."

In traditional philosophy, the same phenomenon has often been dealt with under the heading of "will" or "free will." Consider this passage from John Locke: "This at least I think evident, that we find in ourselves a power to begin or forbear, continue or end, several actions of our minds and motions of our bodies, barely by a thought or preference of the mind ordering, or, as it were, commanding the doing or not doing such or such a particular action. This power . . . is that which we call 'volition' or 'willing.'" John Locke, *An Essay Concerning Human Understanding* (Amherst, N.Y.: Prometheus, 1995), pp. 165f.

in exactly the same situation might choose to do X the first time and Y the second time. There is no law that can fully explain his choice in terms of the mere circumstances of his action. (Notice that this problem is more fundamental than the difficulty of setting up laboratory experiments to study human behaviour. Even if we could create adequate laboratory conditions to control for the innumerable circumstances of action, we could not control choice. And, as a consequence, the experiment could not help us to determine the impact of any condition on human behaviour.)

The simple fact is that choice is an essential element of human behaviour, and that choice is not itself determined by factors outside of human action. Human action is, therefore, to some extent self-determined, so it cannot be fully explained by those other factors. There is a hard core of liberty in human action that operates even in the lives of paupers, which, as far as material conditions are concerned, are highly determined by their "milieu."[6] Of course, the lives of rich people are also constrained, though within larger margins. Choice is always constrained, to the point that the acting person could be said to merely choose the constraints circumscribing its future actions. Yet, none of this has any effect on the essence of choice. Irrespective of how small the scope for choice is, within this scope, choice is to some extent undetermined and undeterminable; here, the human being is self-determining.

To sum up, because of the existence of choice, it is impossible to give a full explanation of human behaviour in the mere light of any other event, or a combination of other events. There are to be sure boundaries of choice and, thus, there are also laws concerning the impact of these boundaries on choice. But choice itself, whatever its

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[6]On the far-reaching implications of this fact for social analysis see, for example, Max Weber, *Gesammelte Aufsätze zur Wissenschaftslehre* (Tübingen: Mohr, 1988); Wilhelm Dilthey, *Einleitung in die Geisteswissenschaft*, Tübingen: Mohr, 1922); Heinrich Rickert, *Science and History: A Critique of Positivist Epistemology* (Princeton, N.J.: Van Nostrand, 1962); Mises, *Theory and History*; P.L. Gardiner, *The Nature of Historical Explanation* (London: Oxford University Press, 1952); and W. Dray, *Laws and Explanation in History* (London: Oxford University Press, 1957). These authors argue that there are no laws of particular action courses, so the application of positivist methodologies is impossible in applied social research. However, Mises alone among these authors was aware that there are, nevertheless, laws of human action.

boundaries are, is to some extent not bound, but a free and therefore a literally "absolute" establishment of a fact. Human behaviour cannot be fully explained by reference to events and other things outside of the action under consideration. This impossibility concerns both causal and functional relationships.

PAN-PHYSICALISM

Let us briefly examine some of the epistemological implications of this first analysis of choice. A first implication is that there can be no science of human action that is modeled after physics—"pan-physicalism" is a dead end in social research. Physicists seek to establish laws of material nature, that is, essential relationships between objects existing in time and space. Their research is based on the assumption that it is possible to give an exhaustive account of these relationships. They do not believe that the objects of their research make choices ("animism"). Rather, they believe precisely the opposite: these objects do *not* make choices, so their movements through time and space are fully determined by the essential relationships in which they stand with other objects.

Let us notice that physicists do not have first-hand knowledge of these essential relationships or laws. Rather, they *postulate* the existence of some imagined law as a working hypothesis, which then guides and systematises their further observations. Only *ex post*, that is, only after a certain number of observations have confirmed, or at any rate not refuted, the hypothesis, is the law assumed to exist. It is the mere fact that they succeed in uncovering essential relationships between objects-in-time that gives physics its *raison d'être*. And as a by-product, this success also vindicates the fundamental premise of physical research—the rejection of animism.

Everything turns around the factual success of the hypothesis or model. Nothing is more alien to the spirit of scientific enquiry in physics than to display any boldness in championing a successful model as truly representative of the underlying law. For the epistemology of this science is essentially the epistemology of pragmatism: a hypothesis is assumed to be true if it "works," that is, as long as it helps to explain observations. Nothing precludes that future observations jeopardise a theory, or at least lead to major revisions and qualifications. And nothing precludes that some hypothesis that hitherto has been rejected suddenly becomes a useful explanation in the light of new data.

Physicists would boldly insist on their views only if someone denied the facts, established by observation, which their theories seek to explain. But, for good reasons, nobody ever challenges these facts.

The essence of pan-physicalism (or positivism) is the rejection of animism in the field of human action and human society. The best-known example is macro-economic modeling. The macro-economist implicitly assumes that the individual members of the society he models do not make choices, and that human behaviour can be fully explained in terms of the circumstances of action. The fallacy of this approach should be obvious to any impartial mind. Pan-physicalism is based on the denial of the fundamental fact of the social sciences: the existence and pervasiveness of human choice. The sterility of macro-economic modeling and of all similar approaches is, therefore, anything but surprising. Not a single new economic law has been established by such methods, despite decades of generously-funded research pursuing even the most fanciful hypotheses.

It might seem somewhat surprising to notice that the sterility of positivism in the social sciences did not diminish the fervour of ever-new generations of positivists, and their apparent lack of realism did not discourage their sponsors. Hans-Hermann Hoppe has pointed out that the main sponsors of positivism in the social sciences were the western governments, the most important employers of social scientists, and that this government support was no accident because positivism in the social sciences is, by its very nature, one of the pillars of interventionism and the welfare state.[7]

We might also notice the importance of a psychological factor: the popularity of the physicist's mindset among the average social scientist. In the methodology of physics, even the prolonged failure to find workable theories is something entirely normal. In physics, there is no such thing as an "obviously bad theory" since the theories in physics do not describe any experienced relationships in the first place, but only stipulated relationships; and good theories are identified only ex post. But in the field of physics, it *is* warranted to look forward optimistically to the eventual success of one's model building even in the face of continued failures. For here we have all reasons to assume that laws relating physical objects among one another do exist, or, at any rate, we cannot exclude from the outset that such laws exist. In the

[7]See Hans-Hermann Hoppe, *A Theory of Socialism and Capitalism* (Boston: Kluwer, 1989), chap. 8.

realm of human action, by distinct contrast, a similar optimism would be entirely unwarranted because here, the possibility of a full explanation of human action in terms of other events *can* be excluded from the outset. The pan-physicalist application of the methods of physics in economics is doomed to fail because the very nature of choice makes it impossible that human action, whatever its concrete manifestations in thought processes or behaviour, is fully determined by events outside of the action under consideration.[8]

EQUILIBRIUM AND EQUILIBRATION

Twentieth-century economic science has been dominated by what could be called the equilibrium or perfect-competition paradigm.[9] Most economists have assumed that economic laws describe features of economic equilibrium and, based on this assumption, they have been mainly interested in various formal and substantive features of economic equilibrium: price formation in equilibrium, the relationship between equilibrium prices, the conditions for the existence, emergence, and stability of equilibrium, etc.

The economists of the Austrian School have constantly denied the validity of the basic assumption. In their eyes, equilibrium economics is but a minor part of economic science and most economic laws do not depend on the question whether equilibrium exists or how likely it is to come about.[10] There could be no such thing as an economic

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[8]Hoppe has this in mind when, in his *Kritik der kausalwissenschaftlichen Sozialforschung*, he claims that no "causal-scientific" research is possible in the social sciences. He points out that the entire positivist research agenda in the social sciences involves a performative contradiction. For human action can be subject to causal laws only if there is strict constancy in our thought patterns. The positivist social scientist, however, seeks precisely to add to our knowledge and, thus, to overthrow traditional patterns of thought and action. His very research is, therefore, doomed to invalidate the assumption on which it relies. Similar, though less comprehensive analyses of this problem are most notably in Oskar Morgenstern, *Wirtschaftsprognose* (Vienna: Springer, 1928); Adolf Bauer, *Die freie und unberechenbare Mensch—Kritik der Markt-, Meinungs-, und Motivforschung* (Nuremberg: Glock and Lutz, 1961); and in R.E. Lucas, "Econometric Policy Evaluation: A Critique," *Journal of Monetary Economics* Supplementary Series 1 (1976), pp. 19–46.

[9]See Frank Machovec, *Perfect Competition and the Transformation of Economics* (London: Routledge, 1995).

[10]See Hülsmann, "A Realist Approach to Equilibrium Analysis."

law that presupposed the existence of equilibrium, or even its mere tendency to exist, for such a law would contradict the nature of human choice. Since man is free, he can err at any time. Nothing in the nature of human action warrants the claim that man never errs (state of permanent equilibrium) or even that he has the tendency to avoid error.[11]

But why has this inner contradiction of their approach escaped the attention of the champions of equilibrium economics? The answer is simple and relates to what we said above about the mindset of the twentieth-century mainstream economist, whose methodological and epistemological views were impregnated by pan-physicalism.

The essence of scientific explanation is to give a law-based account of facts in terms of other facts, so scientists search for and study laws that exist among the things observed in our world. A thing X is scientifically "explained" if we can show that there exists a constant (e.g., causal) relationship between X and another thing Y. The problem of the equilibrium paradigm in economics is that its adherents look for exactly the same type of relationship as do their colleagues in the natural sciences. Economists insist on explaining observed behaviour *exclusively* in terms of other observations. The equations of general equilibrium theory, market participants are represented—or "mapped" as it were—through utility functions, are a good illustration. Thus, the very premise of general equilibrium models is that market participants are automatons, rather than human beings. They do not choose and do not act.

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[11]This lack of a tendency to avoid error concerns only error in the *praxeological* sense of choosing any other but the most important course of action. There is a tendency to avoid error in the technological sense of not choosing a means suitable to attain a given end, but equilibrium economics concerns only error in the praxeological sense. As a consequence, all theories of equilibration are untenable, including the Hayek-Kirzner theory of equilibration through entrepreneurial learning or "discovery;" see Jörg Guido Hülsmann, "Knowledge, Judgment, and the Use of Property," *Review of Austrian Economics* 10, no. 1 (1997), pp. 23–48. Mario Rizzo has forcefully criticised Hayek's and Kirzner's view that the market is equilibrating, although his own contribution is not satisfactory, either. In the "dynamic tendency to discover" that he advocates, there is no room for the notion that equilibrium be reached by some sort of necessity. Which use does he then make of equilibrium at all? This question needs to be answered—and Rizzo has not yet answered it—for otherwise it seems to be impossible to make sense of "discovery" itself. See Mario Rizzo, "The Tendency to Discover: What Does it Mean?" (working paper, 2000).

It is true that human behaviour is, to a large degree, conditioned by other events. When the quantity of money increases (inflation), people pay higher money prices, so inflation causes an increase of the price level. When people are "insured" against unemployment, there is a moral hazard to become voluntarily unemployed, so unemployment insurance causes an increase of unemployment. Price controls prevent willing and able buyers to acquire the goods they desire, so price controls create shortages, or they increase shortages that already exist.

But problems emerge even in these seemingly clear-cut cases as soon as we set out to give a precise formulation of the way external events determine human behaviour. In particular, what does it mean to say that inflation causes an increase of the price level, or that unemployment insurance causes an increase of unemployment? As compared to what do the price level and unemployment increase, according to these laws? The fact is that these laws—as pertinent as they might be on other grounds—cannot be established on the mere basis of systematic observations. Inflation does not always lead to a higher price level than the one that existed at the inception of the inflation. Sometimes we observe money inflation followed by a stable or decreasing price level. Similarly, in some cases, we observe price ceilings but no shortages, and unemployment insurance does not always go in hand with unemployment. In all these cases, other factors intervene simultaneously, factors that partly or totally offset the operation of the factor under consideration. This is so, for example, when the effect of inflation on money prices is offset by economic growth, or when unemployment insurance is counterbalanced by a strong work ethic.

Now the crucial question is this: considering the great number of factors that determine human behaviour often in opposite directions, how do we verify or refute any hypothesis at all? How can we deliver a scientific proof that inflation causes money prices to increase, or that unemployment insurance causes unemployment to increase? Before we venture to suggest a solution for this problem, we must stress the fact that general equilibrium theory (or, for that matter, any other method inspired by the positivistic research hypothesis) is not a solution. The reason is, of course, the existence and pervasiveness of human choice. Equilibrium models of human behaviour cannot be born out by observed facts in the same way that models of the physical world can be born out by observed facts, because human behaviour is not exclusively determined by observable facts, but is also self-determined by human choice.

This raises a question: What do we mean when we use the term "economic law"?[12] If economic laws are not relationships between observable events, then what are they? Some economists claim that economic laws refer to observations that could be made if only one condition of action varied while all other conditions remained frozen. Others claim that economic laws refer to observations that could be made if all market participants possess perfect knowledge or rational expectations, etc. All these solutions sought to salvage the central positivist tenet (that economic laws are relationships between observable events) by claiming that certain observations could be made if certain hypothetical and unreal conditions were given. Thus, one error induced another as methodological prejudice inspired the construction of various methodological crutches.

THE INVISIBLE SIDE OF CHOICE

So far we have argued that the very nature of choice makes it impossible to apply in the social sciences those methods that are used by the great majority of professional economists.

The question arises, then, whether choice is subject to any law at all. Some economists have indeed argued that it is not.[13] In their eyes, there are no laws that govern choice at all. Choice is, by its very nature, unrelated to any other event, so attempts to uncover laws of human action are futile. The social world is in permanent and unbound change, transforming itself into ever-new settings, offering again and again unheard-of vistas, just like the indeterminable vistas of a grand kaleidoscope. This kaleidic universe cannot be explained in terms of any general laws of human action without squeezing it into some sort of a Procrustean bed. Scientific accuracy, then, requires abstention from

[12]Menger, in *Grundsätze*, p. 8, surmised that the existence of choice would jeopardise economics as an exact science. See also the exchange between Thornton, Cairnes, and Leslie from the Fall of 1866, reprinted in *The Economic Writings of William Thornton,* ed. P. Mirowski and S. Tradewell (London: Pickering & Chatto, 1999), vol. 1, pp. 73ff. The exchange included a criticism of what had been supposed a fundamental economic law: J.S. Mill's explanation of how demand and supply govern prices. On the methodological debate on demand curves in the 1950s and 1960s, which raised similar issues, see Daniel Hausman, *Essays on Philosophy and Economic Methodology* (Cambridge: Cambridge University Press, 1992), chap. 11.

[13]See G.L.S. Shackle, *Epistemics and Economics* (Cambridge: Cambridge University Press, 1972); and Ludwig Lachmann, *Expectations and the Meaning of Institutions* (London: Routledge, 1994), chap. 16 and passim.

any ill-conceived search for economic laws. The true social scientist must be content to describe the transformation of the world without any pretension to know its laws.

However, this view is unwarranted since *there are* laws of choice, and therefore of human action. These laws make various causal and non-causal explanations of human action possible. The key to our argument lies in the fact that human action contains both realised and unrealised parts.[14] Human action is realised in the actual movement of the body and in the actual activity of the mind. But it also contains two types of unrealised parts: the ends sought after and the foregone alternatives. This fact is almost universally acknowledged, but while the analysis of the subjective and objective rôle of ends has attracted at least some attention among economists (under headings such as "intentionality" and "meaning"), the analysis of foregone alternatives, the hidden side of choice, has been neglected. Scientifically speaking, it is almost a virgin field.[15] Yet, it is precisely in this field, in the relationship between choice alternatives, that virtually all laws of human action can be found.[16]

In what follows I will argue that the bulk of economic laws are based on relationships that are contained *within* choice. The visible part of a choice, the realised alternative, brings an observable fact into being, for example, a walk in a park. This fact stands in certain essential relationships to the unrealised alternatives of the same choice, for example, staying home to watch TV, staying home to eat ice cream, etc. These unrealised alternatives are the other side of choice, its invisible part. They have no actual existence for the very reason that they are *un*realised alternatives. But although they are not observable facts, they still are facts, namely, invisible counter-facts of the visible facts established by a given choice, and therefore stand in essential relationships with these visible parts of human action.

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[14]See Jörg Guido Hülsmann, "Economic Science and Neoclassicism," *Quarterly Journal of Austrian Economics* 2, no. 4 (Winter 1999), pp. 4ff.

[15]In economic science, the only exception in more recent times has been the debate concerning the nature of costs and opportunity cost. In philosophy, Antony Flew seems to be alone among modern academics in noticing that it is crucially important for social analysis to take account of "contrary-to-fact-alternatives." See Flew, *Thinking About Social Thinking*, pp. 126f. Flew does not elaborate on this observation, however.

[16]"Virtually" accounts for the fact that some laws of human action relate to the subjective and objective relationships between means and ends.

In short, the essential relationships that choice brings about between what exists and what could have existed instead are the counterfactual laws of human action. Since the choices that are actually taken stand in counterfactual relationships to the choice alternatives that could have been taken instead, real-world human actions stand in counterfactual relationships to alternative actions that would have been possible.[17]

Counterfactual laws, therefore, do not concern relationships between the perceptible parts of human action (for example, observed behaviour) and other observed events. Rather, they are relationships *within* human action linking its visible and invisible parts. Using these laws to explain observed human behaviour, we can relate the state of affairs that we observe as a consequence of this behaviour to a counterfactual state of affairs that could have existed instead. The characteristic method of economic science by which one comes to identify these laws is counterfactual analysis—relating the seen and the unseen of a choice to one another. Thus, we explain what really exists by comparing it to what could have existed instead.

In distinct contrast to the laws known from other sciences (the laws of physics, for example), the counterfactual laws of human action are not mere stipulations or hypotheses that are held to be true on the pragmatic ground that they "work." Rather, by human reason, they

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[17]This meaning of the expression "counterfactual" has to be distinguished from the meaning that Hausman and others sometimes attach to it. In that meaning, counterfactual claims are interpreted as conjectural or *modal claims*, that is, as more or less unrealistic claims "about how things would be, were various complications absent." Daniel M. Hausman, *Capital, Profits, and Prices: An Essay in the Philosophy of Economics* (New York: Columbia University Press, 1981), pp. 146f., also 129f.; see also Daniel M. Hausman, *The Inexact and Separate Science of Economics* (Cambridge: Cambridge University Press, 1992), pp. 129f.; and Donald McCloskey, "Counterfactuals," in *The New Palgrave Dictionary of Economics*, ed. J. Eatwell, M. Millgate, and P. Newman (London: Macmillan, 1987), vol. 1, pp. 701–3.

The paradigmatic case study serving as a model for these epistemological interpretations is R.W. Fogel, *Railroads and American Economic Growth: Essays in Econometric History* (Baltimore: Johns Hopkins Press, 1964). The analysis of the counterfactual laws that we have in mind must also be distinguished from the conjectural or modal analyses of game theorists who describe their work as "counterfactual reasoning." See, in particular, Robert Stalnaker, "Knowledge, Belief, and Counterfactual Reasoning in Games," *Economics and Philosophy* 12 (1996), pp. 133–63.

are immediately ascertainable, so economists are in the happy position that they can have first-hand knowledge of *all* elements of their explanations: the fact to be explained, the explaining fact, and the relationship between these two facts.[18]

EXACT COUNTERFACTUAL LAWS

Two types of counterfactual laws can be distinguished. In this present section, we will deal with those counterfactual laws that allow us to give *exact* causal explanations of human action. In the next section, we will turn to "case-probable counterfactual laws"—better known as "tendencies"—which concern causes that only have a *probable* effect on human behaviour.

Let us formulate some exact economic laws in a way that their counterfactual nature becomes evident. Consider the following:

- A person considers that the course of action that he follows is more important than alternative courses of action that he could follow instead;
- wrong investment decisions reduce the welfare of the owner of the invested resources below the level it could otherwise have reached;
- the division of labour between individuals is more physically productive than autarkic production by each individual would have been; market exchanges benefit both partners because, at least when the exchange takes place, each of them prefers it to alternative courses of action;
- each new product is an additional potential market for other commodities, so the owners of these other commodities are now better off than they would have been without the additional production;
- increased saving makes possible a higher consumption in the future than would have been possible without this additional saving;

[18]Cairnes first stressed that economists can have such knowledge, although he did not recognise the counterfactual nature of these economic laws; see John E. Cairnes, *The Character and Logical Method of Political Economy* (London: Macmillan, 1875). For other fields besides economics where such knowledge can be acquired, see, for example, Barry Smith, "An Essay on Material Necessity," *Canadian Journal of Philosophy* Supplementary vol. 18 (1991); and Barry Smith, "Realist Phenomenology," in *Encyclopedia of Phenomenology*, ed. L. Embree (Boston: Kluwer, 1997).

- increased saving diminishes present consumption below the level it would otherwise have reached;
- government projects reduce the amount of capital available in all other industries, thereby reducing wage rates attainable in other industries below the level they would otherwise have reached;
- increases or decreases of the quantity of money do not increase the wealth of a nation above the level it would otherwise have reached, nor do they decrease its wealth below the level it would otherwise have reached.[19]

As can be gathered from these examples, counterfactual laws of human action really exist, and they are exact and universally valid. Their very existence counters the view that economic science is fundamentally inexact.[20] He who ventured to deny the existence and exactitude of counterfactual laws would have to deny that human beings choose, that choice involves different alternatives, and that it takes place in a physically finite universe. Moreover, the explaining facts referred to in this and the other counterfactual laws mentioned above are *not* fictitious. All elements of counterfactual analysis are realistic.

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[19]Some examples of the above shortlist have been taken from Hans-Hermann Hoppe, *Democracy—The God That Failed* (New Brunswick, N.J.: Transaction, 2001), p. xvii. This is not the place to defend these propositions, not only because *exempla sunt odiosa*, but also because a sufficient defense already exists. The present work does not claim that counterfactual laws are an entirely new class of economic laws, but that a large class of already known economic laws have a counterfactual nature. Thus, we can rely on the works where these laws—though not their ontological status—are sufficiently well explained for all practical purposes; see in particular Mises, *Human Action*, part six; Ludwig von Mises, *Kritik des Interventionismus* (Jena: Fischer, 1929); Murray N. Rothbard, *Power and Market*, 2nd ed. (Kansas City: Sheed Andrews & McMeel, 1977); Murray N. Rothbard, *Man, Economy, and State*, 3rd ed. (Auburn, Ala.: Ludwig von Mises Institute, 1993), chap. 12; Hoppe, *A Theory of Socialism and Capitalism*; and Hoppe, *Economics and Ethics of Private Property*.

[20]See, for example, Hausman, *Capital, Profits, and Prices*, pp. 120ff., 133ff., 148ff.; Hausman, *The Inexact and Separate Science of Economics,* pp. 123ff., 205ff.; and John Sutton, *Marshall's Tendencies: What Can Economists Know?* (Cambridge, Mass.: Massachusetts Institute of Technology, 2000). It is true that Hausman's characterization of economic science as inexact refers more narrowly to the neo-classical economic mainstream. But one can gather from the titles of his books that he makes more general claims on behalf of this characterization, and, as we have shown, these claims are unfounded.

It is a matter of fact that human beings choose, that to choose means to choose between alternatives, and that only one alternative can become a fact whereas all other alternatives remain counter to fact.[21] Finally, counterfactual analysis is an act of reflection on the invisible structural features of human action, such as choice, and counterfactual laws are *a priori* laws that, by their very nature—linking the factual to the counterfactual—cannot possibly be verified or refuted by observations.[22]

Notice that, in the above examples, we did not qualify the counterfactual laws by stating our assumptions about the behaviour of all the other factors determining the state of the economy that we did not explicitly consider. In particular, we did not use the common qualifier of *ceteris paribus*. We did not say that, only *ceteris paribus*, increased saving makes possible a higher consumption in the future than would have been possible without this additional saving; or that, only *ceteris paribus*, increases or decreases of the quantity of money do not increase the wealth of a nation above the level it would otherwise have reached. Rather, we presented these laws as absolutes that are not conditioned by any other factors, and rightly so.

Because a counterfactual law relates an observable fact to a counterfactual alternative, it is immaterial which other facts exist besides the one under consideration, how these other facts are modified throughout time, and how they influence the course of events. Neither do we have to concern ourselves with what the acting persons know about the future. All this cannot affect the validity and applicability of our knowledge of counterfactual economic laws. For example, as we have already pointed out, the division of labour between individuals is more

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[21]Let us emphasize that the counterfactual laws ruling the relationship between the realized and the unrealized choice alternatives do not depend at all on the contingent strategies, knowledge, and beliefs of the persons under consideration. The contingent—and, to a certain extent, choice-dependent—character of strategy, knowledge, and beliefs creates considerable difficulties for "counterfactual reasoning" in the sense of Stalnaker, "Knowledge, Belief, and Counterfactual Reasoning in Games." No such problems exist in the field of counterfactual laws as we have identified them.

[22]Since we rely on the economic works of Mises and his followers, it might be useful to point out that, as our argument shows, it is not necessary, as Stephen D. Parsons seems to suggest in "Mises, the A Priori, and the Foundations of Economics: A Qualified Defence," *Economics and Philosophy* 13 (1997), pp. 175–96, to give a Kantian reading to Mises in order make the case for *a priori* economic laws. On this point, see Hülsmann, "Introduction" to Mises, *Epistemological Problems of Economics*.

physically productive than autarkic production by each individual would have been—whatever the present level of taxation and accumulation of capital, the character structure of the society, the weather, etc. may be. Any choice that is actually taken has an impact on the real world that can be compared to the impact that *would have* resulted from the realisation of some other choice alternative. For example, the decision to print more paper money does not increase the wealth of a nation beyond the level it would otherwise (in the case of the decision *not* to print more paper money) have resulted. Counterfactual laws exist irrespective of what the conditions of action are and irrespective of how these conditions change in the course of time. Hence, instead of *qualifying* economic laws by the ceteris-paribus clause, one merely has to *clarify* their counterfactual nature by adding the expression "than otherwise."

Another important implication of the counterfactual nature of economic laws is that they enable us to make exact quantitative statements about the real world. Human action transforms its environment. Yet, this means nothing other than that it modifies the quantitative relationships between things in the world. For example, if Paul tailors a suit out of three square-meters of raw fabric, then he creates a state of affairs in which there is one more suit than would otherwise existed and three square-meters of raw fabric less than otherwise. On the basis of such simple considerations, we can discover counterfactual laws about the quantitative impact of human action. And such laws are, of course, genuinely economic laws.

Clearly, we do not *measure* the quantitative effects of choice. Rather we arrive at statements like "government projects reduce the amount of capital that otherwise (without the inception of these projects) would have been available in all other industries" or "increased consumption now means that consumption in the future can only be less than otherwise." It is such comparative statements about quantities that economists can infer from the study of choice modifying the conditions of action.

Thus, we do not have to neglect quantitative issues, but our insights are limited to the impacts of quantitative *differences*. All we can say about quantitative effects runs in terms of more or less, of higher or lower, etc. Below, we will deal with the question whether we can go beyond these comparative statements about quantities. In particular, we will show that economic theorems can never be "summed up."[23]

[23]Mill claimed that the "effect produced, in social phenomena, by any complex set of the circumstance, amounts precisely to the sum of the effects of

If ten people buy milk to drink it and another five persons buy milk to produce pudding, then certainly the demand of the former *adds* to the demand of the latter—in the sense that both make the price of milk higher than it would otherwise have been. But no statement can be made about *which part* of the price of milk was due to the demand of the drinkers and which part was a consequence of the demand of the pudding makers.

CASE-PROBABLE COUNTERFACTUAL LAWS (COUNTERFACTUAL "TENDENCIES")

Let us now turn to the second class of counterfactual laws—those laws that do not denote an exact relationship between human behaviour and a counterfactual reality, but merely a probable relationship or tendency. Consider first the following examples:

- an increased demand for a good involves a higher market price for the good than would have obtained without this increase;
- a higher supply of a good decreases its market price below the level it would otherwise have reached;
- taxation makes the taxpayer more present-oriented than he would otherwise be;
- increases of the quantity of money lead to higher market prices than would otherwise have been established.

These and all similar laws differ from the exact laws we discussed in the previous section. They do not denote exact relationships, but relationships that only hold true "at the margin." It is not in all cases true, for example, that a higher supply of a good actually brings about a lower price for this good than would otherwise have obtained on the market. Depending on the value scales of the market participants, the price might in some cases not decrease as a consequence of the increased supply. Still it is true that the additional units that now come on the market satisfy additional needs, and that these needs are less important, from the point of view of the buyers, than the ones that would have been satisfied with a smaller supply. And, as a consequence, the market participants will buy these additional units, in a great number of

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the circumstances taken singly." John Stuart Mill, *System of Logic*, 8th ed. (London: Longmans), vol. 2, p. 488.

cases, only at a lower price.[24] Again, whether the price will drop depends on the concrete data of the case, but the increase of the supply has at least the "tendency" to decrease the price.

Similarly, increases in the quantity of money bring about higher market prices in the following way: The new money decreases the marginal value of money in the eyes of its holders. This means that

[24]In private correspondence, Cristian Comanescu has objected that some of these laws—he referred in particular to the laws of supply and demand—are not valid quite as generally as we here claim; a similar comment came from Professor Roderick Long. This is so because supply and demand are not necessarily independent of one another. Consider the case that an increased supply of tomatoes (accidentally) *causes* an increase of demand for these tomatoes. In this case, Comanescu argues, it is not necessarily the case that the tomato price is lower than it otherwise would be. He concludes that it would not be sufficient to clarify the counterfactual law under consideration by saying "than otherwise." Rather, it is necessary to account for such cases of accidental causation through a more elaborate formula, for example, by saying "than otherwise, other relevant things being unaffected" or "than otherwise, all things not systematically connected with the demand for tomatoes running their course without being 'accidentally' affected by the demand for tomatoes." Now, it is true that such cases of accidental causation might exist, but, as Comanescu admits, they only affect *some* of the laws that we mentioned. It follows that these cases do not really concern the existence and nature of counterfactual laws *per se*, and that there is therefore no reason to describe such laws by referring to anything else but the concise "than otherwise."

Fundamentally, Comanescu's criticism does not at all concern the accurate description of the counterfactual nature of economic laws. It concerns a different and rather particular problem that we encounter most notably in the laws of demand and supply. We cannot set out examining this problem here in any detail. Suffice it to say, however, that the following three considerations might play a role in any such examination. 1) Insofar as we are concerned with the description of laws, it is irrelevant or at least of secondary importance to take account of accidental relationships between phenomena. A higher supply goes essentially in hand with a lower price. This law holds true even if its operation is accidentally modified through other factors. 2) If an increase of demand is (accidentally) caused by an increase of supply, we have to raise the question of whether this is not a case in which the good under consideration—or the relevant unit of this good—has changed. 3) In a similar vein, one might also come to the conclusion that the laws of demand and supply are based on the very premise of an independence of demand and supply. In other words, the very definition of "supply" and "demand" involves their independence from one another. If this condition does not hold, these laws would not apply.

they will now a) spend more money than they otherwise, in the absence of this increase, would have spent, and/or b) buy less money in exchange against their work or other parts of their property than they otherwise would have bought. In both cases, the money prices paid in the exchanges are higher than they would have been without the increase of the quantity of money. Yet, again, this chain of causation is not an exact one. Not in all cases will the additional money units change the relative positions of money units and units of other goods on the value scales of the individual market participants. In some cases, the increase of the quantity of money will not be big enough to induce the cash holder to spend more money than he would otherwise have spent, or to buy less money than he would otherwise have bought. But, as in our other example, it remains true that the additional money units have at least the tendency to bring these effects about.

In short, the knowledge of a counterfactual tendency does not put us in a position to give an exact determination of human behaviour. But still it *is* knowledge about a factor that potentially causes a certain effect in human action. He who ventures to deny the existence of such tendencies would have to deny that the marginal value of a good depends on the supply owned by the acting person.

Mises discussed some of these problems under the heading of probability. He defined the nature of probability as follows:

> A statement is probable if our knowledge concerning its content is deficient. We do not know everything which would be required for a definite decision between true and not true. But, on the other had, we do know something about it; we are in a position to say more than simply *non liquet* or *ignoramus*.[25]

He then went on to distinguish two kinds of probability: class probability (which he also calls frequency probability) and case probability. In the field of human action, Mises argued, the relevant probability concept was case probability, which he defined as:

> Case probability means: we know, with regard to a particular event, some of the factors which determine its outcome; but there are other determining factors about which we know nothing.[26]

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[25]Mises, *Human Action*, p. 107.

[26]Mises, *Human Action*, p. 110.

This characterisation of case probability fits the counterfactual tendencies we have discussed above. Knowledge of such tendencies is deficient knowledge about human action. Increases in the quantity of money have the tendency to increase money prices, but whether this will actually happen depends on other conditions—in particular, on the individual value scales of the concrete case—about which we know nothing.

SIMULTANEOUS CHANGES: ADDITIVITY VS. "SUMMING UP"

Despite the fact that, in reality, we observe countless simultaneous changes, in counterfactual analysis, we analyse only one change at a time. We have already seen that this fact neither reduces the exactitude nor diminishes the applicability of economic science. Still, we have to examine how we can integrate different economic laws which describe different aspects of observed reality to gain an understanding of the whole picture that our real world presents to us.

Consider the following example of two simultaneous changes. If an increased demand for tomatoes is accompanied by the discovery of new growing techniques for them, we can say that the shift of demand will lead to higher prices than otherwise and that the technological advance will lead to lower prices than otherwise. Whether the observed tomato prices will in fact be higher or lower *than before* is a question to which our law gives no clear-cut answer. Yet, again, the validity and exactitude of this law do not suffer at all from this problem. For what we say in the above example is that increased demand will lead to higher prices than otherwise. Whatever other changes may occur that push the price above or reduce it below its previous level, increased demand for the good must exercise an additional influence. It has the tendency to lead to a higher price for it than would have been established on the market without this influence.

As mentioned above, we do not have to concern ourselves with the other conditions of actions not taken account of in our analysis. For each change exercises *additional* effects on action. The change under consideration will necessarily bring about more or less goods, higher or lower prices than would have resulted without *this change* occurring. Mises recognised this very clearly in his analysis of the additional influences of inflation and deflation.

> Each change in the money relation takes its own course and produces its own particular effects. If an inflationary

> movement and a deflationary one occur at the same time or if an inflation is temporally followed by a deflation in such a way that prices finally are not very much changed, the social consequences of each of the two movements do not cancel each other. To the social consequences of an inflation, those of a deflation are added.[27]

Or, consider the law that a risk component and a price premium add to the pure interest rate: "a whole structure of interest rates will be superimposed on the pure rate, varying positively in accordance with the expected risks of each venture."[28] Each of the different factors exercises an additional impact on the interest rate, even if our counterfactual theory of the interest rate cannot tell us anything about how high any concrete interest rate will be.[29]

From this it follows that the counterfactual laws of human action are directly applicable to the real world. They do not need to be complemented by specially constructed dynamic models because they *are* dynamic. They refer to all present and future events that are in any way influenced by the choice under consideration, and they are true irrespective of whether all other data are frozen or subject to kaleidic change.

We have tried to stress this important fact by abandoning the use of the qualifier *ceteris paribus*. Indeed, there is no need to qualify our results at all. Whenever the assumed condition is given (which we can find out by simple observation or discursive reasoning),[30] the counterfactual relations as they are described by the law exist as well. We only have to make it clear that our law refers to a counterfactual standard of comparison by adding "than otherwise" to its propositions.

As we have said, the only question to which theoretical analysis provides no answer is *how high* prices will be as the result of all intervening influences. He who seeks the latter kind of statements may belittle the results of counterfactual analysis. However, we can tell him three things. First, there is no other method that could procure

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[27]Mises, *Human Action*, pp. 417f.

[28]Rothbard, *Man, Economy, and State*, pp. 497ff.

[29]See, for example, Mises's study of the "inner" determinants of the value of money, which he contrasted with the analysis of the whole money relation, in *Theorie des Geldes und der Umlaufsmittel*, 2nd ed. (Munich: Duncker & Humblodt, 1924), pp. 103f.

[30]See Mises, *Epistemological Problems of Economics,* pp. 24f.

for him that type of quantitative law. Second, for the practically most-relevant purposes, namely, for societal decision-making, the results of the theoretical analysis are entirely sufficient, for they tell us whether a given measure will rather increase or diminish output, whether it will bring more or less unemployment, etc., and this is all that we are asking for in these matters. Third, these results of the theoretical study of changes are valid for all times and for all places, and this is certainly no small advantage.

Most economists do not perceive these facts with the necessary clarity. They usually labour under John Stuart Mill's exaggerated interpretation of the nature and scope of economic laws that hold true only as tendencies. For Mill, *all* economic laws denote mere tendencies, and he also seems to suggest that the knowledge of tendencies does not put us in a position to make exact propositions about reality as it is here and now. Consider Mill's classic statement:

> It is evident . . . that Sociology, considered as a system of deductions *à priori*, cannot be a science of positive predictions, but only of tendencies. We may be able to conclude, from the laws of human nature applied to the circumstances of a given state of society, that a particular cause will operate in a certain manner unless counteracted; but we can never be assured to what extent or amount it will so operate, or affirm with certainty that it will not be counteracted, because we can seldom know, even approximately, all the agencies which may co-exist with it, and still less calculate the collective result of so many combined elements.[31]

[31]Mill, *System of Logic*, vol. 2, p. 491. See also John Stuart Mill, *Essays on Some Unsettled Questions of Political Economy*, 2nd ed. (London: Longmans, 1874), pp. 149ff. Similarly, Vilfredo Pareto stated in his *Manual of Political Economy* (New York: Kelley, 1971), chap. I, § 11: "Since we do not know any concrete phenomenon completely, our theories about these phenomena are only approximations." Richard Whately emphasized the distinction between two concepts of tendency. The first connotes "the existence of a cause which, if *operating unimpeded*, would produce that result" while the second refers to "the existence of such a state of things that that result *may be expected to take place*." See Richard Whately, *Introductory Lectures on Political Economy*, 3rd ed. (London: Parker, 1847), pp. 231ff., emphasis in the original; see also Richard Whately, *Elements of Logic* (New York: Harper, 1856), appendix I, entry "tendency." Whately's distinction also fails to grasp the nature of comparative propositions about choice.

In a sense, it is to be sure correct that statements like "prices will be higher than otherwise in consequence of an increased demand" are not "positive predictions" because they do not tell us how high observed prices will be. Yet, it does not follow that such statements are not exact and universally valid, or that, as Mill has successfully insinuated, scientific enquiry in the field of economics must seek to derive by theoretical means the compound result of combinations of circumstances in which action takes place, "to put all these effects together, and, from what they are separately, to collect what would be the effect of all the causes acting at once." Mill's prejudice in favour of this type of approach has led him to the fatal conclusion that, if we ever overlook one factor operating in reality, "our premises will be true, and our reasoning correct, and yet the result of no value in the particular case."[32]

But this is not true if the "particular case" is one of practical decision-making, as Mill himself admits. Consider the law that higher taxation of inheritance reduces the amount of savings and, consequently, the productivity of the economy below the level it would otherwise have reached. We do not know the other factors that determine savings and productivity. Yet, as far as our law goes, we derive it by correct reasoning, based on true premises, *and* obtain a result of great practical value. It might certainly be interesting to know whether a tax of *x* percent on inheritance reduces productivity by *y* or *z* percent. However, the crucial information is that this tax *does* reduce productivity.[33]

Moreover, even when the application of this law is not in practical decision-making but in historical analysis, one cannot claim, as Mill does, that it would be of no value. It is valuable to know whether the misery of large parts of the population, which could be observed at many places in Europe during most of the nineteenth century, resulted

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[32]Mill, *System of Logic*, vol. 1, pp. 59f. It is clear that, in Mill's view, there can be no exact science of human action short of a total model of life. Only such a model could bring social phenomena "under laws comprehending the whole of the causes by which the phenomena are influenced." Mill, *System of Logic*, vol. 2, p. 432.

[33]In a similar vein, Mises, in *Kritik des Interventionismus*, pp. 46f., admitted that frictions might hamper pricing on the labor market. But he argued that the relevant question in curbing unemployment was whether the concrete political measure under consideration was likely to *reduce* unemployment—that is, in our terms, whether the proposed policy would make it lower than it otherwise would be.

as a consequence of, or despite, the spreading of capitalism. And it is also valuable to know whether the Great Depression of the early 1930s occurred because of, or despite, the regulation of the money supply through the Federal Reserve. Clearly, such information is valuable even if we could never *quantify* the impact of capitalism on nineteenth century poverty, or of the Federal Reserve on the Great Depression.

Let us now deal with the problem of whether one *could* go beyond comparative laws and quantify the impact of a given factor in absolute terms. Assume that we know *all* factors that have some impact on the state of affairs under consideration. In short, we know everything about the factors that determine the conditions of action. Could we then find laws about their compound effect? Could we then, for example, make scientific statements (predictions) like "under the given conditions, a tax increase of 10% will lead to a reduction of total savings by 3%?"

According to Mill's thesis, this would be possible. However, this thesis is clearly wrong because it disregards the existence of choice. Choice is not determined by the conditions of action (it would indeed be difficult to say what we mean by the word "choice" if it were otherwise). It can only be explained by reference to its counterfactual alternatives. All we can say, to come back to the example of the increase of the inheritance tax, is that this tax increase *reduces* savings and productivity in comparison to a counterfactual standard. *How much* it will reduce them depends on the choices taken at a particular time and at a particular place by the individuals who are subject to this tax.

In short, while the *relative quantitative* impact of a tax increase is governed by counterfactual economic laws, the *absolute quantitative* impact of the tax increase will depend on the individual case. Economists cannot say, on the *a priori* grounds provided by finitude of the world, *how much* higher or lower a price will be or has been in consequence of a change. There is no scientific (that is, fact-based) possibility to answer this question.[34] And even if we could by other means (for example, by lucky guess) answer it in one case, we will not be able to generalise these findings.

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[34]See Mises, *Theory and History*, pp. 274, 314f. See also F. Ballvé, "On Methodology in Economics," in *On Freedom and Free Enterprise*, ed. M. Sennholz (Irvington-on-Hudson, N.Y.: Foundation for Economic Education, 1956), pp. 132f.

THE REALIST FOUNDATIONS OF COUNTERFACTUAL ANALYSIS

Face to face with the existence of counterfactual laws, we have to enquire on which grounds we can make scientific assertions that involve the counterfactual. No other science seems to refer to anything else than what is undoubtedly part of the real world.[35] How can it be different in economics?

In what follows, I will try to answer this question in a somewhat systematic manner and explain on which grounds counterfactual laws enable us to explain the real world in a way that is both empirically meaningful and practically relevant. I will argue that counterfactual laws rely on three elementary facts, namely, that there are *heterogeneous* entities that compose our world, that these entities are *finite*, and that they are related through choice to alternative (counterfactual) entities that are also heterogeneous and finite.

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[35]In philosophy too, the problem of counterfactual analysis is a comparatively new field. A pioneer was Hans Vaihinger, *The Philosophy of "As If,"* 2nd ed. (London: Routledge & Kegan Paul, 1935). Also see Roderick Chisholm, "The Contrary-to-Fact Conditional," *Mind* 55 (1946); Nelson Goodman, "The Problem of Counterfactual Conditionals," *Journal of Philosophy* 44 (1947); Hans Reichenbach, *Laws, Modalities, and Counterfactuals* (1954; reprint, Berkeley: University of California Press, 1976); Daniel Lewis, *Counterfactuals* (Cambridge, Mass.: Harvard University Press, 1973); Nicholas Reicher, "The Ontology of the Possible," in *The Possible and the Actual: Readings in the Metaphysics of Modality*, ed. Michael J. Loux (Ithaca, N.Y.: Cornell University Press, 1979); Michael Woods, *Conditionals* (Oxford: Clarendon Press, 1997); and Charles Chihara, *The Worlds of Possibility* (Oxford: Clarendon Press, 1998).

With the notable exception of Antony Flew, whom we already mentioned, the crucial role of human choice as the readily ascertainable (not merely stipulated) relationship between facts and counterfacts has not been sufficiently recognized in this literature. Only some of Reicher's statements, e.g., in "The Ontology of the Possible," pp. 170, 173, come somewhat close to our line of argument when he emphasizes the "mind-dependency of hypothetical possibilities" and that "the *condition* of possibility . . . involves . . . a reference to the hypothetical . . . that would be infeasible in the face of a postulated absence of minds." Yet, even these statements are somewhat vague and possibly misleading, insofar as the expression "mind-dependency" is meant to suggest that the human will creates counterfactuals. Hausman, in *The Inexact and Separate Science of Economics*, pp. 296f., recognizes the pertinence of counterfactual analysis in the sense of Lewis as far as the analysis of causality is concerned, but does not see the relevance for economic science.

The choosing person is confronted with a certain environment including his own body and person. His actions will to some extent modify this environment, which he transforms according to his ideas. He has to cope with *this* environment, however, and this means that he has to accept it as the totality of given conditions in which his actions take place.

Now, any set of conditions implies two things. On the one hand, it permits the success of some actions. On the other hand, it implies that other actions cannot be successfully executed. For example, in reading a certain book, I can learn about its contents by my own experience. This would be impossible if I did not read the book but spent my time cutting flowers in the garden, or if I had someone else tell me what was written in the book. On the other hand, reading the book makes it impossible to cut flowers at the same time. It also makes it impossible (at least for me) to listen to hard-rock concerts or to sell ice cream. It is obvious that uncountable similar statements, for this and for any other set of conditions, could be made. There are things that (only) the prevailing conditions permit us to do, and there are other things that cannot be done under these conditions. It is absolutely certain that this holds true for *any* set of conditions, even if one knows nothing about their concrete features. The reason, of course, is that all things are limited.

If conditions change by natural events, two things are implied. On the one hand it will render possible the success of actions that, hitherto, would have failed. On the other hand, it will render impossible the success of other actions that, hitherto, would have been successful. For example, if a strong wind starts to blow, it is impossible to play outdoor badminton. On the other hand, the strong wind increases the joy of sailing and the productivity of windmills.

Exactly the same result obtains if the conditions of action are modified by human choices. Indeed, whatever choice is taken, it will, on the one hand, render other actions successful that, otherwise, would have failed. On the other hand, it will render impossible the success of still other actions that, otherwise, would have been successful. The construction of a power plant will supply consumers with more energy than they otherwise could have used. Yet, it will also reduce the production of other goods, which could have been produced with the factors used in the construction of the power plant, below the level they could otherwise have reached.

When studying the implications of a change of conditions, we can therefore neglect all subsequent changes if we limit our investigation

to what the change has rendered possible or, respectively, impossible. Each choice opens up a new universe for action and, at the same time, necessarily forecloses another one. By this very fact, both universes are *a priori* related to one another. And because both universes are composed of finite entities, the differences between these two universes can only be finite, too. Thus, there can be identifiable laws governing their relationship, which we have seen to be the counterfactual laws of human action.

In conclusion of this section, it might be useful to deal briefly with the question in how far counterfactual analysis can give a realist account of *a priori causal* relationships. In short, the answer is that it can give us causal explanations of observable events, but that these causal explanations are of a different type than the ones current in other sciences.

In physics and other natural sciences, causal laws are laws relating phenomena in time. Causality in such fields is the "necessary consequence" of two phenomena, that is, the fact that the second always follows the first. However, no such thing can be said of economic laws. A 10% increase of the money supply might be followed in one case by a 5% increase of a (arbitrarily constructed) price level, in another case by an 8% increase, in another situation by a 2% decrease, and so on. All we can say from the point of view of economic science is that, as a consequence of the higher money supply spreading through the economy, the money prices paid by the recipients of these additional quantities of money will be higher than they otherwise would have been.

In short, variations of the money supply do cause variations of the level of prices, but there is here no consequence of phenomena involved. Rather, the variation of the money supply is the cause of a counterfactual relationship between the money prices as they come to be observed on the market, and the prices that would have come into existence in the absence of the variation of the money supply.

The existence of such counterfactual causality might cause a headache for positivists, who in all fields of enquiry look out for the consequential laws that they know from some of the natural sciences.[36]

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[36]For the modern reductionist view on causality and how it came to replace the more encompassing classical theory, see Mario Bunge, *Causality and Modern Science* (New York: Dover, 1979); William Wallace, *Causality and Scientific Explanation* (Ann Arbor: University of Michigan Press, 1972); and Edwin A. Burtt, *The Metaphysical Foundations of Modern Science* (Garden City, N.Y.: Doubleday, 1954).

But it nicely fits into the classical theory of causality—as expounded in the works of Aristotle, Aquinas, and the *Book of Causes*—which championed a much larger notion of what causality is, namely, in the words of Aquinas: "Those upon which others depend for their being or becoming are called causes."[37] Clearly, in our example, a variation of the money supply is that upon which the relationship between observed and counterfactual prices depends.

THE NECESSITY OF COUNTERFACTUAL ANALYSIS

There is no question that counterfactual laws exists and are universally valid. Some economists might fear, though, that we give away too much of the practical relevance of our science by claiming that some of its most important laws "merely" enable us to explain the factual in terms of the counterfactual. They should consider the following four points.

First, real-life decision-making is based on counterfactual comparisons. When an entrepreneur hires a worker, he compares the revenue that he expects to result from the activity of the new employee to the revenue that he expects to obtain from other investments of the salary. The important word here is "expect," since there is no way to *know* what a different decision would have brought about, because any decision *precludes* the realisation of all other alternatives. The entrepreneur must choose here and now, and this choice must be based on counterfactual comparisons.

Second, all other sciences take recourse to counterfactual comparisons, too. For example, causality in law is usually conceived as a *conditio sine qua non*, that is, as a condition without interference of which the events would have been different.[38] And even the natural sciences use counterfactual comparisons. For the performance of

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[37]St. Thomas Aquinas, *Commentary on Aristotle's Physics* (New Haven, Conn.: Yale University Press, 1963), book 1, lecture 1, nr. 5.

[38]I am indebted to Professor Lemennicier from the University of Paris-Assas for this point. On causality in German civil law, see A. Teichmann, "Erläuterung zu den §§249, 823," in *Bürgerliches Gesetzbuch*, ed. Othmar Jauernig, et al., 4th ed. (München: Beck, 1987), pp. 199ff., 909ff. For a different account of causality in the law, rejecting the *sine qua non* theory, see Adolf Reinach, "Über den Ursachenbegriff im geltenden Strafrecht," *Sämtliche Werke* (Munich: Philosophia, 1989), vol. 1, pp. 1ff. and in particular pp. 19f. Reinach's position can, however, be reconciled with our counterfactual approach.

an experiment presupposes that, if the change had *not* been introduced, the observed effect would have remained constant. Of course, this assumption can never be proven on the basis of observations precisely because the introduction of the change makes the required observation impossible. Thus, the natural sciences here rely on the very same assumptions as economics—yet, whereas economics can do with these assumptions alone, the theoretical natural sciences must introduce additional assumptions and artifacts.

Third, there is no other way of conceiving of general laws of human action. I do not claim that the view here submitted is merely *one* view on economics; rather, I claim that it is the *only* one that leaves a scope for economic principles. *Either* economic laws refer to relationships between reality and the counterfactual, in which case they can be exact and apodictically true, *or* economic laws are supposed to describe reality in terms of other perceivable things, in which case there is no such thing as an exact science of human action. Unfortunately, economists have not recognised that the laws they discovered by their nature refer to counterfactual relationships, even though in countless instances they have qualified their formulations of economic laws by saying "than otherwise."[39]

Fourth, conceiving of economics as a science dealing with counterfactual comparisons does not reduce its practical relevance. The case is just the reverse. Precisely because economics analyses the comparative effects of choice, it is highly relevant for all policy issues. Consider the frequent proposal to reduce unemployment by government spending. Economists reject these measures because the government can only spend what it has previously taken away from other members of society. Thus, they might (counterfactually) argue: "Government

[39]John R. Hicks perceived the counterfactual nature of equilibrium economics in his discussion of the role of "contemporaneous causality" in economics. For a discussion, see Hülsmann, "A Realist Approach to Equilibrium Economics," pp. 42f. However, contemporaneous causality is, for Hicks, merely one out of three different concepts of causality in economics, and even though he describes it as "the characteristic form of the causal relation in modern economics" and as a causal relation between "relevant alternatives," he fails to relate it to individual choice. See John R. Hicks, *Causality in Economics* (New York: Basic Books, 1979), pp. 62 and 27. On contemporaneous causality, and on sequential causality and permanent causality, see Hicks, *Causality in Economics*, pp. 73ff. and 12ff., respectively. With this distinction, Hicks seems to follow Mill, *System of Logic*, vol. 1, pp. 110ff.

spending increases the incomes of some members of society above the level they would otherwise have reached. However, it necessarily also *reduces* the income of *other* persons below the level they would otherwise have reached. Government spending might, in some places, create more jobs than would otherwise have been created, but, on the very same grounds, it will necessarily destroy jobs in other places."

This way of stating the issue is entirely independent of time and place, yet is undisputedly relevant for any concrete choice because it compares the effects of the available alternatives. Thus, it refers to reality in a way that no other approach possibly could. It is applicable to decision-making about government policies under all conceivable circumstances. In short, it is a principle of real human life.

THE MYTH OF *GEDANKENEXPERIMENTE*

Among the most popular methodological views among Austrian economists is that economic reasoning discerns the laws of human action through *Gedankenexperimente* or mental experiments.[40] This view, however, is untenable, as we will now proceed to show.

We find a succinct statement of the method of mental experiments in the work of Mises, who says that change can only be analysed if we start our examination at a state of affairs without any change and then introduce a change of a datum in order to analyse the effects that have to be attributed to this change as its cause.

> There is no means of studying the complex phenomena of action other than first to abstract from change altogether, then to introduce an isolated factor provoking change, and ultimately to analyze its effects under the assumption that other things remain equal.[41]

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[40]The first description of the method of mental experiments was due, not surprisingly, to a physicist-philosopher. See Ernst Mach, "Über Gedankenexperimente," *Erkenntnis und Irrtum*, 5th ed. (1897; reprint, Darmstadt: Wissenschaftliche Buchgesellschaft, 1991), pp. 183–200. The first Austrian economists to endorse this method in economics were apparently Josef A. Schumpeter, *Wesen und Hauptinhalt der theoretischen Nationalökonomie* (Leipzig: Duncker & Humblodt, 1908), pp. 451ff.; and Friedrich von Wieser, "Das Wesen und der Hauptinhalt der theoretischen Nationalökonomie—kritische Glossen," *Gesammelte Abhandlungen* (Tübingen: Mohr, 1929), pp. 22f.

[41]Mises, *Human Action*, p. 248. See also, e.g., Frank Knight, *On the History and Method of Economics* (Chicago: University of Chicago Press, 1956), p. 175;

The first point to be made is that this statement is wrong insofar as Mises contends that there is no other method for the analysis of change than this one. Indeed, we have seen above that, relying on the simple and realistic notion that all entities composing the world are finite, one can explain a change in terms of the counterfactual state of affairs that would have obtained in the absence of the change.

Thus, the remaining question is whether the method recommended by Mises could possibly be an alternative approach.

It is clear that *if* mental experiments were the economist's only tool of dynamic analysis, this would have uncomfortable implications indeed. Part of the frozen data are the valuations (that is, choices) of other human beings, and one cannot assume constancy in choice without running into various performative contradictions.[42] If economic laws were based on the assumption of unchanging conditions, it would not be clear at all how they could be used for the understanding of the real world. It would be impossible to take them at face value for immediate application, and this would considerably diminish their importance. Economic laws might then describe "tendencies" or "approximations" but they would not be exact statements about reality as it is here and now.

Most importantly, the method of mental experiments is not truly an alternative to the method of counterfactual comparisons because it is itself, like the experiments of the natural sciences, based on a counterfactual comparison. The underlying assumption in a laboratory experiment is that the observed effect *would not* have occurred in the absence of the observed cause. This is clearly a counterfactual assumption that is itself not based on observation. Similarly, the underlying assumption in mental experiments is that the operation of the law in question *could* be observed if only one condition of action

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Walter Eucken, *Grundlagen der Nationalökonomie*, 9th ed. (Berlin: Springer, 1989, p. 188); and Murray N. Rothbard, "Praxeology as the Method of the Social Sciences," in *Method, Money, and the Austrian School*, vol. 1 of *The Logic of Action* (London: Edward Elgar, 1997), p. 35. A good discussion of *ceteris paribus* is in Hausman, *Capital, Profits, and Prices*, pp. 123ff. On the history of the *ceteris-paribus* clause, see Joseph Persky, "Retrospectives: Ceteris Paribus," *Journal of Economic Perspectives* 4, no. 2 (Spring 1990), pp. 187–93, and Erich Kaufer, "Ceteris Paribus," *Journal of Economic Perspectives* 11, no. 2 (1997), pp. 190–91.

[42]See Hoppe, *Kritik der kausalwissenschaftlichen Sozialforschung*; Hoppe, *Praxeology and Economic Science*.

varied while all other conditions remained frozen. Hence, mental experiments tacitly presuppose a counterfactual comparison, too. What distinguishes them from the counterfactual method that we presented is that they make the additional and, most importantly, unrealistic assumption of frozen data.

In the light of this fact, it is not difficult to decide which of the two methods is better. Both its realism and the principle of Occam's razor speak a clear language in favour of our elementary version of the counterfactual method. Still, it might be worthwhile to examine the question whether the method of mental experiments could at least in principle be used in economic science. Is it at least conceivable to perform mental experiments? In particular, is it possible to analyse some or all of the ramifications of a change "under the assumption that other things remain equal"? I contend that this is impossible in the sphere of human action.

What could one possibly understand by the "effects" of an event if not a modification of "other things"? And if there are secondary effects as a consequence of the primary effects, how could one, then, distinguish between the effects of these consequent changes and the effects of the original change? In particular, how could one identify a net effect of two effects operating in the opposite direction? It is not possible to perform such distinctions so long as human choice differs from the movements of stones and other dead matter.

Moreover, it is not clear as to how far the effects of the original change should be pursued. Mises seems to assume that, under stable conditions, all effects of the change will sooner or later be exhausted. Yet, nowhere does he give a reason why this should be so. Common sense suggests precisely the opposite assumption, namely, that whatever event occurs, its impact will make *all* of the future different from what it otherwise would have been. The impact might be so small as to be hardly sensible, but *if* there is any impact whatsoever, and *if* this impact makes all of the future different from what it otherwise would have been, then it is definitely impossible to follow through all the ramifications of the original change.

These considerations should suffice to show that the method of mental experiments could never be applied. And in the praxis of the economist, it has never been applied. I venture to give a challenge to all those who uphold the method of mental experiments, namely, to cite one single instance of the application of this method. In fact, neither Mises nor any other economist has ever attempted, still less succeeded,

at doing so. What economists *have* done is to apply the method we have outlined above. They have based their reasoning on the rock-solid notion that human beings act in a world of finite entities, and they have compared the actual modification of the real world, as it results from choices and other events, with those modifications that could also have taken place.

The outstanding example is the quantity theory of money, which we will take to be the law that increases of the quantity of money lead to increases—though not necessarily always to *proportional* increases—of money prices. How can this law be established by mental experiments? No economist has ever traced the repercussions of an additional quantity of money through the whole economic system and through all future times. Most economists follow David Hume in contrasting two states of the economy, states which only differ by the quantity of money in use and by the price level, and then they say that it is the increase of the quantity of money that also increases the price level. However, this is clearly a case of *petitio principii*. Mises, by contrast, chose the correct method.[43] He stated that there must be some persons who first obtained the additional quantity of money. As a consequence of their increased money balances, the marginal utility of money for these persons diminishes, and therefore they spend more money than they otherwise would have spent. In turn, this spending increases the money balances of other persons who, again, spend more money than they otherwise would have spent. Since the quantities of all other goods are not affected by the increase of the quantity of money, we have to conclude that the increased spending must, *ipso facto*, increase most of money prices paid on the market, and that only some isolated prices might decline.

To sum up, the valid core of the idea of performing mental experiments is that economic laws cannot be established by the observational methods of the natural sciences. But the question is whether experiments are necessary at all. The view that one must create "special conditions" to "isolate" the effects of a given event is confused over the rôle and the presuppositions of experiments. Even in the natural sciences, experiments can only be performed on the basis of the insight that the world is finite. It is from this insight alone that economists can directly derive the kind of propositions we have discussed

[43]See Ludwig von Mises, *Theory of Money and Credit*, trans. H.E. Baston (Indianapolis, Ind.: Liberty Classics, 1980), pp. 160ff.

above. In the natural sciences this direct derivation is impossible, and therefore one takes recourse to the artifact of experiments. But why should economists bother about these handicaps of their fellow researchers and use their crutches? In so doing, they give the ridiculous impression of a healthy person wearing thick glasses that, so he believes, improve the force of his eyes whereas they distort the way he sees the world. The economist should rather be happy that he has to make *fewer* assumptions about the world than do his colleagues from the natural sciences and that, moreover, he can pursue his investigations on these assumptions alone and without the use of any artifacts.

PREDECESSORS

It is often asserted that economic science begins with Adam Smith, who discovered the invisible hand of the market. However, it would be more pertinent to argue that economic science, as a science, begins with Frédéric Bastiat, who stressed the counterfactual relationship between what is seen and what is not seen in human action. In fact, Bastiat was the first economist who grasped the nature of the laws of choice and who, in the light of his intuition, explained the logical nature of economic argument. In his great essay "What is Seen and What is Not Seen," Bastiat presented his insight as a tale about a broken window. It is worth quoting Bastiat at some length, as he explains how economic argument contrasts facts and their counterfactuals:

> Have you ever been witness to the fury of that solid citizen, James Goodfellow, when his incorrigible son has happened to break a pane of glass? If you have been present at this spectacle, certainly you must also have observed that the onlookers, even if there are as many as thirty of them, seem with one accord to offer the unfortunate owner the self-same consolation: "It's an ill wind that blows nobody some good. Such accidents keep industry going. Everybody has to make a living. What would become of the glazier if nobody broke a window?"
>
> Now, this formula of condolence contains a whole theory that it is a good idea for us to expose, *flagrante delicto*, in this very simple case, since it is exactly the same as that which, unfortunately, underlies most of our economic institutions.
>
> Suppose that it will cost six francs to repair the damage. If you mean that the accident gives six francs worth of encouragement to the aforesaid industry, I agree. I do not contest it any way; your reasoning is correct. The glazier will

> come, do his job, receive six francs, congratulate himself, and bless in his heart the careless child. *That is what is seen.*
>
> But if, by way of deduction, you conclude, as happens only too often, that it is good to break windows, that it helps to circulate money, that it results in encouraging industry in general, I am obliged to cry out: That will never do! Your theory stops at *what is seen*. It does not take account of *what is not seen*.
>
> *It is not seen* that, since our citizen has spent six francs for one thing, he will not be able to spend them for another. *It is not seen* that if he had not had a windowpane to replace, he would have replaced, for example, his worn-out shoes or added another book to his library. In brief, he would have put his six francs to some use or other for which he will not now have them.[44]

Here is the nature of economic argument in a nutshell. Bastiat's nineteenth-century admirers have very perceptively noticed his net departure from the type of argument cherished by the British school of Smith and Ricardo. His biographer Fontenay observed that Bastiat in a way continued the research programme of the physiocrats.[45] The latter had seen human happiness as the object of economic science, which in turn was for them the science of natural law. By contrast, the British classical economists had reduced economics to a science of (visible) facts, and replaced human happiness by a materialistically-conceived "wealth." Bastiat's great achievement, according to Fontenay, was to integrate these two approaches into a "science of the facts from the point of view of natural law."

Unfortunately, this perspective on the nature of economic laws fell into oblivion. Bastiat was defamed as a political agitator and his scientific achievements were systematically diminished, especially from the side of British economists.[46] Economic science fell under the sway of British political economy, which, as far as its materialistic methodology is concerned, found its fulfilment in twentieth-century positivism. And, last but not least, Bastiat's insights about the essential

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[44]Frédéric Bastiat, "What is Seen and What is Not Seen," in *Selected Essays on Political Economy* (Princeton, N.J.: Van Nostrand, 1964), pp. 2f.

[45]See R. Fontenay, "Notice sur la vie et les écrits de Frédéric Bastiat," F. Bastiat, *Oeuvres completes*, 3rd ed. (Paris: Guillaumin, 1881), pp. ix–lii.

[46]See Joseph T. Salerno, "The Neglect of the French Liberal School in Anglo-American Economics: A Critique of Received Explanations," *Review of Austrian Economics* 2 (1988), pp. 113–56.

relationships between the visible and invisible parts of human action were replaced by a distinction more congenial to the positivistic mindset, namely, by the distinction between the short run and the long run. The invisible consequences of an action were interpreted as its long-run and thus not *yet* visible consequences. And both short-run and long-run consequences were analysed by mental experiments.

In the twentieth century, Ludwig von Mises and his followers have been virtually alone in recognising the great practical importance of counterfactual reasoning.[47] This recognition is obvious from the very way Mises stated the problem of political economy, that is, of the science analysing the impact of government intervention on the market economy. Mises did not proceed in two steps, first developing an economic model of the unhampered market, which he then contrasted with another model that also included the government. Rather, he advocated an integrated, one-step analysis of the counterfactual impact of interventionism, describing interventionism in a way that stressed its counterfactual consequences:

> Intervention is a limited order by a social authority forcing the owners of the means of production and entrepreneurs to employ their means in a different way than they otherwise would.[48]

In his actual economic analysis, therefore, Mises accurately described counterfactual laws, and his economic writings feature plenty of instances of counterfactual argument, especially when he discussed government intervention in the market economy. For example, he refers to government fixing "price at a height different from what the market would have fixed if left alone" and to labour unions raising "wage rates above the height at which the unhampered market would determine them." Similarly, in analysing the impact of credit expansion, he states

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[47]An important exception is Knut Wicksell's distinction of the "natural interest rate" from the money-interest rate. The former is the rate that "would come to be determined by supply and demand if the real capital goods were lent out in natura, without the intermediation of money." Knut Wicksell, *Geldzins und Güterpreise* (Jena: Gustav Fischer, 1898), p. iii, my trans.; also p. 98.

[48]Ludwig von Mises, *A Critique of Interventionism* (New York: Arlington House, 1977), p. 20. The original German version reads: "Der Eingriff ist ein von einer gesellschaftlichen Gewalt ausgehender isolierter Befehl, der die Eigentümer der Produktionsmittel und die Unternehmer zwingt, die Produktionsmittel anders zu verwenden, als sie es sonst tun würden." See Mises, *Kritik des Interventionismus*, p. 6.

that "the gross market rate continues to lag behind the height at which it would cover both originary interest plus the positive price premium."[49]

The nature of these laws did not, however, come to be reflected in Mises's methodological writings. The reason for this failure of Mises-the-methodologist to take full account of the work of Mises-the-economist was, as we have seen above, that in his methodological writings he still laboured under the remnants of positivism in his thought. Mises was (so to say) not enough of a Misesian in methodology.

The writings of Mises's followers, then, featured exactly the same combination of accurate counterfactual analysis and inaccurate methodological reflection.[50] For example, Murray Rothbard championed the notion that economists perform mental experiences and never even hinted at the existence of counterfactual laws in his methodological writings.[51] But Rothbard-the-economist brilliantly captured these laws in many passages of his works. Consider the following passage from his *Man, Economy, and State*, where he shows that the positivist approach of the economic mainstream is unsuitable to give an exact description of the counterfactual laws ruling the business cycle:

> Those who approach business cycles from a statistical point of view and try in that way to arrive at a theory are in hopeless error. Any historical-statistical fact is a complex resultant of many causal influences and cannot be used as a simple element with which to construct causal theory. The point is that credit expansion raises prices *beyond what they would have been in the free market* and thereby creates the business cycle. Similarly, credit expansion does

[49]Mises, *Human Action*, pp. 757, 763, 549.

[50]Mainstream economists make some use of counterfactual considerations in their teaching, as a glance at the better textbooks reveals. As far as research is concerned, however, the prevailing positivist creed has effectively prevented any systematic analysis of counterfactual laws. Thus, John R. Hicks, in chap. 2 of *Capital and Growth* (Oxford: Oxford University Press, 1965), characterizes comparative statics as the method comparing "any basic process" and an "amended process." Similarly, for example, Lee E. Ohanian, in "The Macroeconomic Effects of War Finance in the United States: World War II and the Korean War," *American Economic Review* 87, no. 1 (1997), pp. 23–40, analyses the macroeconomic effects of war finance by comparing a "baseline artificial economy" with the actual data. This is as close as the mainstream gets to Austrian economics as far as counterfactual laws are concerned.

[51]See, e.g., Rothbard, "Praxeology as the Method of the Social Sciences."

> not necessarily lower the interest rate below the rate *previously* recorded; it lowers the rate *below what it would have been in the free market* and thus creates distortion and malinvestment.[52]

Among contemporary writings, Hoppe's 1989 *Theory of Socialism and Capitalism* is another outstanding piece of *a priori* comparative economic analysis, but Hoppe, too, was unaware that the nub of his argument involved a counterfactual comparison.

CONCLUSION

We have argued that mainstream economists look for the laws of human action in all the wrong places. Imbued with positivistic prejudices on methodology, they seek to find regularities between the observable parts of human action (behaviour) and other observable events. But no regularities can be found in this sphere. Laws of human action exist only within human action. They are counterfactual and *a priori* laws relating observed behaviour to unobservable choice alternatives.

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[52]Rothbard, *Man, Economy, and State*, p. 862, emphasis in the original. It so happens that I disagree with Rothbard on the relationship between credit expansion and the interest rate; see Guido Hülsmann, "Toward A General Theory of Error Cycles," *Quarterly Journal of Austrian Economics* 1, no. 4 (1998). The point is, however, that Rothbard clearly perceived that certain economic laws were counterfactual in nature, and that this counterfactual nature made it impossible to grasp them accurately through the usual positivist methods.

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