
Economics Imperialism: Concept and Constraints

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The paper seeks to offer [1] an explication of a concept of economics imperialism, focusing on its epistemic aspects; and [2] criteria for its normative assessment. In regard to [1], the defining notion is that of explanatory unification across disciplinary boundaries. As to [2], three kinds of constraints are proposed. An ontological constraint requires an increased degree of ontological unification in contrast to mere derivational unification. An axiological constraint derives from variation in the perceived relative significance of the facts explained. An epistemological constraint requires strong fallibilism acknowledging a particularly severe epistemic uncertainty and proscribing against over-confident arrogance.

Keywords: *economics imperialism, interdisciplinarity, fallibilism, explanatory unification*

1. Introduction

The observation that motivates this paper is that economics imperialism has become a subject of heated debate that much of the time tends to be dominated by unexamined emotions rather than systematic arguments. It

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is time to calm down and to start being clear about what we are talking about and what standards we apply for evaluating the phenomenon.

“So economics is an imperial science: it has been aggressive in addressing central problems in a considerable number of neighboring social disciplines and without any invitations.” So wrote George Stigler in 1984, and was perfectly justified in doing so (Stigler 1984, 311). The imperialistic inclination of economics has been in operation for the last half a century, and it has gained in strength. As paradigmatic examples of the trend, one may cite works such as Gary Becker’s *The Economics of Discrimination* (1957), Anthony Downs’s *An Economic Theory of Democracy* (1957), James Buchanan and Gordon Tullock’s *The Calculus of Consent* (1962), Mancur Olson’s *The Logic of Collective Action* (1965), and Becker’s *A Treatise on the Family* (1981). As their titles indicate, these works deal with domains of phenomena that previously were not generally perceived as “economic” but are now analyzed in economic terms. Unsurprisingly, economics imperialism has become a hotly contested topic that divides both economists and, even more so, practitioners in other social sciences such as political science, sociology, anthropology, law, and human geography. Some celebrate it more or less unconditionally—indeed, some more, some others less (Tullock 1972; Becker 1976; Stigler 1984; Hirshleifer 1985; Radnitzky and Bernholz 1987; Lazear 2000); others object to it (Coase 1978; Fine 1999, 2002); while yet others hold more differentiated or undecided attitudes (Udéhñ 1992; Green and Shapiro 1994; Tullock and McKenzie 1975; Lehtinen and Kuorikoski 2007).

The conventional expression used in this literature is “economic imperialism,” but this suffers from an ambiguity. The expression denotes both the imperialism of the discipline of economics in the academic realm and the economy-driven imperialism in international relations and the global economy. I have proposed using “economics imperialism” to refer to the former and thereby to keep the two distinct (see also Mäki 2002a, 2002b). So defined, there is a striking asymmetry between the two expressions insofar as the evaluative use of the “imperialism” component is concerned: while “imperialism” in the case of economic imperialism has been adopted by the anti-imperialists in order to denounce it, in the case of economics imperialism it has been proudly adopted by the imperialists themselves with the purpose of celebrating it.

What is economics imperialism? What to make of it? Are those who endorse it justified in doing so? Do others have sound reasons to resist it? What exactly are the issues, and what exactly are the arguments? These are questions that are found troubling by many economists and an increasing

number of other social scientists whose intellectual landscapes are changing as a result of the growing presence of economic ideas in their home disciplines. In trying to go some way toward answering these questions, I will outline, within one framework, the philosophical foundations of both the thrust of economics imperialism and of a possible strategy of resistance. In other words, what follows is a sketch of a philosophy of science that helps articulate both the concept of, and the constraints on, economics imperialism; what will be offered is a *philosophy of the rationale of, and resistance to, economics imperialism*. The hope is that this will help us be clear about the target of the controversy as well as about the character of some of the actual and potential arguments on both sides. No framework of this sort has been available—but it is badly needed to structure the ongoing debates.

An obvious observation to start with is this: Most scientists and most philosophers of science believe that one respectable, if not the most respectable, species of scientific achievement amounts to expanding the domain of phenomena explained by a given theory, or, even better, by an increasingly parsimonious theory. Most economists seem to share this conviction. On closer inspection, economics imperialism appears to be an implementation of this widely accepted general view of scientific excellence. It thus appears to have a legitimate rationale: it turns out to be in line with the received image of successful science in general. Yet, it has opponents, too, both inside and outside of economics. But it may be less clear what the arguments are on the resistance side of the controversy. *While economics imperialism can be construed so as to make it be supported by a well-established philosophy of science argument, the philosophy of science supporting its resistance is not equally obvious*. The account to be submitted on the following pages is intended not only to make both of these positions transparent but also to accommodate them in one framework. For this purpose, I will show that economics imperialism is a special case of the more general methodological norm of explanatory unification. I will show that explanatory unification appears in several forms. And I will submit a way of exploiting the disunity of unification and some peculiar features of the enterprise of economics in order to put forth descriptive and normative judgments about disputed issues related to the expanding scope of economics.

It is important to understand *what this paper does not seek to do*. It does not offer any historical account of economics imperialism, but is supposed to be compatible with a number of different historical accounts concerned with its origins, actual trajectories, and stages of development. Neither does the paper attempt to explain the phenomenon of economics imperialism, it rather seeks to develop tools that could be employed in its evaluation.

Explaining it will be both important and difficult [but see, e.g., the attempts of Fine (1999) and Amadae (2003)]. The paper is also not about the political aspects of economics imperialism. It is obvious that political connotations are very much at the core of the concept of imperialism, but this important side of the matter deserves separate treatment.

Importantly, the paper is not about the economic contents of economics imperialism. This has the implication that the proposed account is intended as *neutral with regard to any particular ideas concerning the contents of any particular economics* that behaves imperialistically. Even though the illustrations to be used are connected with particular and controversial economic ideas, the overall service of the paper is intended to be independent of their specific contents. More strongly, the framework should be usable for highlighting aspects of other sorts of intellectual imperialism, such as evolutionary imperialism, social constructivist imperialism, cultural studies imperialism, neuroscientific imperialism—or virtually any academic tendency toward explanatory expansion beyond the boundaries of disciplines or research fields. Incidentally, it is curious that the term “imperialism” is seldom used of such other cases—which suggests a challenge for social explanation.

The paper is about the philosophical—rather than economic—foundations of economics imperialism, or any intellectual imperialism that is inclined toward explanatory expansion. The aim is to provide a framework of concepts, questions, and general principles within which debates concerning particular theories can be more fruitfully conducted.

2. Concept

Any intellectual phenomenon characterizable in terms of the metaphor of imperialism has a number of important aspects that can be highlighted by descriptions with different connotations of the metaphor. Such descriptions may deal with various institutional, political, emotional, methodological, epistemic, and other aspects of intellectual imperialism. Accordingly, we may focus on issues of relative prestige and academic power associated with scientific disciplines and research fields. This gives us the notion of *imperialism of standing*. We may focus on issues related to supported and unsupported techniques and standards of inquiry, in which case we will be talking about *imperialism of style*. And we may be concerned with issues of explanatory reach, the appropriate range of explanandum phenomena associated to disciplines and fields. These are issues related to *imperialism of scope*. The focus in what follows will be on epistemic aspects of imperialism that

combine issues of scope and style. At the same time, we should stress that epistemic processes are variously dependent on the other aspects of intellectual imperialism: they don't occur in institutional and technological vacuums. Yet, starting out with a focus on epistemic imperialism will help see more clearly how other aspects connect with it in actual academic reality.

There are a number of more basic concepts that are relevant to an explanation or deconstruction of the epistemic concept of economics imperialism. They include those of scope, explanation, consilience, unification, simplicity, and confirmation. These concepts are interrelated in their meanings, but they are all ambiguous and contested. This gives a sufficient reason for an attempt to bring in some clarification.

Scope

The issue of scope was a popular subject for economists in the 19th century: books and essays were published with the title, "The scope and method of political economy" and the like. One example is John Neville Keynes and his 1891 book with that very title. His notion of scope is fairly broad:

In seeking to define the scope of any department of study, the object in view is primarily to determine the distinguishing features of the phenomena with which it deals, and the kind of knowledge that it seeks concerning these phenomena. (J. N. Keynes 1955/1891, 2)

The scope of a theory, T, can be defined in terms of *problems* or in terms of *facts or phenomena*, for example. We may say that the scope of T is the set of problems it is used to solve or, more strongly, is able to solve. And we may say that the scope of T consists of the facts—singular phenomena, types of phenomena, aspects of phenomena, regularities among phenomena—T is intended to explain, or is able to explain. I adopt the latter version that is put in terms of explanation for the purposes of the present discussion: The scope of theory T is the set of classes of T's perceived explananda.

Here are three remarks on this idea, to be expanded on later. First, scope is characterized in terms of explanation. Second, the set of T's perceived explananda does not have to be, and often is not taken to be, fixed in advance. It may change, it may expand, and it may shrink. Scientists' perceptions change in response to attempts to apply T. Third, the detailed contents of T do not have to remain fully fixed across its attempted applications. We have to allow for variations in T within limits without T losing its identity. Fourth,

membership in the set of T's explananda has to be decided by means of some criteria. In the case of the discipline of economics, for example, such criteria are implied by what are known as "definitions" of economics. They specify what J. N. Keynes referred to as "the distinguishing features of the phenomena with which it deals" as part of the scope of economics. To cite examples, here are two—perhaps the most famous two—such definitions:

Economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of wellbeing. (Marshall 1920)

Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses. (Robbins 1935, 16)

Undoubtedly, the way one defines economics makes quite a difference to its imperialistic inclinations concerning whether, to what extent, and in which domains it is disposed to behave imperialistically. The framework outlined here is not committed to or otherwise linked with any specific idea of the contents of economics—it is intended as general enough to be able to accommodate them all. Yet it is unsurprising that Marshall's definition above has not been used for supporting any wide-ranging intellectual imperialism, whereas Lionel Robbins's definition of economics as the science of (rational) choice facing unavoidable tradeoffs between choice options has turned out to be particularly suitable for explanatory expansion. But even historically, the Robbins definition has not been the only conception sustaining economics imperialism. James Buchanan, himself a practitioner of economics imperialism—in analyzing the political realm in economic terms—has been both critical of Robbins's definition and in favor of another definition of economics in terms of market exchange, as "the study of the whole system of exchange relationships" (Buchanan 1964, 220). This plurality of views provides another reason for steering a neutral line with respect to the contents of the economics in economics imperialism.

Consilience and Unification

The concept of consilience will serve as another entrance point in our deconstructive endeavor. This concept played a major role in William Whewel's philosophy of science in his *Philosophy of the Inductive Sciences* (1847). Consilience is a property of theories that denotes its scope with a number of characteristics: First, the items included in the scope are facts to

be explained, thus explanation is an essential element in the notion. Second, in order for a theory to have the property of consilience at all, the theory has to be able to explain two classes of facts at least; and the more classes it is able to explain, the more consilient it is. Thus theory T1 is more consilient than another theory T2 if T1 explains more classes of facts than T2 (qualifications on this will be provided in due course). Third, when measured in terms of consilience, a theory's explanatory power is a matter not of the number of facts the theory is able to explain, but of the variety of *kinds* of facts it can be used to explain. This is why the idea of "classes of facts" appears in the characterization of "the Consilience of Inductions from different and separate classes of facts" (Whewell 1847, 95). So characterized, Whewell presents consilience as a virtue of theories and adds another related virtue, namely "the progressive Simplification of the Theory as it is extended to new cases" (*ibid.*, 95). The two virtues are related, since the "Consiliences of our Inductions give rise to a constant Convergence of our Theory towards Simplicity and Unity" (*ibid.*, 96).

Combining these two virtues brings us close to the contemporary philosophical accounts of explanatory unification. Generalizing on the various versions of this idea, we may say that explanatory unification is a matter of some explanantia/explananda ratio. This is expressed variously, such as "Explaining much by little"; "Minimizing the number of premises used while maximizing the number of conclusions obtained"; "Minimizing the number of patterns of derivation employed while maximizing the number of conclusions generated"; "Reducing the number of apparently separate and diverse phenomena by showing that they are manifestations of the same system of objects" (Friedman 1974; Kitcher 1981, 1989; Aronson 1984; Morrison 2000; for the case of economics, see Mäki 1990, 2001).

Whatever the formulation, unification is widely celebrated as a major goal and achievement of the best of science. Some philosophers of science have made it the cornerstone of their accounts of scientific explanation and confirmation (in particular, see Kitcher 1981, 1989). There is little doubt that large segments of the economics profession share the view that unification is a major virtue of theorizing (for examples, see Mäki 1990, 2001, 2004; Mäki and Marchionni 2008). The search for a parsimonious and explanatorily powerful set of core principles has been a dominant line of theoretical research in economics from Nassau Senior to a series of Nobel laureates as diverse as Paul Samuelson, James Buchanan, Gary Becker, and Robert Lucas.

We need yet another idea in our tiny philosophical toolbox. The authentic concept of consilience contains more than the characteristics mentioned

above, and it is this additional feature that will give us an important key to understanding economics imperialism in actual scientific practice. Consilience between classes of facts (and inductions thereupon) requires that the theory in question is first successfully suggested as an explanation of a generalization over one class of phenomena. Subsequently, and surprisingly, the theory turns out to explain a second (and perhaps a third, and a fourth ...) class of phenomena. At the time of constructing the theory in the first place, these further classes of phenomena were not considered to be among the actual or potential explananda of the theory, but are eventually found to be adequately explained by it: “it enables us to explain and determine cases of a *kind different* from those which were contemplated in the formation of our hypothesis” (Whewell 1847, 65). This idea is supposed to have powerful epistemological consequences as we will see. Together with those above, it constitutes what we may call *full consilience*. (The presumption that full consilience, involving as it does the element of surprise, has epistemic significance, is philosophically controversial, but its role in the psychology of persuasion in actual scientific practice seems uncontroversial.)

Expansionism and Imperialism

It is well known that the Robbinsian “definition” of economics in terms of ends and scarce means (cited above) is powerfully scope-expanding. It “opens the door wider” than previous definitions. “After all, the ends that men and women seek include not just bread and butter but also reputation, adventure, sex, status, eternal salvation, the meaning of life, and a good night’s sleep” (Hirshleifer 1985, 53). According to this conception, the scope of economics is not restricted to ordinary market phenomena: “Rational self-interested choice plays a role in many domains of life other than markets, for example in politics, warfare, mate selection, engineering design, and statistical decisions” (ibid.).¹ Built on these principles, we now have economic explanations of politicians’ and bureaucrats’ behavior, voting and law, crime and punishment, racial discrimination and slavery, marriage and divorce, pornography and prostitution, religion and suicide, drug addiction and abortion, sport and gambling, rock ’n’ roll and science, and much more (for a start, see Tullock and McKenzie 1975; Tommasi and Ierulli 1995; Bowmaker 2005).

1. At the same time, it is important to see that the Robbinsian definition, strictly applied, excludes major—and economically significant—phenomena from the purview of economics. These include innovation and entrepreneurship as well as macroeconomic relationships at a purely aggregate level.

This is not just an instance of explanatory unification, but of full consilience: such non-market phenomena were not conceived as being among the explananda of the conventional theory of market phenomena at the time of constructing the core principles of the theory. Moreover, Robbins's interpretation of the scope of the theory was not a matter of generalizing upon prevailing explanatory practice: on the very contrary, it took decades for explanatory practice to exploit the features of the theory that Robbins pointed out in a programmatic fashion. The conditions of full consilience seem to be met.

Hirshleifer refers to the "expanding domain" of economics, thus suggesting an idea of economics expansionism. But he also talks about the "imperialist invasive power" of economics:

What gives economics its imperialist invasive power is that our analytic categories—scarcity, cost, preferences, opportunities, etc.—are truly universal in applicability. Even more important is our structured organization of these concepts into the distinct yet intertwined processes of optimization on the individual decision level and equilibrium on the social level of analysis. (Hirshleifer 1985, 53)

More generally, economics expansionism and economics imperialism appear to be matters of broadening the range of types of explananda: the categories of economics being "truly universal in applicability" refers to unification of phenomena.² What here appears just as a terminological difference between expansionism and imperialism in Hirshleifer, may be turned into a substantive one by offering a few stipulations:

Economics Expansionism

Economics expansionism is a matter of a persistent pursuit to increase the degree of unification provided by an economic theory by way of applying it to new types of phenomena.

This definition invokes the scope side of the ideas of unification and consilience. In case the expansionist pursuit will succeed, unification and consilience are achieved by way of expanding the scope of a theory, that is, by expanding the set of its types of explananda (rather than by way of compressing its explanatory resources). Full consilience requires that the new kinds of phenomena were not considered to be among the actual or

2. On the other hand, the idea that economic theory has the feature of "structured organization of these concepts" refers to a unified theory and makes Hirshleifer's characterization akin to Whewel's notion of "simplicity and unity" and to Kitcher's notion of "explanatory patterns."

potential explananda of economic theory at the time of its construction. A further element has to be added to get to economics imperialism:

Economics Imperialism

Economics imperialism is a form of economics expansionism where the new types of explanandum phenomena are located in territories that are occupied by disciplines other than economics.

Here the “territory that is occupied by a discipline” has to be understood as *the class of phenomena that researchers in this discipline have conventionally or traditionally taken as their task to explain*. Note that this does not require that there have been successful prior explanations, or even that there have been attempted explanations—all that is required is that explaining those phenomena has been on the agenda of another discipline; this is what it means for that discipline to have occupied the territory. Note also that the definition is in terms of “persistent pursuit” rather than achievement on the part of the expansionist discipline. This is in line with the statement we cited from Stigler at the outset, saying that economics “has been aggressive in addressing central problems in a considerable number of neighboring social disciplines and without any invitations” (Stigler 1984, 311), as well as with Becker’s portrayal of the “economic approach” as being a matter of “relentless and unflinching” application of a core set of explanatory principles (Becker 1976, 5).

These definitions imply that expansionism and imperialism are not the same thing. Imperialism is a special case of expansionism. This leaves room for non-imperialistic expansionism:

Non-Imperialistic Economics Expansionism

Non-imperialistic economics expansionism is a form of economics expansionism where the new types of explanandum phenomena are located in unoccupied territories, that is, territories unoccupied by disciplines other than economics.

When awarding the Nobel Memorial Prize to Gary Becker in 1992, the Nobel Prize Committee recognized both versions: the prize was awarded for “having extended the domain of economic theory to aspects of human behavior which had previously been dealt with—if at all—by other social science disciplines such as sociology, demography, and criminology” (1993, 1). Here, “which had previously been dealt with” can be taken to refer to the imperialistic version, while “if at all” refers to a non-imperialistic version of

economics expansionism. Tullock (1972, 318) mentions the new work in the economics of charity and non-profit organizations as “the creation of a new field rather than an imperialistic invasion of an existing one”—an example of expansionism without imperialism.

The difference between imperialism and mere expansionism deserves comment. From the point of view of the very idea of unification, there does not appear to be any significant difference: both forms of expansionism come down to the pursuit of increased unification. The difference appears to be based on *historical and social contingency*: in one case, there were, in the other, there were not, established disciplines addressing the phenomena that are later added to the expanding scope of the expansionist discipline. The very idea of imperialism presupposes that of boundaries: economics imperialism is a matter of crossing disciplinary boundaries. From this perspective, the difference has a *pragmatic* character: it is defined in terms of the (existence or non-existence of the) practices of the conquered or would-be conquered disciplines and the relations between the practices in the conquering and conquered disciplines. We might conjecture, for example, that in the case of prior disciplinary occupation, the likelihood of debate across disciplinary boundaries is higher than in the case of its absence, *ceteris paribus*. It is another question whether there is something more deeply ontological behind these pragmatic contingencies.

The Epistemological Role of Unification

Unification and explanation are often presented as being tightly linked to one another: to explain is to unify. While this is controversial (Kincaid 1996; Halonen and Hintikka 1999; Mäki 2001), there is a more obvious link between unification and confirmation. The idea is that the capacity to unify increases the likelihood of a theory being correct, *ceteris paribus*. In Whewell’s account of consilience, this connection is explicit and close. Consilience plays an epistemological role: consilient theories are more likely to be true. Whewell says that “the evidence in favour of our induction is of a much higher and more forcible character when it enables us to explain and determine cases of a *kind different* from those which were contemplated in the formation of our hypothesis. ... Accordingly the cases in which inductions from classes of facts altogether different have thus *jumped together*, belong only to the best established theories which the history of science contains” (Whewell 1847, 88). This sounds like a message that economics expansionists and imperialists should welcome with delight:

imperialistic successes can be taken as indicators of one's theory being on the right track. Here is a somewhat stronger formulation: "No example can be pointed out, in the whole history of science, so far as I am aware, in which this Consilience of Inductions has given testimony in favour of an hypothesis afterwards discovered to be false" (90). This has turned out to be an exaggeration in the light of later developments in natural science, but yet it suggests that if expansionistic and imperialistic economics were to be a failure, it would be an exception to a general rule. The general rule suggests that successfully imperialistic economic theory is more likely to be true than one without such success. This principle will not be directly disputed in the remainder of the argument.³

3. Constraints

We might choose to go as far as saying that unification provides a norm that is firmly embedded in the institution called science. Not only has it been the case that most scientists have explicitly or implicitly endorsed the ideal of unification, but it has also shaped the normative structure of the institutions of science, and has thereby become part of the very idea of science.

We may or may not choose to go this far, but the fact remains that explanatory unification is one of the most uncontroversial goals and virtuous achievements of scientific theorizing. No doubt this ideal enjoys a strong position also within economics.⁴ This appears in many forms, such as the following two: [1] theories that do not unify or that are much weaker in their ability to unify than their rivals, are less likely to be accepted, or even to be considered for acceptance; and [2] successful applications of a theory to new kinds of phenomena are celebrated as progressive (sometimes worth the Nobel Prize such as in the case of Gary Becker and James Buchanan). Yet, we may not want the ideal of unification to dominate unconstrained. I propose three kinds of constraint: ontological, pragmatic, and epistemological.

3. This is more controversial than it may appear. Whewell was very confident about the connection between full consilience and necessary truth, but he never spelled out an account of why this connection would obtain, and such an account has not been provided ever since. What seems uncontroversial, nevertheless, is that there is a strong connection between full consilience and our psychic inclination to believe the theory.

4. The fact that the ideal of explanatory unification tends to be more popular in economics than in other social sciences calls for an explanation.

Ontological Constraint

An important observation to motivate further scrutiny is that the above abstract conclusions [1] and [2] fail to take us very far since both are ambiguous in many ways. The first step is to acknowledge that unification itself is not uniform, that it appears in various forms. The disunity of unification can then be invoked to develop constraints on the two ideas [1] and [2]. Here is the general intuition I submit: [1] and [2] are more acceptable when “unification” is taken to refer to ontological unification than when it is used to refer to mere derivational unification. We now have to specify these two notions (see Mäki 1990; 2001; 2002a).

Derivational Unification

Derivational unification is a matter of deriving large classes of explanandum sentences from a parsimonious set of theoretical sentences or inferential patterns. It is based on the derivational capacities of theories. Explanations are construed as arguments. Theories are regarded as logical formulae, possibly devoid of truth-value, serving the task of generating implications and saving the phenomena.⁵

One of my favorite examples of derivational unification has been given by game theorist Robert Aumann (1985; see Mäki 2001). Aumann is explicit about unification being a major virtue of theories (all the italics are added in the following). “Part of the greatness of theories like gravitation or evolution, or the atomic theory of matter, is *that they cover so much ground, that they ‘explain’ so many different things*. ... The idea of gravitation itself, in the abstract, is rather mysterious; it is important because it enables us to relate the tides to the motion of the planets and to the trajectories of shells and missiles” (30). The accompanying feature is “spareness; as few as possible exogenous parameters should be used to account for any particular phenomenon. . . . In addition . . . one would like spareness in the basic structure of the theory. . . .” (31).

5. Derivational unification, when conceived as explanation, requires that explanations be conceived as arguments—as derivations of conclusions from sets of premises. This does not determine a position in the issue of whether the explanatory theory has or lacks truth-value—it is consistent with both views even though the illustration to be offered represents the latter view. In other words, the relevant contrast is the argument view versus the representation view of explanation—rather than instrumentalism versus realism about theories, including the issue of whether theories have truth-values.

The above does not yet determine any specific version of unification. Further textual evidence suggests that what Aumann has in mind is derivational unification. As a general point, he says: “In constructing such a theory, *we are not trying to get at the truth, or even to approximate to it: rather, we are trying to organize our thoughts and observations in a useful manner*” (31–32). In relation to game theory, the principle applies: . . . *a solution notion is the scientists’ way of organizing in a single framework many disparate phenomena and many disparate ideas*” (34–35). Economics is no exception to the general principle of derivational unification: Aumann says, “the validity of utility maximization does not depend on its being an accurate description of the behavior of individuals. Rather, it derives from its being the underlying postulate that *pulls together most of economic theory* . . . Alternatives such as satisficing have proved next to useless in this respect. While attractive as hypotheses, there is little theory built on them; *they pull together almost nothing*; they have few interesting consequences. In judging utility maximization, we must ask not ‘Is it plausible?’ but ‘*What does it tie together, where does it lead?*’” (35).

Another notion of unification is based on the acknowledgment of the centrality of ontology in theorizing and explaining. Explanatory theorizing is taken to be a matter of describing the role of the explanandum phenomenon in the workings of the world, its nexus of causes and effects and the processes that connect the two. The supposition behind explanatory unification in the ontological mode is that there is a degree of unity among the phenomena in the world, and it is the task of theorizing to help represent this unity as accurately as possible. Explanatory unification here amounts to redescribing a variety of apparently independent types of phenomena as forms or manifestations of one and the same underlying system of entities and causes. The emphasis here is switched from the logic of sentential derivation to the ontology of being and the semantics of representation.

Ontological Unification

Ontological unification is a matter of redescribing large classes of apparently independent explanandum phenomena as forms or manifestations of a common system of entities, causes, and mechanisms. It is based on the representational capacities of theories in depicting such underlying systems. Explanations are construed as descriptions of the order of things, or goings on, in the world. Theories are regarded as purportedly true pictures of the simplest mechanisms and processes of the world’s workings; phenomena are regarded as manifestations thereof.

Ontological unification is a factual discovery concerning the actual degree of unity in the world, and an ontologically unifying theory represents this unity in a truthful fashion. An example in economics is Milton Friedman and his famous 1953 essay. Readers may find this surprising, since Friedman is usually described as an instrumentalist, and the notion of ontological unification is a realist idea. Contrary to conventional readings, parts of Friedman's essay can be read as a realist defense of his favorite economics (Mäki 1992a, 2003). Here is a key passage:

A fundamental hypothesis of science is that appearances are deceptive and that there is a way of looking at or interpreting or organizing the evidence that will reveal superficially disconnected and diverse phenomena to be manifestations of a more fundamental and relatively simple structure. (Friedman 1953, 33)

The key ideas characterizing ontological unification are present in this passage in rough outline. It contains the idea of there being "superficially disconnected and diverse phenomena" to be unified. There is the idea of "a more fundamental and relatively simple structure" by reference to which unification can be accomplished. And there is the idea that unification amounts to showing that those disconnected phenomena are only apparently disconnected, because the facts of the matter are such that these phenomena are "manifestations" of one and the same "fundamental and relatively simple structure." Unification, according to this picture, is not just a matter of derivational success, but rather a matter of successfully representing how things are related in the causal structure of the world.

The concept of consilience can be construed as a dynamic element in such an ontological idea of unification. It refers to different kinds or classes of phenomena or facts explained in consecutive points in time. It is important to see that the difference in kind (of facts or phenomena) referred to is only apparent difference. This apparent difference is supposed to conceal real similarity or unity. Apparent difference is a product of there being different theories relative to which their kind is determined: the classification of facts by the old theory and the new theory do not coincide. Once the new theory takes over and explains the new and surprising class of facts, those facts are shown really to be similar to those that the theory explained previously.

I am now prepared to put forth my first constraint on economics imperialism. It is based on the above distinction between two kinds of unification, providing us with different versions of imperialism.

Ontologically Grounded Economics Imperialism

Ontologically grounded economics imperialism is economics imperialism whose achievement is an increased degree of ontological unification.

Derivationally Grounded Economics Imperialism

Derivationally grounded economics imperialism is economics imperialism whose achievement is an increased degree of derivational unification that is not based on ontological unification.

If we choose to favor the idea that ontological unification should be pursued by science, then we may say that ontologically grounded economics imperialism is justified while imperialism is unjustified if nothing but derivational unification is attained. Ontological grounding gives us justified imperialism under the supposition that we believe that it is the factual discoveries we make about the real order of things that should determine the scope of theories and the disciplinary divisions in our scientific practices. On this supposition, it is ultimately immaterial whether a given class of phenomena was or was not examined as part of the intended scope of a discipline other than economics before it was ontologically subsumed under a unified set of economic principles.

These notions are not easy to operationalize so as to tell justified from unjustified economics imperialism in practice. We may distinguish two types of case. One is the case where we have achieved derivational unification but do not yet know whether ontological unification is forthcoming as well. In such a situation, we may be advised to suspend judgment on whether the theoretical imperialism at hand is justified or unjustified; we are not epistemically justified to pass judgment, *ceteris paribus*. The other case is one where we have reason to believe that ontological unification is not to be expected even if derivational unification were to be achieved; we may be epistemically justified in judging that the economics imperialism at hand is unjustified.

The latter seems to be Nobel laureate Ronald Coase's view on the boundaries of economics. Unlike his critic Richard Posner, who is an instrumentalist with strong imperialist leanings (especially in the area of law and economics), Coase is a realist about economic theorizing (see Mäki 1998a, 1998b) and skeptical about the recent victories of economics in expanding its domain to neighboring disciplines such as political science, sociology, linguistics, education, and law (Coase 1978). His various formulations make it obvious that there are ontological grounds for his doubts. "The reason for this movement of economists into neighboring fields is certainly not that we have solved the problems of the economic system; it would perhaps be more

plausible to argue that economists are looking for fields in which they can have some success” (ibid., 203). Coase anticipates the expansionist victories to be temporary only. His argument is based on the suggestion that a group of scholars may be bound together so as to form a profession by three factors, namely “common techniques of analysis, a common theory or approach to the subject, or a common subject matter” (ibid., 204). He then argues that since *the identity of a discipline is ultimately based on a common subject matter*, expansionist victories based on techniques or approaches (mere imperialism of style, as we called it above) are going to be short-lived:

[I]n the long run it is the subject matter, the kind of question which the practitioners are trying to answer, which tends to be the dominant factor producing the cohesive force that makes a group of scholars a recognizable profession [. . .] However, in the short run, the ability of a particular group in handling certain techniques of analysis, or an approach, may give them such advantages that they are able to move successfully into another field or even to dominate it. (204)

Coase argues that there is something specific about the subject matter of economics that imposes limits on its wider applicability. Taking a distinctly pre-Robbinsian stance, he claims that this factor is “*the measuring rod of money*.” He says that within the proper domain of economics, “important determinants of behaviour” are measured by money, and that hypotheses in economics can be “examined and checked” since “the data (on prices and incomes)” are available in monetary terms (209). There are limits to the domain of applicability of economics based on the extent to which the “measuring rod of money” helps constitute the subject matter of inquiry:

If it is true that the more developed state of economics, as compared to the other social sciences, has been due to the happy chance (for economics) that the important factors determining economic behavior can be measured in money, it suggests that the problems faced by practitioners in these other fields are not likely to be dissipated simply by an infusion of economists, since in moving into these fields, they will commonly have to leave their strength behind them. The analysis developed in economics is not likely to be successfully applied in other subjects without major modifications. (209)⁶

6. It is interesting to note that even though Coase’s criticism of expanding the scope of economics is quite uncompromising, he seems to have failed to observe his own maxims in proposing that we are advised to apply economics to the study of science and its methodology (see Mäki 1999).

Naturally, the specification of the proper domain of economics in terms of “the measuring rod of money” is what makes Coase’s *specific argument* controversial. However, basing his *general argumentative strategy* on considerations of shared subject matter means that he is arguing for an ontological constraint on economics imperialism. It is in the spirit of this paper to focus on the latter.

Pragmatic Constraint

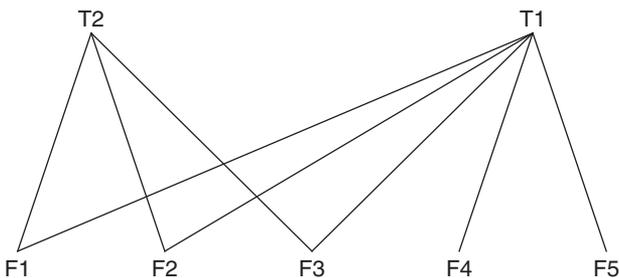
My second constraint is pragmatic and axiological. It is also comparative in that it is based on comparing the relative consilience of theories in different disciplines. Here I approach the issue from the point of view of the explanandum facts. This constraint suggests itself as soon as we distinguish two kinds of comparative or relative consilience—or relative unifying power with given simplicity. The first notion of is in terms of subsumption among explananda.

Comparative Consilience: Subsumption

Theory T1 is more consilient than T2 if the set of kinds of facts explained by T2 is a proper subset of that of T1.

Suppose T2 explains {F1, F2, F3} while T1 explains {F1, F2, F3, F4, F5}. We will then say that T1 is more consilient than T2 in a subsumptive sense. We may also be attracted by the suggestion that T1 is a better theory than T2. Here is a visualization:

Figure 1



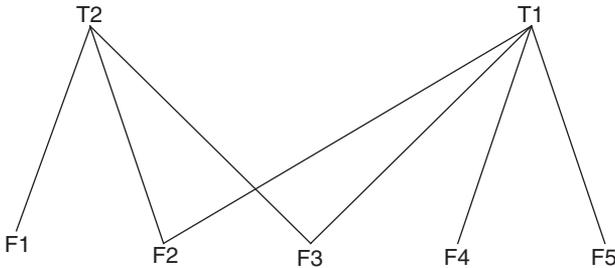
The second notion of comparative consilience is based on the less restricted idea of cardinality of types of explananda.

Comparative Consilience: Cardinality

Theory T1 is more consilient than T2 if the cardinality of the set of classes of facts explained by T1 is greater than that of T2.

Here the situation may be such that, say, T2 explains {F1, F2, F3} while T1 explains {F2, F3, F4, F5}:

Figure 2



Now the question is whether we are still prepared to say that T1 is a better theory than T2—perhaps with the suggested implication that more resources should be devoted to studying and applying T1 than T2? It is obvious that this case is more problematic than the subsumptive case. Indeed, better consilience in this cardinal sense does not seem sufficient for judging T1 to be a better theory. More is needed. One additional consideration is about the significance of the classes of facts F1, ..., F5, as judged by some human agency, individual or collective.⁷ For example, if it were to turn out that F1 is judged to be far more significant than F4 and F5 taken together, then we should be reluctant to finance more jobs and research projects devoted to the study and application of T1 than to T2. This implies that, due to such pragmatic considerations, a (cardinally) more consilient theory is not always a better theory.

7. This immediately gives rise to an issue of a principal-agency sort. Who is entitled to fix the values on the basis of which such judgments of significance will be made? The researching economist herself, some segment of the economic profession, the scientific community at large, various funding organizations, or citizens through the organs of representative democracy?

As a general rule, we may say that comparative consilience by subsumption does not, *ceteris paribus*, invite any pragmatic constraints, while the one by cardinality does require them in case we apply cardinality weighed by judgments of significance: we are advised to opt for the theory that manages to unify facts with the maximum total amount of significance. The non-weighted cardinality of the chosen theory may be much lesser than that of its rivals. If the traditionally non-economic facts accounted for by imperialistic economics were in classes such as tooth brushing and dish washing, there would be little to recommend in it when compared to facts such as famines and revolutions belonging to classes accounted for by rival theories.

The notions of comparative consilience above are largely *static*. Scientists also apply *dynamic* notions of consilience: *expansion of the scope of theories across time*. This gives us various dynamic notions of comparative consilience. We may refer to the relative rate of expansion of explained scope across time by way of entering new territories without modifying the theory, or by way of modifying the theory; by subsuming earlier theories, or by expanding without such subsumption. Economics has turned out to exhibit a lot of dynamic consilience, that is, it has been able to expand its scope. It is extremely spongy, as it were, in that it is able to encompass ever new types of facts, but typically without subsuming earlier non-economic theories about those same territories. As Oliver Williamson put it when interviewed on the relationships between economics and sociology:

Actually, one of the things that is probably frustrating to non-economists is that economics is so incredibly elastic. Once the economic content of a concept is understood, economics finds a way to embrace it. (Williamson in Swedberg 1990, 122)

One can also formulate subsumption and cardinality versions of comparative dynamic consilience. There is little doubt that such ideas play a role also in economists' commentaries on the expansionary capacities and victories of their theories. The same pragmatic constraint as above can be introduced to modify excessive claims based on strong dynamic consilience. One may sometimes have to *compare slow progress in regard to more significant facts with fast progress in regard to less significant facts*. This seems to be roughly what Gary Becker acknowledged in an interview concerning the relationships between economics and sociology:

Sociologists are far more willing than economists to discuss these big and broad questions. And they do it in an intelligent and thoughtful way, even

though their progress in understanding these issues is very slow. . . . These are questions that it is tough to make progress on . . . Most economists still work on pretty narrow questions. That narrowness may partly explain the progress made by economics, but it caused my initial rebellion against economics, and it is still there. (Becker in Swedberg 1990, 38)

As a general rule, we may say that the relative rate of progress of consilience by cardinality is a reliable guide in theory choice only subject to the constraint of the considered significance of the classes of facts explained by the theory candidates.

Epistemological Constraint

Recall that a major service provided by unification and full consilience is supposed to be epistemological: the broader the range of kinds of phenomena successfully explained by a theory, and the broader the range of those that were not considered to be among its explananda at the time of its construction, the more justified we are in accepting or believing it. In short, the degree of confirmation of a theory depends on the range of types of confirming instances. Whewell sees here a criterion “which has never yet been produced in favour of falsehood” (Whewell 1847, 90). We also noted that this is potentially good news to any expansionistic and imperialistic economics.

Two considerations seem relevant when developing an epistemological constraint on the application of this criterion. One derives from the concern about the obvious untruth of many of the central assumptions in standard economic theory. This is important, because some of those assumptions serve the function of suggesting the boundaries of the domain of application of a theory. Among the problems related to this are that it is not always clear which assumptions play a decisive role of this kind; it is not clear what degree of their approximation to the truth would be required for the theory to apply; and there are difficulties in reliably measuring the actual degree of approximation.

The second concern is about the particularly pressing difficulties of confirmation and disconfirmation in economics more generally. To see the role of this it is illuminating to cite Whewell’s full list of criteria of good theory: “an agreement with facts such as will stand the most patient and rigid inquiry; a provision for predicting truly the results of untried cases; a consilience of inductions from various classes of facts; and a progressive tendency of the scheme to simplicity and unity” (128). Of these four criteria, the last two are combined in the idea of unification, as we have seen. I don’t take any big

problem to lie here: we are not questioning the relatively high extent to which this composite goal at least appears to be achieved by economics.

The issue is with the first criterion, “an agreement with facts such as will stand the most patient and rigid inquiry.” If our account of confirmation includes the unificationist standard—the confirmation of a theory depends on the range of types of confirming instances—then we are required to pay careful attention to those *confirming instances themselves*, and not just to the range of their types. It is here that difficulties arise. The recent work in the philosophy and methodology of economics has persuasively identified some of them, pointing out the pressing complexities in the way in which the Duhem-Quine problem appears in economics. In addition to the target hypothesis, every test involves a large number of auxiliary assumptions. A great many of such assumptions cannot be controlled for, thus their warrants are weak or non-existent. The outcome of the test therefore cannot be a clear-cut verification or refutation of the target hypothesis as there are so many other uncontrolled elements that have played a role in generating the test implication. This helps explain why empirical tests have been unable to conclusively settle major controversies in economics, such as that between the monetarists and the Keynesians (Cross 1982, 1998).

Testing an economic theory is not a simple and straightforward matter of confronting predictions with the data with unambiguous and conclusive results. The observation that theories are underdetermined by empirical evidence applies to all sciences, but the consequences of this are particularly severe in the social sciences, including economics. Testing involves a giant measure of uncontrolled complexity, leading to striking epistemic uncertainties. These uncertainties, in turn, invite other factors to enter theory assessment. Decisions about the fate of theories are actually made, but as these decisions are not fully determined by evidence, other determinants will fill in the gap (see Mäki 1993).

The arch imperialist Gary Becker acknowledges these difficulties and the concomitant epistemic uncertainties that create room for commitment in place of reasoned evidential support:

So I start with the assumption that behavior is rational, and ask, “As I apply this to a particular problem, is there behavior that I *cannot* explain with the rationality model?” Since rationality can be pretty flexible and the data are often limited, I don’t frequently encounter decisive evidence against rationality. Anyway, that is my way of doing things. Others are more agnostic about the scope of rationality, so they will approach a problem by asking, “Does this look like rational behavior or is it better interpreted in a different way?”

Part of the difference, therefore, is the degree of *commitment* or *confidence* one has of finding rational behavior when investigating a particular set of phenomena. (Becker in Swedberg, 1990, 41)

Becker here exhibits admirable awareness of the epistemological constraint. Epistemic uncertainty about evidential support creates room for evidentially unsupported commitment. While it is unavoidably the case that evidential considerations are thereby to some extent replaced by commitment, we should not forget that uncertainty is not thereby removed. Whatever the degree of subjective commitment and confidence on which Becker and his opponents rely, it remains radically fallible. The epistemological constraint I am proposing on economics imperialism advises against dogmatic commitment and recommends a strong sense of fallibility and openness to critical conversation across disciplinary boundaries. Personal and “strategic” commitment to a theory may do no harm, but only provided it is accompanied by tolerance and pluralism that derive from a deeper commitment to the uncompromised principle of fallibilism.

4. Economics Imperialism: Good and Bad

The upshot of the account submitted on the pages above can be expressed by saying, first, that economics expansionism, whether imperialistic or not, manifests a respectable philosophy of science, *ceteris paribus*; and secondly, that the *ceteris paribus* condition often may not hold. We may say that, roughly, the clause holds when the three constraints are met. The ontological constraint, based on a preference for ontological unification, implies that a derivationally more unifying theory is not always a better theory. The pragmatic constraint, emphasizing significance considerations, implies that a cardinally more consilient theory is not always a better theory. The epistemological constraint, based on the recognition of radical epistemic uncertainty in social science, implies that even if we believe the first two constraints to be met, we may be holding a wrong or inferior theory.

It is not self-evidently easy for an intellectually expansionist endeavor to meet the three constraints proposed. Whenever it is felt that they are not met, fears may arise of expansionism that is not rooted in ontologically and axiologically sufficiently deep, and empirically well-controlled, insight into the causal dependencies and processes constituting the way the world works. Such fears may be aptly expressed by Edward Wilson (who argues for what he calls “consilience” based on the interplay between natural and

social sciences)—even though not all social scientists would agree on Wilson’s constructive program. He says that economic theorists

have unnecessarily handicapped themselves by closing off their theory from serious biology and psychology, comprising principles drawn from close description, experiments, and statistical analysis. They have done so, I believe, in order to avoid entanglement in the formidable complexities of these foundation sciences. Their strategy has been to solve the micro-to-macro problem with the fewest possible assumptions at the micro level. In other words, they have carried parsimony too far. Economic theories also aim to create models of the widest possible application, often crafting abstractions so extreme as to represent little more than exercises in applied mathematics. That is generality carried too far. The result of such stringency is a body of theory that is internally consistent but little else. Although economics, in my opinion, is headed in the right direction and provides the wedge behind which social theory will wisely follow, it is still mostly irrelevant. (Wilson 1998, 202)

Whatever one’s opinion on Wilson’s judgment, one may be persuaded to agree on the following conclusions. Economics imperialism, as formulated above, is not intrinsically misguided. However, to be supportable, it would have to meet the three constraints. Given that it is very difficult to meet the constraints and at least as difficult to determine whether they have actually been met, economics imperialism under the following amended description should be resisted under all circumstances:

Economics Imperialism*

Economics imperialism* is a form of economics expansionism where the new types of explanandum phenomena are located in territories that are occupied by disciplines other than economics, and where economics presents itself hegemonically as being in possession of superior theories and methods, thereby excluding rival theories and approaches from consideration.

Given the nature of the social material and the complexities and uncertainties involved in studying it, Economics Imperialism* appears too dogmatic and arrogant to be acceptable. A modest, tolerant, open-minded, pluralistic, and self-critical economics imperialism, fully acknowledging the difficult challenge of meeting the three constraints, may be much to ask, but it will be much more agreeable.

Some may object to using the vocabulary of imperialism when talking about the possibility of such a modest and pluralistic position. They will say that only Economics Imperialism* deserves to be called by that name.

Imperialism is intrinsically hegemonic and arrogant, they say. This is a reasonable objection, but I will not here want to engage in a debate over the appropriate (perhaps essentialist) interpretations of the metaphors of imperialism. Let me just suggest that Economics Imperialism* is what the opponents often have in mind, while Economics Imperialism as I have defined it is what the proponents at least often claim to have in mind. Nevertheless, Economics Imperialism as defined here is the shared core component in the opponents' and proponents' notions. In attempting to identify the extent of agreement and the remaining issues between the two parties, it is useful to follow the strategy followed above and start with that shared core component. Resisting Economics Imperialism* does not imply resistance to Economics Imperialism, nor does the soundness of Economics Imperialism justify Economics Imperialism.*

We might say that Economics Imperialism* is based on an *economics hubris*. I grant that it may be difficult to discover pure exemplifications of this attitude in fully explicit form. This also applies to a recent much cited statement by Lazear (2000). His article was published in a leading economics journal and it includes an impressive body of allegedly supportive evidence for the superior performance of economics. But it is not a pure case of Economics Imperialism* as it considers a constructive role for other social sciences.⁸ Yet certain features in it come close enough to be used as illustrations. Lazear is confidently proud of economics:

The power of economics lies in its rigor. Economics is scientific; it follows the scientific method of stating a formal refutable theory, and revising the theory based on the evidence. Economics succeeds where other social sciences fail because economists are willing to abstract. (Lazear 2000, 102)

The problem is that this statement shows little awareness of the epistemological constraint. The claim that economics is "scientific" since it "follows the scientific method" involving formulating "refutable" theories is an anachronism: most philosophers and other students of science have long ago pointed out major problems in the project of characterizing "the scientific

8. Lazear (103) admits that "the weakness of economics is that to be rigorous, simplifying assumptions must be made that constrain the analysis and narrow the focus of the researcher. It is for this reason that the broader-thinking sociologists, anthropologists, and perhaps psychologists may be better at identifying issues, but worse at providing answers ... much can be learned from other social scientists who observe phenomena that we often overlook. But the parsimony of our method and ability to provide specific, well-reasoned answers gives us a major advantage in analysis." This appears to be close to Becker's stated views.

method” at all, or at any rate characterizing it in terms of formal refutable theory. The statement appears to appeal to the higher authority of science by misrepresenting it according to an antiquarian school-book image.

One should add that methodological studies on economics have shown that stringent refutability is hard to find in economic theories (e.g., Blaug 1980) and also that the notion of “revising the theory based on the evidence” simplifies a complex issue to the point of distortion of what happens when theory and evidence meet (e.g., Hands 1993). As noted earlier, testing is cursed with a particularly hard form of the Duhem-Quine problem. Since every test involves a large number of uncontrolled auxiliary assumptions, the test outcome will never be a conclusive refutation of the target hypothesis. There is a lot of room for maneuver in adjusting such assumptions so as to yield a desired outcome. Indeed, critics of imperialistic practice argue that much of it is based on ad hoc moves of introducing empirically unwarranted auxiliary assumptions with the purpose of ensuring that the model fits with the data (e.g., Udéhn 1992; Green and Shapiro 1994; Blaug 1980, 242f). This may be taken to be a feature of suspect versions of economics imperialism, the ones only aiming at derivational unification and being insensitive to the epistemological constraint.

As for the last sentence of Lazear’s passage, it is easy to agree that theoretical abstraction and isolation are powerful tools: “It is the ability to abstract that allows us to answer questions about a complicated world” (Lazear 2000, 103; see Mäki 1992b for a sympathetic account of this method). At the same time, one would do wisely by acknowledging the accompanying risks in using these powerful tools in non-experimental (or semi-experimental) domains: as the degree of abstraction and isolation increases, the slack between theory and evidence grows, resulting in difficulties with controlling theorizing by empirical means. The standard complaint about economics, in the course of its history, is the claim that those difficulties have been evaded by settling on theories that are nothing but imaginary fictions (and, I would add, serving as the basis for nothing but derivational unification). This complaint is voiced by, among many others, those non-economists who resist the invasion of their disciplines by economics: they prefer tackling the complexities of the social world with “dirty hands” to the danger of being distanced from it by adopting the “clean models” of economics (Hirsch, Michaels, and Friedman 1987). In case a model is cleaned of all factual content, the chance of meeting the first constraint will be lost: no ontological unification will be forthcoming.

Even if there is no problem in principle with approaching complexities with the tools of simplification, there is the problem in practice that even

if a theory were to succeed in hitting the target by truthfully isolating the simple essence of the matter under consideration, we cannot be fully sure about this. Indeed, the degree of epistemic uncertainty in any social science is high enough to require equally high doses of fallibilist modesty in one's claims to possessing the truth or the right answers. It seems Lazear acknowledges the problem: "Economic models try to make sense out of non-sense. Sometimes, they abstract away from the essence of the problem. But the better analyses provide insight where there was confusion" (142). The next step would be to tune down the outspoken over-confidence so as to match the non-negligible possibility of error.

5. Conclusion

It is important to understand the strategy of the foregoing argument: it proceeds through constraints rather than goals. In contrast to some critics of economics imperialism, I do not begin with denouncing it directly, or by way of attacking its premises, such as explanatory unification that I have argued to be the root notion. The argument does not blame unificationism or expansionism for suffering from some intrinsic flaw. The strife for ever higher degrees of unification, irrespective of disciplinary boundaries, is not presented as somehow inherently illegitimate. The argument has a substantial critical moment in it, but it is introduced in the form of a series of constraints imposed on the pursuit of this goal. It seems some critics attack the imperialistic goal directly. Others may believe that some constraints are too demanding to be met, thus economics imperialism is not given a chance. The argument of this paper does give it a chance, but only provided it is defended in its moderate versions; and this chance has to be cashed out by serious attempts to meet the constraints. Economics Imperialism* suffers from unjustified radicalism and dogmatism that should deny it any support.

As a final word, it should be stressed that no final word has been said. The framework outlined in this paper is just a framework or a skeleton for a more complete one. At best, it may provide beginnings of a map for social scientists and philosophers of social science, helping them orient themselves in distinguishing types of economics imperialism from one another and from other kinds of interdisciplinary relationships, in normatively judging concrete cases of economics imperialism, in raising further questions and perhaps answering them—and ultimately in understanding what they are supporting or resisting, and why, whenever they happen to make statements about economics imperialism.

References

- Amadae, S. M. 2003. *Rationalizing capitalist democracy. The cold war origins of rational choice liberalism*. Chicago, IL: University of Chicago Press.
- Aronson, Jerrold. 1984. *A realist philosophy of science*. London: Macmillan.
- Aumann, Robert J. 1985. What is game theory trying to accomplish? In *Frontiers of economics*, edited by K. Arrow and S. Honkapohja. Oxford: Blackwell.
- Becker, Gary. 1976. *The economic approach to human behavior*. Chicago, IL: University of Chicago Press.
- Blaug, Mark. 1980. *The Methodology of Economics*. Cambridge, UK: Cambridge University Press.
- Bowmaker, Simon W., editor. 2005. *Economics uncut. A complete guide to life, death and misadventure*. Cheltenham, UK: Elgar.
- Buchanan, James. 1964. What should economists do? *Southern Economic Journal* 30:213-22.
- Coase, R. H. 1978. Economics and contiguous disciplines. *Journal of Legal Studies* 7:201-11.
- Cross, Rod. 1982. The Duhem-Quine thesis, Lakatos and the appraisal of theories in macro-economics. *Economic Journal* 92:320-40.
- . 1998. Duhem-Quine thesis. In *The handbook of economic methodology*, edited by John Davis, Wade Hands, and Uskali Mäki. Cheltenham, UK: Edward Elgar.
- Fine, Ben. 1999. The question of economics: Is it colonizing the social sciences? *Economy and Society* 28:403-25.
- . 2002. Economic imperialism: A view from the periphery. *Review of Radical Political Economics* 34:187-201.
- Friedman, Michael. 1974. Explanation and scientific understanding. *Journal of Philosophy* 71:5-19.
- Friedman, Milton (1953) *Essays in positive economics*. Chicago, IL: University of Chicago Press.
- Green, Donald P., and Ian Shapiro. 1994. *Pathologies of rational choice theory: A critique of applications in political science*. New Haven: Yale University Press.
- Halonen, Ilpo, and Jaakko Hintikka. 1999. Unification – It's magnificent but is it explanation? *Synthese* 120:27-47.
- Hands, D. Wade. 1993. Testing, Rationality and Progress: Essays on the Popperian Tradition in Economic Methodology. Lanham, MD: Rowman & Littlefield.
- Hirsch, Paul, Stuart Michaels, and Ray Friedman. 1987. 'Dirty hands' versus 'clean models': Is sociology in danger of being seduced by economics? *Theory and Society* 16:317-36.
- Hirshleifer, Jack. 1985. The expanding domain of economics. *American Economic Review Special Issue* 75:53-68.
- Keynes, John Neville. 1955/1891. *The scope and method of political economy*. New York: Kelley & Millman.
- Kincaid, Harold. 1996. *Philosophical foundations of the social sciences*. Cambridge, UK: Cambridge University Press.
- Kitcher, Philip. 1981. Explanatory unification, *Philosophy of Science* 48:507-31.
- Kitcher, Philip. 1989. Explanatory unification and the spatial structure of the world. In *Scientific Explanation*, edited by Philip Kitcher and Wesley Salmon, 410-505. Minneapolis, MN: University of Minnesota Press.
- Lazear, Edward P. 2000. Economic imperialism. *Quarterly Journal of Economics* 115:99-146.

- Lehtinen, Aki, and Jaakko Kuorikoski. 2007. Unrealistic assumptions in rational choice theory. *Philosophy of the Social Sciences* 37:115-38.
- Mäki, Uskali. 1990. Scientific realism and Austrian explanation. *Review of Political Economy* 2:310-44.
- . 1992a. Friedman and realism. *Research in the History of Economic Thought and Methodology* 10:171-95.
- . 1992b. On the method of isolation in economics. *Poznan Studies in the Philosophy of the Sciences and the Humanities* 26:319-54.
- . 1993. Social theories of science and the fate of institutionalism in economics. In *Rationality, institutions and economic methodology*, edited by U. Mäki et al. London: Routledge.
- . 1998a. Is Coase a realist? *Philosophy of the Social Sciences* 28:5-31.
- . 1998b. Against Posner against Coase against theory. *Cambridge Journal of Economics* 22:587-95.
- . 1999. Science as a free market: A reflexivity test in an economics of economics. *Perspectives on Science* 7:486-509.
- . 2001. Explanatory unification: Double and doubtful. *Philosophy of the Social Sciences* 31:488-506.
- . 2002a. Explanatory ecumenism and economics imperialism. *Economics and Philosophy* 18:235-57.
- . 2002b. Scientific progress: Complexities of a contestable concept. In *Is there progress in economics?* edited by Stephan Böhm, Christian Gehrke, Heinz D. Kurz, and Richard Sturn, 123-130. Cheltenham, UK: Edward Elgar.
- . 2003. The Methodology of Positive Economics (1953) does not give us *the* methodology of positive economics. *Journal of Economic Methodology* 10:495-505.
- . 2004. Theoretical isolation and explanatory progress: Transaction cost economics and the dynamics of dispute. *Cambridge Journal of Economics* 28:319-46.
- Mäki, Uskali, and Caterina Marchionni. 2008. On the structure of explanatory unification: The case of geographical economics. *Studies in History and Philosophy of Science* (forthcoming).
- Marshall, Alfred. 1920. *Principles of economics*. Reprint of 8th edition. London: Macmillan.
- Morrison, Margaret. 2000. *Unifying scientific theories: Physical concept and mathematical structures*. Cambridge, UK: Cambridge University Press.
- Radnitzky, Gerard, and Peter Bernholz, editors. 1987. *Economic imperialism: Economic method applied outside the field of economics*. New York: Paragon House.
- Robbins, Lionel. 1935. *An essay on the nature and significance of economic science*. London: Macmillan.
- Royal Swedish Academy of Sciences, Press Release. 1993. "The Nobel Memorial Prize in Economics 1992," *Scandinavian Journal of Economics* 89:1-5.
- Stigler, George. 1984. Economics—The imperial science? *Scandinavian Journal of Economics* 86:301-13.
- Swedberg, Richard. 1990. *Economics and sociology. Redefining their boundaries: Conversations with economists and sociologists*. Princeton, NJ: Princeton University Press.
- Tommasi, Mariano, and Ierulli, Kathryn, editors. 1995. *The economic of human behavior*. Cambridge, UK: Cambridge University Press.
- Tullock, Gordon. 1972. Economic imperialism. In *Theory of public choice*, edited by James Buchanan and Robert Tollison, 317-29. Ann Arbor: Michigan University Press.
- Tullock, Gordon, and McKenzie, Richard. 1975. *The new world of economics*. Homewood, IL: Irwin.

Udén, Lars. 1992. The limits of economic imperialism. In *Interfaces in economic and social analysis*, edited by Ulf Himmelstrand, 239-80. London: Routledge.

Whewell, William. 1847. *Philosophy of the inductive sciences*. London: John W. Parker.

Wilson, Edward. 1998. *Consilience*. New York: Alfred A. Knopf.

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