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# Commentary on: Mark Weinstein's "Emerging truth and the defeat of scientific racism"

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## 1. WEINSTEIN'S THEORY OF WARRANT AND THE MODEL OF EMERGING TRUTH (MET)

The primary aim of Weinstein's paper is to show that the Model of Emerging Truth (MET) is an effective method for evaluating arguments across a wide range of argument domains. Weinstein hopes such a display will pique the interests of argumentation theorists who might otherwise be skeptical or dismissive of the MET because of its grounding in the logic of entailment. (Weinstein, 2013, p. 2) While I confess to having only a vague and superficial understanding of the details of the MET (for I lack the higher level of mathematical and logical competence needed to study the model thoroughly), the pragmatist nature of both the MET and Weinstein's broader theory of warrant merit more attention that they appear to have received.

The MET takes the methods and results associated with physical chemistry as paradigmatic of theoretical or argumentative warrant, a fact that may provide some "insights into the logic or argument evaluation in general." (Weinstein, 2009, p. 1) Put crudely, the MET is Weinstein's attempt to construct a theory of warrant grounded in key, nomothetic features of the logic of entailment. Taking his cue from David Hitchcock, Weinstein interprets warrants as "substantive generalizations" that function "by generalizing over content expressions of whatever logical type," (Weinstein, 2009, p. 4) The connection between warrant and explanation outlined here harkens back to C.S. Peirce's nomothetic or *merenomic* account of explanation, where to explain something is to bring the thing being explained under a higher, more general principle or rule (Hookway, pp. 266-267), a process that, for Peirce, was expressive of a fundamental principle of thought best characterized as the *reduction to unity*. (Peirce, 1867, pp. 1-3) Weinstein also sees explanation and warrant as inherently reductive, with the reduction being of a nomothetic order, i.e. a reduction to a higher level of generality. Thus, warrant is taken to be directly proportional, at least in part, to the comprehensiveness or *breadth* of an argument or theory: the greater the breadth of the argument or theory, the greater its warrant. Hence the warrant of arguments or theories will be a function, at least in part, of their generality and breadth.

Another key ingredient in Weinstein's theory of warrant is argumentative *depth*. Here warrant is taken to be directly proportionate to the depth of an argument or theory, where depth refers to the extent to which a given argument or theory is "supported by underlying theories, that are reduction progressive." (Weinstein, 2009, p. 4) Put crudely, the deeper the chain of interconnecting theories compatible with an argument or theory (i.e. the deeper its theoretical *roots* if you will), the stronger the warrant for the argument or theory in question.

The final element in Weinstein's theory of warrant is the requirement that the breadth and depth of an argument or theory *increase over time*. Here again we find an interesting parallel with Peirce's claim that breadth and depth can increase conversely in what he calls a growing state of *Information* (thereby falling outside Kant's law regarding the inverse proportionality of breadth and depth). (Peirce W1, pp. 464-465; W2, pp. 76-86; 1867, p. 10) In summary, the key elements of Weinstein's theory of warrant are: 1) "consilience, the adequacy of empirical descriptions over time; breadth, the scope of theories as applied to a range of empirical descriptions and generalizations; and depth, a measure of the levels of theoretic redefinitions each one of which results in increasing breadth and higher levels of consilience." (Weinstein, 2013, p. 2)

As Weinstein is right to emphasize, one of the more important features of the MET is its dynamic, adaptive, pragmatist character. Though it appeals to key features associated with the logic of entailment, the MET is fundamentally *a posteriori* in its applications and functions, with the ultimate ground of argument warrant being the accumulating, empirical evidence of experience broadly understood. (Weinstein, 2009, p. 3) Hence Weinstein's reference to the MET as a model of *emerging truth*, for warrant ultimately rests upon a theory's or argument's ability to hold up under the weight or force of experience over time, a notion that harkens back again to Peirce's pragmatist account of truth as that which will prevail against the test of experience in the long run. (Peirce, 1868, p. 52; 1877, pp. 120-123) In this spirit, the MET does not rank arguments in absolute terms as right or wrong, but ranks them in more relative terms as having more or less warrant. Such ranking is in keeping with the situational, adaptive nature of inquiry and the increasing state of Information associated with an evolutionary, emergent idea of truth.

Weinstein's application of the MET to arguments relating to scientific racism is clear, thorough, and highly convincing. He shows how the various arguments put forward in support of scientific racism have relatively low warrant when measured against the three inter-related criteria of breadth, depth, and consilience associated with the MET. (Weinstein, 2013, pp. 5-9)

## 2. GENERAL OBSERVATIONS

There are good reasons for taking physical chemistry as the paradigmatic model of argumentative or theoretical warrant. First, as Weinstein rightly points out, physical chemistry stands as a prime example of the reduction of a wide variety of phenomena to an explanatorily and epistemologically powerful overarching theory. (Weinstein, 2013, p. 7) I would add, secondly, that chemical elements and relations

are also sufficiently stable, broadly speaking, as to make them highly amenable to mathematical forms of expression. Put simply, chemical phenomena seem to exhibit a strength and stability of connection that closely mirrors the kinds of strong, logical connections found within the logic of entailment. Thus the structural/syntactical, processional/procedural resemblances between chemical phenomena and the logic of entailment make chemical phenomena highly amenable to the kind of metamathematical modeling expressed in the MET.

Now I suspect that it is precisely at this point that many argumentation theorists might begin to feel a little uncomfortable, perhaps even squeamish, for they could rightly point out that argumentation ranges over an extremely wide variety of phenomena, few of which have the kinds of elemental and relational stability found in physical chemistry (e.g. ethics, politics, etc.). They could also rightly point out that argumentation takes a wide variety of forms, schemes, styles, and so on, few of which have the same level or kind of connective strength found within the logic of entailment. Such suspicions might be expressed in the following way: 1) the MET presumes that all phenomena are reducible to the kinds of strong, stable, nomothetic relations expressed within physical chemistry, and 2) the MET presumes that all forms of argumentation are reducible to the logic of entailment.

The main problem with these kinds of criticisms, at least as I understand them, is quite simply that they miss the point. Though it draws upon key elements found within physical chemistry and the logic of entailment, the MET does not reduce all phenomena to the kinds studied within physical chemistry, nor does it reduce all arguments to the logic of entailment. The MET is a method for evaluating warrant, and physical chemistry and the logic of entailment stand merely as paradigmatic examples or illustrations of theories or arguments that have a particularly strong, paradigmatic or exemplary level of warrant. Understood in this sense, Weinstein's description of his theory of warrant as a "metamathematical model of emerging truth" is perhaps not only misleading, but distracting as well, for it draws attention away from the theory's rich, pragmatist nature.

First, I would humbly suggest that the MET should not be viewed solely as a method for evaluating arguments, but should also be viewed as a method for evaluating theories, positions, or standpoints as well. To oversimplify somewhat, when arguments are employed as part of a process of *inquiry* or *discovery* then the MET can serve as a method of evaluating *arguments*, but when arguments are employed as part of a process of *justification*, then the MET is better seen as evaluating the *theory, position, or standpoint* for which particular arguments are employed. This suggests that the scope of the MET may actually be broader than Weinstein purports.

Second, I also want to suggest that the most salient feature of Weinstein's theory of warrant and the MET is not its metamathematical relation to the logic of entailment, but its pragmatist character. The great insight underlying the MET, as I see it, is the fundamentally pragmatist idea that the warrant of arguments or theories is a function, at least in large part, of their *fecundity* or, as Peirce might put

it, their *uberty*.<sup>1</sup> Thus the main insight underlying the MET is that a high level of fecundity or uberty is a strong mark in favor of an argument or theory. We see this in a number of Weinstein's more salient observations:

Distinguishing generalities that are imposed on incomplete data from generalities that are supported by *increasing* bodies of evidence is what the notion of model chain progressive attempts to capture. It is not enough that a warrant is supported by evidence. The evidence must be *increasingly* adequate to the warrant and increasingly many chains of increasingly adequate evidence point to the epistemological power of the warrant in its logical force in supporting inference. [*emphasis mine*] (Weinstein, 2013, p. 4)

And again,

It is the perspective of the MET that such rich descriptions, however essential in the understanding of human culture, are preliminary and that the adequacy of anthropological understanding requires that generalizations by [sic] put forward and tested by their ability to warrant increasingly adequate descriptions of the phenomena. Such generalizations determine competing theoretic perspectives. The MET attempts to offer an indication as to how such competing perspectives may be evaluated. The view put forward is that generalizations take their strength from the breadth and depth with which they connect networks of explanatory structures. (Weinstein, 2013, p. 4)

Expressed in slightly different terms, the MET plays upon the Peircean-styled insight that the warrant of an argument or theory is proportionate to its capacity to *adapt* and *grow* as a reliable and effective guide to conduct within an ever-evolving state of Information (where conduct includes not merely the sphere of practical action, but of thought as well).<sup>2</sup> The idea that an argument or theory should be adaptive, exhibiting the primary features of *growth*, is a fundamental principle of Peircean pragmatism, for argumentation is itself part of an evolutionary process to which it must become increasingly well adapted (i.e. increasingly truthful). While Weinstein interprets the emergent nature of truth in epistemic terms, his theory of warrant as well as the MET are both compatible with the kind of ontological or metaphysical account of emergent truth expressed within Peirce's work. One of Peirce's great insights was that if we are to take the idea of evolution seriously, then it follows logically that if forms of argumentation and inquiry are to be effective guides for conduct, they should continuously adapt and re-adapt themselves to the unrelenting pressures of experience. The most logically and evolutionarily favored forms of argumentation (i.e. those with the greatest warrant) will be those that serve as reliable guides to conduct in the long run, and the best measure of such effectiveness is the capacity for an argument or theory to adapt and grow in the face of experience (i.e. become increasingly truthful).<sup>3</sup> The great virtue of the MET is that

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<sup>1</sup> For more on the idea of uberty in Peirce's work see, "An Essay toward Improving Our Reasoning in Security and in Uberty" (1913).

<sup>2</sup> For more on the idea that conduct extends to thought as well as practical action, see Peirce (1906), "The Basis of Pragmatism in the Normative Sciences, pp. 386-287.

<sup>3</sup> This is one of the main points underlying Peirce's famous paper, "The Fixation of Belief."

it serves as a pragmatically grounded means for measuring the fecundity or *uberty* of an argument or theory. While my capacity to articulate the details of Weinstein's account may be limited, all indications are that the MET is a rich, highly adaptive, fecund model whose dynamic life, simplicity, and beauty merit more considered attention than it has received.

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