

***Reply to Robert Crease***  
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Robert Crease (2013) criticizes my approach to scientism for

- (a) not being equal to the 21st century situation of science-society-politics relations;
- (b) not taking into account the “acoustics of expertise”;
- (c) not suggesting a specific treatment of experimentation;
- (d) not having a proper access to the historical dynamics of science; and
- (e) perverting the Heideggerian doctrine of science by underestimating the resources it offers.

Perhaps, my hermeneutic-phenomenological critique of scientism is “standing in the 1950s”. Nonetheless, I do not see a substitute for this type of critique to be offered by discourses like SSK, STS, cultural theory of expertise, standpoint epistemology, cultural studies of science, or network analysis (to mention only a few from a large list of candidates). To a great extent, Crease’s criticisms are nurtured from my paper’s deficiency to make clearer the basic distinctions it employs. So, before addressing his critical comments, I will briefly lay bare what this paper basically fails to do, namely to discriminate clearly between two (albeit closely related) aspects of scientism. In so doing, I will place in contexts my replies to (a), (b), and (e).

I will not pay attention here to (c) and (d) for two reasons. First, my attempts to figure out the connection between them and my discussion of scientism were unsuccessful. Second, I developed elsewhere views about the interpretative nature of the practices of scientific experimentation (criticizing especially the doctrines which look at these practices as a continuation of the process of theory construction by other means), and the historical temporality of scientific research (Ginev 2000, Ginev 2011). Otherwise, I completely agree with Crease’s cogent remarks on experimentation and history of science, and most of all with his appreciation of Mara Beller’s excellent work on scientific research as a “practical-dialogical flux” that involves the “indispensability of open-ended disagreement”. Her “dialogical approach” to scientific domains in the making provides the best clue about how to bridge the hermeneutics of scientific communication (in her terminology, “the dialogical analysis of scientific papers”) with the phenomenology of scientific research.

### **The Two Aspects of Scientism**

To begin with, the approach to “scientism qua ideology” requires to differentiating between two aspects. On the one hand, scientism is the ideology of the unrestricted privileging of science and scientific rationality in formulating and resolving problems of general public interest. Privileging science might be characterized as a “global post-Enlightenment political decision”, or as an implication of the Enlightenment project. Scientism takes on the form of ideological meta-narrative (about scientific reason’s progress) that legitimizes the status which science enjoys in modern societies. Schematically speaking, the rationale for this privileging is to have an undistorted intellectual system of empirical knowledge production, independent of all political (partisan, parochial) standpoints and worldviews. (Interestingly enough, it is — as demonstrated, in particular, by Imre Lakatos — the meta-political claim that scientific rationality must govern the process of political decision-making and not the

other way about that grounds the post-empiricist versions of historical internalism in the philosophy of science.) The rationale for privileging science is stylized typically in the classical versions of sociology of knowledge developed by Karl Mannheim and Max Scheler. Epistemological objectivity correlates with political neutrality (acquiring thus a meta-political status), and this is why the political decisions have to be subordinated to the authority of scientific reason. Hence, if scientists are able to "guarantee" (by means of their own norms, criteria, and standards) that what they are doing (plus the outcome of their activities) is distinguished by such objectivity, then one should ascribe to science the status of the only politically neutral intellectual system that might formulate empirically, treat objectively, and resolve rationally the basic problems of public life by justifying, at the same time, value commitments. This observation brings me to the second aspect.

On the other hand, scientism is scientists' false identification of the specificity of their practices and of science in general. The false identification of science's cognitive specificity is tantamount to scientists' false epistemic identity (self-consciousness). The second aspect amounts also to a kind of ideology — the intrinsic "epistemological and metaphysical ideology" of scientific communities. Though this aspect serves the function of a prerequisite for privileging science and scientific rationality in contemporary societies, it is by no means the preponderant one.

Let me say a few words about the sense in which I use the term "ideology" concerning the second aspect. On a neo-Marxist tradition associated in the first place with Louis Althusser, the concept of ideology has to be gained by analyzing the reality of ideological state apparatuses. These are apparatuses that function predominantly by propaganda and manipulation, but they also function secondarily by repression. (Althusser 1971, 146) One can come to grips with the specificity of ideology only by pondering upon the ideological apparatuses' functioning. By the same token, one can treat the norms and standards of having objectivity of scientific knowledge as self-imposed ideological apparatus necessary for meeting the political authorities' expectations about what science could and should do. Analyzing the functioning of this apparatus allows one to reveal epistemological objectivism as ideology. On the latter, because of its normatively defined objectivity, science can guarantee the true access to empirical reality, and accordingly, to provide genuine knowledge for this reality and its possible technological transformations.

Neither of the two aspects of scientism determines the other. They are rather involved in a complex relationship of mutual dependence. Each of them is a prerequisite for the other.

### **Overcoming Scientism**

Let me, against the background of the foregoing considerations, indicate my basic argument for overcoming scientism: If on closer inspection one manages to demonstrate that science's philosophical identity is not to be spelled out in terms of epistemological objectivism (cum cognitive essentialism, representationalism, and foundationalism), then the privileged status of science would become undermined, without succumbing scientific research to "procedures of normative-democratic control", thereby destroying its autonomy. (De-privileging scientific rationality by combating objectivism would not entail the demand that scientific research and its outcome should be subject to public scrutiny via democratic procedures.) In contrast to all sorts of constructivist-relativist programs, hermeneutic phenomenology of scientific research makes the case that undoing the claim of the uniqueness of scientific knowledge's objectivity

does not imply a getting rid of science's cognitive specificity. The most reliable way to defend this specificity — so the argument goes — is in terms of hermeneutic phenomenology of scientific practices and objects.

To be sure, the critique of scientism in the 21<sup>st</sup> century and the (philosophy of) expertise are closely intertwined. In commenting on Hubert Dreyfus's view of the "situationally embodied expertise", Crease (together with Evan Selinger) bring the nexus of coping with scientism and the critical theorizing of expertise to bear. What in my view is essentially important in their approach is the insistence on "hermeneutic sensitivity" in handling the cultural embeddedness of scientific expertise (Selinger and Crease 2006, 225-34). If I am correct in my reading, it is this hermeneutic sensitivity that one has to take into consideration when one goes on to address scientism by having recourse to the "acoustics of expertise". Thus, the viewpoint of the philosophy of expertise, which Crease recommends for dealing with scientism in the 21<sup>st</sup> century, requires a kind of hermeneutic theorizing. My thesis, however, is stronger than this requirement. It states that the hermeneutic critique of scientism (more precisely, the critique from the viewpoint of hermeneutic phenomenology of science) is to a great extent independent of the kind of social-theoretical critique mediated by the philosophy of expertise.

I am by no means claiming that there are no philosophically interesting boundary points between the hermeneutic critique of scientism and the critique arising out of theorizing the forms of expertise. The issue of guarding science's cognitive autonomy from various social-scientific programs striving for invalidating this autonomy is a possible illustration of such a boundary point. With regard to the way of addressing this issue, both kinds of critique are united by the conception that the democratic process of contemporary societies needs science's cognitive autonomy, lest social life becomes totally "scientificated". On this conception, the "democratic surveillance" of the ways in which scientists appropriate possibilities in the research process which may call into question even the ethos of scientists' rational behavior, and the subordination of scientists' activities to public needs and political interests destroy traditionally established mechanisms against an unimpeded intrusion of scientific policies (or better, politically manipulated scientific programs) in peoples' life-world.

A society that purports to have a full-fledged control over science's research processes, thereby seizing a hold on the aims and goals of these processes, fails to resist the dangerous overwhelming scientification of all aspects of social life. The political finalization of science (as cognitively free enterprise) implies necessarily not only the destruction of genuine scientific research (distinguished by free choices of possibilities for investigation), but a techno-scientific distortion of society as well. Obviously, the appeal to an unlimited (and even to a limited) democratic control over scientific research that refuses to recognize the need of science's cognitive autonomy is (though unwittingly and perhaps unwillingly) in a partnership with a kind of scientism that preaches for the unrestricted expansion of technoscience.

This is why I strongly insist that the task of opposing scientism is not to be disentangled from the agenda of defending the threatened cognitive autonomy of science. The combination of both initiatives presents in embryo a strong alternative to an established (chiefly in the United States) view epitomized by Mark Brown. According to him, "when scientists, engineers, doctors, and other experts engage with lay-people's demands, they become those people's representatives. When they engage the broader public in ongoing processes of deliberation and judgment, they become involved in democratic representation. Political representation by

experts does risk the partisan forms of politicization apparent in recent debates over the misuse of science advisory committees. But a democratic response to such politicization would seek not to eliminate the politics of expertise but to embed it within a political framework" (Brown 2009, 259). Now, being embedded in such a framework the politicized scientific expertise would lead to both a politicization of science (in particular, a finalization of scientific research by incorporating in its "cognitive body" political aims and values) and a scientification of the public debates.

Following my initial claim that scientists' prevailing wrong identification of science in terms of epistemological objectivism is a prerequisite for scientism qua policy and "public ideology in a post-ideological time", I am now in a position to formulate a much stronger claim. The terrain on which one has to overcome scientism is neither politics (i.e. the institutionalized sphere of public debate) nor expertise designed by new moral norms and ethical principles. This overcoming should take place in scientific research as a reflexive process of interpretative constitution of what is to be investigated (i.e. the constitution of objects of inquiry). By "reflexive process" I mean the process of scientists' mastery of their research's characteristic hermeneutic situations. In laying this claim, I touch upon the central issue of hermeneutic phenomenology of science. It is the issue of the conditions under which science (pace Heidegger) would be able "to think".

Roughly speaking, this would be a kind of science that constitutes its objects of inquiry by taking into consideration a kind of ontological difference. By having recourse to the characteristic hermeneutic situations of doing research, scientists become reflexive with regard to their interpretative practices. It is this reflexivity on which the integration of ontological difference in the research process hinges. By "ontological difference" in this context of discussion I mean the difference between the interpretative-contextual articulation of meaningful entities within a domain as a horizon of possibilities that can be appropriated, and the de-contextualization of such entities within a domain as a pure presence that can be delineated by the totality of a theory's semantic models. (For instance, the totality of models of the mathematically codified theory of enzymatic kinetics delineates the domain of enzymology as a static presence.)

Thus, scientists' interpretative reflexivity and the integration of ontological difference in scientific research complement one another in "science's capability to think". (Max Weber has a historical priority in posing the question about the possibility of making "science as a vocation" a hermeneutically sensitive enterprise in the time when all earlier illusions that scientific research is the path to ultimate metaphysical essences have been disappeared from view. Though not using the term "scientism", Weber holds the view that modern societies can be liberated from their objectivist alienation from life by inducing sensitivity to meaning in scientific research that has been already ruled out its metaphysical illusions. He explicitly states that this sensitivity is to be cultivated by a reflexive interpretation of the presuppositions of scientific research (Weber 2008, 38-40).

In the foregoing considerations I put emphasis upon the constitution of the objects of inquiry since the most significant feature of the "natural science which can think" is the interpretatively creative constitution of what it will investigate. In this regard, the natural sciences may constitute (as objects of inquiry) practically relevant (to the public life) entities (processes, events, states of affairs) without undermining or violating their cognitive autonomy. More specifically, the constitution of artifacts of social activities and pathological

states of affairs (like metabolic diseases or environmental disasters) caused by social-cultural factors can also be constituted as objects of natural-scientific inquiry. Producing scientific knowledge about the constitution (not to be confused with social construction) of such "non-natural" entities is the best way in which the politically uncontrolled natural sciences may serve the public interests and the society's needs. The "double constitution" involved in the preceding formulations — the constitution of natural-scientific objects through researching the constitution of states of affairs via social transformations of natural states — does not lead to an incorporation of political goals and values in scientific research. Thus, the process of interpretative constitution of scientific objects is the opposite of the process of "scientification of the life-world" whose main consequences is, to reiterate, a simultaneous destruction of science's cognitive autonomy and unimpeded expansion of politically manipulated scientific views, doctrines, and policies.

### **On Heidegger and Formal Indication**

Finally, I should like to sketch out a response to Crease's critical comments on my reading of Heidegger's doctrine of modern science-technology. Crease is convinced that my reading underestimates the resources that Heidegger offers. It is my contention that Heidegger's verdict of science's inability to think has much to do with a kind of mathematical essentialism he assumes as early as in the "existential conception of science" developed in *Being and Time*. Paradoxically enough, the existential conception of science appeals to essentialism when reading the cognitive specificity of scientific research. Heidegger refrains from drawing philosophically significant conclusions from his observation that "theoretical research is not without a praxis of its own", and accordingly, science's epistemic profile is not to be detached from practices of research. He is convinced that even the analysis of science's intrinsic praxis does not deflate the thesis that "the emergence of the theoretical attitude lies in the disappearance of praxis" (Heidegger 1962, 409).

A radicalization of Heidegger's hermeneutic phenomenology of scientific objects that gets rid of the view that the "mathematical projection of a present-at-hand region" of idealized objects determines the practices of scientific research paves the way to placing the struggle against scientism in the context of a political philosophy of science that I call "cognitive existentialism". This radicalization differs significantly from Crease's implementation of early Heidegger's concept (and method) of formal indication. Nonetheless, I find Crease's efforts in recent years to reformulate formal indication in terms of a phenomenology of scientific research and scientific objects for a highly promising initiative. Despite his constant insistence on the historical dimension of the hermeneutically oriented science studies, however, the main problem of this reformulation remains its discordance with the historical dynamics of scientific practices (Ginev 2013).

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