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26 August 2008

Dear Bill:

I've just finished reading *The Priesthood of Science* and thought that I would send you my quick response before I become overwhelmed by the September craziness. By the way, I think that it's great that University of Ottawa Press picked up your books. Also, becoming series editor must give you some confidence that what you are trying to do is, at least in principle, communicable to others. This is a worry that plagues me constantly these days—along with a related one about how to start talking about what interests me. There doesn't seem to be a way into my obsessions from the public domain. Perhaps I should take that as a clue. But of what? Perhaps this is why it's taken you over a thousand pages to get this far into what you want to say. I'll have to think about that.

The Hegelian framing of your trilogy is much clearer in this volume. The science versus religion tension that builds up through the book is readied for an *Aufhebung* at the end. The fact that this is expected from within the scientific community itself excuses you from any sense of repressing science (as one character claims) and commits you to the notion that the separation of scientific research from application is the basis for the *Aufhebung*—that technology can be subject to social control by scientists even while research is unfettered and open to individual election. I take it that this is where we are left the end of this volume.

I would note that this does not address the question of the unequal relation between scientists and others. Evaluation of technological applications of science seems to devolve on scientists alone and this seems necessary to the way that you see the problem insofar as only they are sufficiently informed to avoid mythico-religious factors in their evaluation. Your utopia seems headed in the same direction as Bacon's here and I suppose that you chose the title to indicate that. It thus deals only in part with the question of technological application since, if we agree that a technology of road-building, for example, is socially useful, the question of whether to pave over this forest with a road, with all its attendant consequences, is a matter for a broader public. The issue of technological evaluation that you address is one of innovation and not of social application, in this sense: whether or not we (scientists as a corporate body) want to have roads, not whether, there being roads, this one is a good idea. Fair enough, of course, to focus your question this way. It has the consequence that the ethics of innovation

devolve upon scientists whereas the application of allowed technologies is a broader social issue. Will the reconciliation of humanity and nature address this inequality between scientists and others or is this inequality the condition of the reconciliation? I await the third volume with bated breath.

Another element of this that seems to me underplayed is the role of social science in the scientific priesthood. I understand that genetics is the basis for your claim that a new form of humanity is coming into being but, with this in mind, I would think that social science would have to be seen as a precursor of this goal of self-design and, after the latter, would have to be incorporated into its self-conception. The application of social science has already posed many issues concerning the relation between designers and designed that you argue has reached a new level. Indeed, one could perhaps argue that the new level of scientific self-awareness that you see in Einstein, Bohr, etc. has already been provoked by the attempt at social control and its dissidents in the 20th century. Surely this is going to have to be an element of the social role of the priesthood, one which will also, and perhaps more clearly, raise the issue of democracy in the relation between scientists and non-scientists. Your references to Condorcet and the spreading influence of the scientific ethos throughout society are pertinent here, but if this tendency were to overcome the 'God-cursed animal' entirely then we would all become members of Hera's community.

I see you readying to confront the question of political order, and thus democracy, through the question of the participation of the next generation in the community. It seems, on my reading, that this is your utopian community, with the addition of those elements of *homo sapiens sapiens* that are up to the requisite standard—ie. capable of letting the religious world-view go. I mentioned my doubts about thinking of all of this through a dichotomy between science and religion with respect to the first volume. I won't traverse all that again. Hera seems to be the only one for whom the religious world-view contains something worth thinking about. I suppose that this 'rational core' of religion might well be the attempt to think human action as ethical in relation to all of Being, or Creation, if you like. So it would seem to me, in any case. Hera seem to think, or at least to want, a sufficient ethic to emerge from the scientific enterprise itself. I suspect that that is where your own sympathies lie. My own investigations of Jewish theology in the last few years have been an attempt similarly to describe this rational core—which I think resides in the concept of infinity and the extreme and 'disappearing' case of a set, that allows one to order and judge the common core of the set. In this, I follow Hermann Cohen and some of his students as guide to Maimonides and earlier sources. I don't want to lead you too far afield here, but only suggest that it may be this concept of infinity—which we could also perhaps call 'the responsibility of self-production in the context of the whole of nature'—that science in its current formulation is

lacking and what it may need to assume the task which you demand of it. You refer to this as 'transcendence,' which is a fitting classical name for it.

I have not yet looked fully into those aspects of contemporary science that seem to be heading in this direction. I have read only a little of Prigogine, but have recently bought a lot more of his books. The issue of self-organisation and emergent order seems to be the point at which this tendency converges with your own. Hera wants some sort of transcendence from within science. Traditional humanists, eg. Hans Jonas, made a point of principle out of the difference between cybernetic steering and human self-awareness, but that may have been an error more properly addressed through a Hegelian argument about accumulated quantity leading to a qualitative leap. I'm not sure of what you think about all this, but it seems to me one place where your utopian scenario might be seen to touch ground in contemporary scientific practice, apart from your example of genetics. It also has the advantage that the issues of emergent order are addressed in both social and natural sciences, thus potentially undercutting this distinction, which would aid your *Aufhebung*, and bringing to the fore the parallelism between issues of social and natural science with regard to the potential destructiveness of innovation. The 20th century experience with totalitarianism would fit neatly into this synthesis. Castoriadis and Lefort, emerging from Trotskyism into a critique of bureaucracy, come to mind as a parallel instance.

For all my concern with the question of democracy, the other side of the issue emerges here: what of the persistent tendency to hierarchy in human society? Emergent order seems to involve a hierarchy of steering-systems, which means that a part of a steered system does not participate on an equal level with the steering of that system. An old question, of course, that fits my obsession with part-whole relations but also seems to be given a new urgency once we have seen that the proliferation of sub-systems means that all parts do not relate equally to the whole. Not in complex systems like contemporary globalisation, in any case. It is now necessary to ask what positive value humans find in hierarchy. Is it just regressive, an immanent religion? I don't think that Hera's community could say so insofar as the scientific ethos is irrevocably bound up with complex systems.

It's about time to stop. I see that I am beginning to pile my obsessions on top of your book and perhaps distort this issues with which you are trying to deal. I do think that these issues pertain to whatever reconciliation of humanity and nature your next volume will provide. In any case, take these notes and reflections as a contribution to the dialogue to which you invited me. I very much enjoyed reading the book.

One final question: what is the meaning of the alliance of the community with the U.S. Air Force? Is this a necessary but tarnished component of their birth? Or is it an alliance that will degenerate due to the latter's irrevocable mixing of technological application with human domination?

With admiration for your writing, and for your ability to strike out anew,
Ian.