

Correspondence

Response to Open Peer Commentaries on “The Coming Era of Nanomedicine”

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Let me start by thanking those who wrote thoughtful and pressing commentaries to my target article (Allhoff 2009). In this response, I will try to distill some key themes in those commentaries as well as to respond to them. Surely there will be comments left unaddressed, though it is more important to make a few substantive remarks rather than myriad undeveloped ones. Perhaps a good place to start is to clarify what the purpose of that target article was: to introduce nanomedicine to many of us, as well as to highlight some of the social and ethical implications that it portends. As Ellen McGee rightly points out, people have talked about nanomedicine before (McGee 2009; Freitas 1999). But a primary contention of my essay is that nanomedicine is no longer emerging, but has now emerged; some of this earlier and pioneering work was, well, exactly that. Yet, despite the attention now afforded to nanomedicine—e.g., through funding and investment—comparatively little attention has been paid to its social and ethical dimensions. McGee (2009) challenges this claim by appealing to various search engine results, but Summer Johnson (2009) issues the appropriate reply that these searches fail to establish any serious scholarly attention and, regardless, whatever attention there has been pales in comparison to that afforded other topics in bioethics.

Johnson and Tihamer Toth-Fejel (2009) both contend that I have not gone far enough in recognizing the prospects for nanomedicine. Johnson (2009), for example, speculates that nanotechnology will solve world hunger, global warming, poverty, and disease. Toth-Fejel (2009) argues that nanotechnology will enable various human enhancements, none of which I address. McGee (2009) also mentions enhancements, citing it a failure of scope of the article to consider them. In response to these worries, there are two things to say. First, the focus of the article was on near- and mid-term applications of nanotechnology; my personal preference is to focus on these and to avoid long-term speculations. This does not mean that speculation is not important (or fun), just that it was not the focus of the article. Second, how nanotechnology will be applied to human enhancement is a critical topic, as well as one that has been a substantial part of my research (Allhoff and Lin 2008a;

Lin and Allhoff 2008; Allhoff et al. 2009). In some ways, this might be the most interesting application of nanotechnology, though its treatment just fell outside this article's scope. To me, enhancement has less to do with 'medicine' than the topics I covered: enhancement is broader than medicine insofar as it includes, for example, education, exercise, and so on. This could be an idiosyncratic intuition, though I nevertheless encourage the interested reader to have a look at some of these other references.

McGee (2009) and Ron Sandler (2009) both take issue with my contention that nanoethics does not raise substantively new ethical issues, although they do so for different reasons. At root here is what it means for an ethical issue to be new; McGee (2009) disagrees with my conception of what this means, whereas Sandler (2009) disagrees with my argument by its own lights. In some sense, there are no new ethical issues anywhere insofar as we could understand some putative case by application of our existing moral concepts (e.g., pleasure and pain, autonomy, rights, etc.). But this is too restrictive and we need to acknowledge the possibility of ethical novelty; within bioethics, human reproductive cloning provides an appropriate example. McGee (2009) thinks that my position holds novelty requires “an ethical principle or, perhaps, rule, which has not previously been identified” (14). While not clearly articulated in my article, this is not what I think, as the cloning example is meant to indicate: we can understand the ethics of cloning by using our existing principles, but it is still the case that cloning requires us to think carefully and creatively about how those principles apply. For example, cloning forces us to think about immortality (e.g., of our genomes), family relations (e.g., giving birth to siblings), and so on in ways that previous biotechnologies have not.

But now consider nanotechnology in general or nanomedicine in particular. Nanotreatments might be harmful, nanotechnology may compromise privacy, and so on. But how do these potential effects force us to rethink any of our ethical commitments? They just seem straightforward instances of previous ethical debates, the only difference being the focus on the nanoscale; this scale is, by itself, ethically uninteresting. For example, some treatments

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are harmful (e.g., chemotherapy) and we are right to concern ourselves with whether the risks are justified given the potential benefits. Nanomedicine does not really generate ethical novelty in this regard, and I have argued elsewhere that nanotechnology more broadly does not either (Allhoff et al. 2007).

But then this leads to Sandler's (2009) criticism, which holds that there is relevant ethical novelty in nanomedicine. To wit, he maintains that nanomedicine requires "new organizational arrangements, new power relationships, new points of service, new forms of medical expertise, new approaches to diagnostics, new sets of expectations, and even new conceptions of 'healthy' and 'diseased'" (16). I do not disagree that nanomedicine will require these, but I also do not think that such examples challenge my conclusion. Rather, it seems to me that what nanomedicine forces us to do is to examine our ethical commitments in a new context (Allhoff et al. 2007; Allhoff and Lin 2008; Allhoff et al. 2009), but this is different from admitting ethical novelty. The newness that Sandler points to—at least to me—is pedestrian in the sense that it does not raise any profound ethical questions. Of course we should think about those sorts of things, but doing so only substitutes the nanocontext for extant other contexts without raising any substantively new issues. I suspect that this contention will be somewhat controversial, though I am out of space to further defend it here; surely more discussion is warranted.

Again, I thank my interlocutors for their conversation. ■

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