Consequences, Conjecture, and Confidence

A Response to Brassington

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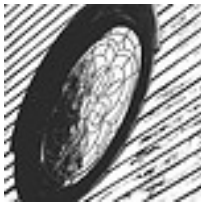
According to the abstract, part of the purpose of Iain Brassington's paper is to "deny that there is anything morally new in synbio."[1] If you quickly settle on the position that the most significant moral concerns associated with a new technology are consequentialist, then you are certainly making it unlikely that any moral problem caused is going to be qualitatively new. When the moral worries are largely worries about harms to health and environment, or security risks associated with the technology falling into the wrong hands, then such worries are familiar from numerous technologies, ranging from nuclear fission to genetic manipulation to nanotechnology. As Brassington suggests, if the issue is risk-reduction and minimization, then "there is no reason to suppose that this is a departure from consequentialism as we know it." The arguments raised by Douglas and Savulescu about the "ethics of knowledge" would likewise appear to fall squarely within the consequentialist domain (Douglas & Savulescu, 2010).

If the case is going to be made solely in terms of balancing costs, risks, and benefits, then Brassington appears correct that there is likely a strong presumption in favor of pursuing research into synbio. As he convincingly shows, there are reasons to think synbio promises enormous benefits through its therapeutic and pharmacological applications, not to mention possible additional benefits in energy production and greenhouse gas mitigation. Even after recognizing how proponents of a technology tend to be eager to hype its potential, with the classic example being the promise of nuclear power "too cheap to meter," it seems clear that one would need compelling counter-evidence that the risks of synbio outweigh the considerable anticipated benefits in order to put the brakes on research. The consequentialist burden seems to fall on the shoulders of the person opposing the technology rather than the person advocating it.

Brassington's case for free and publicly available information on synbio to accelerate the arrival of these benefits is not made on principle, but on somewhat conjectural, consequentialist grounds. Of course, it is hard to prove with any given technology that a public access approach will produce more benefits than an approach governed by rigid intellectual property constraints, because one can never run the course of the technology's development again using the alternative model. Since it is almost certain that a technology as complex as synbio differs in many relevant respects from any comparable technology that has come before it, any reasoning from past technologies has to be pretty speculative. Perhaps Brassington is right that an open source approach would exhibit greater "efficiency" and be more easily "harnessed to the public good." Perhaps it would not. I'm not clear how one would ever know. This part of the discussion merely points towards an ongoing debate on which reasonable people can differ. Since, as Brassington points out, many of the most exciting prospects for synbio are in its medical and pharmaceutical applications, the current status quo in those domains, one which for the most part embraces intellectual property, suggests that an open source approach to synbio would face considerable resistance (the work of the Biobricks Foundation notwithstanding).



While there is much to agree with in Brassington's position, one of the most disconcerting things about the paper is the unsupported finality with which a number of the claims are made. In such a short paper, it is unreasonable to expect that every opinion will be fully explored and supported. However, one of the things that tends to create alarm amongst those suspicious of any new technology is the manner in which advocates so confidently attempt to dismiss their concerns. Brassington exudes confidence in his dismissals. After pointing out some of the possible risks associated with synthetic organisms being accidentally released into the environment, his opinion that "it is quite likely…worries about releases could be mitigated by appeals to regulatory tools" does not really provide adequate reassurance. Similarly, Brassington's hope about an open source model being compatible with "…quite stringent regulation to ensure the greatest possible biosafety and biosecurity" is another example of an unsupported confidence that could alarm, rather than reassure, those who might adopt a less sanguine approach. On the important questions concerning security, is it really so obvious that state actors won't pursue synbio weapons projects simply because Brassington is convinced conventional weapons will allow them to "win a war much more straightforwardly"? Likewise for the claim that any "rational terrorist" would steer clear of trying to develop a synthetic pathogen because they would be "better off" using something

"cheap" and "reliable" like a car-bomb? We might wish for a world in which threats could be dismissed so confidently.

Brassington is not the first to suggest that consequentialist objections to synbio are the most significant as far as policy-makers should be concerned (Kaebnick, 2009). While he is probably correct to suggest that the consequentialist arguments make "most of the running" in the synbio debate, it is in the non-consequentialist arguments that the strongest case can be made for synbio breaking new moral ground. Furthermore, one could argue that while consequentialist arguments involving physical harms are more important from the point of view of making policy, non-consequentialist arguments are important for the way they can sometimes articulate something about people's initial reaction to a technology (Pew, 2005). With traditional biotechnology, it was arguably as much the principle-based arguments about "playing God" and acting "unnaturally" that motivated the social movement against GM crops in Europe as it was worries about actual harm to ecosystems and traditional seeds.

While "playing God" objections are obviously limited to those with a theological position to defend, secular versions of this kind of argument look for various moral lines being crossed or radical departures from past acceptable practices. Even if Brassington's summary dismissal of these arguments as "not powerful" is not as alarming as Drew Endy's dismissal of them as "embarrassingly superficial and simple" (Endy, 2008), both perhaps underestimate the power of these arguments to impact the development of synthetic biology. When time is taken to examine them a little closer, one finds that those cautious about the technology tend not to rest their case on something as vague as "interference with nature" (p. 4).

For example, Boldt and Mueller (2008) unpack the idea of blurring the boundary between organism and machine. Cho and her co-authors (1999) talk about a diminution of the significance of life caused by the "reductionist approach to understanding life" employed by synbio.[2] (My own claim [Preston, 2008] is that a genome synthesized entirely in the lab from constituent chemicals is the first life form with all physical connection to Darwinian processes severed.) Each of these authors disagrees with the suggestion that there is no "obvious reason to suppose that synbio is wildly different." They would be baffled as to why someone would think these developments were substantially equivalent to the development of fire. Even though such non-consequentialist arguments are unlikely to cause the development of synbio to be stopped in its tracks, they do help articulate why synbio appears to many to mark a new era in the development of biotechnology. They provide reason to pause and to think seriously about its implications. Having accomplished this, they provide additional impetus for developing sensible policies to ensure (alongside Brassington) that synbio's consequences are all benign.

Notes

1. Unless otherwise noted, all quotations refer to Brassington's paper.
2. While the worry expressed by Cho clearly concerns a consequence of the production of synthetic organisms, this concern might be viewed as a notable conceptual change rather than strictly as a harm.

References

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