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Biohackers by Alessandro Delfanti – book review

Delfanti's new book on the idea of openness in modern biology is a cogent invitation to the politics of science.

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Open. Be it the open of open policy, open government, open data, science, access, markets or sesame, it's one of those words that's used more than it is deeply considered.

A desire to consider our ideas of open, in particular the various opens surrounding modern science, sits at the centre of Alessandro Delfanti's new book, *Biohackers*. The key premise is that hackers, scientists and neoliberalism share some interesting overlaps of culture, norms, ideologies, attitudes and people, or at least there are some interesting changes happening around the social arrangements of science, the biosciences in particular, and they're worth a nose around.

The result is not just an interesting exploration of the multiple possible meanings of open science but, much larger than that, an illuminating and clear study of some of the ways in which modern science operates.

After an introduction to some history of the idea of openness, Delfanti looks in more detail at what he dubs "biohackers". He then works through three case studies: US "venture biologist" Craig Venter, Italian virologist Ilaria Capua (who challenged WHO policies on access to influenza data) and the rise of DIY "garage biology". The term hacker doesn't always come from people themselves. It's only really the DIY bio

communities who might self-identify as such, or even have an explicit connection to hacker culture. Yet Delfanti feels it is useful as they are all similarly disruptive and represent a comparable type of critique of the status quo.

At the heart of his argument is an apparent confluence between what is often known as the "Mertonian norms" of science (especially the desire to share work) and that of hacker ethic. Hacking mixes rebellion and openness with a form of anti-establishment critique, and so does science, and both may be applied to a variety of political ends. Delfanti talks through some studies of hacking culture to show it as pretty culturally diverse and ideologically heterogeneous. He also notes science doesn't just run on these things called "norms", but also "counter-norms" (translation of sociology-speak: scientists can be a bit self-contradictory, it must be bloody confusing being one). One might argue that if you define hacking and science so broadly of course they have similarities, and you end up saying very little of substance as a result. But the book manages to build an engaging and convincing narrative nonetheless.

A fairytale story of science's openness might go something like the following. Once upon a time, science was a smooth, efficient and ethical enterprise of sharing, equality and disinterest, driven by nothing but the common good. Then the evil corporations got involved and spoiled it all with a proliferation of restrictions to access, patents and industrial or military secrets (what is sometimes called "the tragedy of the anticommons"). But the hackers disrupt this, and now we have new tools which allow us to share and it might be taken back for the public good.

Delfanti knows this is too simple a story, and instead paints a more complex back and forth where science, after abandoning the tradition of secrecy which characterised it until the start of the Enlightenment, went through stages of openness permitted by patronage (either private or governmental) followed by enclosures encouraged by the developments in ideas of "intellectual property" at the end of the 20th, with a final counterattack based on open science movements in the 21st century.

This is possibly still too simple a view though, and Delfanti would have benefited from more on the way secrecy may be part of even very modern science. Brian Balmer's work on Porton Down is interesting here, or perhaps the literature on agnotology (culturally induced ignorance or doubt). Delfanti could also have made use of Steve Shapin's classic paper (pdf) on the way science ostentatiously opened up to forms of public witnessing in the 17th century and (perhaps more so) feminist critiques which show how limited this sense of openness was (Haraway's largely theoretical approach, or Winter's study of Mesmerism) to gain a larger sense of the long history of both science's rhetorical commitment to openness, and how many closures this has concealed.

There's also some work on the ways what Delfanti calls "Big Bio" publish work and tap into forms of open science which would have been a nice context, and it might have been interesting to see something on the more politically challenging notion of open exhibited by 1990s approaches to public engagement (e.g. see Jack Stilgoe and Simon Burall on this).

In his conclusion, Delfanti makes the important point that hacking biology is different from hacking DNA; biology is a social system within which change is created by political action. His case studies were all political actors as much as scientific ones, or at least they

could only achieve their scientific work by working the social system. And yet we should question how deeply any were willing to challenge the system, or at least we might ask how many of these hacks were self-serving rather than ways to unlock science for the public at large? The biohackers discussed are largely tinkering with this thing Delfanti calls "biocaptialism", not questioning its premise. It remains a very open-market form of open. Maybe that's appropriate, but it's not an ideological stance everyone would agree with. A book explaining how the public at large might hack the political economies of science has perhaps yet to be written. Or maybe it's not possible.

Biohackers won't tell you everything you want to know about open science. Despite the very interesting treatment of his three case studies, I remain sceptical that the idea of the biohacker - as deliberately loosely defined as Delfanti presents it - really exists as much more than an idea. But it's a powerful idea, well explained; one worth spending time with. The book will help you think about what openness, biology and open biology mean today. More broadly, Delfanti offers a cogent invitation to care about the politics of how science is put to work. We could do with more books like this.

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