

QUESTIONING ACTION IN CYBERSPACE

CUESTIONANDO LA ACCIÓN EN EL CIBERESPACIO

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Abstract: This paper tries to show how they are flaws on the Open Science movement. There is a contradiction in cyberspace: a community of knowledge tries to favor scientific and technological advancement whereas there is a cyber-movement to attack precisely that pursue. Contradictions go on in different aspects: scientific data demands from users but those who demand are outside of that exchange. PLoS initiative is a good example for those contradictions.

Keywords: open science, communities of knowledge, PLoS initiative

Resumen: Este artículo trata de mostrar algunos de los fallos del movimiento *open* en ciencia. Hay una contradicción básica en el ciberespacio: una comunidad de conocimiento trata de favorecer el desarrollo científico y tecnológico, mientras que otro movimiento trata precisamente de atacar este elemento. Hay más contradicciones en otros niveles: los datos científicos que se exigen a los usuarios no son exigidos precisamente a aquellos que organizan estos intercambios. El caso de la iniciativa PLoS es un buen ejemplo

Palabras clave: ciencia abierta, comunidades de conocimiento, movimiento PLoS.

In a posthumously published collection of essays, *Fractured Times: Culture and Society in the Twentieth Century* (2013), Eric Hobsbawm includes the English version of a talk on public intellectuals delivered originally and then published in German in 2010. The great Marxist historian of the long nineteenth century, noting the decline of intellectual influence on public affairs at the end of the short twentieth century, observed as follows:

Mankind today has characteristically got used to lives of internal contradiction, torn between a world of feeling and a technology impervious to emotion, between the realm of human-scale experience and sense-knowledge and that of meaningless magnitudes, between the "common sense" of everyday life and the incomprehensibility, except to exiguous minorities, of the intellectual operations that create the framework in which we live. Is it possible to make this systematic nonrationalism of human lives compatible with a world that depends more than ever on Max Weber's rationality in science and society?

One of the distinctive features of social life for the indefinite future is the existence of two types of knowledge communities, in tension with regard to their use of cyberspace. In type one communities the superstructure, as it were, acts in harmony with the base; it acts in cyberspace to advance science and technology. In type two communities the superstructure is at odds with the base and acts in cyberspace to attack science and technology. One vivid expression of the latter is the internet and telecommunications coordinated flying of high-tech airplanes into the World Trade Center towers by Al-Qaeda operatives. According to Hobsbawm, however, although the internal contradictions of type two knowledge communities undermines their long-term viability it is not yet clear that type one knowledge communities can take advantage of their weaknesses.

[W]hile high technology can be used, though not further advanced, without original thinking, science needs ideas. Hence even the most systematically counterintellectual society today has a greater need of people who have ideas, and of environments in which they can flourish. We may safely assume that these individuals will also have critical ideas about the society and the environment in which they live. In the emerging countries of East and Southeast Asia and the Muslim world, they probably still constitute a force for political reform and social change in the old manner. It is also possible that they may in our times of crisis once again constitute such a force in a beleaguered and uncertain West. Indeed, it may be argued that at present the locus of the forces of systematic social criticism is to be found in the new strata of the university-educated. But thinking intellectuals alone are in no position to change the world, even though no such change is possible without their contribution. That requires a united front of ordinary people and intellectuals. With the exception of a few isolated instances, this is probably harder to achieve today than in the past. That is the dilemma of the twenty-first century.

To repeat with emphasis: Thinking intellectuals alone are in no position to change the world. What is required is a united front of ordinary people and intellectuals —something that is harder to achieve today than in the past. There are many reasons for this difficulty, but some that deserve further consideration are fragilities in type one knowledge communities themselves.

Knowledge communities shaped by telecommunication networks have created important changes in how knowledge is generated and used. First, these new telecommunication-based communities make possible alternatives to the usual institutions of knowledge production such as R&D organizations, states, and private companies. A paradigmatic case is free software, the production of entire computer operating systems such as GNU/Linux, and other widely used digital utilities such as OpenOffice or Firefox. Telecommunication knowledge

communities produce not just software but also content such as Wikipedia, which is a good example of free knowledge.

Furthermore, communication even within the standard institutions of scientific knowledge production is itself undergoing internal changes. Examples include the creation of open access journals such as *Public Library of Science* or *PLoS*, internet pre-publication by traditional journals such as *Science* and *Nature*, and the greater sharing of data associated with print publication by means of parallel web postings.

The public sharing of data is a good example of contradictions that often appear at the core of type one knowledge communities. The allegedly public demands for public data sharing do not really come from the public but from private corporate interests who want to be able to turn the data against its producers: tobacco lobbyists that want to take issue with cancer research, oil companies that want to promote climate change scepticism. Reflecting an imbalance of power, type one knowledge communities are forced make their private lives public while type two knowledge communities retain their privacy. Are corporate board rooms forced to undress in cyberspace?

Consider in slightly more detail the case of PLoS. This cyber activity was initiated in 2000 with the cyber-circulation of an open letter by Harold Varmus (Director, National Cancer Institute), Patrick Brown (Professor, Department of Biochemistry, Stanford University School of Medicine, and Howard Hughes Medical Institute in California, Investigator), and Michael Eisen (Associate Professor of Genetics, Genomics, and Development in the Department of Molecular and Cell Biology at the University of California, Berkeley).

This three-paragraph manifesto called for

establishment of an online public library that would provide the full contents of the published record of research and scholarly discourse in medicine and the life sciences in a freely accessible, fully searchable, interlinked form

and claimed that

Establishment of this public library would vastly increase the accessibility and utility of the scientific literature, enhance scientific productivity, and catalyze integration of the disparate communities of knowledge and ideas in biomedical sciences.

It went on to

pledge that, beginning in September 2001, [its authors and anyone else who signed on, would] publish in, edit or review for, and personally subscribe to only those scholarly and scientific journals that have agreed to grant unrestricted free distribution rights to any and all original research reports that they have published, through PubMed Central and similar online public resources, within 6 months of their initial publication date.

The PLoS initiative was thus an exemplar of a type one knowledge community action in cyberspace. And something like 34,000 scientists from 180 nations signed the letter.

But the cyber-action had little real effect. Corporate, for profit publishers continued to resist, and as the self-presentation history on the PLoS web site explains,

the publishing landscape remained largely unchanged until PLoS [in 2003] became a publisher itself to effect change.

Here we see one of the key features of knowledge community cyber-action: The close linkage between communication and action, much closer and more integrated than is the case with communication and action in the non-cyber world.

The PLoS case further illustrates how type one telecommunication-based knowledge communities tend to enact more democratic and participatory political values than type two knowledge communities. Central examples of such values are

- information freedom,
- sharing,
- transparency, and
- openness.

Type one cyber-based knowledge communities offer new models of the “invisible college” creation that emerged in conjunction with the founding of the institutions of modern natural science, most prominently the Royal Society in London in 1660.

Two further aspects of the Royal Society that continue to be characteristic of the action of type two knowledge communities in cyberspace:

First, the real-world Royal Society was stimulated by and a conscious effort to realize an imaginative fiction, that is, Francis Bacon’s posthumously published utopia, *The New Atlantis* (1627).

Second, this real-world creation almost immediately became the basis of a knowledge dissemination activity, namely the *Transactions of the Royal Society*, in 1665, which could also be described as promoting information freedom, sharing, transparency, and openness.

Such continuity calls into question some of the claims for the historical originality of cyber-communities of knowledge production. It is not clear that type one cyber-knowledge communities and their cyber actions offer a wholly different social architecture and set of normative bonds for the production and sharing of knowledge. Especially is this the case insofar as a further distinction is made in both the type one and type two categories between strong knowledge communities and soft knowledge communities, that latter united only by weak bonds (that is, bonds with no non-cyber aspects).

Any excitement regarding strong type one cyber knowledge production and action deserves to be tempered in at least three respects: Questions about the quality of the knowledge so produced and questions about the social fallout of such knowledge production.

Regarding questions about the quality of knowledge production, consider only the argument of John Ioannidis, published in PLoS in 2005, that “Most Published Research Findings Are False. According to Ioannidis,

There is increasing concern that most current published research findings are false. The probability that a research claim is true may depend on study power and bias, the number of other studies on the same question, and, importantly, the ratio of true to no relationships among the relationships probed in each scientific field. In this framework, a research finding is less likely to be true when the studies conducted in a field are smaller; when effect sizes are smaller; when there is a greater number and lesser preselection of tested relationships; where there is greater flexibility in designs, definitions, outcomes, and analytical modes; when there is greater financial and other interest and prejudice; and when more teams are involved in a scientific field in chase of statistical significance. Simulations show that for most study designs and settings, it is more likely for a research claim to be false than true. Moreover, for many current scientific fields, claimed research findings may often be simply accurate measures of the prevailing bias. In this essay, I discuss the implications of these problems for the conduct and interpretation of research.

Second, with regard to questions about the social fallout of such knowledge production, consider a distinction made by anthropologist Margaret Mead in 1970 between postfigurative and prefigurative cultures. Postfigurative cultures

are characteristic of societies in which the future repeats the past and the young learn from the old. Prefigurative cultures are those in which change is so prevalent that the elders have to learn from the young. Mead herself, in an effort to describe social changes taking place in the 1960s, had already identified a distinctive feature of cyber-knowledge communities: their age biases. Of course, all knowledge production communities have an age bias toward the young, but with cyber-knowledge communities the bias is aggravated or intensified.

Finally, let us remember again Hobsbawm's truth, as illustrated in the failures of the social media mediated Arab Spring. Power appears to rest more firmly on the barrel of a gun than in the glow of a smart-phone screen.

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