

Scientists, citizens and goods

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The social utility of science deals with the need of breaking down some barriers separating the scientific community and society. Both are involved in the relationships among science, democracy and goods. It is a recent phenomenon linked to the advent of the World Wide Web, which has led to a huge explosion in the availability of information. Many companies are now involved in this revolution and are aware of the importance of the sharing culture. Conversely, the academic world travels at a slower pace, despite the widespread awareness of the importance of accessibility to research products for scientific progress.

Science is a dynamic field, involved in the definition of both an epistemic and social order. This aim is not pursued by science alone, but in a reciprocal interaction with politics¹. The tension between resistance and search of a new balance characterizing this intricate network of relationships has been deeply analysed by Jasanoff². She defined the set of knowledge and practices that addresses lives and choices of citizens as ‘civic epistemology’. Science policies should always take into consideration these principles to assume that citizens do not necessarily know and understand science and its dynamics. Civic epistemology allows to conceive science and its credibility in political and social life as a phenomenon needing an explanation and that, therefore, should not be taken for granted. Jasanoff also stated that shifting attention from individual knowledge of the facts to the way in which political communities know what concerns them as communities, the concept of civic epistemology also provides the opportunity of capturing cross-cultural diversity in the responses of the public to science and technology. In this way, it is possible to highlight the role of science in society, particularly regarding the ways in which science shapes and permeates political institutions³.

The main issue is to understand how science realizes its social utility and the connections characterizing the processes of knowledge formation⁴. This note deals with the need of breaking down some barriers that still resist and separate scientists and citizens. However, they are part of the same broad category, viz. ‘research players’, including funding institutions and science communicators and in which the players’ roles often overlap⁵. Particularly, we are referring to the experiences of scientific research

conducted by non-professional scientists, resulting in the so-called citizen science.

Outside their laboratories, even scientists are citizens. However, the removal of barriers between the academic world and society, between researchers and citizens, is a process that has been going on for a long time, and which has not yet come to an end. We should consider sharing knowledge as a development factor, being aware that it increases as fast as it is shared. At the same time, we should consider the lack of access to knowledge as a factor of exclusion both for scientists and citizens⁶. Fecher and Friesike⁷ pointed out that open science represents a set of movements and schools of thought in favour of the democratization of knowledge, but also of groups supporting purely practical reasons.

Now we come to the relationships among science, democracy and goods. This is a recent phenomenon, closely linked to the advent of new technologies, especially the World Wide Web, which has led to a huge explosion in the availability of information, including commercial information. Business research pays attention to sharing practices. We are referring to the so-called collaborative consumption, to the commercial sharing and access-based consumption^{8–10}. This is growing hand-in-hand with the growth of companies practising e-commerce. If the human need of acquiring and sharing material and digital goods is an ancient practice, collaborative consumption and, more generally, the economy of sharing are recent phenomena associated with the Internet. In a broad sense, the Internet itself is a large pool of goods whose accessibility is almost the same for everyone, obviously proportional to individual economic resources.

The Web 1.0 was based primarily on a unidirectional involvement of the consumer, who could access and choose, but

not interact and express his/her opinion. However, today we have something different, viz. Web 2.0, which refers in a collective sense to all the websites allowing users to contribute to their contents, to be connected with each other and to discuss¹¹. This also applies to sites offering consumer goods and services that are familiar to those who are not compulsive web users. Web 2.0 is also, and above all, a great opportunity for sharing. We are referring to the global diffusion of peer-to-peer (P2P) file sharing practices and protocols, especially used for the exchange of music and movies. These illegal sharing practices have led the film and music industry to develop a series of actions to discourage the same and to avoid suffering excessive losses from the lack of sales of their products. Intellectual property rights have been strengthened. The Digital Rights Management (DRM) software has been incorporated into products for the management of property rights, to curb duplication. However, there is not only the illegal sharing. In fact, some sites offer legal downloads and streaming of music and video accounts with a good commercial success. In this grey area we can identify a clear contrast between the illegality and proximity in terms of values between the P2P sharing of what would be commercial products and the sharing of data, results and methods among researchers, which are not (or should not be) commercial products. We are in the sphere of the right to access, to understand and choose to use (or not) the intellectual products of someone – artists, inventors or scientists. It is a matter of discussing the opportunity to widen the sphere of citizenship rights, freeing them from territorial belonging, by including them within a core of universal rights¹².

Another form of sharing facilitated by the Internet is the transfer and use of

goods between consumers. In fact, there are many websites allowing anyone to place online advertisements for the exchange and sale of private goods. This may not be a new concept. However, around the Web there is something closer to our idea of sharing and that recalls the concept of citizenship that we have explicitly mentioned.

An example proposed by Ozanne and Ballantine¹³ can help clarify our reasoning: Sharehood. What is it? Few years ago, in a neighbourhood in Melbourne, Australia, Michael Green needed to wash his clothes and knew that between his house and the nearest self-service laundry there were dozens of houses with dozens of families owning a washing machine. Thus, Green had an idea. He thought of involving members of his community in an online service of sharing goods. The inhabitants of the district prepared a list of things they were willing to share (not only washing machines, but also microwaves, bicycles, and so on), without asking for any compensation. All this was managed on a website called Sharehood. The success of Sharehood not only reduced the redundancy of objects possessed among members of the community, but also contributed to consolidate the sense of belonging to the community itself.

There are various reasons that foster a perception of sharing as a common value for both scientists and citizens: sharing means working together in order to acquire new knowledge; sharing makes it possible to use the available resources more effectively; sharing improves relationships and increases trust; sharing contributes to the sense of belonging to a community. Sharing is a value that gives undeniable advantages to communities of different origins and composition. However, we should consider that all of this exists because there is an efficient online structure supporting a worldwide sharing of material and informational goods.

The digital revolution is still in its infancy and it will result in marked changes. These changes will represent

the emerging challenges for forward-thinking entrepreneurs who will have to find new answers to give consumers the freedom to use goods and services, whose access will be more and more 'click away'. At the same time, being entrepreneurs, they must understand how to transform this perception, this common feeling, into innovative investment opportunities aimed at growing their capital. However, this near future will be characterized by global issues regarding the availability of fossil fuels and other raw materials, and the trends of pollution and global warming. The evaluation and monitoring of such dynamics are tasks of the scientific community, but they affect all the other communities of citizens and should also involve entrepreneurs riding the digital revolution. Many companies are now involved in this revolution and are supporting the value of the sharing economy. Conversely, the academic world travels at a slower pace. It is still struggling, although it is progressively becoming aware of the need to spread the culture of sharing^{14–17}. According to Belk¹⁸, rather than working individually and keeping our knowledge as a secret, we should be happy to make it public and give it to anyone interested: a truly open science model that must definitively replace medieval scientific practice based on the maintenance of scientific results as secrets. It is a matter of taking a decisive step towards the 'post-ownership' economy, changing the paradigm from 'you are what you have' to 'you are what you share'.

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