

## Rethinking the Public Scientist

For many years, possibly for too long, scientists have not been concerned with engaging with the ordinary lay person during the process of research and innovation. The ivory tower was, and still is, the chosen place for advancing knowledge, interacting with colleagues and other academics, and communicating scientific results to specialized academic journals and conferences. Science has never come closer, historically, to expertise as it has in the last 50 years. Experts operate within technical and specialized networks of knowledge that are only open to other experts in the same discipline and field (Grundmann and Stehr, 2012). Disciplinary knowledge, narrowly based on specific methodological techniques and analytical tools only known to insiders, has been the basic structure of knowledge systems in many countries in Europe and beyond. This was based on the relationship of public authority when citizens were addressed as subjects of public services and passive recipients of social benefits. In modern times, contemporary democracies have shown how citizens struggle to see the public interest and public institutions are challenged.

This view of science as a medieval castle remotely located and under siege by continual societal pressures is outdated, at best, and no longer reflects the research activities carried out by most departments at universities, research centres and individual academics (Posner, 2003; Cummings, 2005; Gauchat, 2010). Although the relationship between science and society remains dialogical and sometimes conflictual, it is now firmly anchored

in a new normative framework centred around the values of transparency, accountability and citizen science (Gibbons et al, 1994; Gibbons, 1999). Citizens should take up their role as participants to the creation of public value (Pestoff, 2018; Hupe, 2022). The EU's Horizon Europe Programme and the earlier Research Framework Programmes have embraced this commitment to responsible research and innovation (European Commission, 2001a, 2001b, 2001c, 2014), as discussed in Chapter Two of this book. The EU has led the way in many countries in this respect, and now national governments are trying to align their research funding strategies, assessments and projects with the European approach (EC Expert Group, 2013). At the start of the third millennium, citizens have achieved a renewed centrality in public policy making, focused on deliberative processes and collaboration with research and academic institutions. However, having said that, in contemporary democracies the level of public trust in scientific public authorities continues to be significantly lower than in the period before NPM in the 1980s. Expertise-based public trust is highly contested, and exacerbated by populist and illiberal ideologies (Mueller, 2016).

### **Citizen science**

The public understanding of the science model has paved the way in the last decade for citizen science, which this book has discussed at great length as a paradigmatic change that has the power to transform the relationship between science and society. The idea is to create knowledge-based systems with the direct involvement of 'citizens', normally referred to as 'the public' or also 'lay people'. Generally, this means stepping outside the ivory tower to engage with non-academic, nonexpert groups of people from different backgrounds, interests and values. The overall goal of citizen science and its related government programmes and investment is to democratize science (Goodson, 1999; Goddard and Vallance, 2013). In the book I have also referred to 'bringing citizens in' whereby the public is involved upstream in the early days of research design and the formulation of scientific projects. Why communicate the final results of a research project in a unidimensional relationship when we can engage citizens in the

formulation of research questions? Should science not be based on answering citizens' demands, preferences and needs? In the policy world, which is ever more complex and characterized by wicked problems, it is sensible to interact as early as possible with the end-users of public services and citizens affected by programmatic changes, with the goal of helping them change their behaviour and, for instance, turning them into ecological citizens as discussed in [Chapter Three](#). If one accepts the society-driven scientific enquiry, then a wide range of mechanisms and governance tools need to be established to run this fundamental transformation in the relationship between science and the public.

Citizen science has relied heavily on the expectations that citizens have to change their behaviour, interact with the academic community, leave behind their passivity and mobilize their enthusiasm for scientific projects. Why not raise expectations about scientists taking up themselves the role of citizens? In what ways are researchers different from citizens? Unfortunately, these questions have remained marginal in the current debate because the relationship between experts and democracy is still dominated by the notion of public authority. In this way, the relationship between society and science is still influenced by the wrong assumption that it is possible to improve trust by providing more facts, more data and more evidence. Unless we promote a post-positivistic conception of science and policy making, understood as a feature of 'civic epistemologies' ([Jasanoff, 2005](#)), the risk is to preserve the line of demarcation between experts and citizens as a zero-sum game.

### **Public engagement: the concept**

In the book, I have concentrated on one of the governance tools adopted to democratize science, namely, public engagement activities carried out with the intention of improving public trust in science. The normative assumption is that citizens will decide voluntarily to engage with scientific projects, and by virtue of new awareness, social responsibility and new educational opportunities, the production of knowledge will benefit from their input and become more legitimate and accountable. Democratic practices of public engagement with the public will

result, as predicted by a wide range of policy and programmatic documents reviewed in previous chapters of the book, in a stronger trust relationship between scientists and society based on collaboration and partnership. While in the 1980s, the organizational models associated with the entrepreneurial state shaped relationships between stakeholders in a highly contractual nature, the new millennium began with the political demand for a trust-based relationship between citizens and the state. Collaborative governance and co-production arrangements reflect the paradigmatic change. Citizens are no longer clients of research contracts, but are co-producers of knowledge systems that are increasingly shaped by collaboration and networks of stakeholders from different disciplines and backgrounds. This complex system is at the heart of the so-called quadruple helix by Carayannis and Campbell discussed in this book and is very popular among national governments, education departments and European institutions (Carayannis and Campbell, 2013).

As a concept, public engagement contains multiple definitional streams, depending on its purposes. It entails participation, involvement and civiness promotion (as I have called it in this book). They overlap empirically, and they are all ways of building public trust and a sense of collective investment in research, yet they are analytically distinct. Participation refers to those activities where citizens take part, but not necessarily in an active mode. Scientific conferences often include non-academic audiences, but engagement stops there. Scientists record the number of participants as an indicator of public engagement. Raising public awareness is a very important activity, and participation is a mechanism that creates educational opportunities for citizens of all ages. Involvement is a type of public engagement that requires an active role of citizens as co-producers. For instance, the public can be invited to public meetings with researchers to define the research question of a funded project to facilitate the problem-solving capacity. In large population health projects and precision medicine initiatives, citizens are recruited to test new technologies and volunteer in data collection. Co-producing knowledge is presented as the go-to solution for future scientific challenges, and the literature is booming in this area (Brandsen et al, 2018; Hupe, 2022). The collaborative governance conception represents the response to the neoliberal

agenda of public services reforms in the 1980s and 1990s (Whitaker, 1980; Neave, 1998).

### **Public engagement: the contradictions**

The book concludes with a view of public engagement that departs from the idealistic assumption of society as a utopian public ready to mobilize, collaborate and interact with research as soon as given a chance. It also departs from a rather naive view of scientists as individuals only moved by altruistic and nonutilitarian ways of producing knowledge for public value. Equally, a conception of policy making based on the assumption that magic concepts and standards can easily be operationalized on the ground by benevolent academics and research assessment agencies is misleading. On the one hand, public engagement with society has now become a gold standard of science and research, based on the optimistic view that scientific knowledge, facts and data are a sufficient ground for rational and legitimate policy making. On the other hand, the democratization of science is a political agenda that reinforces the technocratic concept of the relationship between science and politics, which has been dominant since the 1950s and 1960s. Public engagement, adopted by governments and research programmes as an instrument of democratization, is sometimes premised precisely on the same technocratic assumption that its activities are intended to mitigate. Therefore, collaborative governance seems to be more politically and economically motivated than democratically inspired.

My critical understanding of the political agenda associated with government programmes of public engagement stems also from the gap between its high-level aspirations and the street-level limitations encountered at the local level. On the one hand, national governments decide to adopt strategies to reduce costs and offload service delivery to NGOs, for instance, without an adequate understanding of who the public is, who are the citizens, and what it means to be a citizen in a specific socioeconomic concept. I am convinced that state–society synergy is the best way to strengthen accountability. It is not sensible, however, to expect that citizens will engage in the same way given very different socioeconomic backgrounds. How to motivate citizens to become involved in public engagement activities should be better evaluated and,

generally, discussed by governments at the stage of policy design. [Chapter Four](#) of the book has illustrated the operational difficulties of motivating local communities and groups of citizens by exploring the case of education for sustainability in schools.

### **Public engagement: the benign rhetoric**

As Rosanvallon has suggested, ‘we are moving bit by bit from a polarised political democracy to more disseminated forms of civil society’ (2006: 235). Electoral democracy has undeniably eroded, and civicism has been gaining strength such that the notion of the passivity of citizens needs to be revised. The efforts to promote the involvement and engagement of citizens in research and innovation are consistent with this direction and may have a positive impact on improving trust in scientific endeavours. The new production of knowledge, particularly Mode 2 (Nowotny et al, 2001), as discussed in [Chapter Three](#) of this book, has the advantage of focusing on applied policy problems and contextualized solutions. This promises to build stronger connections to citizens’ demands and needs. However, bringing citizens in can only be meaningful and relevant if public engagement activities foster the promotion of civic culture and civic virtues among all stakeholders and networks (Putnam, 1993). To the extent that promoting civicism is a central, yet often neglected, dimension of citizen science, the role of scientists is not only to open scientific processes and make procedures formally legitimate in the eyes of research funders but also to participate themselves as citizens with the duty to care for others and the collective community.

The findings suggest that agonizing over the crisis of trust in science and the benign assumption that citizen science and public engagement activities with the non-academic public will solve it, is somewhat misplaced. On the one hand, it is useful to move away from a one-way model of public authority that views the role of scientists as educating an ignorant, passive and incompetent mass of people. Scientists themselves are implicated in the mistrust of science, when they alienate citizens with errors, and presumptions of unjustified authority. At the start of the millennium, we certainly needed a critical reflection about the relationship between science

and society, as triggered by national government policies and the EU agenda on research and responsible innovation.

On the other hand, the current direction of change seems to reproduce the polar model discussed by Habermas in 1971 (Habermas, 1971). It reinforces the technocracy versus democracy debate (experts versus citizens) when public engagement is not viewed as civicness promotion; instead, it is viewed as a rhetorical tool to justify the use of public funds (Wynne, 2006) or to recruit patients in large medical data projects (Woolley et al, 2016). The two opposites are represented by technocracy and the decisionistic concept. There is a democratic deficit in both. In the 1970s, as part of the debate on the relationship between science and politics, Habermas made a plea for a democratic model of policy consultation and a move away from technocracy. He rejected technocratic decision-making based on the illusionary assumption that scientific rationality can resolve everything. He also claimed that the decisionist concept is not appropriate insofar as the power and political interests held by policy makers and politicians determine the goals of science. What, then, can be advanced as a third way? He proposed a ‘pragmatist model’, which is inspired by the definition of the public offered by John Dewey. To avoid the two polar extremes, we need to engage the public *à la* Dewey (1927). By this, I mean that the public exists independently and separately from those public officials who only need a public ‘to support and substantiate the behaviour of officials’ (Dewey, 1916, 1927).

Democratizing science is a laudable and convincing government strategy and a positive transformation of the future relationship between science and society in the direction of recalibrating the dialogue between experts and citizens and mutually reinforcing technocracy and democratic accountability. A wide range of public engagement activities have contributed in the last decade to collaborative governance and new models of policy making that bring citizens to the process of knowledge production. Citizen science has been the response to the pronounced neoliberal agenda of marketization reforms associated with NPM in the 1980s, when the entrepreneurial model became the go-to solution for public services delivery and reforms and society was kept to one side. The new participatory push at the start of the new millennium, which is now embraced by most research funding agencies in Europe and

institutionalized by universities, has contributed to improving public accountability and the legitimacy of science (Mulgan, 2003; Mattei et al, 2013, 2016; Mattei, 2019).

The book has highlighted the conflicting meanings of public engagement and the governmental use of this rhetoric to encourage participation. Trust is, however, a much more complex issue and does not squarely fit in any organizational model or decision-making formulation. Some scholars suggest that there are few or no causal effects of co-production on public trust (Dudau et al, 2019). Blaming the incompetent and ignorant masses for its hostility to experts, or its passivity in civic life, is misleading and counterproductive. Scientists are also implicated in campaigns against biotechnologies. A conceptualization that considers citizens as subjects of research is not a useful approach to rebuilding trust in science. The new public engagement arrangements draw upon normative frameworks that operate firmly within a hierarchy of knowledge in ways that contradict their own aims. Future debates on the relationship between science and society might benefit from further critical reflections on *who is the public* to reclaim the civic engagement dimension of social participation, beyond the politically rhetorical use of magic concepts.