

Which hat am I wearing?

Reflecting on roles of scientists in society



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Expectations differ as to which functions science should have in society, and these differences can sometimes lead to heated debate. It is important that researchers are aware of the societal goals to which their work contributes and the roles they play in this process. This enables them to actively perform these roles, anticipate expectations and define their area of responsibility. Role diversity has the potential to make scientific work more effective.

Today's societal challenges, such as climate change and the loss of biodiversity, make it necessary for science to work more closely with society and, in particular, with politics. This requires new forms of collaboration and dialogue. Researchers are increasingly taking on roles other than that of a pure scientist – and not always consciously or voluntarily.

This text provides researchers with approaches for reflecting on and discussing the roles they can play in the societal context. It is based on the guide “Roles of Scientists in Sustainability Transformations: A Guide for Reflection and Workshop Facilitation” published by the Swiss Academy of Sciences¹. Greater clarity and a more conscious understanding of roles will strengthen scientific work and its contribution to societal change.

Science is part of society. Researchers contribute to societal change through their work.

Science provides the knowledge required for technological achievements, societal debates and political decision-making processes. Expectations as to what role science should play in these areas can vary greatly. This can lead to heated debates, such as during the COVID-19 pandemic, for example.

A common understanding, especially in the field of science itself, is that researchers should provide decision-relevant knowledge ("policy-relevant") but not anticipate what political decisions should look like ("policy-prescriptive"). For example, they point out options for action with their respective advantages and disadvantages or potential consequences, but refrain from making statements about what should be politically desirable. In reality, the boundaries between policy-relevant and policy-prescriptive are usually blurred.

Some researchers see their expertise as giving them a social responsibility to call for political action. In this sense, researchers in the 1970s and 1980s, for example, drew attention to the threat to the ozone layer posed by hydrofluorocarbons because they were concerned about human health. Today, researchers are becoming increasingly politically active in connection with climate change, sometimes even engaging in civil disobedience.

It is important that researchers are aware of the societal relevance of their work, which societal or political objectives a research project should address, and which roles they take on in their exchange with society. This needs to be considered and compared time and again.

The following questions arise:

- Is there such a thing as value-free research?
- How does my scientific work benefit society?
- What does society expect from my field? Why?
- Are the statements and recommendations derived from my research policy-relevant or policy-prescriptive?

Researchers develop knowledge in support of society. This is partly done together with other societal actors.

When looking into roles, it helps to distinguish between two ideal-typical ways in which researchers contribute to societal change and interact with societal actors². The transitions between the two are fluid.

Production of knowledge for society

In this case, researchers provide factual knowledge in order to describe and understand processes in nature and society, or they develop options for action and design, such as social and technological innovations. During this process, researchers and societal actors do not exchange information directly. Instead, knowledge moves from research to society in the form of a transfer process. The scientific findings are communicated in a way that is suitable for the respective target group, such as political decision-makers. Persons who impart knowledge often also come from the scientific community: the scope of research projects can include both knowledge transfer and knowledge production.

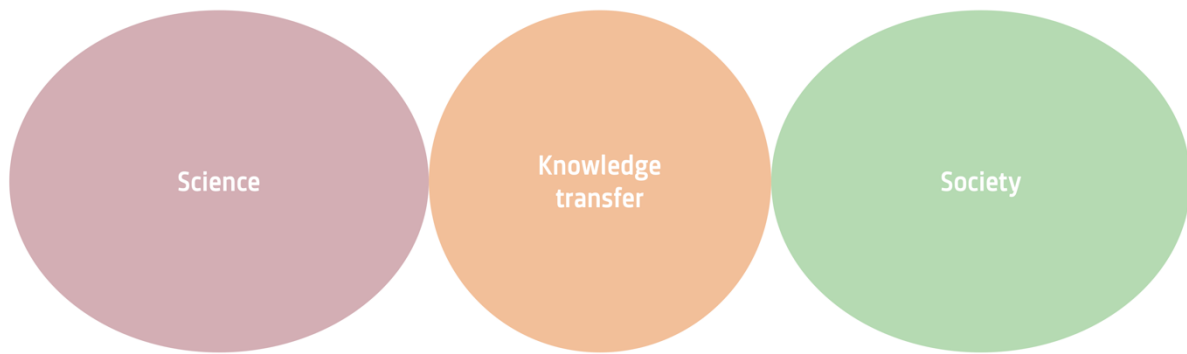


Fig. 1: The production of knowledge and its transfer to other fields of society are separate processes.

Co-production of knowledge together with other societal actors

Here, science and other fields of society work together. Non-academic experts, stakeholders and decision-makers are involved in the production of knowledge. The main focus is on jointly solving problems or shaping the future. Researchers and societal actors interact directly with one another; the latter are part of the research process. The transfer of knowledge is mutual and is part of the collaboration process. Knowledge is co-produced. In this transdisciplinary approach, the functions of researchers are more fluid than in the pure production and transfer of knowledge.

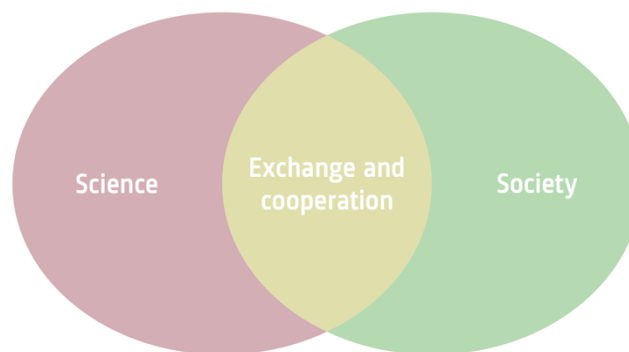


Fig. 2: Exchange and cooperation between science and other fields of society are part of the research process.

If researchers are aware of their roles and their functions, they can actively exercise them, anticipate expectations, and specify or negotiate where the influence of science ends.

Researchers support society effectively when they play different roles - within the framework of scientific integrity³. However, they are not always fully aware of these roles. In order for them to be able to perform their roles adequately and be accepted in these roles, they must recognize them and communicate them transparently. In doing so, they delimit an area for expectations about how their work can contribute to societal change. This also applies to other specialists who work at the intersection of science, society and politics. Roles can also change during various phases of a process.

Scientific work is potentially more effective when different researchers take on different roles. These roles make it easier to integrate the knowledge of different societal actors, which leads to a broader knowledge base.

Depending on their role(s), researchers may have to distance themselves from their academic identity or come into conflict with their personal values. In public debates or in an advisory role in particular, it is therefore important to distinguish and transparently communicate what is scientific knowledge and what is the researcher's personal opinion. You do not always choose your role yourself; it can also be ascribed to you from outside.

Researchers can take on the following ideal-typical roles in the two types of knowledge production outlined above:

- a) **Pure scientists⁴**: Their research generates scientific knowledge that is also available to politics and society. They do not participate in societal decision-making processes and do not pursue any interests.
- b) **Science arbiters⁴**: On behalf of politics and society, they use scientific knowledge to answer specific questions. They provide facts to support societal decision-making processes without recommending what is preferable
- c) **Honest brokers⁴**: Based on scientific knowledge, they show politics and society the possible options for action and their respective impacts. By highlighting the scope for action, they support societal decision-making processes without advocating for any one option.
- d) **Issue advocates⁴**: Based on scientific knowledge, they recommend specific options for action to politicians and society. In doing so, they reduce the range of available options. They evaluate the knowledge provided in a normative way, consciously take a political position and thus participate in societal decision-making processes.
- e) **Facilitators**: They coordinate cooperation between scientific and societal actors, ensure equal communication, facilitate learning and design processes, and integrate knowledge from different sources.
- f) **Advisors**: They accompany, support and coach societal actors in shaping knowledge production processes in an integrative and collaborative way.
- g) **Mediators**: They mediate between different perspectives or, in the event of power imbalances and conflicts, between actors.

Roles a) to d) are particularly relevant when researchers produce and convey knowledge (production of knowledge for society); e) to g) are examples of roles that they can take on in transdisciplinary projects (co-production of knowledge).

Researchers have also been increasingly acting as **activists**: they derive a moral obligation to take societal action based on scientific knowledge or their work and become involved in social movements.

Making the normative position transparent

Research that deals with societal challenges is oriented towards what is socially desirable or politically required. It is therefore helpful to explicitly state the societal goals with which the research is aligned and to make the underlying value orientations transparent.

As in the case of transdisciplinary research, researchers can actively participate in the development of socio-political goals. As citizens and private individuals, they can also personally adopt a certain political position that influences their work, or advocate for certain goals in social movements, i.e. outside of their research work.

The following questions arise:

- What roles make sense for me to take on in the context of my research? How do I legitimise them? Whose expectations do they meet?
- Which values, opinions, and political goals underpin my research or my recommendations?
- How do these correspond to my personal values?

In the context of the transformation to a sustainable society, the question as to which roles researchers play and how they can make an appropriate contribution especially manifests itself.

The scope and urgency of today's societal challenges are pushing science to play a greater role in achieving the UN's Sustainable Development Goals and the associated societal transformation required. Researchers must be clear about the roles they (want to) play in these societal-development and -change processes.

From understanding to co-design

Research in the context of transformation processes usually takes place in close exchange or in cooperation with other societal actors. In such settings, it is particularly important to clarify what these societal actors' expectations of science are and in what role researchers can support them.

It is also helpful to agree on the different and changing roles within inter- and transdisciplinary research teams. It is important to clarify the division of labour and negotiate who will take on which role at what time. Clarity about the roles makes it possible to work effectively and efficiently.

Transformative research goes one step further: it actively participates in societal transformations by shaping and accompanying change processes together with actors outside of academia, thus helping to initiate change.

The following questions arise:

- Is it legitimate if I help shape societal change processes with my academic work? Under what conditions and in what form?
- In which change processes should I participate? How do I decide which societal goals are worthy of support?
- Should my role in my academic work be different from the role I play shaping societal change processes?

¹ Studer S., Marfurt F., Zimmermann A., Behringer J. (2025) Roles of Scientists in Sustainability Transformations: A Guide for Reflection and Workshop Facilitation. Swiss Academies Communications 20 (2). Bern, Switzerland: Swiss Academy of Sciences.

² Pohl C., Rist S., Zimmermann A., Fry P., Gurung G.S., Schneider F., Speranza C.I., Kiteme B., Boillat S., Serrano E., Hirsch Hadorn G., Wiesmann U. (2010) Researchers' roles in knowledge co-production: experience from sustainability research in Kenya, Switzerland, Bolivia and Nepal. Science and Public Policy, 37(4): 267-281

³ Akademien der Wissenschaften Schweiz (2021): Kodex für Wissenschaftliche Integrität. Bern: Akademien der Wissenschaften Schweiz

⁴ Pielke Jr, R. (2007) The Honest Broker: Making Sense of Science in Policy and Politics. Cambridge: Cambridge University Press