

# Vienna theses on science-based advice to politics and society

In modern societies, scientific expertise is a major prerequisite for identifying crises and being able to deal with them responsibly. The coronavirus pandemic once again made this clear: Without science, we would not have known what causes the “strange lung disease” and we would not have developed vaccines and effective medicines within a short space of time. Without reference to scientific findings, there would also have been no focused public discussion about necessary measures and no possibility for politicians to make evidence-based decisions. The pandemic impressively demonstrated the power of science.

Despite these successes, tensions between science, politics and the public also became clear during the pandemic. A deep science skepticism developed that almost assumed the character of a social movement. Protests directed against certain political measures and initiatives (such as the vaccination drive) repeatedly targeted science. Experts visible in the media became the target of anger and hatred on social media. Science was attacked as part of the “establishment”.

Science and politics are autonomous systems that fulfill different functions for society: while science concentrates on producing new knowledge that satisfies its strict methodological standards, politics organizes collectively binding decisions. Cooperation between science and politics that is efficient and concordant with democracy requires that competencies and responsibilities are clearly distributed and that no conflicts over roles arise. Crossing boundaries is rightly criticized as a politicization of expertise or expertocracy.

At the *Joint Academy Day* of the Austrian Academy of Sciences, which the Academy is organizing together with the German National Academy of Sciences Leopoldina in Vienna on February 1, 2023, the focus is on the challenges of science communication in times of multiple crises. On this occasion, nine points on the tasks and requirements of science-based advice are presented for discussion below, reflecting important experiences of the academies of sciences during the coronavirus pandemic.

## 1. Science should act as an “honest broker” when advising politics and society

Science should see itself in the role of an “honest broker” (R. Pielke), providing politicians with decision alternatives and options on the basis of scientific evidence. This thinking in terms of options is based on the insight that a discipline-diverse science rarely speaks with one voice when it comes to current problems. Scenarios and predictions are often burdened with considerable uncertainties that should be clearly stated. And even if there is a broad consensus among the relevant experts, it is important to remember that political issues are ultimately not decided by facts and figures (however convincing), but by weighing up competing values and interests, i.e., in the area of politics.

## 2. Science should inform, not legitimize

Science should not aim to contest the authority of politicians in decision-making and implementation. Science-based advice should not be used to relieve politicians of the burden of making and justifying decisions. This means that comprehensive status reports and nuanced comments should encourage politicians to explain the reasons for their decisions. Politicians should disclose which recommendations and expertise were important for their deliberation processes. Reference to “the” science (or the consensus of well-known experts) for the purpose of political legitimacy should be reserved for acute crises when decisions have to be made under great time pressure and considerable uncertainty. In short: science should inform politics as comprehensively as necessary, but it should legitimize it as little as possible.

## 3. Problem and problem framing must be questioned

The framework within which a problem is addressed (“framing”) has a decisive influence on which topics and aspects are considered (un)important and which disciplines are therefore considered (ir)relevant. It makes a difference whether, for example, the pandemic is seen “only” as a health problem or as a networked crisis in which social, economic and psychological aspects also have to be taken into account. The task of science-based advice is therefore not only to answer factual questions, but also to critically reflect on the problem framing and to propose alternative framing.

#### **4. Interdisciplinary cooperation requires the courage to face conflicts**

The global crises of today require interdisciplinary cooperation on the part of science because their problem structure is not based on the subject logic of scientific institutions. In the context of interdisciplinary advisory bodies, different cultures in different disciplines, different styles of thinking and different perspectives meet. Interdisciplinarity therefore requires active debate. It should not be limited to juxtaposing statements or recommendations from individual experts in isolation or keeping them so general that discipline-specific differences are ignored. Broad agreement in advisory bodies should not be due to dominance of the culture of one discipline but should be the result of a serious discourse across subject boundaries.

#### **5. Consensus among experts is not an end in itself**

Science seeks to (and should) create clarity and not confusion. A sweeping consensus is therefore considered a desirable goal of institutionalized science-based advice. However, unanimity should not become an end in itself. Estimates and scenarios are particularly important in crises, when reliable knowledge is lacking and data quality is poor. It may be wiser to present politicians with an ordered and well-founded dissent rather than a consensus that has a strategic character due to the lack of canonical knowledge. Considerable dissent among well-known experts underscores the fact that politicians must ultimately decide.

#### **6. Science should make the process of acquiring expertise transparent**

Evidence and expertise are two different forms of knowledge. To be politically compatible, research results often have to be applied to a problem context in which they were not developed. The public must therefore be able to understand how evidence is translated into recommendations in advisory bodies. Making the process of knowledge acquisition – with all its conditions, necessities and limits – transparent strengthens trust in an independent science.

#### **7. Science communication should also extend to advisory processes**

Public participation in science is not an end in itself, but rather to be called for and promoted where it promises added value for science and society. The invitation to dialogue about advisory processes can contribute to raising science’s awareness for topics that affect people’s everyday lives. At the same time, this makes the process logic and results of science-based advice easier to understand for the general public. By providing insight into their own consulting practice, academies of sciences promote an understanding of the tasks, requirements and limits of their advisory activities.

#### **8. Academies of sciences know who really has expertise**

As learned societies, academies of sciences bring together the “cleverest minds” from science and research and have access to the most up-to-date and well-established knowledge. They are therefore a credible source of information, especially when it comes to setting up and making appointments to advisory committees. Due to their independence and their professional overview, academies can quickly and reliably explain who the key people with the relevant expertise in a specific subject area are. This increases the chance that academic excellence and not (partisan) political considerations or media influence play the decisive role in making appointments to advisory committees.

## **9. Academies should be forums for critical scientific reflection**

Academies of sciences are competent partners in the discussion of fundamental issues relating to the relationship between science, politics and the public/media. In the broad range of subjects in science, the interdisciplinary field of science studies is a good place for promoting self-reflection in science – especially in its role as a central advisory body in present-day crises. For this purpose, institutional forums for self-reflection should be set up permanently in the academies. Only research-intensive, advice-relevant and self-critical science gives modern societies the well-founded confidence to master the diverse, interconnected and protracted crises of our time.