How does spatial and temporal aspects influence science advice?

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- Spatial arrangements and how is the questions and answers process planned in time have implication for science-policy decision making.
- When managers are aware what implication each solution better decisions can be made.
- Since no ideal solution exists experts should always report clearly on both knowledge and values.

This article is written for practitioners and focuses on the spatial and temporal dimensions of science advice processes. As "there is no universal solution to science advice" this article aims to provide some tools that should help managers plan their activities. Thinking through the consequences of spatial and temporal arrangements between the requesters and providers of advice should help better planning and decision making.

The temporal aspects. Whether the questions and answers are divided into entirely distinct tasks or joined into interactive processes can affect the decision processes. In first case the question asked by the requesters is followed by the answer by the expects. In second case the development of questions and answers is an interactive process with on-going communications between both teams.

The spatial aspects. Both teams can be either physically or administratively embedded (e.g. in the same room or in constant contact) or sequestered (separated in space or without contact during some or all parts of the decision making process). Staying close means that the risk of influencing the advice and evidence is high – one may convince another or the provider may overhear information that will influence his/her judgement. This causes a challenge for independence and impartiality.

Obviously in real life a combination of both temporal and spatial aspects is common. Some dilemmas - for both spatial and temporal aspects - make the choice even more complicated. **The Dilemma of Strong Boundaries**. On the one hand, strong boundaries make the communication difficult and the message sent by experts may be twisted. On the other hand such approach helps keeping the right control and ensures better impartiality. **The Dilemma of Weak Boundaries**. On the one hand, ensuring the impartiality and accountability is more difficult. On the other hand, science policy may benefit from better communication that ensures clarity and better discussion, better flow between both teams and that the asking party understood the answer correctly. When managers are aware what implication each solution has it becomes easier to make the correct choice.

The public – another team here - may judge models of scientific advice to governments in two possible ways, however, it is unclear how the public will respond. **Hypothesis on Time, Space and the Benefits of Strong Boundaries**: Strong boundaries are probably best realized by focusing on the spatial rather than the temporal dimension as a physical or organizational separation helps demonstrate clear managerial intent to keep politics out of the evidence.

Hypothesis on Time, Space and the Benefits of Weak Boundaries: Weak boundaries are probably best realized by focusing on the temporal rather than the spatial dimension as an interactive process implies a strong commitment to inclusiveness and democracy.

Since no ideal solution exists experts should always report clearly "not only what is known, is not known, could be known, and should be known, but also what has been valued, has not been valued, could be valued, and perhaps should be valued".

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Marc Saner, 2016, Temporal and spatial dimensions in the management of scientific advice to governments, PALGRAVE COMMUNICATIONS, 2:16059, DOI: 10.1057/palcomms.2016.59