Reflexivity in Research:
situating knowledge productions, building stronger objectivity

This section invites researchers to reflect on how their cultural background and personal identity can influence their research activity. It introduces feminist epistemologies that propose a framework of 'situated knowledge' and 'strong objectivity', through which the reflexivity of researchers on their specific position can enable an increased objectivity.

Reflexivity in Research

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to support your work on this topic >>

How researchers' identities can affect research

As defined by Bero & Grundy (2016), "Reflexivity is a tool ... borrowed from the social sciences ... that makes transparent accounts for researchers' professional and personal identities." To guide the reflexivity process, they proposed the following series of 'Key questionsfor reflexivity':

- Who is the researcher?
  - What are their professional identities? What is their discipline, educational background, or training? Where are they employed? What is their career stage, and are they in position of power or influence? What is their area of research or theoretical perspective? What are their advocacy positions?
  - What are their relevant personal identities, including age, race/ethnicity, gender, religious or political affiliations, and life experience?
- How could who they are affect the design, conduct or reporting of research?
- Who or what is the focus of research? For whom does this have consequences? What are these consequences?
- Who or what is placed at risk / advantaged by this research? How?
- What are the ethical, social, political or economical implications of this research?

Bero, L. & Grundy, Q., 2016, *Why Having a (Nonfinancial) Interest Is Not a Conflict of Interest*, PloS Biol, 14(12).

The concept of "strong objectivity"

Sandra Harding (1993) has proposed the concept of 'strong objectivity' to describe how acknowledging one's own perspective does not undermine - but rather enhances - the objectivity of a scientific enterprise. The central concept of feminist epistemology is that of a situated knower, and hence of situated knowledge: knowledge that reflects the particular perspectives of the subject.

'Strong objectivity' requires what we can think of as 'strong reflexivity'. This is because culture wide... beliefs function as evidence at every stage in scientific inquiry: in the selection of problems, the formation of hypotheses, the design of research (including the organization of research communities), the collection of data, the interpretation and sorting of data, decisions about when to stop research, the way results of research are reported, and so on. The subject of knowledge – the individual and the historically located social community whose unexamined beliefs its members are likely to hold 'unknowingly' so to speak – must be considered as part of the object of knowledge from the perspective of scientific method.

Harding, S. (1993). Rethinking Standpoint Epistemology: What Is "Strong Objectivity?" In L. Alcoff & E. Potter (eds.), *Feminist Epistemologies* (pp.49 – 82) New York: Routledge

How culture shapes science: metaphors in research

E. Martin examined how culture may shape scientific knowledge, based on the analysis of metaphors used to describe the process of fertilization.

As an anthropologist, I am intrigued by the possibility that culture shapes how biological scientists describe what they discover about the natural world... Part of my goal in writing this article is to shine a bright light on the gender stereotypes hidden within the scientific language of biology...

Gerald Schatten and Helen Schatten set out to show that... the "egg is not merely a large, yolk-filled sphere into which the sperm burrows to endow new life"... This sounds like a departure from the stereotypical textbook view, but further reading reveals Schatten and Schatten's conformity to the aggressive-sperm metaphor. They describe how "the sperm and egg first touch when, from the tip of the sperm's triangular head, a long, thin filament shoots out and harpoons the egg." Then we learn that "remarkably, the harpoon is not so much fired as assembled at great speed, molecule by molecule, from a pool of protein stored in a specialized region called the acrosome. The filament may grow as much as twenty times longer than the sperm head itself before its tip reaches the egg and sticks. "Why not call this "making a bridge" or "throwing out a line" rather than firing a harpoon? Harpoons pierce prey and injure or kill them, while this filament only sticks. And why not focus, as the Hopkins lab did, on the stickiness of the egg, rather than the stickiness of the sperm?

Martin, E. (1991). The egg and the sperm: how science has constructed a romance based on stereotypical male-female roles. *Signs: Journal of Women in Culture and Society, 16(31), 485-501.*

PERFORM researcher reflection

> **“Being introduced to standpoint theory made me aware of my standpoint and the fact I can actively change it. Science can be done differently, by thinking outside the box, and interacting with people other than scientists. Doing so could increase the benefit of science to society, and in my opinion, that is worth pursuing!”**

Activities

Who are you as a researcher?

1. Discuss the ‘key questions for reflexivity’ in the ‘How researchers’ identities can affect research’ section above.
2. Ask everyone to write a reflection on their identity and how it influences their research (topic, practice, expectations, choices etc.). You could refer to the categories described in Haraway (1998), (section 1, Situated Knowers).
3. Invite everyone to share their written reflections.
4. Ask everyone to reflect on the following questions and then discuss:
   - Who is affected by, related to and concerned with your research topic?
   - Do you expect them to have different perspectives and opinions on your research topic?
   - Would you like to discuss it with them?
   - How could you initiate discussion with them?

Language, metaphors, hidden meanings and values

The aim of this exercise is to analyse the metaphors used in your research activity, and to reflect on the particular cultural perspectives and values that they bring to your research activity.

1. Before the discussion, ask everyone to bring an abstract from one of their recent papers, posters or grants.
2. Discuss the excerpt by E. Martin, above.
3. Ask everyone to underline, in their abstracts, all the words that could be considered to be metaphors, or have strong alternative meanings. For example ‘affinity’ can be used in a chemical sense, but could also relate to human relationships and connections, ‘mother cell’ can refer to a specific type of yeast cell, yet carries strong human associations, ‘invasion’ refers to cell motion, but can also refer to conflict.
4. Ask everyone to share what they underlined.
5. Discuss the following questions:
   - Do some words carry unexpected meanings, values, or representations?
   - Can you notice any trends in the metaphors used by different members of your group?
   - Could you have used a different word or metaphor?
   - Are you aware of how these metaphors may shape your research?
   - Are you aware of how your (cultural, personal) standpoint affects the metaphors you use in your research?

References and additional resources

- Anderson, E. (2016). Feminist Epistemology and Philosophy of Science. *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.). https://goo.gl/vmFzu5
- Bero, L. & Grundy, Q. (2016). Why Having a (Nonfinancial) Interest Is Not a Conflict of Interest. *PloS Biol, 14(12).* https://goo.gl/46i1Zn
- Haraway, D. (1998). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies, 14(3), 575-599.* DOI: 10.2307/3178066.
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