

Identifying and Breaking Stereotypes

Objectives

Participants will learn to identify gender stereotypes of physicists in public images of scientists and develop ideas how to break these stereotypes. Thereby they practice an analyzing view on public images of science.

Introductory Notes

Mass media have a crucial role in reinforcing stereotypes on how a typical scientist is or should be. These stereotypes are highly gendered, especially concerning (a) the competencies that are said to be essential for a successful career in science and (b) the occupational preferences men and women allegedly have.

Analyzing media coverage of science reveals asymmetrical ways in which male and female scientists are portrayed. Firstly, the underrepresentation of women scientists is reflected in the fact that female scientists are portrayed in the media less frequently than men. Furthermore, when portraying a female scientists, the woman's appearance and her exceptional status is commonly emphasized, not her research. Portraying female scientists this way is at risk of distracting from their scientific merits. In that way, women are used as "tokens" in media articles when being presented with strong emphasis placed on their role as wives and mothers. Thus the media foster people's sense of taken-for-granted normality concerning inequalities in science.

In the lesson an intervention by female science journalists, the Finkbeiner test, a so-to-speak No-Go-List for media portraits of female scientists to break gender stereotypes in journalism, is introduced and applied by the participants as an exercise for identifying stereotypes. This opens the possibility of thinking how to challenge stereotypes for the participants.

In-Class-Time

180-240 minutes, including 30 minutes break, depending on group size.

The break can be scheduled after the group work or can be split in 15 minutes before the group work allowing the session leader to copy articles and 15 minutes after the group work.

<h2>Schedule and Teaching Instructions</h2>

Homework for the participants in preparation for the session:

1. Search for and bring two mass media articles that portray physicists, one about a female physicist and one about a male physicist. These can be contemporary physicists as well as historical physicists. The media can be popular science magazines (e.g. *Physics Today*), news magazines, newspapers (e.g. *New York Times*) from any country.
2. Read the article of Chimba/Kitzinger (2010)

Introduction of the session:

15-20 minutes

As the session leader explain the background of the Finkbeiner test to the participants: The Finkbeiner test is a checklist proposed by journalist Christie Aschwanden to enable journalists avoiding gender bias in media articles about women in science. To pass the test, an article about a female scientist must not mention:

- That she is a woman
- Her husband's job
- Her child care arrangements
- How she nurtures her underlings
- How she was taken aback by the competitiveness in her field
- How she's such a role model for other women
- How she's the "first woman to..."

Christie Aschwanden formulated the test in an article in an online science magazine for women, *Double X Science*, on 5 March 2013. She did so in response to what she considered was a type of media coverage of women scientists that:

"treats its subject's sex as her most defining detail. She's not just a great scientist, she's a woman! And if she's also a wife and a mother, those roles get emphasized too."
https://en.wikipedia.org/wiki/Finkbeiner_test, retrieved 01.09.2017)

Aschwanden named the test after the fellow journalist Ann Finkbeiner, who had written a story for her science blog *The Last Word on Nothing* about her decision not to write about the subject of her latest article, an astronomer, "as a woman".

In the aftermaths of publishing the test, some science articles, e.g. in the *New York Times* that were criticised by the audience have been revised.

Check if the participants brought articles as required. Ask them for their experiences when they have been searching for the articles.

If some participants report on having difficulties finding suitable articles, discuss with them why and ask for their hypotheses. Since there are fewer female than male physicists in research the chance to find a media portrait of a male physicist is much bigger.

Alternatively in case of too few sample articles: Let the groups analyze the article on Lisa Randall in The Guardian in 2005 (see Additional Resources)

Build groups. Groups should not be bigger than 4 people since they will have to analyze 8 articles at maximum.

Leader's preparation of group work / Participants' break:

15 minutes if needed

Copy the articles for all group members if needed.

Group Work:

60 minutes

Exercise on Work Sheet in Groups

Group Presentation, Part 1:

depending on number of groups, e.g. 60 minutes for 4 groups

Each group has 15 minutes to present their results for task number 1 and 2:

1. Let each group present the discussed articles, their test results, some citations from the articles as highlights,
2. Let each group present aspects of the discussion on gender differences between articles on men and woman physicists.

Break:

15 -30 minutes, depending on the chosen break schedule

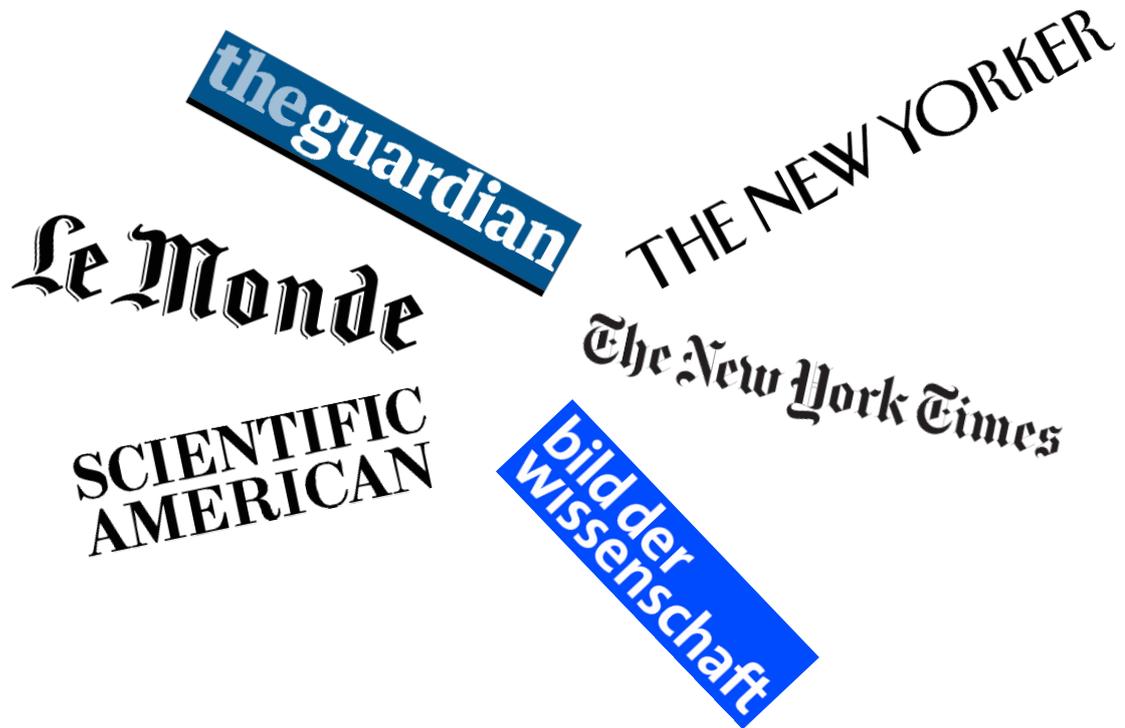
Group Presentation, Part 2:

30 - 60 minutes

Plenary discussion of tasks number 3 and 4.

Participants might have different opinions on the Finkbeiner test. If so, let them discuss the pro's and con's of the No-Go-List.

Work Sheet: Identifying and Breaking Stereotypes



In the Finkbeiner Test there are listed several No-Gos when portraying females scientists. It is a checklist proposed by journalist Christie Aschwanden in order to help journalists to avoid gender bias in media articles about women in science. To pass the test, an article about a female scientist must not mention:

- That she is a woman
 - Her husband's job
 - Her child care arrangements
 - How she nurtures her underlings
 - How she was taken aback by the competitiveness in her field
 - How she's such a role model for other women
 - How she's the "first woman to..."
1. Check if both articles on physicists that each of you brought for today would pass the Finkbeiner test. Which articles would pass the test? Which not? Prepare some highlights of the articles as result for the group presentation.

2. Are there differences between the articles portraying the male and the female physicist concerning their test result? Discuss the differences and prepare the results of the discussion for presentation.
3. If there are several articles that fail the test, how could they be improved? Any ideas?
4. Discuss how stereotyped representations of scientists in the media can be overcome?

Obligatory Reading

Chimba, Mwenya; Kitzinger, Jenny (2010): Bimbo or boffin? Women in science: an analysis of media representations and how female scientists negotiate cultural contradictions. In: *Public Understanding of Science* 19 (5): 609-624.

Further Reading

Code, Lorraine (2006): Images of Expertise. Women, Science, and the Politics of Representation. In: Ann B. Shteir, Bernard Lightman (ed.): *Figuring it out. Science, Gender, and Visual Culture*. Dartmouth College Presse, Hanover / London: 289-314.

Elena, Alberto (1997): Skirts in the Lab: “Madame Curie” and the Image of the Woman Scientist in the Feature Film. In: *Public Understanding of Science* 6: 269-278.

Erlemann, Martina (2013): Hunting for female galaxies and giving birth to satellites: the gendering of epistemic cultures in public discourse on physics and astronomy. In: *Transforming Substance: Gender in Material Sciences – An Anthology*. Helene Götschel (ed.). Centre for Gender Research, Uppsala University: 29-56.

Flicker, Eva (2003): Between brains and breasts — women scientists in fiction film: on the marginalization and sexualization of scientific competence. In: *Public Understanding of Science* 12: 307-318.

Kitzinger, Jenny; Chimba, Mwenya; Williams, Andrew; Haran, Joan et al. (2008): *Gender, Stereotypes and Expertise in the Press: How Newspapers represent female and male Scientists*. Cardiff University. Report of the UK Resource Centre for Women in Science, Engineering and Technology (UKRC).

Kitzinger, Jenny; Haran, Joan; Chimba, Mwenya; Boyce, Tammy (2008): *Role models in the media: an exploration of the views and experiences of women in science, engineering and technology*. Cardiff University. Report of the UK Resource Centre for Women in Science, Engineering and Technology (UKRC).

LaFollette, Marcel C (1988): Eyes on the Stars: Images of Women Scientists in Popular Magazines. In: *Science, Technology & Human Values*: 262-279.

LaFollette, M. C. (1990). *Making Science our own – Public Images of Science 1910-1950*. Chicago: University of Chicago Press.

Long, Marilee et al. (2010): Portrayals of Male and Female Scientists in Television Programs Popular Among Middle School–Age Children. In: *Science Communication* 32(3): 356-382.

Steinke, Jocelyn (1999): Women Scientist Role Models on Screen. A Case Study of “Contact” In: *Science Communication* 21: 111-136.

Steinke, Jocelyn (2005): Cultural Representations of Gender and Science. Portrayals of Female Scientists and Engineers in Popular Films. In: *Science Communication* 27: 27-63.

Additional Resources and Materials

- Website of the Finkbeiner Test: https://en.wikipedia.org/wiki/Finkbeiner_test
- Website of the science journalist Ann Finkbeiner: <http://annfinkbeiner.com/>
- Finkbeiner’s Blog *The Last Word on Nothing*: <http://www.lastwordonnothing.com/>
- Website of science journalist Christie Aschwanden: <https://christieaschwanden.com/>
- Article on Lisa Randall in *The Guardian* in 2005:
http://randall.physics.harvard.edu/RandallCV/Guardian_06_05.pdf
- *Ask her more*, Project against stereotypical representations of women in film industry and sports <http://therepresentationproject.org/the-movement/askhermore/>