

## **Science Communication and Science in Society: Key Concepts**

Instructor: **prof. Massimiano Bucchi** (University of Trento)

### **OBJECTIVES**

The seminar aims at introducing key concepts in the study of science communication and science in society.

The first part will be devoted to a historical and sociological overview of the relationships between science and society and their transformations, as well as a series of keywords relevant for the study and discussion of science communication. The second part will be focused on the discussion of the main theories and models of science/society interactions; key processes and strategies in science communication; studies of media representations of science and technology and studies of audiences of science and technology communication. Each student will choose a reading from the list below to contribute the discussion.

### **CLASS SCHEDULE**

10 November  
14:00-17:00  
Online

### **REQUIREMENTS**

No specific previous information on the course's content is required as a prerequisite. Class attendance and reading assignments will be critical components of the course experience.

# COURSE OUTLINE AND READING ASSIGNMENTS

## INTRODUCTION

### GENERAL READINGS

- Trench B. & Bucchi M. (eds), *Handbook of Public Communication of Science and Technology*, 2nd ed. 2014, Routledge.
- Bucchi M., *Science in society. An introduction to social studies of science*, 2004, Routledge.
- Bucchi M. & Trench B., *Science Communication and Science in Society: A Conceptual Review in Ten Keywords*, in *Tecnoscienza*, 2016, 7 (2) pp. 151-168.
- *Annuario Scienza Tecnologia e Società, Observa*, 2005-2020.

### THEORIES AND MODELS

1. Fleck L. (1983), *Genesis and Development of a Scientific Fact*, Bologna, Il Mulino, pp. 98-125.
2. Bucchi M. (2008), *Of deficits, deviations and dialogues. Theories of public communication of science*, in M. Bucchi e B. Trench (eds), *Handbook of Public Communication of Science and Technology*, Routledge.
3. Weingart P. (2012), *The Lure of the Mass Media and its Repercussions on Science*, in P. Weingart, M. Franzen, S. Rödder (eds) *The Sciences' Media Connection – Public Communication and its Repercussions: Sociology of the Sciences Yearbook 28*, Dordrecht: Springer, pp. 17-32.
4. Irwin A. (2014), *Risk, science and public communication: third-order thinking about scientific culture*, in M. Bucchi and B. Trench (eds), *Handbook of public communication of science and technology*, revised edition, London: Routledge, pp. 160-172.
5. Godin B. and Gingras Y. (2000) *What is scientific and technological culture and how is it measured? A multidimensional model*, *Public Understanding of Science*, 9, 1, 43
6. Merton R. K. (1968), *The Matthew Effect in Science*, in "Science", vol. 159, n. 3810, pp. 56-63.
7. Bucchi M. (2015), *Norms, competition and visibility in contemporary science: The legacy of Robert K Merton*, in *Journal of Classical Sociology*, 15 (3), pp. 233- 252.
8. Shapin, S. (2016), *Invisible Science*, *The Hedgehog Review*, xviii, 3 (Fall 2016), 34-46.

### PROCESSES AND STRATEGIES

9. Peters H. P., Brossard D., de Cheveigné S., Dunwoody S., Kallfass M., Miller S. & Tsuchida S. (2008), *Science-Media Interface: It's Time to Reconsider*, in "Science Communication", vol. 30, n. 2, pp. 266-276.
10. Fahy D. & Nisbet M. (2011), *The science journalist online: Shifting roles and emerging practices*, in "Journalism", vol. 12, n. 7, pp. 778–793.
11. Väliverronen E. (2006), *Expert, healer, reassurer, hero and prophet: framing genetics and medical scientists in television news*, in *New Genetics and Society*, vol. 25, n. 3; pp. 233-248.

12. Jacobi D. and Schiele B. (1989), Scientific imagery and popularized imagery, *Social Studies of Sciences*, 19, 4, 731-753.

## **MEDIA REPRESENTATIONS OF SCIENCE**

13. Mazur A. (1981), Media Coverage and Public Opinion on Scientific Controversies, in "Journal of Communication", vol. 31, n. 2, pp. 106-115.
14. Collins H. (1987), Certainty and the public understanding of science: science on television, in "Social Studies of Science", vol. 17, n. 4, pp. 689-713.
15. Jacobi D. & Schiele B. (1989), Scientific imagery and popularized imagery, in "Social Studies of Sciences", vol. 19, n. 4, pp. 731-753.
16. Felt U. (1993), Fabricating scientific success stories, in "Public Understanding of Science", vol. 2, n. 4, pp. 375-390.
17. Schäfer M. (2009), From Public Understanding to Public Engagement. An Empirical Assessment of Changes in Science Coverage, in "Science Communication", vol. 30, n. 4; pp. 475-505.
18. Burns M. & Medvecky F. (2018), The disengaged in science communication: How not to count audiences and publics, in "Public Understanding of Science", vol. 27, n. 2; pp. 118-130.
19. Scharrer L., Rupieper Y., Stadler M. & Bromme R. (2017), When science becomes too easy: Science popularization inclines laypeople to underrate their dependence on experts, in "Public Understanding of Science", vol. 26, n. 8; pp. 1003-1018.
20. Felt U. & Fochler M. (2008), The bottom-up meanings of the concept of public participation in science and technology, in "Science and Public Policy"; vol. 35, n. 7; pp. 489-499.
21. Besley J. C., Oh S. H. & Nisbet N. (2013), Predicting scientists' participation in public life, in "Public Understanding of Science", vol. 22, n. 8; pp. 971-987.

## **PUBLICS FOR SCIENCE**

22. Felt U. and Fochler M. (2008), The bottom-up meanings of the concept of public participation in science and technology, *Science and Public Policy*, 35, 7, 489-499.
23. Callon M. (1999), The Role of Lay People in the Production and Dissemination of Scientific Knowledge, in "Science, Technology and Society", vol. 4, n. 1, pp. 81-94.
24. Shapin S. (1990), Science and the Public, in R. C. Olby et al. (eds) *Companion to the History of Modern Science*, pp. 990-1007.
25. Jasanoff S. (2003), Technologies of Humility: Citizen participation in governing science, in "Minerva", vol. 41, n. 3, pp. 222-244.
26. Scheufele D. A. & Lewenstein B. V. (2005), The public and nanotechnology: how citizens make sense of emerging technologies, in "Journal of Nanoparticle Research", vol. 7, n. 6, pp. 659-667.
27. Bauer M., Allum N. & Miller S. (2007), What can we learn from 25-years of PUS research? liberating and expanding the agenda, in "Public Understanding of Science", vol. 16, n. 1, pp. 79-95.
28. Einsiedel E. (2014), Publics and their participation in science and technology: changing roles, blurring boundaries, in M. Bucchi and B. Trench (eds) *Routledge Handbook of Public Communication of Science and Technology*, London: Routledge, pp. 125-139.
29. Dawson E. (2018), Reimagining publics and (non) participation: Exploring exclusion from science communication through the experiences of low-income, minority ethnic groups, in "Public Understanding of Science", vol. 27, n. 7, pp. 772-286.
30. Rommerweit K. and Wynne B. (2017), Technoscience, imagined publics and public imaginations, in "Public Understanding of Science", vol. 26, n. 2, pp. 133-147.