

Will Science Remain Human?

Frontiers of the Incorporation of Technological Innovations in the Bio-Medical Sciences

Experts Meeting

Rome, Campus Bio-Medico University of Rome, March 5-6, 2018

Can machines substitute scientists in the crucial aspects of scientific practice? Scientific practice takes place in a context increasingly populated and executed by machines, and objects of study (the 'observables') are themselves increasingly constructed and identified by means of technology. Technology is pervading known disciplines, and technology-based fields that weren't recognized as sciences (e.g., robotics) now are. This current explosion of technological tools for scientific research (and of technological drivers thereof) seems to call for a renewed understanding of the human character of science. While technically advanced analyses are trying to capture and tackle the issue of unreliable or unelaborable data, we want to pose a deeper problem which has to do with science as a human activity: scientific knowledge runs the risk of being represented in simplified way, hiding human responsibility, freedom, creativity and choice of observables and *explananda* that ever ceased to characterize it. Critical thinking about the reliability and meaningfulness of data and information, if tackled from this point of view, acquire renewed urgency, thickness and complexity. The **Social Trends Institute (STI)** is an independent, non-profit research center that offers institutional and financial support to academics in all fields who seek "to make sense of emerging social trends and their effects on human communities". STI Experts Meetings are meetings with more or less a dozen top scholars from a variety of disciplines who discuss specific issues of current social significance. **Campus Bio-Medico University of Rome** partners with STI to hold the "Will Science Remain Human? Frontiers of the Incorporation of Technological Innovations in the Bio-Medical Sciences" Experts Meeting in Rome.

Chair and moderator: Marta Bertolaso (Campus Bio-Medico University of Rome)

Program

Sunday, March 4

20:00 Opening Dinner

Monday, March 5, 9:00-17:00

8:30 Welcome coffee and opening

9:00-11:15 Discussion of papers:

- **Paul Humphreys** (University of Virginia) – Why automated science should be cautiously welcomed
- **Eric Winsberg** (University of South Florida) – Can models have skill?
- **Emanuele Ratti** (University of Notre Dame) – Predictions, phronesis and machine learning in biology

Discussant: Marta Bertolaso (Campus Bio-Medico University of Rome) and Kathleen A. Creel (University of Pittsburgh)

11:15-11:45 Coffee break and discussion

- 11:45-13:15 Discussion of papers:
- **Giuseppe Longo** (CNRS et Ecole Normale Supérieure, Paris & Tufts University, Boston) – Some bias on bio-medical knowledge induced by the digital networks and the political bias on their use
- **Francesco Bianchini** (University of Bologna) – Virtually extending the bodies with (health) technologies
Discussant: Fabio Sterpetti (Campus Bio-Medico University of Rome)
- 13:15-14:30 Light lunch
- 14:30-17:00 Discussion of papers:
- **Sandra D. Mitchell** (University of Pittsburgh) -- Unsimple truths: Multiple perspectives and integrative strategies
- **Mieke Boon** (University of Twente) – How scientists are brought back into science – The error of empiricism
- **Fridolin Gross** (Universität Kassel) – The impact of formal reasoning in computational biology
- **Barbara Osimani** (Ludwig-Maximilians-Universität München and University of Ancona) – Social games and epistemic losses: reliability and higher order evidence in medicine and pharmacology
Discussant: Melissa Moschella (Columbia University)
- 17:00 Transportation to hotel
- 19:30 Gala dinner

Tuesday, March 6, 9:00-16:00

- 9:00-11:00 Discussion of papers:
- **Christopher Tollefsen** (University of South Carolina) – What is ‘good science’?
- **Alfredo Marcos** (University of Valladolid) – Dehumanizing technoscience
- **Benjamin Hurlbut** (Arizona State University) – Behold the Man: figuring the human in the development of biotechnology
Discussant: Mariachiara Tallacchini (Catholic University of the Sacred Heart)
- 11:00-11:30 Coffee break
- 11:30-13:00 General discussion
- 13:00-14:30 Lunch
- 14:30-16:00 Closing remarks and publication plans

VENUE:

Campus Bio-Medico University of Rome
Rome

SCIENTIFIC COORDINATOR:

Marta Bertolaso, Campus Bio-Medico University of Rome

STAFF:

Cecilia Cecconi
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PRESS OFFICE AND INFORMATION:

The Experts Meeting is a closed doors meeting; results will be made available and published some months after the meeting. For inquiries: team@biotechnopractice.org