



NANOMEDICINE: PHILOSOPHICAL CHALLENGES

Joint humanities and sciences workshop in conclusion of the ANR Nano2E Research Programme

Paris, Université Paris 1, centre Panthéon, October 17-18, 2013

The emergence of nanotechnologies in the public sphere over the past fifteen years has accompanied the political will to promote “responsible science”. From this viewpoint, nanomedicine stands out as exemplary. The development of early and more accurate diagnostics along with more adequate, better targeted and less toxic therapies, have turned nanomedicine into a champion for the “social acceptability” of nanotechnologies. When it comes to winning the “war against cancer” who would argue against it? Nanomedicine thus appears as THE key research area where nanotechnologies are deployed as “enabling technologies”, in order to reach an unquestionable goal: the “4P” medicine that has enhanced its own capacities for Prediction and Prevention, while being more Participative and Personalized.

This conference aims precisely to question the new horizon of health policies defined as “4P” medicine as well as the purely functional role assigned to nanotechnologies. Is it simply a matter of improving what has always been done in the field of medicine? Or can nanomedicine be considered as the gateway to a new configuration of values, and of emerging scientific and clinical technologies, which may transform the management of care-taking, the representation of the patient and even the place of medicine within society today ?

This conference concludes the NANO2e research programme in philosophy supported by the French National Research Agency (ANR). The three conference sessions will sum up the approach of an empirically-oriented philosophy, developed in close interactions with scientists, focusing on three categories of nano-objects used for medical purposes, namely nano devices such as biochips designed for molecular diagnostics, biomarkers used in personalized medicine and nanovectors of medicines. Each session will be structured around a pre-circulated paper written by a member of the NANO2e research group. Every speaker will briefly introduce their paper (10 mn) which will then serve as the basis for a discussion. Three conferences will address more general issues about nanomedicine.

October 17

Centre Panthéon, salle 1

09:30. Welcoming of participants

10:00-10:15. Introductory presentation by the leaders of the research programme

10:15-11:15. Conference presentation by Alberto Cambrosio

(sociologist, McGill University, Canada)

11:15-12:15. A sociological approach to nanomedicine

Position paper by Mathieu Noury (sociologist, UQAM, Canada)

Discussant : Philippe Bardy (philosopher, Université Paris 1)

12:00-14:00. Lunch

14:00-15:45. Molecular diagnosis : instruments and paradigms

Position paper by Ronan Le Roux (philosopher and historian of science, Université Paris 1)

Discussants : Federica Russo (philosopher, University of Kent), Christophe Vieu (physicist, INSA, LAAS-CNRS), Mauro Turrini (philosopher, Université Paris 1)

The session deals with the theoretical background of molecular diagnostics. While the claim that it is merely technology-driven can be criticized, the expression “theory-laden” can have several meanings, and how theory-laden molecular diagnostics is deserves further clarification.

15:45-16:15. Break

16:00-18:00. Personalized medicine and biomarkers

Position paper by Xavier Guchet (philosopher, Université Paris 1)

Discussants : Valérie Gateau (philosophe, CERSES, Institut Curie), *discussant to be confirmed*

New technologies for molecular analysis, “potentialized” by nanotechnologies, are expected to lead towards “personalized medicine”, which has within a few years become the new horizon for health policies. The working assumption underlying this session is that, first, there is a misunderstanding about what “personalizing” diagnostics and medical treatment means (or which notion of “person” is referred to); and second, that the concept of molecular biomarker is a useful starting point for analyzing this misunderstanding that may also serve as a basis for a reflection aiming to better articulate the various meanings of the “person” used in personalized medicine. The main goal for this session will be to discuss this assumption.

October 18

Centre Panthéon, salle 1

09:30-11:15. Nanovectors and the performance of metaphors

Position paper by Bernadette Bensaude-Vincent (philosopher, Université Paris 1) and Sacha Loeve (philosopher, Université Paris 1):

Discussants: Lissa Roberts (historian of science, University of Twente, Netherlands), Kostas Kostarellos (chemist, University of Manchester, UK), Roberta Brayner (chemist, Université Paris 7)

Nanotechnologies for targeted drug delivery systems are often depicted and designed with the help of military metaphors (therapeutic missile, magic nano-bullet...) and, less often, by referring to an ecological framework (the body as an ecosystem made of a multiplicity of interacting agents). This session seeks to evaluate these two frameworks by questioning their descriptive, performative as well as normative power.

Position paper(s):

- Extensive article: Bernadette Bensaude-Vincent & Sacha Loeve (forthcoming), "Military and Alternative Metaphors in Nanomedicine: The Case of Targeted Drug Delivery", *Nanoethics*.
- Short version: Sacha Loeve, Bernadette Bensaude-Vincent et Florence Gazeau (2013) "Nanomedicine metaphors: From war to care. Emergence of an ecological approach.", *Nanotoday*, 330, 2013.

11:15-12:00. Nanoimplants: philosophical and social challenges (work in progress)

Presentation by Sébastien Broca (sociologist, Université Paris 1) and Maxime Derian (sociologist, Université Paris 1)

12:00-14:00. Lunch

14:00-16:00 . Nanoethics, care and responsibility

Position paper by Vanessa Nurock (philosopher, Université Paris 8)

Discussants : Catherine Larrère (philosopher, Université Paris 1) and Sandra Laugier (philosopher, Université Paris 1) (*to be confirmed*)

This session will analyze the complex relationship between nanoethics and responsibility building on the ethics and politics of care. On the basis of the examination of the conceptual boundaries that have been reframed by nanoethics, we will see how a relational approach to responsibility contribute to the current nanoethical reflection lying at the intersection of ethics and politics.

16:00-16:30. Break

16:30-18:00. General discussion

Speakers:

Philippe Bardy (philosopher, Université Paris 1/Université Paris 5)
Bernadette Bensaude-Vincent (philosopher, Université Paris 1)
Roberta Brayner (chemist, Université Paris 7)
Sébastien Broca (sociologist, Université Paris 1)
Alberto Cambrosio (sociologist, McGill University, Canada)
Maxime Derian (sociologist, Université Paris 1)
Valérie Gateau (philosopher, CERSES, Institut Curie)
Xavier Guchet (philosopher, Université Paris 1)
Kostas Kostarelos (chemist, University of Manchester, UK)
Catherine Larrère (philosopher, Université Paris 1)
Sandra Laugier (philosopher, Université Paris 1) (*to be confirmed*)
Ronan Le Roux (philosopher and historian of science, Université Paris 1)
Sacha Loeve (philosopher, Université Paris 1)
Mathieu Noury (sociologist, UQAM, Canada)
Vanessa Nurock (philosopher, Université Paris 8)
Lissa Roberts (historian of science, University of Twente, Netherlands)
Federica Russo (philosopher, University of Kent, UK)
Mauro Turrini (philosopher, Université Paris 1)
Christophe Vieu (physicist, INSA, LAAS-CNRS)

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