

László Nemes

Summary of the doctoral dissertation *Outlines of a bioethics based on Science Studies*

1. The aim of the dissertation, the outline of the topic

During the last decades bioethics has produced one of the most striking advances in our intellectual life, gaining considerable positions both in the academic world and in the wider social public. Due to this quick development we now can see a large variety of approaches, methods and dominant topics in this field of research. Furthermore, today it is possible to individuate certain developmental stages in the history of bioethics and so to separate various conceptions on the nature of bioethics. The central goal of my dissertation is to strengthen a particular commitment in bioethics which can make it feasible to discuss ethical questions raised by current science and technology more effectively than earlier stages could. In this sense, my dissertation has a double objective: (1) to offer a historical depiction of bioethics in order to create a basis on which it would be possible to develop the framework of an approach which I prefer, and (2) in the light of this approach I want to discuss particular bioethical topics whose proper analyses would profit from using that approach. In the following I will continue the delineation of the aims of the dissertation by clarifying these two points further.

(1) I offer a picture of the historical development of bioethics by separating three developmental stages and so three different conceptional and methodological approaches. The three stages and approaches are the following: (i) *philosophical bioethics* - which tries to discuss ethical dilemmas by using the philosophical method based primarily on thought-experiments, a methodology typical of Anglo-Saxon analytic philosophy; (ii) *sci-fi bioethics* – as I call the now dominant approach in bioethics which while reflecting on scientific advances, often seems to be too vulnerable to misunderstandings of the real possibilities and dilemmas. The main source of this problem is an inherent inclination to extrapolate current situations into an uncertain future; (iii) *scientific bioethics* - which I regard as the most proper

version to provide us with a bioethical thinking based on a really scientific way to deal with philosophical problems. The most important characteristic of this kind of bioethics is that it uses the methods of *Science Studies*, an approach which integrates the fields of philosophy of science, history of science and sociology of science. Even though I emphasize throughout my work that all of these three approaches have their own positive aspects and so they will be able to contribute to bioethics in the future, my view is basically critical to the two formerly mentioned kinds of bioethics and the primary aim of my dissertation is to eliminate their weaknesses by promoting what I call scientific bioethics.

The chief difference between various forms of bioethics lies in their attitude toward current scientific results and philosophical reflections made on them. The strength of philosophical bioethics is that it can test our ethical intuitions and moral theories effectively by relying on thought-experiments and philosophical arguments. The price of this approach is that this method keeps it at a distance from critical understanding of actual advances of science and technology. In addition to that, this separates the discipline of bioethics from the scientific circles involved in achieving just these developments as well as from the wider public interested significantly in these advances. It seems to be rather unable to take important aspects of challenging questions into serious consideration. The source of weakness of philosophical bioethics is the same as that of its intellectual appeal: it tries to operate at a level independent of the subtleties of scientific results. It can be a fairly good approach to investigate philosophical views, but not to create an applied ethics which wants to take the *bio* prefix in it really seriously.

The sci-fi bioethics, however, offers an approach which focusses on the newest breakthroughs of science investigating their positive prospects as well as dangers. Modern life sciences, biotechnology and medicine have produced a number of advancements which require to take moral position. This need is expressed very clearly in our societies today. The only question is how to evaluate properly these benefits and risks. The sci-fi bioethics, according to my conception, is the bioethical approach which tries to assess the ethical aspects of current scientific results by extrapolating them into the future. Alas, while making this effort it remains still inclined to forget about the fact that the history of science and society are much more complicated things than it would be possible to be understood simply by this extrapolation of the recent situation. This can raise the suspicion that the bioethics so conceived is occupied with our recent situation and it uses current scientific research only to deal with actual problems of this state of affairs. It is problematic because it can mean that the real challenges generated by scientific development lose their importance.

In my view, the appropriate answer to this challenge is to strengthen the relation between bioethics and scientific research: a relation which means a certain kind of continuity between philosophical/ethical thinking and the actual working of science. We can already find excellent instances of this attitude in the field of philosophy of science. The perspective preferred by me is provided by the so-called Science Studies which means the various efforts to integrate philosophy of science, history of science, sociology of science or any other related fields. The underlying conception is that this integrated area should be able to reflect on the real history, functioning and results of science. So, scientific bioethics is bioethics based on Science Studies.

(2) A further aim of the dissertation is to introduce areas of research where Science Studies can make significant contributions in cases of ethically relevant topics too. The dissertation is a summary of my researches conducted during the last years of which common feature is that they are mirroring a particular philosophical conception according to which certain areas of philosophy should be in close relationship with scientific thinking, to be able to take scientific views into account as well as to contribute to them. The researches in question in my case mean philosophically relevant applications of evolutionary theory such as theoretical problems of ontogenetic development and genetics, evolutionary psychology or scientific studies of animal behavior and cognition.

In the chapters discussing possible applications of bioethics based on Science Studies (scientific bioethics) I try to meet the objective to avoid separation of philosophical considerations from actual scientific research. To achieve this goal I use the complex methodological apparatus of Science Studies in analysing questions which play central role in bioethics. Discussions on ethical problems raised by genetics today only occasionally involve careful analyses of the very concept of gene and the role genes play in ontogenetic development. Similarly, the impact of evolutionary perspective on our thinking and moral judgments can provide us with further insights based on the methods of Science Studies. The moral status of non-human animals is also an area of modern bioethics where empirical and philosophical considerations often get out of the horizons of debates. I try to stress the utmost importance of approaches coming from Science Studies by discussing these and similar topics (I will specify the related points in the *The theses-based summary of results* section).

By following this line of thinking, the primary aim of the dissertation is to elaborate a theoretical framework of a bioethics within which the actual results of scientific research would be presented in a way more concentrated than it was typical in the mainstream

bioethical thinking. To achieve this goal I recommend a solution within which the applied methods are following the complex approach of Science Studies, i. e. trying to integrate bioethical discourses into Science Studies. A further aspect is the discussion of the ethically most relevant themes of evolutionary theory by using the methods of Science Studies. The theoretical framework chosen by me is based on the rethinking of the nature of bioethics in the form of analysing its historical stages. In this sense, my dissertation is primarily an effort to elaborate a philosophical theory directed on the very nature of bioethics. Furthermore, it provides analyses in philosophy of science which try to show how these principles are working in practice.

2. The methodology used in the dissertation

The core argumentation of the dissertation is that it approaches from an elaboration of theoretical underpinnings towards a more detailed analysis of concrete topics. The theoretical work means the expression of four, closely related aspects: (1) a historical investigation: elaboration of a conception about the history of bioethics; (2) depiction of various forms of as well as theoretical and methodological commitments in bioethics; (3) an overview of the literature of most important fields; (4) suggestion of some new directions. The chapters which deal with the applicability of bioethical approach based on Science Studies in particular cases the used methodology is basically the same: presenting the current professional literature and the latest tendencies and then to suggest some further progressive recommendations.

Given that my dissertation can be interpreted as a philosophical discourse which tries to create a continuity between scientific insights and philosophical analyses, the applied methodology is also mirroring this dual nature. The methodology in question can be fairly regarded as naturalistic. Naturalism in philosophy has various meanings. The version preferred and applied by me in the dissertation means that there is no any sharp boundary between scientific thinking and philosophical considerations. This doesn't mean that (as other concepts of naturalism might claim) we would have to deal with philosophical problems as if they were scientific ones. I am very far from saying that. The essence of naturalism supported by me is that without taking questions which were traditionally regarded as primarily philosophical problems, such as precise definitions and analyses of the used concepts into serious considerations, we simply cannot do science in an appropriate way. The methodology

used in science and the hypotheses waiting for justification are inevitable parts of effective research in just the same sense as empirical works are. Because what I do in my dissertation is the analysis of some biological phenomena, it would be worth to illustrate this point with a biological example.

During the last years it has become obvious that the concept of gene is not really clear. The consequence of this is surely drastic in relation to our views about genes too. Concepts can direct our efforts to elaborate theoretical frameworks as well as to plan empirical research projects. In order to get able to understand that particular concept of gene which attributes specific (metaphysical) priority to it among other developmental resources on the basis that genes contain certain kind of information (while other developmental resources do not) and does this by referring to some teleosemantic considerations it seems to be necessary to involve the investigation of those historical aspects by which we could try to unfold the changes in the concept and cultural status of information. In this way, using various aspects of Science Studies can provide proper tools to reassess the preformationist conception of genetics which would suggest a misleading picture on the related natural processes both in science and bioethics. In this case the historical-sociological analyses (together with current conceptions of philosophy of science) seem to be inevitable to develop a more precise understanding of the nature of real ethical problems raised by science and technology.

I discuss questions concerning genetics in the 2nd chapter of my dissertation. In the other chapters presenting the functioning of bioethics based on Science Studies I follow the same methods, reviewing the most important conceptual problems of particular dilemmas and the theoretical background supporting scientific investigation. I mean in this sense that my dissertation is a definite effort to elaborate a naturalistic approach as well its practical applications.

3. The theses-based summary of results

The dissertation has a double agenda and as a result of this it consists of two larger parts. In the first larger part my goal is to lay down the most important theoretical bases. I do this in the Part I.

3.a. The central thesis of Part I. ('Theoretical bases')

From recent critiques raised against bioethics I agree mainly with that one according to which bioethics too often turns out to be rather helpless in taking the real results and prospects of science into serious consideration. To cope with this problem I urge to develop a new kind of bioethics which, in its attitude and methodology, relies on the complex area of Science Studies. I call the bioethics so conceived as scientific bioethics (to oppose it two alternative forms or two earlier developmental stages: philosophical bioethics and sci-fi bioethics respectively).

After the elaboration of the theoretical bases I present some results of my own research projects which provide good examples of the particular bioethical thinking preferred by me. This second section covers three larger parts (II-IV.) and five chapters (2-6.) In the following I will summarize the central theses of these parts.

3.b The central thesis of Part II. ('Philosophy of biology')

The preformationist conception of gene which is based on the assumption that genes are exceptional developmental resources because they contain special kind of information due to their evolutionary history, is not really tenable in the light of available empirical and philosophical results. It is a scientifically unacceptable hypothesis that among various developmental resources only genes would act as evolutionary factors. Moreover, on philosophical basis, it is a questionable effort to attribute information to the genes in a (teleosemantic) way in which it would be impossible to do the same in cases of other developmental resources. It is becoming problematic to a growing number of philosophers of biology to explain genes as not primarily causal factors. These views obviously have a deep impact on the ethical discourses concerning genetics and development. Similarly, it is plausible to guess that in developing the objectionable scientific views, bioethics has been playing a significant role.

3.c The central thesis of Part III. ('Prospects of evolutionary psychology')

The conception of evolutionary psychology which interprets (describes and explains) mental phenomena investigated as implementation-independent entities has to face in scientific practice difficulties which actually prevent it to be able to deal with a wide scope of various phenomena. In my view the solution can be to integrate a natural historic/phylogenetic explanatory level in order to establish explanatory constraints for hypotheses generation. Phylogenetic considerations can make evolutionary psychology able to give comparative

explanations of phenomena which seem to be unexplainable to purely functional approaches. By using these comparisons based on phylogenetic relatedness evolutionary psychology could be more sensitive to ethically relevant issues, such as the evolutionary relationship between humans and animals.

The central thesis of the other chapter of Part III is that we can use our cognitive capacities in the most effective way, if we get aware of their evolutionary origin. The topic of risk-communication, which is very important in bioethics today, this would mean to understand our difficulties with statements in the form of probabilistic formulations. *In order to be able to satisfy moral obligations of informing, it is practically more useful to formulate risks (including health-related risks) in a frequency format, instead of using probabilistic formulations.*

3.d The central thesis of Part IV. ('Human-animal relationship: A reassessment')

The two chapters of Part IV. provide an approach to the study of animal behavior and mental processes of which novelty is that it integrate phylogenetic considerations into investigation of a wider scope of related phenomena. My problem with usually applied comparative researches in evolutionary psychology and cognitive ethology is that they study mainly human traits and so in comparative studies they often confine themselves to species similar enough to us. Of course, these traits primarily are the so-called higher cognitive capacities. Although the deepest impact of evolutionary theory would be to eliminate hierarchical thinking from biology, dominant approaches still often suggest this kind of thinking. The same tendency is present in debates about the moral status of non-human animals. It is a typical kind of reasoning that if members of a given species are similar enough to us (for example, they have the capacity for mirror self-recognition), then – and only then – we should take them into moral considerations. In opposition to this approach *I try to strengthen a conception which relies on a wide scope of species and traits, and instead of hierarchical thinking it would represent an evolutionary pluralism about them.* This surely has deep ethical significance.

The common feature of my views on particular problems of Science Studies is the effort to abolish traditional forms of nature-nurture dualism. The thesis of the primacy of genetics means the separation of genes from other developmental resources, which very often leads to sharp distinctions between genetic and cultural evolution. The same danger can be detected in the case of evolutionary psychology too. Phylogenetic approaches can make it possible to inquire comparatively into less specifically human or primate characteristics. This

can enrich our understanding of the evolutionary processes as well as our knowledge about behavior and mental phenomena. In addition to all of this, a non-hierarchical and non-dualistic evolutionary sciences built on a wide base can throw new light on our ethical views on animals, by which we should rethink our place in nature (see. Chapter 6). And this is the largest philosophical challenge for me.

4. Publications on the topics of the dissertation

- NEMES L. (1995): Nem-reduktív szcientizmus. In: Gulyás G. (szerk.): *Megkerült dilemmák*. Debrecen, 138-149 [Non-reductive scientism]
- NEMES L. (2000): A biológia filozófiája: áttekintés. *Vulgo*. 1-2. 276-306. [The philosophy of biology: A comprehensive survey]
- NEMES, L. és MOLNÁR, P. (2002): Evolúciós pszichológia: új szintézis (?). *Magyar Tudomány*, 47: 1, 20-32. [Evolutionary psychology: A new synthesis (?)]
- NEMES L. (2003): A kreatív béka filozófiája. *Vulgo* 2003/1, 159-170. [The philosophy of the creative frog]
- NEMES L. (2003): Az evolúciós pszichológia helyes kezeléséről. *Világosság*. 2/3. 113-126. [The proper treatment of evolutionary psychology]
- NEMES L (2003): A féltékenység evolúciós pszichológiája. *Magyar Pszichológiai Szemle*. 2, 303-310. [The evolutionary psychology of jealousy]
- NEMES L: (2003): Filozófiai diskurzusok a nem-emberi állatokról. In Loboczky J. (szerk.): *Filozófiai diskurzusok*. EKF Líceum Kiadó, Eger, 113-134. [Philosophical discourses on non-human animals]
- NEMES L. (2003): Kommunikációtechnológia és filozófia. *Vulgo* 2003/2, 186-194. [Communicational techniques and philosophy]
- NEMES L. (2003): Állatfelszabadítás, állati jogok és a tudomány *Disputa* 2003. október, 60-65. [Animal liberation, animal rights and science]
- MOLNÁR P., NEMES L. és NAGY E. (2004): Az evolúciós diád mint fejlődési rendszer: kölcsönös niche-konstrukció az újszülött-anya kapcsolatban. In: Pléh Cs., Kampis Gy. és Csányi V. (szerk.): *Észleléstől a nyelvig*. Gondolat, Bp. 261-273. [Evolutionary dyad as a developmental system: The mutual niche-construction in the relationship between newborn babies and their mothers]

- NEMES L. (2004): Ember, állat gép: a kognitív tudomány evolúciója. In: Pléh Cs., Kampis Gy. és Csányi V. (szerk.): *Az észleléstől a nyelvig*. 2004, Gondolat, Bp., 306-323. [Of humans, animals and machines: The evolution of cognitive science]
- NEMES, L. és MOLNÁR, P. (2004): Gén, információ, reprezentáció. In: László J., Kállai J. és Bereczkei T. (szerk.): *A reprezentáció szintjei*. Gondolat, Bp. 275-290. [Gene, information, representation]
- NEMES L. (2004): Kockázatokról és mellékhatásokról: A kockázatkommunikáció elmélete és gyakorlata. *Disputa*. 2004/4: 59-64. [On risks and side-effects: The theory and practice of risk-communication]
- NEMES L. és MOLNÁR P. és KAKUK P. (2004): Több dolgok földön és egen : válasz Boros János és Guttman András cikkére. *Magyar Tudomány*, 49: 9, 1033-1038. [More things on Heaven and Earth: A reply to Boros and Guttman]
- NEMES L. (2005): Binoculars, Cameras, and Nature Films: Paths to a New Scientific Understanding. In: Nyíri K. (ed.): *Seeing, Understanding, Learning in the Mobile Age*. 371-375.
- NEMES L. (2005): A képiség szerepe a 20. és 21. század tudományában: A klasszikus etológia paradigmikus esete. In: Boros J. és András F. (szerk.): *Képszemantika, hagyomány, mobilkommunikáció*. Brambauer, Pécs, 99-108. [The role of visuality in science of the 20th and 21st Century: The paradigmatic case of classical ethology]
- NEMES L. (2006): Filozófiai intuícióink, mint kognitív korlátok: Kísérleti filozófia és kognitív tudomány In: Kubinyi E. és Miklósi Á. (szerk.): *Megismerésünk korlátai*. Gondolat, Bp. 259-282. [Philosophical intuitions as cognitive constraints: Experimental philosophy and cognitive science]
- NEMES L. (2006): A bioetika három fajtája. *Fundamentum*, 2006/1, 5-22. [Three kinds of bioethics]

5. Some representational lectures in international events

MOLNÁR, P., NEMES, L. NAGY, E.: *The 'bonding brain'*. Symposium on Evolution of the Brain and Cognition (Organized by Jean-Pierre Changeux and Eörs Szathmáry), Collegium Budapest, Budapest, Hungary, 2002.

- NEMES L.: *Nature, red in tooth and claw – violence in nature films.* Image/Text/Representation/Multimedia, University of Szeged, Hungary, 2005. 25-27 May
- NEMES L.: *Binoculars, cameras and nature films: Paths to a new scientific understanding,* Seeing, Understanding, Learning in the Mobile Age, Hungarian Academy of Sciences, Budapest, Hungary, 2005. 28-30 April
- NEMES L.: *Binoculars, cameras and nature films: Some epistemological aspects of ethology.* ISHPSSB, University of Guelph, Canada, 2005. 13-17. July
- NEMES L.: *A new war against animals: The Animal Liberation movement under the threat of avian flu epidemic,* Avian Flu: Ethical, Social and Economic Implications, Central European University, Budapest, Hungary, 2006. 7th of April
- NEMES L.: *Toward a multidirectional approach to the relationship between bioethics and basic sciences: A case study in neuroethics.* EACME Conference, Leuven, Belgium, 2006. 28-30 September
- NEMES L.: *Publicity, bioethics & the science of consciousness: The role of case studies of chronic diseases of consciousness in current bioethics, neurosciences and clinical neurology.* Toward the Science of Consciousness Conference, Budapest, Hungary, 2007. 23-27 July

