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Short literature notices

Roberto Andorno

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Kaebnick G. and Murray T.: 2013, *Synthetic Biology and Morality. Artificial Life and the Bounds of Nature*. Cambridge, MA: MIT Press. 192 pages. ISBN: 978-0-262-01939-2. Price: \$21.00.

This collection of essays on moral, ethical and philosophical debates around synthetic biology and their implications to discourse on public policy is a timely work of immense value to students, researchers, scholars as well as policy makers. Synthetic biology, by its very nature, moves from analytical or descriptive biology to one where life, or life-like artifacts, are to be constructed either by top down or bottom up approach bringing together knowledge, expertise and technologies from various disciplines of science.

Though the ultimate aim of synthetic biology is to create artificial life in a laboratory from its tiny molecular building blocks, at this moment, the field is restricted to modifying certain aspects of genome of unicellular organisms such as the successful creation of *Mycoplasma mycoides* by the researchers at J. Craig Venter Institute. This has triggered a debate in various levels in the society with strong polarization at either end, on one side, unsettling skepticism about man's ambition to create life and thus playing God, and fear of bioterrorism where intentionally knowledge of synthetic biology could be misused to disrupt human life and wellbeing. On the other hand there is a strong sense of hope and knowledge driven ambition that by being able to create and correct life, cells and organisms, we could bring a lot of positive effects in health and wellbeing of humans as well as environments.

There are also strong commercial implications in these potential products of synthetic biology whether it is about cleaning up oil spills using synthetic bacteria or producing artificially antimalarial drug such as artemisinin. No event in scientific research is isolated and often has ripple effect influencing political, economic, and environmental impacts and these needs to be thoroughly studied to make better policy decisions. This is where this collection of essays plays a valuable role by facilitating a scientific debate across the disciplines and experts and bringing diverse voices in the public discourse.

In the introduction, the editors highlight that many of the ethical, moral issues related to synthetic biology are not unique and have been raised several times before in the context of other biotechnologies and enabling technologies. But they also emphasize that synthetic biology challenges our understanding of what it means to be a human and our relationship with the natural world in more interesting and perplexing form. The essays are divided in three main themes. The first three essays critically examine the questions around ethics of creating new organisms and raise questions such as: Could the human ability to create life artificially reduce life to simple biochemical reactions? To what extent human beings should interfere with nature? Would organisms created by synthetic biology, synthetic bacteria to be precise at this moment, have same intrinsic value as naturally occurring bacteria? The next section of the book draws the attention of the readers towards potential benefits from these synthetically created life forms and the knowledge gained in the process. These essays closely relate to dominant debate in environmental ethics and also reflect on the fact that efforts to create artificial life may seem to be disrupting our current understanding of the cosmos but it could also lead to deepening of our value and understanding of life,

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organisms and their intrinsic value. The final section of this book puts these threads of debate together into larger picture of public policy decisions also incorporating religious and sociological themes underlying these debates.

Though some sections of these essays could be difficult to grasp for those who do not have a strong background in philosophy, this book definitely succeeds in displaying a large and nuanced spectrum of facets around synthetic biology rather than taking a position for or against it. That, I believe, is its significant contribution, as it leaves readers with more things to reflect on and even makes it hard to formulate a personal position either for or against synthetic biology. But like every other phenomenon in life, even new technologies need to be understood with the large gray zone in between its tremendous potential at one end, and the potential harms and disruptions at the other end. For those interested in immersing themselves in deep debate around synthetic biology and morality of artificial life, this is definitely a book to read.

Priya Satalkar
Basel, Switzerland

Blank, R. 2013, *Intervention in the Brain. Politics, Policy, and Ethics*. Cambridge, MA: MIT Press. 344 pages. ISBN: 978-0262018913. Price: \$34.00.

Robert H. Blank is a real pioneer in the field of neuro-policy. As early as in 1999 he published his book *Brain Policy. How the New Neuroscience Will Change Our Lives and Our Politics*, which was greeted at the time as a “ground-breaking work in its appraisal of the ethical and policy questions raised by our new capabilities of intervention in the brain” (Andrea Bonnickson). Fifteen years later Blank revisits the field, taking into account the tremendous neurotechnological advances of the last years. The first 60 pages of the volume offer an excellent overview of current knowledge about the brain and of a wide range of experimental and clinical interventions ranging from direct brain interventions (electroconvulsive therapy, electronic and magnetic stimulation, psychosurgery and brain implants), psychotropic drugs, virtual reality, brain imaging techniques, and neurogenetics. Blank presents in clear terms each of these procedures, identifying both potential risks and benefits.

The larger part of the book attempts to elucidate the social and political implications that accompany the new neuroscience. The core of the problematic is that any intrusion in the brain conjures the image of mind control, thus potentially undermining individual’s autonomy and responsibility (p. 68). A related issue concerns authenticity, or the self’s sense of its own uniqueness and individuality, and the desire to be true to this self. Privacy issues are also

at stake in this field, as neuroimaging may, even if still imperfectly, acquire personal information and disclose facts about a person that the person would prefer to keep private. After having considered in chapter 4 the potential implications of neuroscientific knowledge for a better understanding of drug addiction, sex differences, and aggressive behavior, chapter 5 discusses in detail the use of neuroscientific evidence before the courts, especially in criminal procedures, and explores both its strengths and shortcomings. The following two chapters turn attention to the potential contribution of neuroscience to a better understanding of social relations, racism, and conflict (chapter 6), and to the commercial and military uses of the new knowledge and tools provided by neuroscience research (chapter 7). The following chapter summarizes the current controversy around the concept of “brain death” and argues that neuroscience could positively contribute to this debate. The author points out that the capacity of brain imaging techniques to measure levels of activity, or lack thereof, in specific brain regions, in the whole brain or in the normal asymmetry of activity between the two sides of the brain “gives us for the first time the technical means to measure the end of life in precise brain regions” (p. 240). The last chapter directs attention to the political implications of neuroscience as manifested in recent studies on decision making, political ideology, voting behavior, and warns against potential misuse of the new technologies in this field. The last 50 pages of the book offer a rich list of bibliographical references, which will be very much appreciated by anyone interested in further readings on this emerging field.

As the bioethicist Walter Glannon pointed out, Blank’s new volume is “a well-informed, lucid, and thoroughly engaging discussion of the ethical, social, and political implications of the new neuroscience. It is an essential guide for anyone interested in how intervening in the brain can affect our lives.” If we consider that Blank has practically invented the field of biopolitics with his previous book, this conclusion might not be surprising.

Roberto Andorno
Zurich, Switzerland

Jones, D.G.: 2013, *The Peril and Promise of Medical Technology*. Bern: Peter Lang. 280 pages. ISBN 978-3-0343-0775-8. Price: €58.90.

In this volume, which is part of the *New International Studies in Applied Ethics* series, Dr. D. Gareth Jones leads his readers through an illuminating discussion of emerging medical technologies. He rightly contends that such analysis is ever-evolving as long as new technologies demand refined nuances. Jones brings to the discussion his

distinctive training as a neuroscientist, researcher, and educator at the University of Otago, New Zealand. Therefore, his involvement in bioethics depends on a first-hand experience with medical technology, its actual accomplishments and admitted failures.

Jones frames his discussion within a Christian ethos to navigate through modern ethical dilemmas. Not a theologian by training, Jones engages in a reciprocal interdisciplinary exchange between medicine and theology. Notwithstanding the danger in such a venture, he courageously attempts to demythologize contemporary scientific abilities, and self-critically admits the inability of Christian theology (or any religious or secular ethos) to clearly draw answers to ethical dilemmas. The underpinning premise of his work is the uncertainty of both theology and science; therefore, humility is a necessary attitude for reciprocal benefit. Humble scientists and theologians may then compassionately minister to patients.

The book is composed of nine chapters that are vividly written and enriched with concrete cases to serve the author's goal. In his first chapter, "Challenges of modern medicine", Jones lays the scientific and theological premises on which he approaches ethics. In the second chapter, "A story of two domains", he compares possible genetic manipulation of fetuses with neurological interventions through real-life cases. He concludes that these seemingly different interventions are rather similar in their underpinning philosophy and consequent challenges.

The third chapter, "Artificial reproductive technologies and pre-birth dilemmas", highlights the complexity of dealing with new reproductive technologies and the danger in unmitigated rejection of these interventions. While exploring historical, political, and cultural dimensions, he argues that Christian theologians should change their strategies by encouraging the proper use of available technologies rather than aiming at ultimate referendum on their development.

Similar exploration of the underpinning reductionist anthropology of modern scientific enterprise is pursued regarding human genetics (chapter 4), manipulation of human brain (chapter 5), technically enhancing morality (chapter 6), and eliminating death (chapter 7). His discussion of these issues culminates in chapter 8 where he explores the contemporary tendency to idolizing science and medicine and the role of Christian communities in questioning the motives behind some imaginative developments such as cyborgs and post-humans.

In his concluding chapter, "Pitfalls and hope in a technological world", Jones brings the various threads of his work together to highlight the bigger picture to keep in mind by Christian communities. Inasmuch as health is important for human flourishing, medical sciences are not the only contributors to better health. Other social

determinants of health, including the equal distribution of basic medical care in society, have also a critical role in this regard.

Illuminating and challenging as it is, Jones' contribution may have benefitted from addressing policies pertinent to medical technology, its agenda and distribution, within the same Christian framework that he advocates. It seems as if medical development were an inevitable self-propelling enterprise that leaves the responsibility of choice to end-users. However, within this framework, policymaking at various levels should have been sufficiently discussed.

Regardless of one's eagerness to read more on that issue, this book is challenging enough to every serious follower of technical developments, their philosophical premises, and social repercussions. Those in the medical field will benefit from its critique of the prevailing culture that idolizes science and overlooks human limitations. Bioethicists and theologians will benefit from the simple and informative presentation of the scientific material to better address the morality of its use. Scholars who belong to other value-systems or religions than the Christian one can use Dr. Jones' critical method to evaluate their own subjective premises and mindsets. In general, this volume will be an enjoyable read to those who are interested in serious inter-disciplinary study of modern medicine.

Rabee Toumi
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May A.T., Grützmann T., Brokmann J. (eds.): 2013, *Patientenverfügungen in der präklinischen Notfallmedizin*. Münster: Lit-Verlag. 191 pages. ISBN: 978-3-643-10017-7. Price: €34.90.

In the field of emergency medical services, patient self-determination has its own challenges. While patient self-determination would not legally or ethically be questioned, there are a wide range of practical, legal and ethical issues that must be discussed. This was also the focus of the START research project which was conducted between 2007 and 2009 by the Institute for History, Theory and Ethics in Medicine at the RWTH Aachen University, in Germany. This book represents the contributions of a conference held on the topic at the University clinic of Aachen in 2009.

The book is divided into two parts: the first one focuses on the use of advance directives (AD), generally and in pre-clinical emergency medicine. The second one is dedicated to counselling for AD. The book is completed by a comprehensive appendix of 50 pages, including material used for the START study, e.g. questionnaires for clinicians, information material for patients and emergency orders templates. Due to the late publishing of the book, the

first two articles reflect the legislation in Germany before 2009, when the new Law on advance directives was adopted. Therefore, some of the legal and also ethical considerations have become obsolete.

The book definitely shows its strengths when describing the START study and its results. One aspect of this is the attitudes and experiences of rescue professionals that have been collected. Although 80 % of the rescue professionals agree that AD should contain information on resuscitation, they did not ask for an AD in each situation. There are different explanations, e.g. lack of time, feared crisis of the patient or they did not feel comfortable to ask. The study also shows that the majority of the professionals are interested in a clear and standardized regulation, including a reference card stating the presence of an AD. The main study reflects 1,047 (=N) questionnaires of a total of 7,212 emergency calls (return rate 14.5 %). In 12.1 % of the encountered situations (N = 127) an AD existed but only 47 could be presented immediately. Sometimes, the AD was kept at home or in a bank safe (sic!) and was not at hand at the moment when the emergency services were delivered. In 40 % of the cases, the professionals were informed about the AD's existence before or during performing emergency measures and in 1/3 of the cases the professionals only got the information about an existing AD by actively asking. In 6 % of the cases, the information could be transmitted by an explicit reference card and in 10 % of the cases the information was received only after emergency measures. The reaction of patients or family members was also obtained on a 1–10 scale and was clearly on the positive side (7.3). This was also the case when no written patient's instructions existed. In some of cases, the written document was not even signed and would therefore not be legally binding.

A very interesting chapter is the one that presents a computer-supported system for creating AD and other legal advance instructions in combination with counselling services. The authors take a stance for systematic information and counselling programmes for the general population on how AD must be set up and which requirements they must fulfil. Other contributions are dedicated to the elaboration of guidelines on how to implement AD in the clinical setting or the development of a palliative network supporting patient self-determination at the end of life.

Unfortunately, as mentioned above, some of the contributions are not up-to-date as they reflect the situation in Germany before the new legislation on AD came into effect in 2009. In some other contributions the link to the pre-clinical emergency setting is not given or is unclear. The articles that clearly focus on the issue bring new insights, especially about the attitudes of emergency service staff and pinpointing the practical problems in the field. For everybody who is interested in these particular

questions and is looking for possible solutions, the book will provide useful information.

Peter Lack
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Frewer, A., Bruns, F., May, A. (eds.): 2012, *Ethikberatung in der Medizin*. Berlin: Springer. 216 pages. ISBN: 978-3642255960. Price: €15.00.

Medical ethics has not only entered the clinic, but also reached the patient's bedside. This is how Florian Bruns, one of the authors and editors of this volume about ethical consultation services, describes the situation (p. 21). Thirty years after Stephen Toulmin's now classical essay "How Medicine Saved the Life of Ethics" (1982), modern biomedical ethics is not only alive but a still growing field. During the last fifteen years, ethical consultation has become one of the most important of them.

Operationalizing medical ethics as consulting services for health care professionals, patients and relatives is pretty ambitious. It means to link the theoretical and philosophical part of more general reflections to the particular needs of deciding and acting in particular situations. And so it is an ambitious project covering all these issues from the framework of theory, to an outline how things currently are in terms of implementing ethical consultation in Germany and finally giving an outlook to upcoming issues and challenges.

To make it short: The editors of this volume (Andreas Frewer, Florian Bruns and Arnd T. May) did an excellent job. With their team of authors they produced a robust and comprehensive intellectual work. In its three major sections, the volume addresses the fundamentals of clinical ethics consultation, the models and examples of implementing ethics—mostly as clinical ethics consultation (CEC)—, and finally, in the third part, the new fields of action and future challenges in this domain.

This broad spectrum of issues is covered along fifteen carefully constructed and thoroughly readable chapters. In the first chapter on philosophical ethics, clinical ethics consultation is described as "pragmatics of conflict resolution". Based on this understanding, the second section presents different and complementary stories about the implementation of ethical advice. Among the issues that are addressed in this section are questions and objectives, modifications of models, organization and ways of working—all this without losing sight of the theoretical basics.

The third part of the book deals with the new applications of ethics consultation such as advice to general practitioners, and ethics consultation in geriatric care and hospices. Of course, not all the topics can be covered in a little more than 200 pages. Interfaces with politics and

health care economics are most understandably addressed only casually. All the more, a special merit of the volume is to mention: among the legal issues relating to the topic, which are discussed in the final chapters, we do not only find the usual suspects as questions about the patient's will, therapy limitation, or assisted suicide, but also most instructive considerations about the specific legal status of clinical ethics consultation itself.

This is so important because the state of liability of a clinical committee for ethical advice or consultation—and its members of course—explains so much about the current

state of ethics in health care in general. And this is what the book does. It provides an exquisite survey of ethical counseling in medicine—absolutely essential for all those who want to get engaged in ethical counseling, those who want to implement a sort of counseling service in a health care facility or those who just want to know better what ethical counseling is or can be about.

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