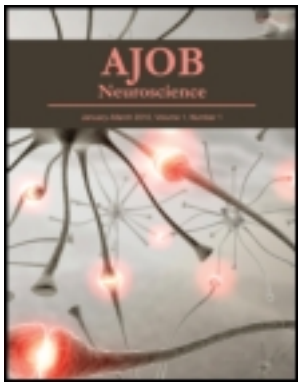

AJOB Neuroscience
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/uabn20

Top 25 Abstracts from 2012 Annual International Neuroethics Society Meeting in New Orleans

Published online: 29 Apr 2013.

To cite this article: (2013) Top 25 Abstracts from 2012 Annual International Neuroethics Society Meeting in New Orleans, AJOB Neuroscience, 4:2, 63-75, DOI: 10.1080/21507740.2013.782925

To link to this article: http://dx.doi.org/10.1080/21507740.2013.782925

AJOB Neuroscience, 4(2): 63–75, 2013

ISSN: 2150-7740 print / 2150-7759 online
DOI: 10.1080/21507740.2013.782925

Abstracts

Top 25 Abstracts from 2012 Annual International Neuroethics Society Meeting in New Orleans

1. Revisiting the Brian Dugan Trial: Is Evidence from Brain-Imaging Technology Ethically Relevant to Criminal Justice?

C. G. Ogbuka, Center for Healthcare Ethics, St. Louis University, St. Louis, Missouri, USA

Background

Neuroethics is an emergent subfield in bioethics that investigates the ethical implications of advances in neuroscience and brain-imaging technology, as well as their impact on the understanding of how the human brain functions, and how we view ourselves as moral agents. Given the connection between brain and behavior, advances in neuro-imaging technology do offer key breakthroughs in understanding the neurological basis of human behavior. These advances could potentially revolutionize the criminal justice system offering deeper insights into the neural and causal foundations of criminal or antisocial behavior. Critical ethical questions, nonetheless, come to bear, regarding the use of brain-scan evidence in criminal trial.

Problem Statement

Is the admissibility of neuro-imaging evidence in criminal justice proceedings ethically relevant to adjudicating culpability and gauging moral responsibility? The case of Brian Dugan, an Illinois resident, who was convicted for the rape and murder of 10-year-old Jeanine Nicarico, was a premier in the admittance of fMRI [functional magnetic resonance imaging] evidence in criminal court. Using the Dugan case as a departure point, we investigate the relevance of neuro-imaging evidence to criminal justice. In the light of key ethical principles—of justice, of autonomy and moral responsibility, and of respect for persons—we explore the law of evidence, and the federal rule of evidence undergirding the use of scientific evidence, particularly brain-imaging evidence, in criminal prosecution. From the perspective of neuro-experts, we also examine the science of brain imaging and the question of objectivity in measuring cognitive functions and determining mental capacity.

Method

Several relevant literatures, both legal and neuro-scientific, as well as court proceedings/legislations, were critically examined and analyzed. Together with the Dugan case, three other similar proceedings in which neuro-imaging evidence was admitted in criminal court were examined. Likewise, several legal documents, including the Federal Rule of Evidence and *Daubert v. Merrell Dow Pharmaceuticals*, were critically reviewed. In addition, several neuro-imaging research studies were examined to understand causative and correlative relationships between neural correlates and specific human behavior.

Results

All of the cases involved a capital crime. There was divergence among the neuro-experts regarding the relevance of neural correlates to particular kinds of behavior outside a standard behavioral assessment. Within legal circles, an fMRI could be equally used as a mitigating and aggravating factor, thus posing questions of relevance and ethical dilemma. Ideally, with a preponderance of published peer-reviewed and unchallenged research results that demonstrate a precise "causal relationship between a particular brain anomaly and a specific criminal behavior" (Nugent 2009, 1), and brain-imaging evidence that was taken within proximity to the time a crime occurs, it would be unjust and certainly unethical to impose severe penalties on a defendant not even for reason of deterrence, since the causal factor of the criminal behavior was an anatomical and physiological force that surpassed the defendant's control (Nugent 2009). In reality, however, establishing such a direct causal relationship still remains inconclusive for many reasons. While there have been significant advances in understanding the neural foundations of criminal behavior in the fields of cognitive neuroscience and forensic psychiatry, there has been a marked reluctance within certain scholarly circles in justifying behavior on biological and brain-related determinations.

Conclusion

While we observe that the import of neuro-imaging evidence could offer potential benefits to the adjudication of

grounding neurocentric criterion of sentience for the establishment of the types and level(s) of moral regard and treatment rendered to consciousness-capable machine-entities and their interactions with humans; and (3) this neuroethical paradigm should inform and contribute to the formation of policies and laws that direct (a) behavior of the conscious machines within society, (b) human treatment of such machine-entities, and (c) the scope and tenor of research, development, and applications of sentient machines in various aspects of human endeavors.

Herein, we present: (1) the basic neuroscientific and sociocultural premises that could be used to compel and instantiate this scheme of roboethical revision; (2) a framework for the use of neuroethical constructs within this paradigm; (3) core precepts that direct moral consideration and actions in circumstances of human and sentient-machine interaction(s); and (4) domains of resonance and dissonance with extant ethical systems. As well, we posit ways that this neuro-roboethical framework could be used to develop policy and law(s), and explore how game theory might be useful to project potential scenarios that (a) would be socioculturally problematic and (b) might be avoided or mitigated through preventive direction of certain trajectories of research and/or use of sentient machines.

23. Autonomy and Decisional Enhancement: Public Attitudes Towards Overt and Covert Nudges

N. Castelo[1,2], G. Felsen[3], and P. B. Reiner[1], [1]National Core for Neuroethics, University of British Columbia, Vancouver, British Columbia, Canada, [2]Department of Psychology, University of Toronto, Toronto, Ontario, Canada, [3]University of Colorado School of Medicine, Aurora, Colorado, USA

Pervasive and predictable cognitive biases have been shown to hinder optimal decision making. Recently, attempts to assist decision makers in mitigating these biases have been criticized as infringing upon individual autonomy. We tested the hypothesis that such "decisional enhancement" programs targeting overt decision making, that is, conscious, higher order cognitive processes, would be more acceptable than similar programs that affect covert decision making, that is, subconscious, lower order brain processes. We presented subjects with one of a pair of contrastive vignettes in which they chose between an option that included a decisional enhancement program (e.g., taking a job with a company that administers a program to help its employees make healthier food choices in the cafeteria) and a neutral option (e.g., taking a job with an otherwise identical company that has no such cafeteria program). The only difference between the two vignettes was whether the program targeted conscious processes (e.g., providing nutritional information for the food served) or subconscious processes (e.g., placing healthy foods in more convenient locations than unhealthy foods). We found some support for our hypothesis: In certain contexts, the relative favorability of the decisional enhancement program was higher in the conscious condition than in the subconscious condition. Further, subjects who perceived the influence of the program as more conscious than subconscious believed that their decisions within the context of the program would be more "authentic." However, this relative favorability was context dependent, and contingent upon whether or not the subject wanted help making decisions. We discuss how our results may be of utility in informing architects of decisional enhancement programs.

29. Evaluating the Transhuman: A Role for Neuroethics

D. Degerman[1], J. Shook[1,2], and J. Giordano[1,3,4], [1]Center for Neurotechnology Studies, Potomac Institute for Policy Studies, Arlington, Virginia, USA, [2]Science and the Public EdM Program, University of Buffalo, Buffalo, New York, USA, [3]Georgetown University, Washington, DC, USA, [4]Human Science Center, Ludwig-Maximilians Universität, Munich, Germany

The pace and trajectory of neuroscience and its technologies portend potentially profound changes in the human condition. We posit that this will necessitate reexamination of both "human nature" and normative values premised thereupon. Namely, we ask which norms would remain adequate in light of shifting constructs of humanity, and in guiding human actions within an evolving reality of human ecology. The foundational premise of our argument is that humans are a species-in-transition, effected by technology, as a tool to alter the human being, and human environments. Eschewing the fallacy of the ephemeral as regards human nature, this view operationally describes humans as a species in a co-evolutionary symbiosis with the environment—as shaped by culture and machines—whose "nature" is therefore in a state of flux. This paradigm is likely to deconstruct certain dogmatic ideas about human nature, and thereby influence philosophical, sociocultural, economic, and political institutions that rest upon these notions.

Such transhuman articulations, whether considered treatments, enhancements, or enablements, will transcend the capacity of those conformities expected of static constructs of what it is to be human. We believe that only a more dynamic ethics could afford valid capability to address issues, questions, problems, and solutions focal to such progress and its manifest effects. Our proposed alternative is not a collapse into moral anarchy or fragmentation into political libertarianism, but rather an anthropologically relevant neuroethics informed by the social and brain sciences. This new ethics avoids the naturalistic fallacy by eliminating empirically incorrect ethical ideas (i.e., anachronistic concepts of agency, choice, will, responsibility, freedom, moral culpability, etc.), and by deriving moral norms from extant, scientific information about humans (while remaining

flexible and open to revision of such information as a consequence of scientific progress). The resulting metaethics will comprehend the human capacity for morality and ethical deliberation. Transhumans will still be cultural animals, and will engage in ethical discourse, so these capacities should not be compromised. Therefore, we assert that neuroethics should specifically provide the philosophical groundwork, and practical tools to address modifications to core human capacities, and from this vantage, analyze and guide human activities (inclusive of neuroscience, and its applications in contexts of human ecology).

Toward this end, we (1) describe how modifications of humans-in-transition serve specialized tasks and powers, (2) illustrate the ways these capabilities may exceed social expectations and diverge from cultural regularity, and (3) propose how neuroethics may afford techniques and systems to [a] correctly categorize human modifications, [b] adequately assess moral acceptability in terms of respect for maintaining human capacities for cultural and political participation, and [c] establish a framework for more humanistic and cosmopolitan guidelines, policies, and politics.

31. Neuroethics in Mormon Doctrine: Unique Perspectives, Challenges, and Vocabulary

D. M. Sloan, Sensory Neuroscience Research Center, West Virginia University, Morgantown, West Virginia, USA

Questions posed within the field of neuroethics often pose special challenges to common religious views, particularly those regarding the nature of individual personhood, accountability, and sources of religious feeling. The impact of neuroscience findings and neurological interventions on individuals greatly depends on what the individuals believe; therefore, it is important for neuroethicists to consider the spectrum of those religious beliefs relevant to the field. The doctrine of the Church of Jesus Christ of Latter-Day Saints, commonly called the LDS or "Mormon" church (a religion of over 14 million members internationally with 3 to 400,000 members added annually), poses several unique challenges in the dialog between religion and neuroethics. Although it is essentially a Christian religion in history, basic doctrine, and practice, it espouses several unique teachings that set it apart from virtually any other religious system. Relevant LDS teachings include: an everlasting individual identity that existed prior to birth (which includes gender and executive decision-making abilities), the exercise of choice as central to the purpose of existence, and individual access to divine lines of communication that are independent of normal sensory processes, but that strongly influence mental activity. In addition, vocabulary used both doctrinally and culturally among LDS members can confuse conversations about neuroethics (for example, the terms "morality" and "free will" are used differently than their common ethical definitions). The objective of this poster is to review those LDS doctrines that are relevant to neuroethical topics, to introduce scholarly work on neuroethical themes from within the active LDS community, and to briefly report on an online discussion posted by the author on the topic of neuroethics on an LDS proselytizing website. The expectation is that this information will contribute to thinking on larger issues respecting neuroethics and religion, and will provide insight into the conceptual framework through which neuroethical issues are viewed in a rapidly growing and increasingly influential international religion.

32. Public Attitudes Towards Cognitive Enhancement

R. Nadler, N. S. Fitz, N. S. Chong, P. Manogaran, and P. B. Reiner, National Core for Neuroethics, University of British Columbia, Vancouver, British Columbia, Canada

The ethical issues surrounding cognitive enhancement—improving cognitive function in normal, healthy adults—are of widespread interest. Yet despite a great deal of rhetoric in both the academy and the media, available information in the form of expert opinion greatly outweighs what is known regarding public attitudes toward the topic (Nadler and Reiner 2010). In an effort to bridge this gap, we investigated public attitudes using quantitative methods inspired by experimental philosophy and widely validated in social science research: the contrastive vignette technique. We recruited respondents using Amazon's Mechanical Turk, and received 2728 completed responses to surveys designed to probe attitudes toward the four cardinal concerns that dominate discourse regarding cognitive enhancement: safety, distributive justice, peer pressure, and authenticity.

In probing safety concerns, we found that people view the risk associated with cognitive enhancement as significantly more worthwhile when used for purposes of restoration rather than enhancement (Reiner, 2011), irrespective of whether the enhancement was pharmacological or involved an electrical device akin to tDCS [transcranial direct-currrent stimulation]. In our sample, the public perceived extrinsic peer pressure to enhance using certain methods (pharmacological and tDCS) as significantly more bothersome than self-generated pressure to enhance, while peer pressure to enhance using brain training software was not perceived as more bothersome when it derived from extrinsic sources. Moreover, respondents reported that they were no more likely to enhance in extrinsic peer-pressure situations than when peer pressure was self-generated, regardless of the method of enhancement, suggesting that traditional worries about the effect of peer pressure upon uptake of cognitive enhancement may overstate the case. We found that public attitudes regarding the fairness of unequal distribution of pharmacological cognitive enhancers based upon unequal wealth were significantly more sensitive to the type of enhancement employed than the level of effort required, again casting doubt upon the prevailing wisdom that inequities are more acceptable when they involve effort than luck. Similarly, we found that the public considered the