

Looking Ahead

The Importance of Views, Values, and Voices in Neuroethics—Now

JAMES GIORDANO

Abstract: The body-to-head transplant (BHT) planned to be undertaken later this year at China's Harbin Medical University by neurosurgeons Sergio Canavero and Xiaoping Ren has attracted considerable attention and criticism. The intended operation gives rise to philosophical queries about the body–brain–mind relationship and nature of the subjective self; technical and ethical issues regarding the scientific soundness, safety, and futility of the procedure; the adequacy of prior research; and the relative merit, folly, and/or danger of forging new boundaries of what is biomedically possible. Moreover, that this procedure, which has been prohibited from being undertaken in other countries, has been sanctioned in China brings into stark relief ways that differing social and political values, philosophies, ethics, and laws can affect the scope and conduct of research. Irrespective of whether the BHT actually occurs, the debate it has generated reveals and reflects both the evermore international enterprise of brain science, and the need for neuroethical discourse to include and appreciate multicultural views, values, and voices.

Keywords: body-to-head transplant; international neuroethics; neurotechnology; research tourism

Ethicist Paul Root Wolpe recently wrote a compelling article in *Vox* addressing the body-to-head transplant (BHT) that Italian neurosurgeon Sergio Canavero seeks to conduct later this year in China, in collaboration with colleague Xiaoping Ren of Harbin Medical University.¹ Pro Wolpe (and others),² we have argued that the scientific grounds—as based on previous work by Robert White³—for advancing this procedure to human application remain insufficient, and as such, Canavero's aim of conducting this surgery represents ethically unsound, if not frankly reckless, science and medicine.⁴ But the facts that Canavero and his team have questioned the value of further preliminary work and have lauded this surgery as forging new insights into what may be possible, and that China has sanctioned such effort, each and all raise a number of questions about what constitute the limitations of brain science.

Although the idea of developing a BHT could be seen as having some value if (and only if) the preparatory science and ethical obligations (e.g., sound provision of the body donor, fully informed consent of the recipient, provision of all postsurgical care as required) were obtained, these considerations are also not

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without contention. For example, how extensive should animal model testing be in order to establish parameters for experimental human procedures? Canavero has argued that further use of animal subjects (such as nonhuman primates) would be ethically problematic in that the body donor(s) would need to be killed in order to effect the transplant. Also, he has questioned whether the duration and relative quality of postsurgical life of an animal represent valid comparators for both human survivability and subjective experience.⁵ It is true that additional animal research would provide important information about the integrative physiology (and perhaps behavioral psychology) of a BHT, but such studies would yield nothing about the phenomenological experience of the patient, which could be important to philosophical, ethical, medical, legal, social, and theological questions about embodiment, subjectivity, the “self,” and identity.⁶

This prompts questions—and justifiable concern—about the actual nature and potential “success” of the procedure, its outcomes for the patient, and the validity of informed consent. Like ethicist Art Caplan who has noted that there is a considerable “yuck factor” involved,⁷ Wolpe speaks of the “ghastly” nature of the surgery. But there are numerous procedures in brain science and its translation to clinical neurosurgery and neurology (and other domains of biomedicine) that could be viewed as ranking high in the “yuck factor,” and the relative distastefulness of the practice (or its outcomes) does not necessarily render it unethical, diminish its utility and/or value, or proscribe its articulation.

Even if: (1) prior animal work was broadly deemed to be adequate and sufficient for the technical viability of a human BHT, and (2) such a surgery had some realistic chance of the patient’s (even short-term) survival to the extent that that patient were to regain consciousness, the event itself brings us to the edge of biomedical capabilities, and in so doing forces a philosophical, ethical, legal, and social “look beyond.” This then evokes additional questions of if, and to what extent, consent to such procedures can be fully informed. This too, is not unique to the BHT; for examples we would need only look at initial attempts at transplanting other organs to find evidence of treading into terra incognita of medical possibility. Nor is it the sole province of transplantation; other clinical instantiations of brain science have also been taken to the frontiers of what was previously possible. And this sustains an important point: given what cognitive scientist and philosopher David Chalmers has referred to as the “hard question,” or “hard problem” of neuroscience (i.e., how “mind” occurs in/from a brain),⁸ how informed can researchers, clinicians, and patients really be about the consequences of any cutting-edge neurological intervention?

If the goal is to expand the frontiers of brain science and its utility, it is important to keep in mind that conditions at the “frontier” of what is possible always tend to be somewhat unpredictable (if not unknown). Therefore, despite the best testing, the complete success of many experimental or newly developed procedures cannot be fully ascertained or guaranteed. The vista and desires to move toward the iterative horizons of probability, possibility, and potentiality may prompt a stance of “we cannot know unless we go.” This aspect and view of experimentation is often implicit (if not explicit) in certain dimensions of neuroscientific and neurotechnological research and its entertained applications (in medicine, public life, the military).

Nevertheless, we must fall back to querying whether we know enough “to go” in the first place, based on an argument for at least relative safety within a construct of non-harm, even if an attempt was made to employ some construal of the

principle of double effect to justify the use of a new technique or technology in practice. But how safe is “safe,” particularly if and when a technique is a first-time occurrence? And what of intermediate and long-term effects? In that such interventions have not been implemented before, and/or have not been operational in patients for long periods of time, there are few if any bases for direct casuistic evaluation. Transparency in communicating possible burdens, risks, and harms that could be incurred is an essential component of informed consent; and if such possibilities were unknown, this too would need to be communicated.

Still, there will be patients who will accept such burdens and risks, as balanced by their concept of some good that could be incurred (by themselves as an individual, and/or by others inclusive of humanity at large) by the procedure and its outcomes, regardless of success (e.g., knowledge of what works, what does not, in whom, and why). Should we consider such patients to be “neuronauts,” consentingly offering themselves as exploratory voyagers to the boundaries of medical capability enabled by “pushing the envelope” of what brain science can achieve? What is owed to such patients? Ongoing research to prospectively evaluate if and when something goes wrong? Clinical—and perhaps sociolegal—services and resources to provide care when it does?⁹ Are medical and civic institutions in place and prepared to accept, meet, and sustain such obligations?¹⁰

What if the basis of these patients’ sentiments of consent and participation are reflective of, and undergirded by particular (and long-standing) sociocultural, philosophical, ethical, legal, and/or political attitudes and norms? What if the needs, values, ethics, and practices of one country do not comport with others? How should research be regarded that is conducted in and by countries that maintain differing ethical values and constructs?¹¹ Going further, what if the outcomes of such exploration yield viable benefits that are of value not just within a given country, but globally?¹² Is there some calculus of benefit-to-burden-to-risk and/or harm that could—or should—be employed to evaluate what is gained and what is lost by commission or omission of a certain procedure or use of technology? And what ethical system(s) or principles should be used in this assessment?^{13,14,15}

Such questions are neither rhetorical nor esoteric. The intention to undertake a BHT, as well as to develop tools and methods for attempting remote acquisition and interjection of information in the brain,¹⁶ are planned for the coming year. Ever more sophisticated tools and methods give rise to capabilities and effects that were not previously considered possible or real.^{17,18,19} This demands a stance of ethical preparedness. Ethics must begin from and heed fact(s)²⁰ and remain focal to the endeavor, and each endeavor entails circumstance and context. Increasingly, the circumstances in which brain science is engaged are, and will be, fast evolving, and contexts of research, use, and effect will be ever more global.²¹ Therefore, to keep pace neuroethics must be a work in progress.²² Indeed, it will take work to assess emerging techniques and technologies, as well as to determine whether and/or which current ethical principles and practices are viable, and which require revision, should be supplanted, or should be replaced. Whether such work in progress is deemed a “progressive,” “new,” or “global” neuroethics may be merely semantic. As Judy Illes has asserted, “...it only matters that we do it.”²³ I agree, and urge that we do so now—in ways that enable multicultural views and voices—if we are to look ahead and actively, and not just reactively, define the conduct and uses of brain science on the world stage.

Notes

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