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Abstract: The field of neuroethics is experiencing a great deal of activity at present, as researchers come to realize the potentially dramatic implications of new work in neuroscience and its applications. This review aims to describe some of the work of direct relevance to psychiatric ethics. The review focuses on ethical issues surrounding the use of propranolol to treat or prevent posttraumatic stress disorder, issues concerning the capacity of the mentally ill to give informed consent to medical treatment and the potential social implications of cognitive enhancers and other interventions into the mind. It is argued that psychiatric ethics would benefit from a consideration of cognate questions arising in neuroethics; in particular, neuroethics has the potential to remind psychiatrists that individual treatment decisions can have broad social implications.

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Neuroethics and Psychiatry

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The past twelve months have witnessed dramatic developments in neuroethics. As well as several monographs on neuroethics, there has been the establishment of a new journal (simply entitled *Neuroethics* [1]) entirely devoted to it; at the same time, the *American Journal of Bioethics* [2] has begun to devote three issues per year to the topic. There is considerable overlap between the topics covered in neuroethics and the kinds of ethical and conceptual issues with which psychiatrists have long been concerned.

Neuroethics is concerned, *inter alia*, with ethical issues arising in the application of technologies and techniques stemming from the sciences of the mind. Thus biologically informed psychiatry falls within its purview. So too does the prescription of antidepressants, anti-psychotics and other psychopharmaceuticals. These latter have been the focus of much neuroethical interest. Whereas earlier neuroethical concern focused largely on antidepressants and methylphenidate used in the treatment of Attention Deficit Hyperactivity Disorder (ADHD), more recently the focus has been on propranolol for the prevention of post-traumatic stress disorder (PTSD).

PTSD is a very serious and debilitating condition, affecting millions of people worldwide. Following exposure to a traumatic event, around 8.1% of men and 20.4% of women develop PTSD, yielding a lifetime prevalence rate of 5% for males and 10.4% for females in the United States [3]. Clinical trials on propranolol, a beta-adrenergic antagonist commonly prescribed for the treatment of hypertension, have yielded promising though still preliminary results in the prevention of PTSD, when it is administered within the first six hours after exposure to trauma [4, 5]. Clearly the prevention of PTSD is a desirable goal, but – following the lead of the President's Council on Bioethics [6] – some neuroethicists have worried that achieving this goal comes at an unacceptable cost.

In their 2003 Report the President's Council worried that propranolol might encourage wrongdoing by reducing consequent feelings of remorse; members also worried that it would flatten the quality of human life by mitigating the negative emotional experiences that make us who we are [7]. Concerns like these continue to be heard. Warnick [8] worries that mitigating the effects of trauma will reduce opportunities for personal growth. He notes that positive post-traumatic growth (PTG) often co-occurs with PTSD and suggests on this basis that preventing the latter will also prevent the former. But as PTG is found in a greater proportion of trauma sufferers than is PTSD, the latter cannot be necessary for the former. Hurley [9] argues that erasing trauma blocks epistemic access to the meaning of traumatic events; similarly Evers [10] suggests that propranolol might promote what she calls mendacity: even if users recall what happened, because they have been innoculated against the emotional effects of trauma they will live as though the traumatizing events had not occurred.

These claims recall arguments long directed at other psychopharmaceuticals such as antidepressants and methylphenidate, for instance Elliott's [11] suggestion that the use of antidepressants threatens to render our lives inauthentic, cutting us off from sources of meaning. Insofar as propranolol blunts the emotional intensity of memories, the arguments due to Warnick [8] and Hurley [9] seem to be unsuccessful: it is surely false that only people who have fully experienced terrible actions understand the ways in which these are awful. Warnick's and Hurley's concerns face a common criticism: they seem committed to claiming that PTSD is really, on balance, beneficial to the patient on all or most occasions, such that we ought not to prevent it. But the claim that PTSD is actually, on balance, beneficial to the patient on all or most occasion is highly counterintuitive, especially in light of the high costs of PTSD to sufferers, their families and the communities that they participate in.

Another worry, which echoes the concerns of the President's Council [7] centres on issues of identity. Memory is significantly constitutive of human identity; hence a drug that targets memory systems may threaten the individual's sense of continuity of personal identity or even the individual's sense of being a self [12, 13, 10]. Though these are important issues, which should be considered where future developments in memory altering drugs are concerned, they seem overblown in light of the evidence regarding propranolol. It has been taken by millions of people over several decades; though short term memory loss is a recognized (rare) side effect, the degree or extent of this memory loss has never been significant enough to threaten peoples' sense of having an identity [14].

The President's Council was a creation of President George W. Bush, and generally reflected his conservative political orientation. It may be, in fact, that many of the concerns it expressed reflected nothing so much as anxiety caused by novel technologies and interventions. It is worth noting that empirical work in neuroethics – broadly construed – supports the notion that anxiety can cause, or be mistaken for, moral judgments [15].

Since the President's Council's 2003 report, other concerns about propranolol have been expressed. One such concern centres around implications for the legal system. Memories are primary forms of evidence in courts. Kolber [16, 17; see also Evers, 10] has argued that we need to balance social interests in preserving memories – as evidence in litigation, for example – with individual rights to freedom of memory. He suggests that situations in which our interest in preserving memories overrides individuals' rights may sometimes arise. Tenenbaum & Reese [18] advance similar concerns over the loss of memories as evidence for courts and as valuable information for societies. However, it may be that these concerns are unrealistic, at least at present, given the effects of existing psychopharmaceuticals like propranolol, which blunts the emotional intensity of memories without erasing them. There is some evidence that propranolol actually improves recall of events for some subjects affected by trauma [19]. Nevertheless, more powerful drugs that genuinely erase memories may be developed (see Kolber [20], for

discussion of a case that involves the use of an already existing drug, propofol, deliberately to completely erase memories).

The prescription of psychopharmaceuticals to children raises special concerns. The focus of ethical debate here is methylphenidate prescribed for the treatment of ADHD. Some scholars are suspicious of the very existence of this condition, arguing that its diagnosis and treatment is in fact simply a method of social control over difficult children [21, 22] (Graham 2007; Hawthorne 2007; see [23] for a discussion of social attitudes toward this question in Italy). Another concern centres on the overmedicalization of childhood, with ordinary conditions coming to be seen as disorders requiring interventions [23]. Both of these concerns are echoed in the debate over propranolol; Henry et al. [14] argue that overmedicalization by drug companies in pursuit of profit and subsequent exploitation of vulnerable patients is the biggest ethical problem with the drug.

The past twelve months has seen significant work on issues related to informed consent in neuropsychiatry. It is a standard condition of medical practice in the Western world that before an operation or course of medical treatment can take place, the doctor conducting the operation or recommending the course of treatment must obtain the informed consent to the operation or course of treatment in question. This means that the patient must be provided with sufficient relevant information to enable them to make an enlightened decision regarding medical treatment. In order to enable this to occur, the doctor in question is expected to provide the relevant information and assist the patient in comprehending unfamiliar terminology. Mutatis mutandis for prospective participants in medical experiments [24]. Informed consent is a particularly vexed topic in psychiatric care as many psychiatric patients suffer from cognitive deficits and their competence to consent to complicated medical procedures may be in question [25]. A large number of neuropsychological conditions are associated with diminished capacity to consent to treatment [26] and a variety of different tools have been developed to assess decision-making capacity in patients and research subjects [27].

Capacity to consent comes in degrees, but for legal and ethical reasons practitioners are required to determine whether a patient or prospective participant in a medical study or experiment is competent to provide consent, and competence is a threshold concept. Possessing a particular magnitude of decision-making capacity is necessary to make one competent to provide consent to a particular type of operation or course of medical treatment. Because different types of consenting decision require different degrees of decision-making capacity and because some decision-making tasks draw on different skills, competence to consent can vary from situation to situation. A patient may be competent to consent to one class of operations but at the same time lack competence to consent to another class of operations.

Because we do not yet understand how much ordinary decision-making occurs, we are not very good at determining whether individuals are competent to consent to particular operations. Compounding the problem, it turns out that bioethicists and psychiatrists assess capacity to provide consent in quite different ways, and so they often offer different assessments of competence in particular cases [28]. In practice we tend to

assume that people are competent to consent to medical procedures unless it can be proven that they are incompetent to do so [29]. This is because we think it is very important to respect people's autonomy. We usually hold that it is better to err on the side of caution and allow people who are incompetent to offer informed consent to make decisions about their health care than to wrongly deprive even a few people of the opportunity to decide for themselves whether or not to undergo health care. In other words we are much more willing to tolerate false positives than false negatives when peoples' autonomy is at stake.

Palmer and Savla [26] and Northoff [30] both suggest that recent work on the neuroscience of decision-making may enable us to develop more specific tests of valid informed consent than those that are currently available. Northoff [30] views the potential development of brain-based tests of decision-making as complementary to, rather than in competition with, current diagnostic tests of decision-making, most of which take the form of structured interviews or written tests [27]. However, this may be too concessive. If very accurate brain-based diagnostic criteria were developed and were easy to administer then it is difficult to see why we would still have any need for less accurate structured interviews or written tests. As well as enabling us to develop more accurate tests of decision-making capacity, developments in the sciences of the mind hold out the prospect of enabling us to improve peoples' decision-making capacity. Potentially someone who is not competent to consent to undergo a particular procedure, because they are not generally competent to make consenting decisions regarding their health care, could be operated on so as to enable them to become competent to consent to that particular procedure. Northoff [30] points out that this possibility raises a dilemma. Either we do not treat the person in question on the grounds that they cannot provide informed consent, or we violate their informed consent in order to improve their decision-making capacities.

Issues related to informed consent have begun to be highlighted in debates about the social acceptability of memory modifying drugs. Murphy & Illes [31] highlight two issues related to informed consent in these debates. First, participants recruited to clinical trials of memory modifying drugs may be particularly vulnerable and may not be able to understand the risk and benefits of participating in such trials, so they may not be competent to provide informed consent. Second, the modification of peoples' memories may have important social and legal implications. Henry et al. [14] consider the former problem and they suggest that, at least in the case of propranalol, health professionals will be likely to accept a lower standard of competence for the purposes of informed consent, given that the potential benefits of propranolol far outweigh its risks. Tennenbaum & Reese [17] consider the latter problem and suggest that we deal with it by including a specification of the social and legal consequences of memory modification and then allowing the individual to decide as part of the informed consent process whether they wish to go ahead with memory modification or not. Henry et al. [14] effectively argue that we should compromise out standards of informed consent for the sake of societal benefit. In contrast, Tennenbaum and Reese [18] argue that we should uphold our standards of informed consent in the face of extended social consequences. The rights of the individual and the concerns of a broader society are often in tension with one another.

This new nexus of tension is likely to be the source of significant debate in the literature for some time to come.

Properly assessing the objections to the use of propranolol requires further research, into the effects of the drug on memories, on personal growth and also on cognition (Craigie [37] notes that propranolol seems to induce a conservative bias in judgments under uncertainly in some subjects, as well as reduced sensitivity to punishment cues). Given the costs of PTSD to individuals and to society, it seems likely that this evidence will not overturn a presumption in favor of its use. However, the debate concerning its costs should sensitize us to potential problems with new drugs, as they come into development.

Like all other physicians, psychiatrists' first ethical responsibility is to their patients [32]. However they are also citizens and community members; properly assessing the ethics of any intervention requires considering its broader impacts. A perennial worry with regard to any intervention that improves cognition is that it will place pressure on those who do not wish to use such methods to employ them, in order to keep pace, and that it may exacerbate inequality due to our unequal capacities to pay for interventions (see [33] for review). This concern arises most naturally with regard to antidepressants used 'off label' as cognitive enhancements, but it has also been raised in the context of memory alterations such as drugs used for the treatment of dementia [34]. As neurological interventions grow in power, these concerns are likely to become increasingly pressing [35, 36].

Assessing the range of challenges and dilemmas which fall under the purview of neuroethics requires attention not only to individuals (the most natural focus of debates over informed consent) but also to social concerns. Fully appreciating the concerns focused on such apparently individually-focused interventions as the use of cognitive enhancers or treatments for PTSD requires us not only to understand their implications for the individual who might use them, but also for their society as a whole. Psychiatrists are more used to focusing on individual patients than on their social settings when they consider the ethics of their work; to that extent, neuroethics might serve as a valuable corrective to the dominant strand of psychiatric ethics.

References.

[1] See http://www.springer.com/philosophy/ethics/journal/12152

[2] See http://www.bioethics.net/journal/

[3] Kessler, RC, Sonnega A, Bromet, et al. Posttraumatic Stress Disorder in the National Comorbidity Survey. Archives of General Psychiatry, 1996; 52: 1048-1060.

[4] Pitman RK, Sanders KM, Zusman RM, et al. Pilot study of secondary prevention of posttraumatic stress disorder with propranolol. Biol Psychiatry. 2002; 51(2):189-192.

[5] Vaiva G, Ducrocq F, Jezekel K, et al. Immediate treatment with propranolol decreases posttraumatic stress disorder two months after trauma. Biol Psychiatry. 2003; 54(9):947-949.

[6] See http://www.bioethics.gov/

[7] President's Council on Bioethics. Beyond Therapy: Biotechnology and the Pursuit of Happiness. See http://www.bioethics.gov/topics/beyond_index.html

[8] Warnick, JE. Propranolol and Its Potential Inhibition of Positive Post-Traumatic Growth. American Journal of Bioethics 2007; 7 (9): 37-8.

[9] Hurley, EA. The Moral Costs of Prophylactic Propranolol. American Journal of Bioethics 2007; 7(9): 35-6.

[10] *Evers, K. Perspectives on Memory Manipulation: Using Beta-Blockers to Cure Post-Traumatic Stress Disorder. *Cambridge Quarterly of HealthCare Ethics* 2007; 16: 138-146.

* A wide-ranging discussion of potential objections to the use of memory altering drugs. Evers concludes that the concerns raised give us reason for caution in using such drugs, but that none of the problems are necessary consequences of their use.

[11] Elliot C. Better than Well, New York. WW Norton, 2003 .

[12] Glannon W. Psychopharmacology and memory JME; 2006 32:74-78

[13] Kabasenche KP. Emotions, Memory Suppression, and Identity. American Journal of Bioethics 2007; 7 (9): 33-4

[14] *Henry M. Fishman JR, Youngner, SJ. 2007. Propranolol and the Prevention of Post-Traumatic Stress Disorder: Is it Wrong to Erase the 'Sting' of Bad Memories? American Journal of Bioethics 2007; 7 (9): 12-20.

* The authors consider the objections to the use of propranolol raised by the President's Council, and effectively demonstrate that they are based on hyperbole which disguises the Council's conservative political agenda.

[15] *Haidt, J. The New Synthesis in Moral Psychology. *Science* 2007; 316(5827): 998 – 1002.

Haidt reviews the empirical literature on the causes and influences of moral judgment, including his own important contribution suggesting the centrality of affect to moral evaluations.

[16] *Kolber A. Therapeutic Forgetting: The Legal and Ethical Implications of Memory Dampening. *Vanderbilt Law Review* 2006; 59(5): 1561-1626

Kolber defends a qualified freedom of memory, balanced by social and legal interests in preserving evidence of past events. He argues that there is no need for extensive restriction of memory altering drugs.

[17] Kolber A. Clarifying the Debate over Therapeutic Forgetting. American Journal of Bioethics 2007; 7 (9): 25-6.

[18] Tenenbaum, EM, Reese B. Memory-Altering Drugs: Shifting the Paradigm of Informed Consent. American Journal of Bioethics 2007; 7 (9): 40-42.

[19] Hall W, Carter A. Debunking Alarmist Objections to the Pharmacological Prevention of PTSD. American Journal of Bioethics 2007; 7(9): 23-5.

[20] Kolber A. Freedom of Memory Today. In Press. *Neuroethics*.

[21] Graham LJ. Countering the Attention Deficit Hyperactivity Disorder Epidemic: a question of ethics? *Contemporary Issues in Early Childhood* 2007; 8: 166-169.

[22] Hawthorne S. ADHD drugs: Values that drive the debates and decisions. *Medicine, Health Care and Philosophy* 2007; 10: 129-140.

[23] Frazzetto G, Keenan S, Singh, I. 'I Bambini e le Droghe': The Right to Ritalin vs the Right to Childhood in Italy. *Biosocieties* 2007; 2: 393-412.

[24] Berg JW, Appelbaum PS, Lidz CW, Parker LS Informed Consent: Legal Theory and Clinical Practice. Oxford: Oxford University Press; 2001,

[25] Bloch S, Chodoff P, Green SA (eds.) Psychiatric Ethics (3rd Edition). Oxford: Oxford University Press; 2001.

[26] Palmer BW, Savla, GN. The association of specific neuropsychological deficits with capacity to consent to research or treatment. Journal of the International Neuropsychological Society, 2007; 13: 1047-1059.

[27] Dunn LB, Nowrangi MA, Palmer BW et al. Assessing decisional capacity for clinical research or treatment: a review of instruments. American Journal of Psychiatry 2006; 163: 1323-1334.

[28] Schneider PL, Bramstedt KA. When psychiatry and bioethics disagree about patient decision-making capacity. Journal of Medical Ethics 2006; 32: 90-93.

[29] Welie JVM, Welie SPK. Patient decision-making competence: outline of a conceptual analysis. Medicine, Healthcare and Philosophy 2001; 4: 127-138.

[30] Northoff G. Neuroscience of decision-making and informed consent: an investigation in neuroethics. Journal of Medical Ethics 2006; 32 70-73.

[31] Murphy, ER, Illes J. Neuroethics and psychiatry: new collaborations and emerging challenges. Psychiatric Annals 2007, 37 (12) 798-804.

[32] AMA Code of Medical Ethics: The Principles: http://www.utcomchatt.org/Docs/AMA%20Code%20of%20Medical%20Ethics.pdf

[33] Bostrom N, Sandberg, A. Cognitive Enhancement: Methods, Ethics, Regulatory Challenges. *Science and Engineering Ethics* Forthcoming.

[34] Dekkers W., Rikkert, MO. Memory Enhancing Drugs and Alzheimer's Disease: Enhancing the Self or Preventing the Loss of it? *Medicine, Health Care and Philosophy* 2007; 10: 141-151.

[35] Chatterjee A. The promise and predicament of cosmetic neurology. *Journal of Medical Ethics* 2006; 32:110-113.

[36] Chatterjee A. Cosmetic Neurology and Cosmetic Surgery: Parallels, Predictions, and Challenges. *Cambridge Quarterly of Healthcare Ethics* 2007, 16: 129-137

[37] Craigie J. Propranolol, Cognitive Biases, and Practical Decision-Making. American Journal of Bioethics 2007; 7(9): 31-2.