Deep Brain Stimulation as treatment for psychopathy –a no-brainer?

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Hubner's and White's thought-provoking scenario rests on a unified conception of psychopathy, a reliance upon subjective suffering and individual medical benefit as grounds to justify ethical treatment/research participation, and an assertion that, as psychopathic prisoners do not experience individual suffering which they attribute to psychopathy, they are by definition unable to provide valid informed consent to research trial participation/treatment for psychopathy involving DBS.

The authors derive their unified conception of psychopathy from classic sources Cleckley and Hare. Yet, as Cleckley and Hare recognised, since some with high levels of psychopathic characteristics live in the community without criminal records, or rise to high positions in society, essentialist readings of psychopathy as psychopathology are problematic (Lilienfeld et al 2015). Unified conceptions often conflate imprisoned and community psychopaths' characteristics, despite research suggesting that these are distinguishable by imprisoned psychopaths' frequent constellation of specific confounding cognitive and affective dysfunctions, including treatable medical factors difficult to disentangle from psychopathy, such as traumatic brain injury, concomitant cognitive and affective deficits and impaired emotional regulation (Gau & Raine 2010). Classic clinical/forensic typologies and diagnostic tools derived from imprisoned populations underestimate the prevalence and value of adaptive characteristics in 'successful' psychopaths, research upon whom is relatively new.

Recent models like the Triarchic Psychopathy Measure attribute psychopathy's heterogeneity to differing strengths and combinations of three traits: poor impulse control and reactive violence (disinhibition), callous-unemotionality linked with instrumental aggression and manipulation (meanness), and fearless-dominance thrill-seeking (boldness) (Blagov et al 2015). Normative and clinical assumptions may skew interpretations of psychopathic traits and attempts to create coherent unified frameworks of psychopathic dysfunction. Issues of when traits indicate pathology, adaptability or neurodiversity challenge. Diagnoses of psychopaths as possessing cold, remorseless and callous traits are reframeable in terms of these traits being neurologically-driven hyposensitivity to their own emotions, whereas psychopaths with poor impulse control are hypersensitive (Mackenzie & Watts 2012), while psychopaths' capacity for long-term focused attention could be advantageous, or dysfunctional inflexibility based on deficient neural integration (Hamilton et al 2015). Given this taxonomic volatility, it is ethically and clinically difficult to justify implanting DBS devices in imprisoned psychopaths' brains without precise nosological distinctions between expressions of psychopathy, their normative and clinical significance and relationship to specific neuromechanisms, and evidence of the efficacy of DBS.

The authors' claims that DBS could not provide individual medical benefit for imprisoned psychopaths, nor could they provide valid consent, rest on the assumption that a criterion of individual medical benefit for research involving prisoners as a vulnerable group is and will remain universal. Yet regulation governing research on

prisoners in the USA and UK is attracting increasing criticism as overly protectionist. Under the principles of equivalence and equity, European prisoners and non-prisoners may participate equally in individually beneficial research, while non-beneficial research involving prisoners is permissible where it is possible only with prisoners, offers them group benefit and poses no more than minimal risk. If prison environments are not inherently coercive, prisoners provided with safeguards and protections to minimize vulnerability should be able to provide valid informed consent, and to arrive at their own risk/benefit assessments.

Within current US standards, DBS could arguably confer individual medical benefit, rendering imprisoned psychopaths' participation in DBS treatment/research trials ethical. Imprisoned psychopaths undoubtedly experience subjective suffering derived from first order desires resulting in incarceration. Medical benefit need not hinge on subjective suffering or upon recognition of oneself as oneself as in need of treatment, as in justifications for compulsorily treating the mentally ill, many of whom deny they are unwell. The mentally ill without subjective suffering, such as those with mania, and other patients with symptomless clinical conditions like high blood pressure, may make pragmatic, rational decisions to accept medication to preclude future undesired consequences such as compulsory treatment or ill-health. Medical benefit for psychopathy as a clinical disorder (Raine 2013) would be justifiable, but DBS neuromodulation alone would not result in moral conduct: treating confounding conditions and pre and post-DBS counseling would be imperative. DBS could thus claim to confer individual medical benefit, on the basis that dysfunctional neuroregulatory mechanisms had been normalized, accompanying clinical factors associated with imprisoned psychopaths had been treated, and reintegrative therapy provided.

Nonetheless, DBS treatment for psychopathy may be implausible, or involve unacceptable, uncertain risks. While DBS-associated risks of physiological and psychological side-effects will decrease as technology progresses, benefits associated with DBS for treating psychopathy are still speculative. Non-intrusive interventions may have more merit. Focquaert argues DBS is unsuitable to treat adult psychopaths as psychopathy is a neurodevelopmental disorder with marked structural and functional abnormalities in targeted areas unlikely to respond to neuromodulation (Focquaert 2014). She contends that offering incarcerated psychopaths non-invasive neurotechnological treatment is ethically acceptable, provided that prison circumstances and the proposed treatment are not wrong in some way, treatment is in the best interests of the prisoner and informed consent is obtained, but that sizeable potential side-effects and irreversibility of invasive neurotechnologies like DBS involve undue coercion in prison environments.

Were significant taxonomic and technological advances reducing the current risk profile of DBS as regards precise DBS device placement, side-effects and reversibility in place, it could be ethical to treat or recruit psychopathic prisoners as participants in a trial to test DBS as a means to treat psychopathy. Yet offering prisoners participating in research incentives such as reductions in their current sentences would be coercive, invalidating consent, as Hubner and White rightly contend. Were uncertainties over risk resolved, however, prisoners' decisions to participate, reasoning after balancing risks/benefits that post-DBS they are likely to avoid future imprisonment, could constitute valid informed choices.

Issues remain.

A central question is whether DBS treatment of incarcerated psychopaths aims to avoid recidivism by converting imprisoned psychopaths to community/'successful' psychopaths, or by transforming psychopaths to non-psychopaths. Competing taxonomies of psychopathy render each option more or less plausible or practicable. Incarcerated psychopaths whose confounding difficulties identified above had been treated could perhaps be taught strategies to avoid imprisonment by functioning as community/'successful' psychopaths, rendering DBS otiose and thus unethical. Whether this would be a socially desirable outcome is questionable.

Research on successful psychopaths suggests that converting imprisoned to successful psychopaths via DBS is implausible. Lilienfeld and colleagues' survey of typologies of 'successful' psychopaths, defined as those achieving short or long-term accomplishments which benefit themselves or society, identifies three models of psychopathy and suggests 'successful' psychopaths possess distinct traits (Lilienfeld et al 2015). In the differential-severity model, 'successful' and unsuccessful psychopaths possess identical psychopathic characteristics, which are weaker in the 'successful'. The moderated expression model associates 'successful' psychopathy with intervening adaptive extraneous factors tempering the expression of psychopathy, such as intact executive function, effective parenting or superior intelligence. The differential-configuration model defines unsuccessful and 'successful' psychopathy as constituted by amalgams of distinct traits: 'successful', but not unsuccessful, psychopaths tend to possess boldness, conscientiousness, fearless dominance, low disinhibition and resilience. Neuromodulation to de-intensify psychopathic characteristics is conceivable, but model one is unsupported by research. Evidence favours models two and three, yet DBS produces neither adaptive extraneous factors, nor distinct traits.

Nor is DBS is likely to convert imprisoned psychopaths to non-psychopaths via moral enhancement. Morality is neurologically complex, and moral enhancement arguably impossible, since morality is essentially contestable. Enhancing empathy is suspect – empathy may underpin, but does not guarantee, moral conduct. Effective torture relies upon empathy, while psychopathy may constitute neurodiversity, or a moral learning disability precluding caring about right and wrong (Mackenzie & Watts 2012). Neuromodulation to increase empathy and amygdala sensitivity to fear would be insufficient to eradicate psychopathy without post-treatment counseling to arrive at a revised, subjectively acceptable, code of moral conduct. Furthermore, questions of autonomy and authentic identity underpinning valid consent are fundamental to ethical questions surrounding shaping identities through personality-altering interventions like DBS (Mackenzie 2014, 2011a, 2011b). Focquart and Schermer argue the consent process for direct interventions to provide moral enhancement, such as neuromodulation by DBS, should address the possibility of compromised autonomy and identity, and there should be post-intervention counseling to allow the participant choice over whether to endorse or reject the changes (Focquaert & Schermer 2015).

DBS neuromodulation might conceivably serve to normalise hyposensitivity to one's own emotions associated with psychopathic callous-unemotional traits and meanness.

Psychopaths could thereby learn to not only to know the difference between right and wrong, but to care about it, recognizing their own and therefore others' emotions as a grounding for moral conduct. In a prison context, however, obtaining valid consent from psychopaths for DBS treatment/research participation aimed at achieving this would present complex ethical conundrums.

Psychopathic prisoners' post-DBS treatment experiences of increased empathy and fear, along with remorse, guilt and self-condemnation, would be likely to cause rather than alleviate subjective suffering as a lifetime's affective landscape became disrupted, with established interpersonal strategies like instrumental aggression and dominance defamiliarised. New heightened emotional sensitivities would render prison environments significantly more inhospitable and hazardous, altering the risk/benefit ratio of DBS treatment significantly. Reintegration into a community post-release, difficult enough for most prisoners, would be rendered far more challenging for DBS-treated psychopaths with newly normalized sensitivity to their own and others' emotions.

Prison contexts further complicate the central issue of who should decide upon the final settings for personality-altering interventions like DBS and what would constitute valid informed consent. Neuromodulatory settings on DBS devices would need to be adjustable, in effect reversible, and choices over who made the decisions over settings, and on what grounds, be addressed before and after intervention as part of a continuing consent process (Mackenzie 2014, 2011a, 2011b). Prisoners might well prefer lower settings of sensitivity to affective empathy and fear than the norm, unless they were provided with effective protections or placed in a social environment where these unfamiliar emotions could be experienced safely. How far it would be possible or ethical to address these future prospects as part of pre-treatment informed consent protocols in a prison context is problematic. How these necessary ongoing consent processes could dovetail with patients' right to refuse treatment, and participants' right to withdraw from research, would be particularly ethically fraught.

What place there is for psychopaths and psychopathic traits in society as we would wish it to be, and within which frame of reference this should be be decided remain difficult questions. The authors' intriguing paper challenges us to integrate its concerns with phenomenological research into psychopaths' internal worlds and perspectives from evolutionary and social psychology arguing that psychopathy represents an adaptive response to harsh socio-historical circumstances. Moreover, moral persuasion in neoliberal contexts should arguably be directed towards infrastructures with psychopathic values rather than simply towards individuals shaped by them.

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