

‘Cosmetic Neurology’ and the Moral Complicity Argument

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Abstract Over the past decades, mood enhancement effects of various drugs and neuromodulation technologies have been proclaimed. If one day highly effective methods for significantly altering and elevating one’s mood are available, it is conceivable that the demand for them will be considerable. One urgent concern will then be what role physicians should play in providing such services. The concern can be extended from literature on controversial demands for aesthetic surgery. According to Margaret Little, physicians should be aware that certain aesthetic enhancement requests reflect immoral social norms and ideals. By granting such requests, she argues, doctors render themselves complicit to a collective ‘evil’. In this paper, we wish to question the

extent to which physicians, psychiatrists and/or neurosurgeons should play a role as ‘moral gatekeepers’ in dealing with suspect demands and norms underlying potential desires to alter one’s mood or character. We investigate and discuss the nature and limits of physician responsibilities in reference to various hypothetical and intuitively problematic mood enhancement requests.

Keywords Neuroenhancement · Mood · Doctors · Moral responsibility · Cosmetic surgery

Aims and Scope

Over the past decades, insight in the neurochemical basis of our cognition and emotion has increased significantly. This has driven the production of new drugs which outstrip former generations of psychotropic medication in terms of ability to modulate brain functions with greater precision. Expected progress in this area makes such drugs an attractive option for non-patients who do not suffer from a particular disorder, but who wish to elevate their baseline cognitive and affective functions without having to bear the side-effects related to most recreational drugs. Indeed, we have already witnessed soaring sales of methylphenidate, dextroamphetamine, modafinil and various selective serotonin reuptake inhibitors (SSRIs) once their enhancement effects were proclaimed.

It is too early to predict if the current hype over psychopharmacological and neurotechnological enhancement is realistic. Nonetheless, if neuroscience does prove to provide highly effective methods for

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enhancement, it is very likely that the demand for them will be considerable. One urgent concern will then be what role physicians should play in providing such enhancement services [1–3].

Granted that neurosurgeons, psychiatrists and other physicians will one day be involved in interventions specifically aimed at enhancing healthy mental functioning, this paper focuses on the question if they can be held responsible for deciding upon the moral and social acceptability of the enhancements. In other words, we wish to explore if and to what extent medical professionals should function as ‘moral gatekeepers’ of neuroenhancement.

While few authors explicitly focus on this question in relation to neuroenhancement (apart from general discussions whether physicians may apply medicine for social problems or goals—see for instance [4]—and vague suggestions that there is a need for ‘appropriate’ prescribing of enhancers—see for instance [5]), the issue can be extended from the context of cosmetic¹ (aesthetic) surgery. In particular, Margaret Little drew attention to individuals’ requests for changes in appearance which, she felt, were highly problematic because they were prompted by socially undesirable norms [6]. As a response to this situation, Little argued that doctors have a unique role in resisting and even fighting such forms of cosmetic surgery.

In an attempt to find convincing analogies with the context that concerns us here—and which has aptly been labelled ‘cosmetic *neurology*’ [7]—we will evaluate the position of Little in reference to various *hypothetical* requests for *mood* enhancement (moreover, for the sake of simplicity, we will restrict ourselves to requests made by and for competent adults). Through this application, we will investigate and discuss the nature and limits of physician responsibilities to avoid enhancement interventions with dubious ideological motivations.

Mood Enhancement

Following the British Medical Association’s definition of cognitive enhancement, we define *mood* enhancement as the use of internal methods to improve mood

¹ The term ‘cosmetic surgery’ will refer here to surgery aimed at enhancing aesthetic appearance. Although, arguably, the distinction is vague, it does not include reconstructive surgery, which is primarily aimed at restoring a defect in appearance.

by persons who do not have a recognized medical condition or health defect [1]. It is often argued in this respect that concerns related to mood enhancement are not new, as improvement of human affective functioning has been sought by humans since time immemorial. Traditional (and effective) methods for improving mood include general health improvement; the consumption of certain foods, herbs, chemicals, alcohol; the practice of meditation, physical exercise; and engagement in social relationships. The new forms of neuroenhancement can nonetheless be distinguished in terms of proximity to the neural level [8] and the more direct, immediate and long-term effects on the brain they will likely have.

For now, most (apparent) enhancement effects have been described with drugs originally used as treatment options for various disabling disorders of mood and character. There is anecdotal evidence that non-medical use of such drugs is actively sought by healthy subjects [9]. Examples include the use of beta-blockers by musicians to calm their nerves and control their tremors [10] and the use of SSRIs to increase affiliative behaviour [11], to improve a general sense of well-being [12], or to relieve anxiety and social awkwardness [13] (although their clinical efficacy is highly contested [14]). Various technological interventions are also being explored as tools both for relieving mental disease and for achieving optimal affective functioning. An early experiment in transcranial direct current stimulation (tDCS) using weak electrical currents (1–2 mA) to alter the firing rates of neurons, suggested that such stimulation was capable of changing mood in healthy people [15]. Transcranial magnetic stimulation (TMS) producing short frequency magnetic fields of up to 2.5 T from a coil held to the head is considered a promising treatment for chronic depression [16]. There is still significant uncertainty regarding its potential to boost mood in healthy subjects [17, 18] but negative effects on mood (decreases of happiness and increases of sadness) are apparent in left prefrontal rTMS [19]. Neurobiofeedback is a more popularized enhancement tool. By use of immediate feedback of neural activity in the form of EEG-patterns or other visual data, the person learns to perform predefined EEG patterns for preferred behaviour or attitudes. One study claims that healthy volunteers felt “*more energetic, agreeable and confident*” after the feedback training [20]. Interestingly, in the late 1960s/early 1970s, two researchers independently reported that electrical stimulation

through implanted electrodes could increase pleasant feelings [21, 22]. A recent pilot study involving nine patients with idiopathic Parkinson's disease also suggested that optimal placement of electrodes can induce a general improvement in mood [23]. In an attempt to suppress tinnitus, a superior temporal gyrus electrode implantation induced a pleasant, "almost tipsy" feeling [24]. In a recent study using subcutaneous occipital nerve stimulation for fibromyalgia, mood enhancement was noted as well (although it was unclear whether this was related to the obtained pain suppression or an independent improvement) [25]. Experimental research is also being conducted to assess the utility of Vagus Nerve Stimulus (VNS) for relief of not only symptoms related to epilepsy and motoric dysfunctions, but also psychiatric afflictions such as depression [26]. A recent study suggests that VNS enhanced mood, as measured by significant improvement on the Beck depression inventory [25]. There are also hopes of achieving better affective performance through neurotrophic gene therapies. Finally, it is conceivable that the above techniques will be converged to achieve even stronger effects, as it has already been demonstrated that combining certain medication with neuromodulation techniques such as tDCS or stimulation via implanted electrodes can generate more pronounced neuromodulation effects [27, 28].

Enhancement Within the Domain of Medicine?

An initial question we should ask ourselves is whether it is at all realistic and reasonable to anticipate that mood enhancement procedures will be applied by medical professionals. While for a large part still speculative, there are some good reasons to assume and even wish that this will be the case. Indeed, in analogy with the development of cosmetic surgery, Chatterjee has argued that it is inevitable [29]. One of the incentives for physicians to start practicing cosmetic surgery was the fact that medical professionals were increasingly regarded as 'employees' and that there was an evident appeal of 'fee for service' practices. It is likely that the same will be true for 'cosmetic neurology', given that many psychiatrists already practice on a strict fee for service basis. Indeed, according to Chatterjee, the organizational infrastructure to support the economic interests involved in cosmetic neurology potentially already exists.

Another important factor in the development of cosmetic surgery was the growing conviction that it involved a mental health intervention. Particularly since the WHO definition of health as physical, mental and social well-being, cosmetic surgery has been defended as an integral part of medicine under those terms [29]. Similarly, one could relate the practice of cosmetic neurology to, for instance, psychiatry's goal to eliminate mental inhibitions to good social functioning. Indeed, enhancement of affective functioning is already an accepted practice in the field of 'positive psychology', which focuses exclusively on improving one's normal capacities for the pursuit of happiness, rather than on normalizing defective ones.

The advantage of distributing neuroenhancement procedures through medical professionals rather than others is of course that they have the necessary scientific and clinical skills to perform the (potentially invasive) interventions in the brain. They are also in the best position to anticipate, understand and communicate potential health risks [1].

Cosmetic Interventions and 'Suspect Norms'

Cosmetic (Aesthetic) Surgery

Nearly 10 years ago, Margaret Olivia Little wrote an interesting critique on the expanding practice of cosmetic surgery within the domain of medicine [6]. According to Little, the fundamental ethical concern of such interventions relates to the unique role that doctors play in facilitating the practice. In deciding whether or not it is appropriate to provide cosmetic surgery, she argues, doctors must acknowledge their exceptional moral responsibility to contest the immoral norms and ideals that may underlie patients' requests. We can summarize her argument as follows:

- (1). Cosmetic surgery is a special case of medical intervention:

"(...) in that the suffering medicine is asked to alleviate is in some sense due to social attitudes and norms rather than some disease or biological dysfunction. (...) Perhaps the patient has internalized the norm and wants very much to meet it; perhaps she herself does not accept it but suffers because those who do accept the norm treat her differently." [6, p. 163]

- (2). Some of these norms are ‘morally suspect’: i.e., they are based on social attitudes, beliefs and actions that are intrinsically unfair and unjustifiable. Consider for instance the request of a black person to change facial traits so that (s)he appears more Caucasian. According to Little, the basis for this request is likely to be prejudice rather than preference: the person is attempting to escape the stigma and social punishment that may be associated with black African features.
- (3). The broader source of individual patients’ requests for cosmetic surgery is relevant to the moral responsibilities of medicine in general and surgeons in particular. Granting such requests without opposing the influence of unjust societal norms and ideals renders the doctors complicit to the enforcement of a ‘collective evil’.

Cosmetic Neurology

The emerging and controversial practice of medical mood enhancement provides a new and highly relevant context for evaluating this argument. As is the case for aesthetic surgery, the interventions are likely to be regarded as possible means of improving how we feel about ourselves, and will therefore likely be requested in light of individual pursuit of happiness and self-empowerment. Also, demands for both types of biomedical enhancement arise from social/individual malaise rather than biological impairment. However, depending on the radical impact neural interventions could have on the personality and character of the patient, it is likely that many would view certain mood enhancements requests as far more controversial than requests to change one’s physical appearance.

In order to apply Little’s argument to the context we are concerned with here, let us consider several hypothetical scenarios. Dr. B (who is either a neurosurgeon, psychiatrist or general physician) is consulted by the following patients:

- (a) Emma is an introverted person who wishes to boost her abilities to socialize with others and who desires a more outgoing character;
- (b) Sam is a career-driven person who requests an increase of abilities for efficient and rational behaviour and an inhibition of his/her disposition for emotional sensitivity and instability;

- (c) Julian is homosexual and wishes to ‘convert’ to a heterosexual orientation.

While we realize that the current state of art of pharmacological/technological interventions in the brain is still very modest and does not enable drastic alterations of mood and character, the requests for such alterations are realistic enough. Indeed, a ‘market’ for each request already exists. In reference to example (a), for instance, various pharmaceutical companies have been accused of abusing the blurry line between social anxiety disorder and shyness for marketing purposes. As early as the 1960’s, Sandoz launched an aggressive advertisement for Serentil, a neuroleptic that could help “*For the anxiety that comes from not fitting in*”; “*the newcomer in town who can’t make friends*,” or “*the organization man who can’t adjust to his altered status within his company*.” [30] With regard to the demand to advance rational, ‘manly’ behaviour in example (b), advertisements in women’s magazines, self-help books and internet sites proclaim various benefits of testosterone patches and supplements, including improved mood, increased libido and a boost of energy levels [31]. One advert for a self-help book suggests that “*From the bedroom to the boardroom, testosterone is what makes a man a man*” [32]. It has also been noted that certain employees may already be forced into taking Prozac in order to better fulfil their professional requirements [33]. Even the demand for ‘sexual convergence’ as reflected in example (c) is currently endorsed by hundreds of Christian therapists and ministries who offer ‘help’ through ‘conversion therapy’, ‘reparative therapy’, and ‘Transformational Ministry programs’ [34].

In extending Margaret Little’s concern for certain beauty enhancements, each of these examples may evoke the intuition that morally problematic social expectations or norms are involved. Example (c) is most compelling in this respect, because it is conceivable that the desire for sexual ‘reorientation’ derives from stigma, discrimination and limitation of homosexual life style options. One could also regard (b) as problematic, given that a preference for masculine features in the work setting underwrites a tough competitive mentality and may undermine strategies for social cooperation and communication. Example (a) could also be deemed to reflect bad social policy, characterized by the punishment and rejection of those who lack the confidence or interest necessary to be

assertive and to engage in comfortable interactions with strangers. In each of these examples, furthermore, possible adverse effects on the community include a (further) devaluation and stigmatization of others who share the socially 'undesired' traits, increased pressure to conform to a new norm, as well as a general disrespect for and ultimately downplay of diversity.

Whether these effects will arise is of course a matter of future empirical inquiry. It is not unthinkable that most people who desire some form of mood enhancement will nonetheless be reluctant to alter those traits that help define one's identity. Indeed, this is suggested by the results of a recent poll on the acceptability of neuroenhancement [35]. Also, an interesting trend has been identified among clients of cosmetic surgery: more and more ethnic groups in the United States are seeking cosmetic surgeons who can beautify their appearance while retaining those traits that are constitutive of their ethnic identity [36]. However, for now, we can at least reflect upon the possibility of the above mentioned adverse social effects.

Placing the Moral Gate

Margaret Little's criticism explicates an important issue that is deserving of our concern: that physicians are in a particular position to influence the existence of certain social norms of desired traits [6, p.171]. This is generally the case because they have high social status which may function as a subtle validation of the acceptability and safety of the procedures they perform. Furthermore, within the traditional domain of medicine, doctors' decisions to treat a certain condition directly influence the perception that it deviates from the norm of health/normalcy. Also, for many cosmetic interventions (most certainly those that involve invasive surgery), the requested traits would not otherwise be achievable for the individuals—or at least not as successfully—were it not for their specific surgical skills and expertise.

Nonetheless, various problems arise when one attempts to derive from this unique position a duty to actively oppose social ideas related to certain enhancement requests. Even though at least some of the examples above will likely be intuitively problematic, it is important to note that many medical ethicists today will not automatically share Margaret Little's zeal to resist the (in her opinion) ill-motivated

requests, rather to the contrary. In this section, we discuss various impediments to the recognition of a physician's alleged duty to contest potentially problematic norms underlying hypothetical mood enhancement requests.

Profession-specific Moral Duties: the Liberal Stance

A point often raised in discussions regarding enhancement is the common liberal position that the ultimate duty of a physician is to respect the patients' *own* assessment of what constitutes proper care. While a physician ought to communicate and discuss with the patient all relevant information regarding the intervention—including potentially adverse effects and perhaps even the physician's own personal hesitations—(s)he must foremost recognize and respect the individual's autonomy. This usually implies respect for the choices of a competent and well-informed individual, whatever one's personal opinion on the matter, for the patient is clearly in the best position to recognize his or her best interests. This is particularly relevant for mental 'conditions' for which objective tests are still lacking and the experience of which is essentially subjective and impenetrable. The fact that physicians are bound by obligations of confidentiality would furthermore enable the enhancement to take place without society knowing this, if so desired by the individual.

Enhancements do have a general and obvious appeal in terms of serving the patient's best interests: they may assist the individual in his or her pursuit of self-improvement. Granted this, Dr. B may feel compelled to offer the enhancement in reference to the direct benefits the patients hope to derive in terms of happiness and well-being. Consider for instance that:

- (a) Emma may become better accepted in social settings, thus creating a larger social network and potentially increasing employment and other opportunities;
- (b) A boost of traits considered 'manly' and 'rational' may help Sam achieve certain professional performances, thereby increasing (financial) success and self-esteem;
- (c) A change in sexual orientation may allow Julian a lifestyle that is closer to a personalized norm and facilitate integration in certain social circles.

This view could have particular bearing if cosmetic neurology were, like cosmetic surgery, to be con-

ducted in private practice. It would thereby become regulated by financial and commercial interests and, specifically, the *customers'* demands. Although this will be discussed in a later section, indulgence towards patient autonomy developed partly in response to the growing corporatization of medicine and restrictions of physicians' decisions by professional standards and insurance policies [29]. It also grew out of realization that many formerly identified 'moral absolutes' no longer apply in our ethically pluralistic societies and fail to reveal anything of universal value.

There is reason for concern over the loss of moral absolutes in medicine. Pellegrino, for instance, anticipates a new professional ethic, by which "(...) *each clinical encounter will become a lottery whose constants will be competence, personal preferences, and legal requirement, not norms intrinsic to the doctor.*" [37, p.471–2] Relman also expects "(...) *a new generation of physicians too ready to accept the replacement of professional values by market dogma—too willing to believe that medical care is just another economic commodity, of which they are simply "providers".*" [38, p.375–6].

There are of course other professional medico-deontological principles that Dr. B could evoke in assessing whether or not to provide or resist the enhancements. Dr. B could for instance refer to a duty to refrain from administering treatments or tests which are not directly justified by the patient's medical condition. One could argue that offering an enhancement is 'unnecessary' in terms of the medical needs of the patient; in fact, the person requesting an enhancement is not even a proper 'patient'. However, in light of ongoing debates on what constitutes 'mental health', it is questionable whether the social anguish that leads a person to request the enhancement is an entirely unjustified medical need (especially in this case, when it leads to mental unease not so different from that which is the object of psychotherapy). Indeed, many authors will support the view that the minimally necessary condition for a practice to count as medical is that the doctor be concerned with all kinds of suffering experienced by the patient, regardless of whether there is an underlying medical condition. In support of such a position, one may argue either that 'problems of living' can have a significant impact on biological processes, or that general well-being is the focus of medicine [39].

In a 1980 article, for instance, William Goosens asserted that whether or not a treatment is directed at the health of the patient is a redundant rationalization. What is relevant is that it advances well-being, since the very purpose of identifying certain mental and physical states as medically significant is that it has a beneficial or harmful effect on our well-being. According to Goosens, doctors have a special duty to consider their patients' general well-being because: "Only the medical profession has the scientific knowledge of the workings of mind and body. Therefore (...) no other group is in as good a position as doctors to consider it." [40] Various liberal thinkers have applied this idea in defending neuroenhancement as legitimate health care [41].

Moreover, whether or not a particular treatment is appropriate is not a straightforward matter; rather it is often left to the consulted physicians' best judgment. In the US, for instance, this implies that a licensed physician may prescribe an FDA approved drug or device for off-label use if (s)he deems that use appropriate and if it is based on sound scientific and medical evidence [43]. Furthermore, the need to limit one's medical services to those that are strictly therapeutic does not apply to medical professionals who wish to practice as private consultants.

On the other hand, even private practice cosmetic surgeons must acknowledge that they are, above all, physicians who have vowed to protect their patients [42, 43]. They are therefore equally required to respect their best interests and limit harmful events as much as possible. In this respect, perhaps the clearest motivation for avoiding to provide such enhancements lies in the current uncertainty that they will be safe. Particularly those enhancement methods which require surgical intervention carry a unique set of mental and physical health risks and are generally less reversible than pharmacological interventions. Thus, in this sense, it is currently conceivable that the enhancements will eventually produce more harmful than beneficial effects. It also remains to be seen whether the improvement of a certain affective function will indeed be effective in increasing the patient's overall sense of wellbeing. Moreover, it is possible that enhancement methods will not have the same beneficial effects for all who take them, given the differences in individuals' brain and the varying responses to psychotropic drugs [44]. Currently, we lack evidence of both benefit and potential risk to make the case either way.

There would clearly be other situations in which Dr. B must stand against performing the cosmetic intervention: in case the patient's request is not fully autonomous in the sense that it is misinformed or involuntary. Aside of fairly common problems of ensuring that the patient is competent enough to assess the physical risks and consequences of the intervention, the issue can be related to a crucial point in Little's ethical objection to cosmetic interventions: the assumption that the patient would not endorse the need to undergo the procedure, were it not for his/her social environment. In other words, the social values and norms may implicitly or explicitly force one to do so.

Even then, the responsibility to oppose the request may not be so obvious, particularly when the 'coercion' is not so straight-forward. Consider for instance cases in which a person is subtly made to feel as if (s)he is abnormal because (s)he has affective traits that are redefined as such (for instance, if they are labelled as medical disorders). The impact of cultural norms on disease diagnosis is well-recognized and there has been much debate on the risk of 'disease mongering'. It is feared that for-profit pharmaceutical or biotech companies will advertise their mood enhancing products as 'treatments for biological impairments'—when in fact they are targeting a common facet of the normal character distribution. This would be an effective marketing strategy to convince potential 'clients' that they desperately need a medical 'fix', whereas they themselves had never regarded their condition as problematic. While this is a genuine concern very deserving of scrutiny, it is often unclear when someone has fallen victim to the for-profit motivations of the medical industry, particularly in the domain of mental health. Due to vague diagnostic criteria and lack of diagnostic tests, it is notoriously difficult to identify certain affective traits as symptoms of a given affective disorder rather than expressions of normal, albeit socially unaccepted, traits. It is for instance often questioned how to distinguish between 'social anxiety' (which is now an accepted psychiatric diagnosis) and extreme shyness (which is not) [45]. Moreover, it must be noted that the opposite scenario, in which actual disorders are not medicalised but rather regarded as undesirable character traits, may be worse. For instance, not so long ago, symptoms of epilepsy and manic depression were considered by some societies to be signs of bad character, resulting in the stigmatization and neglect of the patients [45].

Another huge challenge for Dr. B is how to distinguish between cases of indoctrination and those in which the individual truly prefers the alterations following personal goals, needs and desires. It will prove very difficult to establish whether social stereotypes and role models are more influential in deciding to pursue an enhancement than one's own psychological characteristics [46]. More importantly, still, the question remains as to how Dr. B's role as a medical professional is relevant in denying service to a patient who has come to *endorse* the social desire for the requested trait.

Diagnosing a Social 'Evil'

While even from within a very liberal angle Dr. B may identify various situations in which he feels morally and professionally obliged to interfere with the patients' wishes for an enhancement, Margaret Little believes that such discussions are in fact besides the point. Rather than focus on considerations regarding the patient's autonomy and best interests, she places the emphasis on a physician's duties to both the patients and society at large, and on his/her role in avoiding social harm. As such, she evokes the need for a conscientious refusal to support interventions that are motivated by and/or capable of strengthening immoral (or 'evil', to use Little's terminology [6, p.168]) social norms.

Current discussions of neuroenhancement have made explicit appeals to the medical profession to take into account the social impact of a procedure when assessing the needs of the requester. In a paper discussing ethical considerations of neuroenhancement for neuropsychologists, for instance, Shane Bush relates this obligation to the duty to provide *general beneficence*, "*to promote the welfare of all human beings that the neuropsychologist interacts with and has influence over*" [47, p.13]. Given this, it seems imperative that Dr. B's reaction takes into account the welfare of all of society. As immoral norms are not constructive for such general welfare, one may argue, Dr. B has the obligation to resist requests that reflect such norms. However, in terms of prescribing such a decisive moral gate-keeping role to individual physicians, again various problems arise.

There is not necessarily a straight-forward relationship between providing an enhancement intervention and identifying a responsibility for the social consequences thereof.

For one, as a *general* medical-ethical principle, one's professional responsibilities for the health and well-being of the community at large are often explicitly addressed in terms of duties to help safeguard public health and educate the public about health threats, rather than in reference to social effects that are unrelated to health outcomes [48].

Moreover, a particularly relevant aspect of the social harm involved here is the fact that Dr. B is not the direct wrongdoer, nor is any other particular person involved in the scenario; rather it is 'society', the 'social order'. The responsibility of Dr. B consists of not *assisting* that social order in acts of wrongdoing. The principle of complicity is invoked. This principle differs significantly from general conceptions of moral responsibility which weigh in whether or not the cause of harm lies within the moral agent. Generally, it is presumed that a person is blameworthy if in a unique position to contribute significantly to the existence of harm and/or to effectively enable control of its occurrence [49]. While we have outlined the ways in which physicians are in a particular position to contribute to social norms and values, the cause of the social injustice underlying the enhancement requests is not (necessarily) rooted within Dr. B's actions or inactions. In fact, the norms behind the requests have existed long before the emergence of biotechnological mood enhancement and unwillingness to perform them is unlikely to put a stop to their having force. Still, it is fair to assume that the interventions themselves play a significant role at least in maintaining the norms.

It is also crucial to note that, while doctors may have a unique position to provide certain socially impactful interventions, they are not necessarily in the best position to identify and assess the moral acceptability and social worth thereof. It is in this sense important to refer to the problem of establishing what *the precise wrongdoing* is that Dr. B would be assisting. In the history of medicine, the principle of complicity most often refers to cases in which physicians comply with the state or other authorities in acts of torture and abuses of human rights. What is at stake here are not direct forms of physical or psychological (risk of) harm, but the endorsement and enforcement of a collective system of constraining and unjust pressures—effects which are much less tangible, and much more subject to interpretation.

Different doctors may have very divergent views on whether or not the (apparent) underlying norm is indeed immoral and socially harmful. Indeed, although this is an argument we explore elsewhere [50], it is conceivable that some physicians will want seek the use of neuroenhancement modes themselves—partly in acknowledgement of the weightiness of their professional responsibilities. It is also conceivable that Dr. B responds favourably to Emma's request for an enhancement of communication skills, for instance, out of a genuine belief that such interventions will increase the individual's control and communication within society. Even though requests to become a more rational person may seem more subject to suppression, let us assume for the sake of argument that some would regard a boost of manly behaviour as a way of emancipating women from their care-taking roles which they may find restricting and frustrating. As such, one could argue that attributing responsibility to physicians for all consequences, even those contrary to their intention, will make them responsible for too much.

Moreover, doctors invoke conscientious refusals in many contentious contexts—including reproductive aid for unmarried couples, abortion, terminal sedation and even enhancement applications of growth hormone [51]—while their personal moral code is not necessarily ethically authoritative or widely supported. Nor are their judgements necessarily embedded in concern for the betterment of society. Notwithstanding the ongoing debates on this matter, conscientious objections seem to be best accepted when rooted in one's professional rather than personal values; i.e. when they refer to or correspond closely with medicine's broader goals and core values [52]. In this sense, there is undoubtedly space for professional ethical standardization for enhancement practices. Still, and as noted above, such standards will not necessarily rule out the quest for the improvement of one's quality of life, as these do not per definition go against medicine's goals and values (especially within private practice). Moreover, the recommendations may not respond to the specificity of each clinical encounter.

Even if one can assume some form of consensus regarding the immorality of a request, it is also likely that Dr. B does not intend the enforcement of the 'evil' norms and is unaware of the severity of his/her participation. It is conceivable that such unawareness flows from the gradualness with which mood en-

hancement technology may be introduced. If mood enhancement applications are introduced little by little, the medical profession and public at large may grow accustomed to the social expectations that this development involves. In other words, it is likely that a slow emergence of mood enhancement applications will be less of a trigger for thorough ethical reflection on the acceptability thereof, than when new and controversial applications arise more suddenly.

Another possibility is that, while Dr. B recognizes his potential role in the enforcement of unjust norms, he may feel trapped in choosing between his duties to patients and society at large, especially in those situations where there are clear and tangible benefits for the patients. This will be particularly compelling with increased evidence of the safety and effectiveness of the enhancement methods. Consider in this respect the possibility that the patients are truly in despair and view biomedical enhancement as the only solution to their social problems. Dr. B could argue that it is easy enough for those of us who are accepted by society to say that the outcasts should learn to embrace their differences.

Discussion: Personal Autonomy as a Platform for Joint Responsibilities

We have identified various reasons why it may be problematic to target medical professionals as the moral gatekeepers to neuroenhancement. Perhaps the essential problem with Margaret Little's plea is that it risks unjustified forms of paternalism. For this reason, it is highly likely that obligations to acknowledge the patient's personal autonomy will remain a familiar objection. However, this counter objection, in turn, seems overly simplistic and downplays relevant concern for the social dimension of (future) enhancement interventions entirely. We thus seem to be confronted with a conflict between patient and physician expectations.

This apparent clash is nonetheless misleading. Recent bioethical re-interpretations of the duty to respect a patient's personal autonomy open up possibilities for acknowledging social responsibilities and can in effect be a useful paradigm for discussing and sharing these responsibilities between patients and the physician.

Traditionally, medical ethics—including the formulations of the Hippocratic Oath—prescribed that a physician's fundamental moral duty was to focus on and adhere to one's individual patients' best interests. In

this sense, medical ethics is essentially individualistic and has always underscored the importance of social concerns [53]. This individualism was further brought to a head with the birth of bioethics and its emphasis on autonomy and self-determination as a means to counter the long dominant forms of medical paternalism [54]. Along with the above mentioned increased corporatism of medicine, recognition of the irreducibly subjective character of one's conception of the good life is another important reason for placing personal autonomy as a fundamental value [55]. These factors combined have led to the not uncommon libertarian view that autonomy bestows on an individual a right of self-determination without interference of others. It is therefore perhaps unsurprising that, in comparison to our expectations regarding doctors, what we generally require from patients is little more than that they provide consent [56].

This medical ethical 'tradition' is nonetheless increasingly criticized, both because of the untenability of the implications of abiding by patient preferences for medical practice and because of conceptual/philosophical flaws in interpreting personal autonomy as purely individualistic. The discussion was initiated by Onora O'Neill with the observation that the one-sided liberal conception of personal autonomy is not in keeping with original versions as formulated by Mill or Kant. For Mill, O'Neill reminds us, respect for autonomy is not a matter of letting individuals choose to independently express and gratify their desires; rather it implies taking control over those desires. Nor does Kant regard autonomy as a right to self-expression and -determination. Rather, it is the freedom to act on certain principles of obligation, most notably the principle of respecting other persons [54, 57]. As such, the uneven distribution of moral burdens is corrected by placing the value of personal autonomy within a reciprocal context, where not only the physician, but also the patient has concurrent duties and responsibilities. As Draper and Sorell state: *"Even though doctors are likely to remain the main audience for medical ethics, it does not follow that medical ethics is solely the ethics of the doctor's role or even the ethics of the more inclusive role of the health care professional. It extends to patients as well."* [56, p. 336]. Patients must share responsibility both for respecting their own autonomy and that of others and they must be willing to take the consequences when they fail to do so.

Obligations towards the autonomy of others is of course a general ethical principle that is widely endorsed in terms of placing limits on one's freedoms and rights when these impinge upon the freedom and rights of others. While in medicine this principle is most easily identified and applied in cases where a patient's acts risk *serious* harm to others—and most notably within public health policies as a means to control communicable diseases, for instance—broader interpretations can be useful for our discussion. In reference to our hypothetical scenarios, for instance, one way in which a conflict may arise is if granting the requests would mean that other, more necessary forms of medical care must be rationed. Respect for the autonomy of others also entails that one cannot claim a right to an enhancement if it has foreseeable consequences in terms of limiting the rights and lifestyle liberties of others.

The duty patients have towards their own personal autonomy is less compelling within this context, for it means for instance that they should not act in such a way that gratuitously reduces their capacities for autonomy and for accomplishing their goals [56]. Indeed, the precise aim of an enhancement is generally to expand one's capabilities and possibilities (particularly by authors who regard enhancements as 'improvements' per definition). Still, it is important that the patient considers whether this is really the case. Aside of uncertainties regarding the effectiveness and long-term risks of brain interventions, it is relevant that all of the hypothetical requests above reflect distress plausibly caused by anomaly with external circumstances. The examples illustrate forms of what Carl Elliott identifies as 'personal alienation', by which he means "(...) *a sense that you don't conform with social expectations of someone in your particular circumstances,*" either because "*your character doesn't quite fit into place as it should,*" or "*you feel alienated from the social role you are expected to occupy.*" [58, p.8] Elliott would perhaps argue that, if the enhancement requests were to sidestep the need to examine the reasons of such alienation, the interventions would merely render the individual a "*happy slave*" [58, p.11]. When seen in light of the broad effects on one's potential flourishing and lifestyle options—instead of just in terms of direct benefits on a particular, socially preferred and enforced lifestyle—the enhancements could indeed be regarded as reducing one's autonomy.

It is up to physicians to discuss with patients these aspects of their enhancement wishes and demands, and to offer guidance in potentially alternative solutions. Here lies an important challenge, for when a biomedical drug therapy is available, physicians tend to be less willing to consider alternative treatments, even when those approaches could be more beneficial [59]. It is up to the patients, in turn, to weigh these considerations against their goals and to take them into account (—ability). While this is not meant to downplay the need for broad societal debate on such issues, the patient–physician reciprocity appears a more reasonable locus for contesting questionable social motivations and preferences of medical intervention requests than the physician's role alone. In line with the view of several inspiring authors [54, 56, 57], we would suggest that assuming a patient is not capable of such a shared responsibility is itself a grave form of paternalism.

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