



## A Relational Take on Advisory Brain Implant Systems

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revisit and revise them periodically, in case they change their mind; the same should be done with PBIs that inhibit undesirable behaviors.

### CONCLUDING REMARKS

I have argued that the use of PBIs to inhibit undesirable behaviors under certain circumstances is morally analogous to the use of ADs under those same circumstances. Thus, if enforcing an AD to prevent an agent from succumbing to moral weakness or judgment-clouding emotion is compatible with respecting the agent's autonomy, then an agent using a PBI to accomplish the same goal of inhibiting or avoiding undesirable behaviors that result from moral weakness or judgment-clouding emotion also is compatible with respecting the agent's autonomy. Predictive brain implants used this way are just advance directives with a mechanical twist. ■

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# A Relational Take on Advisory Brain Implant Systems

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Gilbert (2015) warns us that advisory brain implant systems—neural implants that predict brain activity and give the user advice based on those predictions—could threaten the user's autonomy. If the user becomes too reliant on their advisory brain implant's advice, "they may become *passive* and *less active* in their acceptance of the advice received" (Gilbert 2015, 8, italics mine). That is, the user is put in a place of "decisional vulnerability" when she trusts the implanted system to make the right decision for her. In cases like these, Gilbert worries that "it is not clear where the realm of decisional autonomy starts and where the realm of advice ends" (8). Gilbert's worry, however, seems motivated by an individualist view of autonomy—where decisions are made by individuals, and autonomy-confounding forces (like neural implants) either threaten or yield to the individual's decisional capacities. I argue that Gilbert's worries are less worrisome when considered through a relational view of autonomy—where decisions are rarely (if ever) made by lone individuals, but rather by complexes of actors. An advisory brain implant system for people with epilepsy, in the relational view, might not be just some force that either clears the way for or stands in the way of a person's autonomous decision making. Instead, such a device, in the best-case scenario, becomes

an integral part of what it means for a person with epilepsy to be autonomous.

Gilbert insists that predictive and advisory brain implant systems come with risks because of how useful they might seem (or be) to the user. In his case study, Gilbert notes that one such device "boosted [the user's] sense of self-empowerment"—the device would monitor the user's brain activity for signs of seizure and leave the user free to act under less of "the uncertainty of having a seizure at any time with little or no warning." The user takes "permanent brain monitoring and potential upcoming advisory signals" to be "an integral component of his increased degree of control"—this user, at the very least, feels as though he has more control over his life because something is watching over his symptoms. If the user, however, becomes overreliant on the system, he may be lulled "into a false sense of security." He may choose to take risks that people with epilepsy shouldn't in the first place, simply because he feels more secure with some system monitoring and advising him. Or the user may follow the system's advice without much scrutiny at all: he may act as though the system gives advice based on premonitions of the user's near future rather than educated guesses from the user's neural data. In both of these scenarios, the

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device renders the user vulnerable when they're called on to make decisions—that is, the user is no longer able to make decisions free of the control of some confounding influence. As such, Gilbert seems to endorse what I'm calling the individualist view of autonomy: where some individual (the user of a neural implant) is confronted with decisions and either allowed to make the decisions the user wants to make or impeded from doing so. Threats to autonomy are threats to the individual's ability to make important decisions.

This individualist view, however, suffers from a deficiency: It does not adequately capture the nuances of the relationships we form with one another or with our technology, and how those relationships change what it means to be autonomous. We would be better served by taking on what Mackenzie and others call a relational view of autonomy (Mackenzie and Stoljar 2000): where "self-identity is intersubjectively and socially constituted, in relations of dependence and interdependence" (MacKenzie and Walker 2014, 337), so our ability to act autonomously is cultivated through our ongoing relationships to one another. That is, autonomy is a competence (Meyers 1989), a set of skills that "emerge developmentally and are sustained and exercised in the context of significant social relationships" (MacKenzie and Walker 2014, 338). There are several lessons we can learn from a relational account of Gilbert's case. First, we can learn that advisory brain implants present a new challenge (not a mere threat) to people's autonomy competence: The brain implant user (and his family) must also learn how to interpret the data from the device and how to act on it. It is less that advisory brain implants (might) render their users "vulnerable"; it is more that these implants require new autonomy competences, so users (and their families) will have to figure out how to act with these devices. This lesson lines up with Gilbert's useful suggestion that "patients must bear in mind that advisory brain devices do not strictly present 'EGG data in itself' but rather 'EGG data as advice'"—the relational view makes it easier to see that not only will people who use advisory brain implants need to become competent interpreters of the implant's advice, but there are possibly other kinds of competences they will have to develop in order to use their device. Perhaps they will, for example, need to learn how to quickly explain their device to strangers in order to get help when the device warns them that a seizure is on the horizon. We can imagine many scenarios, but the core lesson is that many of these scenarios are possible.

Second, we can see how advisory implants don't just act as an influence on the person who receives the implant; they (potentially) take their place in the relationship between users, their families, and medical practitioners. Where a proponent of the individualist view might argue that we are autonomous in virtue of more than how free we are to make our own decisions without coercive influences, I insist (alongside other proponents of the relational view) that people are autonomous in virtue of how they

we act along side, on behalf of, and in tandem with people embodied in a context. Gilbert's study participant, for example, acknowledges that his family is just as worried about his well-being as he is, and he is worried about how much his family is worried about him. The user reports, "My family and I felt more at ease when I was out in the community [by myself]." We can imagine that he and his family have likely had to renegotiate their relationship to one another because of his epilepsy; he and his family likely have thought about how to spot the signs of a seizure, what to do if a seizure happens, and so on. The advisory brain implant, then, put this family in a position to further renegotiate the terms of their relationship in a way that puts the entire family at (relative) ease. This brain implant user doesn't just choose to trust the device by himself; the family trusts the device to stand in for them and serve some function on their behalf. The dynamics of these choices, then, are better understood when we treat the brain implant as "third party" (Lipsman and Glannon 2013) that the user (and his family) forms a relationship with and (perhaps) relies on in order to act autonomously.

In closing, it seems that a relational view of autonomy can give us a better picture of the challenges we face as advisory brain-computer interfaces become more common in clinical contexts. As an illustration, we could rephrase Gilbert's worry as a question, "How much should people with epilepsy trust their advisory brain implants?" This is an important question, and it leads to the insight that the implant user should (perhaps) trust the device less. But we can rephrase this question from the relational view, "In what ways can people with epilepsy (and their close friends and family) trust their advisory brain implants? What skills would they need to develop, and what abilities could they lose?" These questions acknowledge that people with epilepsy are autonomous insofar as they act along with their communities using the technologies available to them, and acting on the advice of the implant is a competence that people can cultivate. I take it that these acknowledgments give us access to even more of the normative terrain. ■

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