

Editorial

### **Moral enhancement and pro-social behaviour**

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Moral enhancement is a topic that has sparked much current interest in the world of bioethics. The possibility of making people 'better,' not just in the conventional enhancement sense of improving health and other desirable (and desired) qualities and capacities, but by making them somehow more moral, more decent, altogether better people, has attracted attention from both advocates<sup>1 2</sup> and sceptics<sup>3</sup> alike. The concept of moral enhancement, however, is fraught with difficult questions, theoretical and practical. What does it actually mean to be 'more moral'? How would moral enhancement be defined and would it necessarily, as some have claimed, make the world a better or safer place? How would or could such enhancement be achieved safely and without undue constraint on personal liberty and autonomy?

On this subject, a recent paper by Crockett et al<sup>4</sup> investigating the effects of the neurotransmitter serotonin on moral decision-making provides an intriguing scientific basis for examining what might or might not constitute moral enhancement. The study involved treatment with citalopram, a drug that increases the action of serotonin in the brain, and subsequent analysis of participants' decision-making behaviour in two different situations involving moral dilemmas: the well-known 'Trolley Problem'<sup>5</sup> and the 'Ultimatum Game'.<sup>6</sup> The researchers found that citalopram promoted what they call 'prosocial behaviour', increasing the participants' aversion to causing direct harm to others: in the first scenario, they were less likely to select the option that required killing one in order to save five, and in the second, less likely to reject unfair offers at the expense of others.

The Crockett study is fascinating both for its insight into human behaviour (though not moral behaviour per se) and because it appears to demonstrate that, at least on some accounts of moral behaviour, serotonin may in fact be a moral de-enhancer, inhibiting or by-passing moral judgement. In the experiments, citalopram seemed to reduce participants' ability to reason about moral dilemmas in order to reach normative conclusions about the right action or outcome. From the reported research, the effect of serotonin seems to be to make subjects more responsive to immediate emotional engagement and less

likely to reason beyond their instant protective reaction. Thus the commentary accompanying the study that claims 'a role for serotonin in moral behaviour'<sup>7</sup> is somewhat misleading. If serotonin plays a role in moral behaviour, it may well be a negative one: it impairs or short-circuits moral reasoning and induces us to act on the basis of emotion rather than rational consideration of the moral and social consequences of those actions.

Other research in the neuroscience of moral behaviour has suggested that intuition/emotion and rational judgement are two opposing mechanisms implicated in decision-making when faced with moral dilemmas. Although both emotion and reasoning thus affect moral decisions, of the two, it must be reasoning that pulls in the direction of morality. A moral agent is not just someone who performs actions with moral consequences, she is a person who cares about doing the right thing. Such a person must have a way of deciding whether what her emotions prompt her to do, what strikes her as the right thing to do, really is the right thing to do. She will need to think things through, identify the relevant principles she accepts, the values she holds and the moral objectives she believes are right, and apply them to the present circumstances; and to do this she must use moral reasoning. In the case of serotonin-induced ethics, she will want to know whether what strikes her as a pro-social response really is best for those people or those values she wants to protect or promote; whether this response can be generalised and is consistent with other values she holds. She cannot do all this by simply running the scenario past her consciousness again and waiting to see if she still feels the same and is still inclined to act in the same way. This would be the confirmatory strategy aptly ridiculed by Wittgenstein as buying several copies of the same newspaper to confirm the news in the first.<sup>8</sup> As he put it, 'justification consists in appealing to something independent'.<sup>8</sup> What we need to both to verify the news, and to establish the probity of our moral judgements as best we can, is a combination of evidence and argument, not a procedure which is self-confirming.

The implications of this from the ethics perspective are manifold: the results of the citalopram study, as well as the wider inferences that have been drawn from it, lead us to reconsider our notion of what moral behaviour is and how moral reasoning and moral judgement intersect with other drivers of behaviour such as emotions or what behavioural psychologists call 'prosocial' tendencies. A number of further points emerge from a consideration of this study and the claims regarding moral behaviour to which it has given rise.

The first is that prosocial behaviour is not the same thing as moral behaviour. Our tendencies to morality and our moral nature may have originally developed, evolutionarily speaking, from prosocial traits,<sup>9–11</sup> which in turn evolved through living in small communities in which direct and immediate personal harm was usually the only relevant harm under consideration. Now, however, we live in what we understand to be a global moral community, where the harm we might cause to others is often indirect and geographically and/or temporally remote, but no less morally relevant for that.

Hence, although 'prosocial' is for behavioural scientists a term of art denoting certain traits which may promote small-group harmony, in the context of global

humanity, so called “prosocial” behaviour may in fact be anti-social as well as unethical; it does not always promote either individual good or good society as we now understand it in the philosophical and political sense. Indeed, one of the greatest moral challenges facing us this century is the problem of global sustainability and development, and it is becoming increasingly clear that ethical solutions to this problem may require us to inflict harm (or withhold benefit, which can amount to the same thing morally but also apparently emotionally, according to the results from the Ultimatum Game) at a local level in order to benefit more others, or avoid greater harms, at the level of the wider community.

How often, though, are we in a situation of having to push someone under a train to save five with no other option, as the Trolley Problem scenario dictates? Be that as it may, as in the case of sustainability, we are faced with moral choices that are more complex and require a more sophisticated application of moral reasoning than the simple serotonin-induced reaction of ‘do no direct harm to those of whom we are immediately aware’.

The case of Jasper Schuringa is perhaps one of those rare real-life situations that required a choice between direct, violent infliction of harm to one in order to prevent harm to a greater number of others, and inaction that would allow the greater harm to occur. Schuringa was the hero of Flight 253 who on 26 December 2009 attacked and subdued a would-be hijacker, harming him but potentially saving the lives of everybody else on the plane. As we have discussed briefly elsewhere,<sup>12</sup> it might well have been that a serotonin-induced aversion to inflicting direct harm would have paralysed Schuringa into inaction, with potentially disastrous (and much more harmful) consequences for Flight 253’s other passengers.

The Schuringa scenario does contain a number of confounding factors that make it an imperfect analogue to the rather more abstract, theoretical choices involved in the Trolley Problem with which participants in the Crockett study were faced. The situation, as well as a choice between directly harming one and allowing many to come to harm, also involves fear, self-defence and the real and present nature of the threat. Moreover the one who must be harmed in order to save others is in this case an apparently guilty threat rather than innocent shield of threat or mere bystander.<sup>13</sup>

It would be interesting to assess the responses of participants in the citalopram study to a hypothetical ‘Schuringa test’; even more interesting (though difficult if not impossible) to administer a real-life version and compare the theoretical decision with their behaviour in practice! It might well be the case that real-life responses to such situations are almost always mediated by emotion of the moment rather than moral reasoning. Citalopram-treated patients display prosocial tendencies as a result of emotion-driven behaviour; perhaps Schuringa was also acting largely on the basis of emotions, albeit different ones, to produce an outcome that fortuitously was also the morally better path. The example still stands, however, as an illustration of how prosocial emotional impulses might result in greater harm. It also raises one of the perennial problems of moral philosophy: how we measure morality, whether it is about ends and the ultimate

outcomes of action or about means and reasons to act, the drivers underlying the action.

Another noteworthy aspect of the research is the effect of serotonin on decisions involving fairness, as measured in the Ultimatum Game. Howsoever we determine the nature of morality (whether manifested through intent, action or consequence), its content usually includes some reference to fairness. Interestingly, attention to fairness is itself another prosocial characteristic that in both evolution and human development seems to coincide with the acquisition of traits such as empathy and altruism, but that has now gone far beyond prosocial impulse to become a principle of great importance in sophisticated moral and political philosophy. The relative decrease in subjects' concern for fairness compared to the emotion-driven aversion to causing direct personal harm suggests once again emotion subverting more complex moral reasoning. This illustrates further that serotonin may prove to be a negative influence on moral decision-making, biasing people towards making choices that are both less moral and more anti-social.

At any rate, there is certainly more to morality than an aversion to harming those close to us. Crockett's study reveals interesting facts about how emotionality is modulated within the brain and the impact on moral decision-making of serotonin-mediated susceptibility to emotional influences; it does not show that serotonin is itself involved in the process of moral decision-making.

The study also illustrates the difficulties and the potential dangers of attempting moral enhancement through direct neurochemical intervention. It is already being suggested that we could take advantage of the behaviour-modulating effect of citalopram and related drugs to treat anti-social personality disorders and social dysfunction. But would this constitute a 'moral enhancement', if the beneficial social effect were to be achieved through suppressing patients' own moral judgement—even if the outcome was a world with less harm? And, as Crockett's research shows and as we have argued above, serotonin-induced ethics will not necessarily always reduce harm, may indeed in some circumstances increase harm. Important questions remain to be answered about the nature and purpose of moral enhancement before we can begin seriously to contemplate whether we should, let alone how we might, set about achieving it.

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### **Footnotes**

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