Outcome-focused judgements of moral dilemmas in schizophrenia

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ARTICLE INFO
Keywords:
Moral dilemmas
Moral judgement
Schizophrenia
Forensic psychiatry
Aggression

ABSTRACT
Previous research on moral judgement in healthy adults suggests a complex interplay of automatic, emotional and deliberative processing. We aimed to advance understanding of these processes by examining moral judgement in individuals with schizophrenia, a population characterised by social-cognitive deficits and interpersonal difficulties. Forty-five patients with schizophrenia and 27 healthy controls judged high-conflict moral dilemmas in response to 3rd-person (i.e. “Is it morally okay to [perform X]?”) and 1st-person (i.e. “Would you [perform X]?”) probes. Controls were less utilitarian for 3rd-person than 1st-person probes, while this discrepancy did not hold for patients. Utilitarianism in patients correlated with higher levels of interpersonal conflict. Findings suggest that people with schizophrenia focus equally on outcomes across moral-judgement conditions that ought normally to elicit an outcome-action discrepancy, suggesting that they are less influenced by an automatic aversive response to harmful acts in dilemma scenarios, consistent with a dual-process model of moral judgement.

1. Introduction

The extent of deficits in social cognition in schizophrenia is well documented (Bora, Yucel, & Pantelis, 2009; Brune, Schaub, Juckel, & Langdon, 2011; Penn, Sanna, & Roberts, 2008), yet scant attention has been paid to moral cognition in this disorder, despite that moral cognition is intimately tied to social cognition and is an integral aspect of social functioning (Haidt, 2013; Knobe, 2010). This is particularly surprising given that early descriptions of young people with schizophrenia had included accounts of these individuals engaging in violations of both moral and social norms (Kahlbaum, 1890), and a small amount of research from the 1960s–80s, a time when the field was dominated by paradigms examining declarative moral reasoning, such as Kohlberg’s Moral Judgement Interview (MJI), found that people with schizophrenia provided less elaborated moral justifications than the general population, even when IQ was controlled for (Benson, 1980; Herron, Stegen, Poland, & Schultz, 1983; Johnson, 1960; Watson, 1972). These findings led authors of the time to propose that moral sensitivities are less well-developed in individuals with schizophrenia.

More recent findings discount this view however, at least when moral sensitivities are indexed by MJI task performance. As argued elsewhere (McGuire, Langdon, & Brüne, 2014), the group differences found in the 1960s–80s between individuals with schizophrenia and healthy controls on the MJI was likely a consequence of the complex demands of the task, and also the scoring procedure, which has been criticised for over-emphasising justice-based abstract reasoning (see, e.g., Gilligan, 1982). In support of this view, McGuire, Barbanel, Brüne, and Langdon (2015) found that differential performance on the MJI by people with schizophrenia and healthy control participants was mediated via social-cognitive ability, in particular, performance on a theory of mind task, and also related to verbal memory ability.

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Another limitation of the early schizophrenia research is that it had focused on moral justifications (i.e., posthoc deliberative reasoning about moral judgements), not moral judgements per se, and recent evidence indicates that explicit reasoning about moral scenarios is not necessarily causal to the moral judgements themselves (Haidt, 2001; Hauser, Cushman, Young, Kang-xing, & Mikhail, 2007). Thus, justification paradigms such as the MJJ provide limited understanding of the capacities for moral judgement of people with schizophrenia. This distinction is particularly relevant because people with schizophrenia come before the courts for assaultive behaviour more often than the general population. For example, people with schizophrenia comprise between 5% and 20% of all homicide offenders, while the prevalence of schizophrenia in the general population is in the order of 1% (Coid, 1983; Fazel & Grann, 2004; Wallace et al., 1998); and 12% of people with schizophrenia self-report a history of assaultive behaviour, as compared to 2.4% of the general population (Swanson, Holzer, Ganju, & Jono, 1990). A consequence of these higher prevalence rates is that the legal system often needs to make decisions about the capacities for moral judgement of defendants with schizophrenia. Yet there is a significant gap in current scientific knowledge of moral judgement in people with schizophrenia, and of any relationships that might exist with these individuals’ impairments of social cognition and comorbid aggressive tendencies.

To the best of our knowledge, only a few studies have demonstrated any evidence of behavioural difference related to moral sensitivities in people with schizophrenia, using alternate paradigms to the MJJ. Agay, Kron, Carmel, Mendlovic, and Levkovitz (2008) used a bargaining paradigm from behavioural economics and found that people with schizophrenia accepted unfair offers of opponents more often than controls. Along similar lines, Wischniewski and Brüne (2011) found that people with schizophrenia acted similarly to the general population in regards to their responses to unfair behaviour by others (i.e., they engaged in punishment to the same extent as healthy controls when a third-person observer of unfair behaviour between other players), but were more accepting of unfairness directed towards themselves. These findings run counter to the early conception of a general reduction in moral sensitivities in people with schizophrenia, and suggest, instead, that these individuals have a heightened expectation of unfairness being directed towards themselves, perhaps due to increased experiences of victimisation. The use of economic bargaining games of this type is limited however, at least with regards to informing understanding of the capacities for moral judgement in people with schizophrenia. This is because paradigms of this type may inform more about implicit rules of social exchange and reciprocity than moral judgement of right or wrong.

In other related work that has focused more directly on moral judgement in people with schizophrenia, De Achával et al. (2013) used moral dilemma stimuli to investigate the neural underpinnings of moral judgement, in accordance with a long tradition in the philosophical literature on moral judgement and recent empirical investigations of moral cognition (e.g.; Cushman & Young, 2009; but see Cullen, 2010 for a critical view). These stimuli typically confront participants with an emotionally difficult choice: specifically whether it is morally acceptable to take one life to maximise the greater good (i.e., to save the majority). An example dilemma is below:

*Enemy soldiers have taken over your village. They have orders to kill all remaining civilians. You and some of your townspeople have sought refuge in the cellar of a large house. Outside you hear the voices of soldiers who have come to search the house for valuables. Your baby begins to cry loudly. You cover his mouth to block the sound. If you remove your hand from his mouth his crying will summon the attention of the soldiers who will kill you, your child, and the others hiding out in the cellar. To save yourself and the others you must smother your child to death.*

Is this acceptable?

The investigation by de Achaval and colleagues found that the clinical participants with schizophrenia did not differ in their actual judgements of the appropriateness of story protagonists’ actions in these moral dilemma scenarios, as compared to the siblings of people with schizophrenia and control participants. However, while the control participants showed activation of brain regions, which the authors suggested are involved in emotion processing and affective regulation (including, e.g., the anterior cingulate cortex and insula) during task performance, such activation was absent in the schizophrenia patients. Since the groups nevertheless made almost identical moral decisions, the authors interpreted their findings to be at odds with the argument that automatic emotional responses substantially drive moral judgements in healthy individuals (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Haidt, 2001). They also went on to speculate that any emotion processing observed when healthy individuals evaluate moral dilemmas (purportedly indexed by the patterns of brain activation observed in the control participants) might therefore be largely epiphenomenal to the processes that constitute the moral-judgement cognitive system.

However, current models of moral judgement allow for multiple interactive effects of intuitive emotional processing, automatic evaluation, and deliberative reasoning. For example, according to Greene’s “dual-process” model of moral judgement (Greene, Morelli, Lowenberg, Nystrom, & Cohen, 2008), emotional processing drives people towards making “deontological” decisions (i.e., rejecting the action as morally unacceptable because the morality of an action depends on the intrinsic nature of the action such that harming another is fundamentally wrong regardless of its consequences), while deliberative “cold” reasoning drives people towards making “utilitarian” decisions (i.e., endorsing the action as morally acceptable because the morality of an action is determined by its outcomes such that harming others is acceptable if it brings about the greatest good). According to such an account, multiple factors associated with schizophrenia (and schizophrenia vulnerability) might have resulted in the minimal behavioural difference observed between the groups in de Achával and colleagues’ study. Specifically, deficits in the patients’ basic cognitive abilities (e.g., of sustained attention, verbal memory, or reasoning; see Loughland, Lewin, Carr, Sheedy, & Harris, 2007) might have reduced the effects of deliberative reasoning (argued to be important for arriving at utilitarian decisions) to the same extent that any deficits in automatic emotional responses (purportedly indexed by the differential patterns of brain activation in the patients compared to the controls) reduced the likelihood of the patients making deontological responses, such that the clinical participants’ actual moral
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