Cognition 156 (2016) 164–176

Contents lists available at ScienceDirect

Cognition

journal homepage: www.elsevier.com/locate/COGNIT

Original Articles

How prescriptive norms influence causal inferences

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ARTICLE INFO

Article history:
Received 10 June 2015
Revised 13 July 2016
Accepted 14 July 2016

Keywords:
Causal reasoning
Moral judgment
Causal selection
Conversational pragmatics
Norms

ABSTRACT

Recent experimental findings suggest that prescriptive norms influence causal inferences. The cognitive mechanism underlying this finding is still under debate. We compare three competing theories: The culpable control model of blame argues that reasoners tend to exaggerate the causal influence of norm-violating agents, which should lead to relatively higher causal strength estimates for these agents. By contrast, the counterfactual reasoning account of causal selection assumes that norms do not alter the representation of the causal model, but rather later causal selection stages. According to this view, reasoners tend to preferentially consider counterfactual states of abnormal rather than normal factors, which leads to the choice of the abnormal factor in a causal selection task. A third view, the accountability hypothesis, claims that the effects of prescriptive norms are generated by the ambiguity of the causal test question. Asking whether an agent is a cause can be understood as a request to assess her causal contribution but also her moral accountability. According to this theory norm effects on causal selection are mediated by accountability judgments that are not only sensitive to the abnormality of behavior but also to mitigating factors, such as intentionality and knowledge of norms. Five experiments are presented that favor the accountability account over the two alternative theories.

1. Introduction

Most theories of moral judgments assume that moral evaluations presuppose causal facts: an agent is only held (morally) accountable for an outcome if she has actually causally contributed to its occurrence (see Shaver, 1985; Sloman, Fernbach, & Ewing, 2009; Weiner, 1995). However, the traditional claim that moral judgments are secondary to causal ones has been challenged by recent findings suggesting that the inverse relation also holds: causal judgments are also influenced by moral evaluations (Alicke, 1992; Alicke, Rose, & Bloom, 2011; Hitchcock & Knobe, 2009; Kominsky, Phillips, Gerstenberg, Lagnado, & Knobe, 2015). One example for this influence is the pen vignette (Knobe & Fraser, 2008) which describes a scenario in which faculty members and administrative assistants working in a philosophy department frequently take pens although only administrative assistants are allowed to do so. One day a faculty member and an administrative assistant both take a pen simultaneously, which leads to a problem. There are no pens left. Participants of experiments who were asked who *caused* the problem tend to choose the faculty member who violated the prescriptive norm over the administrative assistant who is allowed to take pens. Thus, normative evaluations seem to influence causal judgments. However, the cognitive processes underlying this so-called *norm effect* are still under dispute.

1.1. Possible influences of prescriptive norms on causal inferences

Although it is a well-established finding that norms affect causal judgments, it is less clear how these judgments are affected by norms. The literature suggests different possibilities: One possibility is that norms alter *causal model representations*, that is, they lead to changes of the causal structure or the estimated causal strengths (see Waldmann & Hagmayer, 2013, for an overview of causal model theories). An influence on causal strength, for example, is suggested by Liu and Ditto (2013): "[t]he more participants believed that the action was immoral even if it had beneficial consequences, the less they believed it would actually produce those consequences (...)" (p. 318). Consistent with the claim that the consideration of norms alters causal representations, the *culpable control model* of blame, proposed by Alicke (2000), states that participants tend to exaggerate the causal role of the norm-violating agent because they have a desire to blame her for the negative outcome. Thus, the first possibility is that prescriptive norms influence causal inferences by changing the size of the causal model's strength parameters.

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http://dx.doi.org/10.1016/j.cognition.2016.07.007
0010-0277/

A second possibility how norms could influence causality is that normative evaluations influence *causal selection* judgments without affecting intuitions about the underlying causal model. Causal selection refers to the fact that in situations in which several factors contribute to an outcome, people often select one over the other factors and name it 'the cause' (see Cheng & Novick, 1991). For example, although subjects may know that a forest fire depends on both a lightning bolt and oxygen, they typically select the first factor as the cause.

Hitchcock and Knobe (2009; and similarly Halpern & Hitchcock, 2014) have proposed a theory, the *counterfactual reasoning account of causal selection*, that traces causal selection back to counterfactual reasoning about abnormal factors. Abnormality in this account may refer to all types of norm violations including statistical, moral, or proper functioning norms. According to Hitchcock and Knobe's theory, abnormal factors stimulate reasoning about a possible world in which the abnormal factor had instead been normal, whereas thinking about an alternative behavior of a normal factor is less likely (see also Hesslow, 1988; Hilton & Slugoski, 1986; Kahneman & Miller, 1986). The greater salience (or *relevance*; see Phillips, Luguri, & Knobe, 2015) of the counterfactual contrast of the abnormal factor leads to its choice as the cause. On this account counterfactual reasoning can be regarded as the mediator between the violation of a norm and causal selection. Abnormality is only one means leading to an increase in salience of a counterfactual alternative; there are many other ways (see also Kominsky et al., 2015; Phillips et al., 2015).

1.2. The ambiguity of causal queries: The accountability hypothesis

The theories we have discussed so far claim that prescriptive norms either influence parameters of causal models or guide causal selection through counterfactual reasoning about abnormal factors. However, there is an alternative to the view that prescriptive norms affect causal judgments. One general problem of studies investigating norm effects is the notorious ambiguity of the term "cause." Especially in the context of human actions, it can both refer to the question of whether a mechanism underlying a causal relation is present and to the question of whether an agent can be held *accountable* for an outcome. As Deigh (2008) points out, Hart and Honoré (1959) have already argued "(...) that the statement that someone has caused harm either means no more than that the harm would not have happened without ('but for') his action or (...) it is a disguised way of asserting the 'normative judgment' that he is responsible in the first sense, i.e., that it is proper or just to blame or punish him or make him pay" (pp. 61) (see also Alicke, Mandel, Hilton, Gerstenberg, & Lagnado, 2015; Lagnado & Channon, 2008; Suganami, 2011; Sytsma, Livengood, & Rose, 2012, for related views). The ambiguity of queries about the cause in scenarios demonstrating norm effects is grounded in the presupposition relation between accountability and causation. Agents are only held accountable for outcomes they have caused.[1] Thus, causal test questions may either narrowly refer to the causal process linking the agent's behavior to the morally charged outcome, or they could refer to the more comprehensive set of factors determining accountability.

Based on the idea of conversational or experimental pragmatics (see e.g., Noveck & Reboul, 2008; Wiegmann, Samland, & Waldmann, 2016), the *accountability hypothesis* assumes that subjects form hypotheses about the intended meaning of the causal test question. Due to the ambiguity of causal queries, they either interpret this question as a request to assess accountability or as a request to assess causality (in the narrow sense). Which of the two meanings is accessed depends on pragmatic contextual factors in the test situation; subjects will choose the one that makes more sense in the present context. This relation between causal test questions, causality, and accountability is presented in Fig. 1.

Causality in the narrow sense refers to contingent dependency relations between causes and effects that are generated by causal mechanisms (Fig. 1, left). A popular account of how causal dependencies are represented is the *counterfactual view* that claims that an event qualifies as a cause if the effect had not happened in the counterfactual absence of the cause (Lewis, 1973). This view has been extended to account for more complex causal networks (see, for example, Gerstenberg, Goodman, Lagnado, & Tenenbaum, 2014; Gerstenberg & Tenenbaum, in press; Lagnado & Gerstenberg, in press; Spellman & Kincannon, 2001). In the pen vignette both agents are equally causal; had either the professor or the secretary not taken a pen, the problem would not have occurred. Thus, both agents equally contributed to the outcome. Note that the counterfactual theory of causal selection (Hitchcock & Knobe, 2009) primarily addresses a separate counterfactual reasoning process in a later phase after the initial phase of establishing a causal model. Thus, a critique of the assumption that counterfactual reasoning underlies causal selection is compatible with the view that causal model representations are based on counterfactual intuitions.

Queries targeting accountability are more general than queries referring to causal relations in the narrow sense (see Fig. 1, right). Accountability assessments include the identification of causal relations between acts and outcomes (hence the possibility to use the term "cause") (Fig. 1, right, bottom layer) but there are numerous additional factors that determine accountability judgments (Fig. 1, right, top layer): Accountability in social contexts requires that causal effects of the actions are positively or negatively valued. Moreover, accountability judgments are sensitive to mental state factors, such as the agent's intentionality, the foreseeability of the outcome, or the agent's knowledge about the existence and applicability of a prescriptive norm (see, e.g., Cushman, 2008; Gailey & Falk, 2008; Lagnado & Channon, 2008; Malle, Guglielmo, & Monroe, 2014; Young & Saxe, 2011). Thus, whether an agent is held accountable for an outcome is not only dependent on her causal contribution but also on these additional factors. For example, an agent who caused a negative outcome unintentionally, did not anticipate the outcome, or was unaware that the act was forbidden will be held less accountable than an agent who caused the outcome intentionally and with full knowledge. The abnormality of the behavior alone does not suffice for assessing accountability; the additional boundary conditions have to be checked as well.

Initial evidence for the relevance of such additional features in causal queries comes from a recent developmental study investigating a child-friendly variant of the pen vignette in children and adults (Samland, Josephs, Waldmann, & Rakoczy, 2016). Adult subjects in this study were more likely to select a norm-violating agent, a hedgehog, as the cause if it knew about the norm than when it was ignorant.

In sum, the key difference between the accountability hypothesis and its competitors is that the accountability hypothesis does not assume that prescriptive norms change causal representations or the way causal representations are accessed but that pragmatic contextual features steer subjects toward an accountability understanding of the causal test question. In the pen vignette, for instance, it seems far more plausible that the causal query addresses accountability than causal mechanisms because the causal relations are trivial. That the act of taking a pen removes a pen is obvious so that it is unlikely that subjects will think that they are supposed to solely judge this causal relation. The aspect of norm

[1] In some cases, causal responsibility may be indirect, such as in situations in which parents are held responsible for the actions of their children. In such situations, the underlying assumption seems to be that parents are in control of their children's behavior. We test an example of such an indirect accountability relation in Experiment 4.