The Possibility of a Reflective Deontology

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Abstract
Greene (2013) claims automatic (intuitive) processing gives rise to deontological moral judgments while controlled (reflective) processing leads to Utilitarian ones. This claim is supported by an empirical demonstration that, in some cases, a measure of cognitive reflection is correlated with Utilitarian responding to moral dilemmas (Paxton et al., 2013). These authors note there may be a reversal of this pattern, but that there is currently no compelling evidence for it. I begin here by presenting evidence for this reversal; sometimes, more automatic processing leads to characteristically deontological judgment. I then turn to a broader theoretical argument against the posited connection between controlled psychological processing and Utilitarian moral judgment. The psychological distinction between automatic and controlled processing is not one that maps neatly onto theories of normative ethics.

Keywords: intuition, dual process theory, emotion, reason, moral judgment

The Case for Reflective Utilitarianism
Joshua Greene (2013) holds the moral brain is like a camera with two kinds of settings, one automatic and one controlled. Greene complements this hypothesis about the structure of the moral mind with one about the processing of moral judgment: automatic processing provides characteristically deontological judgments, while controlled processing provides characteristically Utilitarian ones. In this context, characteristically deontological judgments are those favoring (for instance) rights and duties, while characteristically Utilitarian ones are those favoring the greater good. Greene and colleagues suggest that a range of research from cognitive science and neuroscience supports this hypothesis (Greene 2007; 2009; 2013). Most recently, Paxton, Bruni & Greene (2013, 3) explicitly claim, “studies of moral cognition using a wide range of methods reveal a consistent pattern: when individual rights/duties conflict with the greater good, deontological judgments favoring rights/duties are more intuitive (more automatic), while Utilitarian judgments favoring the greater good are more counter-intuitive (controlled).”

Paxton et al.’s (2013) claims are the latest addition to a dialectic about automatic versus controlled processing and deontological versus Utilitarian moral judgment. Greene and colleagues argue that automatic (intuitive) processing gives rise to characteristically deontological moral judgment while controlled (reflective) processing leads to characteristically Utilitarian moral judgment. Kahane et al. (2012) object, arguing that these studies confound deontological content with intuitiveness of judgment.

Kahane and colleagues believe there exists a class of Utilitarian judgments that are intuitive, and that Greene and colleagues have narrowly selected only materials in which the deontological judgment is also the more intuitive one.

To test this hypothesis, Kahane et al. (2012) presented participants with both a “Utilitarian Intuitive” dilemma, in which the Utilitarian response is purportedly also the intuitive one, and a “Deontological Intuitive” dilemma, in which the deontological response is the intuitive one. They claim that it is Greene and colleagues’ omission of “Utilitarian Intuitive” dilemmas in their testing materials that gives rise to the artificial relationship between intuitive processing and deontological judgment and reflective processing and Utilitarian judgment.

Paxton et al. (2013) criticize some specifics of Kahane et al.’s study, but they also include an empirical reply. They construct two moral dilemmas, one “Utilitarian Intuitive” and one “Deontological Intuitive,” hypothesizing that controlled, reflective processing would preferentially support Utilitarian judgments in both cases. The Utilitarian Intuitive dilemma used was the following:

[White Lie 2] A young friend of yours always greatly admired his uncle, who has just died and whom you knew well. At the funeral the nephew asks you to tell him what his uncle really thought of him. As a matter of fact, his uncle disliked him and the young man would be devastated to find this out. However, his uncle was superficial and spiteful in his opinions of people and was not worthy of the young man’s esteem. It would do much good for the young man’s confidence and self esteem if he thought that his uncle thought well of him. Should you tell your friend that his uncle disliked him?

Here Paxton et al. assume that not telling your friend that his uncle disliked him is the intuitive and Utilitarian response. The Deontological Intuitive dilemma used was the following:

[Sophie’s Choice] It is wartime and you and your two children, ages eight and five, are living in a territory that has been occupied by the enemy. At the enemy’s headquarters is a doctor who performs painful experiments on humans that inevitably lead to death. He intends to perform experiments on one of your children, but he will allow you to choose which of your children will be experimented upon. You have twenty-four hours to bring one of your children to his laboratory he will find them both and experiment on both of them. Should you bring one of your children to the laboratory in order to avoid having them both die?
Here Paxton et al. assume that not bringing one of your children to the laboratory in order to avoid having both die is the intuitive and deontological response.

Paxton et al. presented experimental participants with one moral dilemma and the Cognitive Reflection Test (CRT), typically taken to be a measure of cognitive reflection (Frederickson, 2005). They report that for both “Utilitarian Intuitive” and “Deontological Intuitive” moral dilemmas, greater success on the CRT, indicating more reflective processing, positively correlates with endorsement of Utilitarian action.

However, there are questions worth raising about Paxton et al.’s findings and conclusions. For one, the endorsement ratings of Utilitarian action in their “Utilitarian Intuitive” dilemma are skewed very highly towards the top of a 7-point rating scale. That is, participants scoring well on the CRT gave very high ratings, while participants with low scores on the CRT gave ratings that were not as high overall, falling around the midpoint of the rating scale. There is a worthy competing interpretation of these same findings; participants using either type of processing (intuitive or reflective) gave very high ratings to this particular scenario, but participants who answered the moral question haphazardly or randomly were more likely to have a normal distribution of responses amongst the scale options. We have good reason to think participants who answer haphazardly, reporting neither an intuitively nor reflectively produced response, are much more likely to score 0 on the CRT than any other positive score.

If this interpretation were correct, the proper conclusion is not that reflective processing produces Utilitarian judgment, but rather that participants who do not receive a requisite level of comprehension of experimental materials respond more randomly than participants who sufficiently comprehend the material. This worry could be met with a recalculation of the correlation that excludes participants scoring 0 on the CRT or with a comprehension check question indicating participants engaged in some relevant way (either through automatic or controlled processing) with the experimental material.

A broader issue is that Paxton et al. conclude that controlled (reflective) processing supports Utilitarian judgments and automatic (intuitive) processing supports deontological ones on the basis of just one “Utilitarian Intuitive” and one “Deontological Intuitive” moral dilemma. Other scenarios could show a reversal of this pattern in which reflective processing leads to more deontological judgment. Paxton et al. (2013, 4) acknowledge this issue but note, “nevertheless, there is currently no compelling evidence for such a reversal.” Here I begin by offering evidence for such a reversal.

An Empirical Reply

Experiment 1

My aim in Experiment 1 is to demonstrate that in some cases, more reflective processing, as measured or induced by the Cognitive Reflection Test, correlates with or causes greater deontological judgment over Utilitarian judgment.

Methods I presented 84 participants ($M_{age} = 34$, 44 male) in an online survey with the following moral dilemma:

A teacher tells her students that she’ll give her class cookies if the average score on their next test is at least a 90%. After the students take the test, the average turns out to be an 89%. If the teacher gave the students the cookies they would never know the actual class average was not at least a 90%, and they would be very happy to get the cookies. Should the teacher give the cookies to her class?

Participants were asked to respond on a scale from 1 (Definitely Shouldn’t) to 7 (Definitely Should).

Here the teacher has a Utilitarian option to give the cookies to the class, promoting the greater good, pitted against a deontological option to not give the cookies to the class, upholding her word.

Participants also received the Cognitive Reflection Test (Frederickson, 2005):

1. A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost?
2. If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?
3. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

For question 1, answers of “[$] 0.05, .05, 5 or five [cents]” were scored as correct responses. For question 2, answers of “5 [min/mins/minute/minutes]” were scored as correct. For question 3, answers of “47 [days]” were scored as correct. All other responses were scored as incorrect, and participants were required to answer all three questions. The highest score, indicating most reflection, on the CRT is a 3 and the lowest, indicating least reflection, is a 0.

Participants received the moral dilemma and the CRT in counterbalanced order. I hypothesized that those scoring higher on the CRT (indicating use of reflective processing) would give lower ratings to the moral question (indicating more deontological judgment) than those scoring poorly (indicating use of automatic processing). Here Paxton et al. (2013) would predict the opposite: that higher CRT scores would correlate with higher ratings, indicating more Utilitarian judgment.
Results I computed the average endorsement of Utilitarian action in the moral dilemma and calculated the correlation with participants’ CRT scores. There was a negative correlation between endorsement of Utilitarian action and number of correct CRT items, $r = -0.230, p < .05$. That is, the more questions participants answered correctly on the CRT, and presumably the more reflective they were, the more deontological their judgments were for this scenario. The correlation remained significant controlling for order of presentation of the CRT and moral dilemma, age, and gender ($p < .05$). These results can be found in Figure 1.

Yet, strikingly, the negative correlation between CRT score and Utilitarian judgment was driven more by participants who received the CRT second, $r = -0.369, p < .05$, than those who received it first, $r = -0.150, p = .33$. This suggests that greater reflection (as purely measured by the CRT second) correlates with deontological judgment, but also that there might be other priming influences of taking the CRT first.

I ran a one-way ANOVA to measure the effect of CRT order on moral dilemma ratings. For participants who answered at least one question correctly, there was no effect of CRT order on mean ratings $F(1, 54) = .89$ (CRT First $M = 4.30$, SD = 2.20; CRT second $M = 3.75$, SD = 2.10, $p = .35$). An analysis including all participants still showed no effect of CRT order $F(1, 83) = 2.19$ (CRT First $M = 4.75$, SD = 1.97; CRT second $M = 4.09$, SD = 2.10, $p = .14$). (Note also there was no difference in pre-exclusion CRT order percentages: 33% vs. 36%, Fisher’s Exact test $p = .83$).

As a further analysis, I ran an ANOVA to measure the effect of CRT score on moral dilemma ratings, controlling for CRT and dilemma presentation order, gender, and age. The analysis indicates that reflective processing, measured by success on the CRT, caused more deontological judgment, $F(1, 83) = 4.52, p < .05$.

Discussion I have assumed that the tested moral dilemma classifies, using the Greene-Kahane dialectic’s terminology, as a “Utilitarian Intuitive” dilemma. That is, the Utilitarian answer (Definitely Should) is the more intuitive one, while the deontological answer (Definitely Shouldn’t) is counterintuitive.

One might worry that this is not the correct intuitive/counterintuitive classification. But whether or not one classifies the scenario in this way is a side-issue to the main empirical dispute. What is relevant is whether reflective processing, as measured and/or induced by the CRT, correlates with and/or causes characteristically Utilitarian judgment (as Paxton et al. (2013) claim). What must be granted is that in the vignette here, the “Definitely Should” response is the more Utilitarian one, while the “Definitely Shouldn’t” is the more deontological one. Which response is “intuitive” or “reflective” is be determined by performance on the CRT.

Regardless of order, CRT first or CRT second, the correlation between CRT score and Utilitarian responding was negative. Paxton et al. (2013) argue that merely taking the CRT increases reflection regardless of participant performance. This is doubtful. One’s positive performance on the CRT indicates reflection, but merely taking the CRT need not increase reflection. Imagine an entirely unreflective person who takes the CRT (entirely unreflectively). It is an untenable assumption to hold that this participant’s mere exposure to the material will increase his reflection without further qualifications about his actual engagement with the material.

That the negative correlation between CRT score and Utilitarian judgment was driven more by those who received the CRT second suggests that merely taking the CRT may itself have other effects. One such effect could be a demand effect; after taking the CRT, participants feel that they ought to give the desired response to each question (and that desired response is the Utilitarian one). Alternatively, the calculation required by the CRT might induce participants into Utilitarian-style thinking. Determining whether these or other hypotheses are true requires testing, but for now we ought not assume that taking the CRT has no other effects. Similarly, we ought not assume merely taking the CRT induces reflection; a participant who takes the CRT without reflecting at all might well continue performing subsequent tasks unreflectively. What is well established is that the CRT is a measure of reflective processing (Frederickson, 2005). And in the experiment here, better performance on the CRT, indicating greater reflective processing, is correlated with deontological judgment.

There are a number of possible explanations for the difference in reflective processing’s correlation with Utilitarian judgment (in Paxton et al.’s (2013) dilemmas) and deontological judgment (in the dilemma presented here). One might think, for instance, that a positive (“should”) or negative (“should not”) prescription might affect either the type of processing involved or moral judgment given. The current evidence suggests that a prescription’s positivity or negativity does not play a

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1 I am grateful to an anonymous referee for this suggestion.
post-hoc rationalizations in favor of a particular hypothesis about the relation between cognitive processing and moral judgment.

Although most of these possibilities strike me as ad hoc efforts to save the Utilitarian-reflective hypothesis, without any explicit mention of which option leads to the greatest good in the testing materials such an objection will always be available. Therefore, I conducted a second experiment to provide comfort to skeptics of the first. In this experiment I made explicit which option was Utilitarian, which would produce the “overall greatest good,” and which option violated a deontological constraint, which would “violate someone’s rights.”

Methods The experiment was similarly structured to the first. Participants received both the CRT and a moral scenario to evaluate, in counterbalanced order. Participants received the following moral scenario:

Imagine that you have to choose whether or not to perform some action. Your only options are to perform the action or not. Performing the action would violate someone’s rights, but it would also result in overall greater good. Not performing the action would not violate anyone’s rights, but it would also result in overall lesser good. Should you perform the action?

Participants expressed their response on a scale from 1 (Definitely shouldn’t) to 7 (Definitely should). Participants then received two comprehension check questions and a brief demographical survey.

43 participants (\(M_{\text{age}} = 34.2, 30\) male) completed the survey and correctly answered the comprehension questions.

Results Here lower ratings on the moral dilemma question indicate more deontological responding while higher ratings indicate more Utilitarian responding. There was an effect of CRT order on moral dilemma ratings. Participants receiving the CRT first, before the moral dilemma, gave more deontological responses, \(M = 3.40 (SD = 1.60)\), than those receiving the CRT after the moral dilemma, \(M = 4.88 (SD = 2.07)\), \(F(1, 41) = 5.55, p = .023\).

There was no effect of CRT score on moral dilemma ratings, \(F < 1\), and there was no significant correlation between CRT score and moral dilemma rating, though the correlation was negative, \(r = - .203, p = .19\).

Discussion Here, if we follow Paxton et al. (2013) and assume taking the CRT is a manipulation that increases reflection, these results indicate that increased reflection causes more deontological and less Utilitarian responding. If we use CRT performance as a measure of reflection, there is no effect of reflection on deontological/Utilitarian judgment, contrary to Paxton et al.’s (2013) hypothesis. It might also be worth noting that the results here trend in the opposite direction to Paxton et al.’s (2013) predictions, with better
CRT performance participants providing more deontological judgment.

**General Discussion**

The two experiments here demonstrate that in some cases, more reflective processing causes and/or correlates with deontological, as opposed to Utilitarian, moral judgment. The study presented here is intended to engage with the findings of Paxton et al. (2013), and is therefore founded on similar assumptions. However, I would like to raise some more general concerns about the Greene (2013) and Paxton et al. (2013) hypothesis that reflective processing leads to characteristically Utilitarian judgment.

First we should consider whether the cases in these studies are bona fide moral dilemmas. Consider, for instance, Sinnott-Armstrong (1988) on moral dilemmas: “in order to have a genuine moral dilemma it must also be true that neither of the conflicting requirements is overridden.” In the cases here, one of the conflicting requirements is at least favored over the other, if not overriding it. Which requirement is favored depends, in part, on whether the scenario is considered intuitively or reflectively. But many consider a genuine moral dilemma to be one in which both conflicting considerations retain their force.

If reflective processing always leads to the favoring of the Utilitarian requirement in a moral scenario in which a Utilitarian and deontological requirement are conflicting, this is evidence that the scenario is not a genuine moral dilemma. Likewise, if reflective processing always leads to the favoring of the deontological requirement in such a scenario, this is evidence that the scenario is not a genuine moral dilemma.

There are moral cases in which neither requirement is overridden, but in which reflective processing causes one requirement to be favored over the other. I suspect the scenarios in the experiments here provide such examples. And although here reflective processing was correlated with deontological judgment, and in Paxton et al. (2013) it was correlated with Utilitarian judgment, it seems much more likely that the effect of reflective processing on moral judgment depends on the particular case, context, and moral judge.

To see this dependence more clearly, we can make a simple philosophical observation that suggests a straightforward refutation of the hypothesis that more reflective processing leads to Utilitarian moral judgment: consider the existence of thoughtful philosophical deontologists. Assuming a careful and reflective deontologist like Frances Kamm (2007) makes intuitive judgments that are at least as reflectively produced as Paxton et al.’s (2013) experimental reflective Utilitarians, we have an example of reflective processing leading to characteristically deontological judgment.

It is worth recalling that the reflective processing we are interested in is that which is applied to the moral scenarios, not the CRT. In these experiments, we make an ampliative inference from CRT performance (indicating reflection) to moral processing. But what is of most interest is the type of processing involved during the analysis of moral dilemmas. It is an open empirical question whether philosophical deontologists are more or less reflective than philosophical Utilitarians in their analysis of moral dilemmas. It does not seem an unrealistic prediction that at least some of these reflective deontologists are even more reflective than the Utilitarian-responding survey participants in these studies, nearly all of whom reflect on these dilemmas for less than 5 minutes.

The results here demonstrate the effect of reflective processing on deontological judgment, but I suspect reflective processing’s effect on moral judgment varies significantly among individuals (see e.g. Feltz and Cokely, 2013). Whether I think reflectively about a moral dilemma will have different results from when you think about it reflectively, as does the reflective moral thinking of Peter Singer differ from that of Frances Kamm. While some participants in these experiments might exhibit responses characteristic of a reflective deontology or reflective Utilitarianism, the conclusion of the present research suggests more strongly that reflective processing leads to varied moral conclusions depending on the case. A universally reflective deontology, like a universally reflective Utilitarianism, remains an unlikely possibility.

**Conclusion**

The claim that our moral brains have distinct automatic and controlled processes must be distinguished from the claim that the former of these processes produces deontological moral judgments and the latter produces Utilitarian ones. The experimental study here provides evidence against this latter claim. The psychological distinction between automatic and controlled processing might be fundamental to moral psychology, but it is not one that maps neatly onto theories of moral philosophy.

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**References**


