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Running head: REASONS FOR MORAL DECISIONS

Self-reported reasons for moral decisions

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NOTE: The online version of the manuscript contains a number of very slight differences to this version. Please see:

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Self-reported reasons for moral decisions

Many investigations of moral decision-making employ hypothetical scenarios in which each participant has to choose between two options. One option is usually deemed “utilitarian” and the other either “non-utilitarian” or “deontological”. Very little has been done to establish the validity of such measures. It is unclear *what* they measure, let alone how well they do so. In this exploratory study, participants were asked about the reasons for their decisions in six hypothetical scenarios. Various concerns contributed to each decision. Action decisions occurred when utilitarian concerns dominated. Bystanding decisions resulted from different concerns or combinations of concerns dominating in different situations, with utilitarianism usually among participants’ concerns. None of the labels usually used for either decision therefore seems entirely appropriate. Five concerns were identified as necessary and sufficient to predict over 85% of participants’ decisions. This suggests great promise for future research, particularly in investigation of real-world moral decisions.

KEY WORDS: Decision-making; deontology; morality; hypothetical scenarios; utilitarianism

1. Introduction

A train is out of control and will kill five people unless diverted onto a side-track where it will instead kill a single person currently not in jeopardy. You are by a switch that you could use to divert the train. Do you use it? Why or why not?

Another train is out of control and will kill five people unless a fat man is pushed off a bridge into the train's path, resulting in the man's death. You, a more modestly sized person whose body would not stop the train, could nevertheless push the man. Do you? What are your reasons?

These are two examples (from Thomson, 1985) of countless thought experiments devised by philosophers to explore people's "moral intuitions" and to compare them with moral principles such as those provided by utilitarianism or deontology.

Utilitarianism proposes that the moral value of acts stems solely from their consequences. Acts are of positive moral value to the extent that they maximise "utility" (often equated to happiness, welfare, or goodness), no matter whose utility is maximised. That is, acts are good (valuable) to the extent that they impartially promote the greatest good (utility) for the greatest number (Driver, 2014).

Deontological positions suggest that the moral value of acts stems solely from them being allowed, required, or prohibited by moral rules. Acts are good to the extent that they are in accordance with rather than in violation of moral rules (Alexander & Moore, 2015).

The *Switch* and *Bridge* thought experiments illustrated above seem equivalent from a utilitarian perspective. In each case, the choice is to allow five people to die or to sacrifice another person without their permission so that the five may live. There seems to be no reasonable basis for weighing the welfare of the singleton more highly than that of any single person within the majority. Everyone involved is a stranger and appears to potentially be a

victim of circumstance. In the absence of good reasons to discriminate between the people involved, determining the morally appropriate action seems to be merely a numbers game: five living and one dying is better than five dying and one living. Perhaps because of such thinking, most people think that they would – and that everyone should – use the switch. However, most people think that they would not – and that no one should – push the fat man. Thomson (1985) referred to such apparent inconsistency as “The trolley problem”. “The ‘problem’ is to explain why people respond (or ought to respond) differently to these two dilemmas” which seem equivalent from a purely utilitarian perspective (Greene, 2009, p. 581).

A great deal of research has sought to solve the trolley problem. The dependent variable in much of this research is participants’ decisions in sets of hypothetical dilemmas similar to *Bridge* and *Switch*. If these dilemmas are set up in the same way as described above, decisions to act are called “utilitarian” and decisions to be a bystander are called either “non-utilitarian” or “deontological”. This is because these seem to be the decisions that would be made by someone who was basing their decisions on the respective moral principles.

This does not mean that participants are actually thinking about or trying to act in accordance with such principles. It means that – whatever participants are in fact thinking about and trying to do – their final decisions are the same as they would be if the participants were deliberately pursuing utilitarian or deontological principles. Thus, and slightly ironically given that hypothetical dilemmas were designed to give insight into people’s specifically moral intuitions, people being “utilitarian”, “non-utilitarian”, or “deontological” does not necessarily reveal anything about the moral content or form of people’s decision-making (Greene, 2014). It is even possible that utilitarian concerns could sometimes lead to “deontological” decisions and deontological concerns result in “utilitarian” choices.

As participants in hypothetical dilemmas have to make decisions and can do so for any reason (which may or may not include commitments to utilitarianism or deontology), it is not very clear what is measured by “utilitarian” or “deontological” choices. Although recent studies have attended to ecological validity (e.g. comparing “utilitarian” and “deontological” decisions in hypothetical and virtual reality situations, Patil, Cogoni, Zangrando, Chittaro, & Silani, 2014) and to measurement issues (e.g. disaggregating “utilitarian” and “deontological” contributions to particular judgments, Gawronski, Conway, Armstrong, Friesdorf, & Hütter, 2016), surprisingly little research has directly investigated the construct validity of “utilitarian” or “deontological” choices per se, i.e. sought to establish what such choices actually do indicate, reflect, or signify (but see Haviv & Leman, 2002; Tanner, Medin, & Iliev, 2008; Uhlmann, Zhu, & Tannenbaum, 2013). Such paucity of concern for construct validity makes it very difficult to interpret many of the accumulated findings within this domain (Bauman, McGraw, Bartels, & Warren, 2014; Christensen & Gomila, 2012; Christensen, Flexas, Calabrese, Gut, & Gomilla, 2014; FeldmanHall, Mobbs, Evans, Hiscox, Navrady, & Dalgleish, 2012; Kahane, Everett, Earp, Farias, & Savulescu, 2015; Kahane & Shackel, 2008; Rosas & Koenigs, 2014).

The current paper investigates what participants report about the reasons for their decisions in scenarios such as *Bridge* and *Switch*. Although people are not always able or willing to accurately report their reasons for action (Nisbett & Wilson, 1977) they often are (Cushman, Young, & Hauser, 2006) and participants’ accounts in this case would seem to provide at least prima facie evidence about their concerns and thereby go some way towards contributing “the important descriptive work that [ideally] precedes experimentation” in progressive science (Rozin, 2007, p. 758).

In the research reported here, participants were therefore asked to what extent their decisions were motivated by a selection of concerns that have previously been claimed to be

important influences in hypothetical dilemmas, i.e. anticipated consequences for the majority (Smart, 1973); anticipated consequences for the minority (Williams, 1973); anticipated consequences for the self (FeldmanHall et al, 2012); the nature of the action (Greene, Cushman, Stewart, Lowenberg, Nystrom, & Cohen., 2009); one's feelings (Moretto, Walsh, & Haggard, 2010); relationships between oneself and others affected by one's decisions (Bleske-Rechek, Nelson, Baker, Remiker, & Brandt, 2010); moral identity (Conway & Gawronski, 2013); wanting to do the right thing (Lombrozo, 2009); and not wanting to do the wrong thing (Gamez-Djokic & Molden, 2016). Importantly, rather than asking participants about the influence of only one of these concerns or asking them about the relative influence of pairs of such concerns, participants were given the opportunity to report the possibly simultaneous and shifting influence of numbers of these concerns.

To capture the possibility that concerns differ in their influence across situations, and also to obtain some contextual information to allow us to better interpret participants' accounts of their decision-making influences in *Bridge* and *Switch*, we asked participants about their decision-making in some additional scenarios (see Appendix 1 for all scenarios). *Pond* (Singer, 1972) and *Appeal* (Unger, 1996) structurally mirror the relationship of *Switch* and *Bridge* in that most people select utilitarian action in the former but not in the latter, despite action in each case involving relatively small sacrifices to ensure relatively large benefits for others. In these scenarios, then, utilitarian concerns are pitted against relatively small costs to self rather than (as is the case in *Bridge* and *Switch*) substantial costs to third parties. *Fire* and *Torture* were developed specifically for this study to introduce obvious and stark counter-utilitarian considerations. Thus, utilitarianism is pitted against love and loyalty in the former (Wolf, 1992) and against moral repugnance in the latter (Foot, 1985).

The intuition guiding this selection of scenarios was that *Switch* and *Pond* potentially represent rather rare situations in which utilitarian concerns are salient and pre-eminent and

clearly point to the appropriateness of action rather than inaction (FeldmanHall et al., 2012). In these situations, then, “utilitarian” responses *would* reflect the dominant operation of utilitarian thinking. In other morally-relevant situations, however, so-called “utilitarian” action might reflect the operation of various moral and non-moral considerations that may or may not include utilitarian and/or deontological concerns – as could so-called “non-utilitarian” or “deontological” inaction (Aguiar, Brañas-Garza, & Miller, 2008; Aktas, Yilmaz, & Bahçekapili, 2017; Broeders, Van Den Bos, Müller, & Ham, 2011; Carnes, Lickel, & Janoff-Bulman, 2015; Chakroff, Dungan, & Young, 2013; Hughes, & Trafimow, 2014; Kortenkamp, & Moore, 2014; Tetlock, & Mitchell, 2010).

2. Method

Participants: Using a variety of methods (posters, advertisements on social media, snowball sampling), potential participants were given a web-link that randomly allocated each to one of the six questionnaires. One thousand one hundred thirty seven completed questionnaires were obtained. Using name and email information, 33 people were identified as having completed 2 - 4 questionnaires. All 76 questionnaires from these participants were removed from the data-set. Questionnaires from two further participants who were under 18 years old were also removed. Of the 1059 remaining participants (sample sizes in each condition are shown in Table 2), 654 identified as female, 402 as male, and 3 as “other”. Half the participants (50.1%) were students; mostly (47.5%) university students. Two thirds of participants were in full-time (39.2%) or part-time (27.3%) employment. A third of participants (35.0%) were parents. Ages ranged from 18 to 81, with 20 being the mode ($M = 33.48$, $SD = 15.69$).

Materials: Questionnaires were completed online. Six were used, differing only in the specific scenario contained. Each started with a comprehensive information sheet which

ended with a statement that informed consent would be assumed once participants clicked on a “next” button.

Section 1 then started with participants being asked to read one of six scenarios (named *Appeal*, *Bridge*, *Fire*, *Pond*, *Switch*, and *Torture*) which were matched as closely as possible (see Appendix).

Action decision. In each scenario, participants were asked how likely they thought it was that, if they were in the depicted situation, they would take the action that would most obviously maximise utility, i.e. optimise the net welfare for all directly affected parties. In *Bridge*, for example, participants were asked to “try as hard as you can to imagine actually being in this situation. If you were, how likely is it that you would push the man?” (*Not at all likely [1], Slightly likely [2], Quite likely [3], Likely [4], Very likely [5], Extremely likely [6]*).

In all but *Appeal* and *Pond*, acting would result in one person dying who otherwise would have lived and five people surviving who otherwise would have died, while not taking the action would result in five people dying who otherwise would have lived and one person surviving who otherwise would have died. In *Bridge* the action was to push a fat man in front of a train; in *Switch* it was to use a switch to divert a train from one track to another; in *Torture* it was to kidnap and torture to death a child; and in *Fire* it was to warn five people about an impending tragedy and in doing this give up any opportunity to save the life of the person the participant most loved in the world.

In *Appeal* the action was to donate £100 to save five lives and in *Pond* it was to wade into a pond to save the life of a child and thereby damage one’s clothing and make one late for work. In these two scenarios, then, saving lives required incurring relatively minor personal economic costs or inconvenience.

Confidence in and ease of action decision: As well as indicating how likely they thought it was that they would take the apparently utility-maximising action, participants were asked how sure they were that their initial answer was “an accurate prediction of how [they] would act if [they] were actually in the situation described” (*Extremely unsure [1]* to *Extremely sure [6]*) and how easy it was to make that decision (*Extremely easy [1]* to *Extremely difficulty [6]*).

Reasons for decisions: Participants were then asked how much they agreed or disagreed (1 = *Disagree very strongly*, 7 = *Agree very strongly*) that their decision about whether or not to act was influenced by each of the following factors: “The likely consequences for [the most obvious beneficiaries of action, e.g. in *Torture*] the five children”; “The likely consequences for [the most obvious beneficiary of inaction, e.g. in *Torture*] the single child”; “The likely consequences for myself”; “The nature of the action, i.e. [e.g. in *Torture*] kidnapping and torturing a child”; “My feelings”; “The relationship between myself and one or more people who would be affected by my decision”; “The sort of person I consider myself to be or that I would like to be”; “Wanting to do 'the right thing'”; and “Not wanting to do 'the wrong thing'”.

For convenience, “consequences for the most obvious beneficiaries of action” will be referred to below as “utilitarian consequences”, “consequences for the most obvious beneficiaries of inaction” will be referred to as “partiality”, and “The sort of person I consider myself to be or that I would like to be” will be referred to as “identity”.

Both across and within scenarios, Principal Axis Factor analyses with Promax rotation suggested that these nine questions about reasons should be treated as distinct single-item measures: scree plots usually had no clear inflection point, cumulative percentages of

variance explained by extractable factors tended to be low, and items loaded onto different factors across scenarios (Russell, 2002).

Section 2 of the questionnaire asked participants to make judgments about other people on the basis of their alleged actions within hypothetical scenarios. Analysis of data from this section will be reported elsewhere.

The final section of the questionnaire asked a number of demographic questions, gave an open-response option to “tell us anything you want to about your experience of completing this questionnaire”, and thanked participants for their efforts.

3. Results

Action decisions. Figure 1 shows the numbers of participants in each condition choosing each possible answer to the question of how likely they were to engage in the apparently utility-maximising act. Almost everyone (98.1%) thought it at least “*very likely*” that they would save the child in *Pond* but the majority of participants thought it at most “*slightly likely*” that they would send money in *Appeal* (73.5%), push the man off the *Bridge* (88.4%), warn the strangers in *Fire* (68.7%), or kidnap and murder a child in *Torture* (90.9%). Although the majority of participants reported that it was at least “*quite likely*” that they would act in *Switch* (74.2%), action decisions appeared to be much more evenly distributed in this scenario than in the others.

Figure 1: Number of participants in each condition selecting each possible likelihood of engaging in the apparently utility-maximizing action.

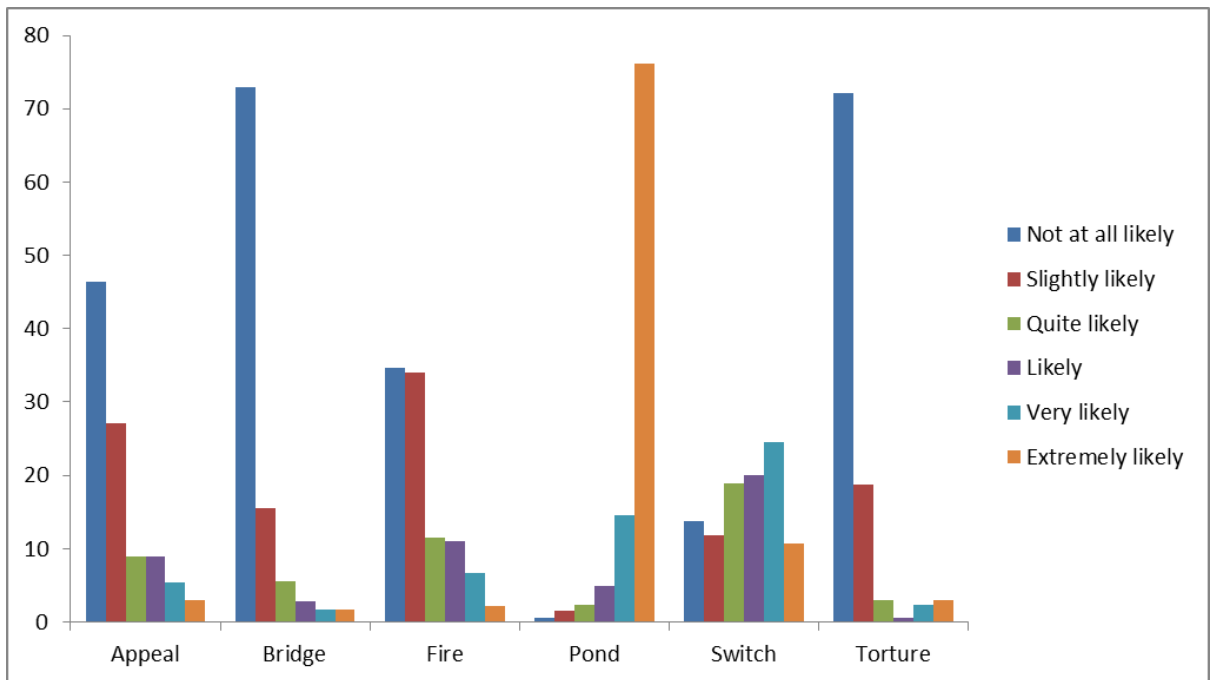


Table 1 shows that participants reported having least difficulty making their decisions in *Pond* and most difficulty in *Fire* and *Switch*. Participants' reported confidence that they would act as they had indicated was correspondingly lowest in *Fire* and *Switch* and highest in *Pond*.

Table 1: Mean (and standard deviation) ratings for difficulty of and confidence in action decisions across scenarios.

	Difficulty	Confidence
<i>Appeal</i>	2.66 ^b (1.13)	4.67 ^b (1.11)
<i>Bridge</i>	2.98 ^b (1.55)	4.44 ^b (1.36)
<i>Fire</i>	3.43 ^a (1.32)	4.02 ^c (1.28)
<i>Pond</i>	1.60 ^c (1.03)	5.43 ^a (0.85)

<i>Switch</i>	3.59 ^a (1.37)	3.69 ^c (1.31)
<i>Torture</i>	2.72 ^b (1.72)	4.50 ^b (1.50)

Note: Means within columns without a common superscript letter differ significantly using Sidak post hoc comparisons. Because this paper is exploratory rather than hypothesis testing, no corrections are made anywhere for multiple comparisons, meaning that statistically significant results should be interpreted with caution.

Reasons for decisions: Prior to examining differences in reasons for decisions within and across scenarios, a 6 (scenarios, between-subjects) x 9 (reasons, within-subjects) ANOVA confirmed a significant multivariate effect for reasons ($F(7.05, 7428.14) = 75.56, p < .001, \eta_p^2 = .07$) and a significant multivariate interaction ($F(35.27, 7428.14) = 59.53, p < .001, \eta_p^2 = 0.22$). A series of oneway ANOVAs with Sidak post hoc comparisons were used to explore these effects.

Reasons across scenarios: As shown in the penultimate column of Table 2, averaged across scenarios, participants reported being influenced in their hypothetical decision-making mostly by their feelings, followed by wanting to do the right thing, identity, partiality, utilitarian consequences, not wanting to do the wrong thing, the nature of the action, relationships, and consequences for the self.

The final column of Table 2 shows that each reason was indicated as being significantly more influential upon decision-making in some scenarios than in others. Specifically comparing the two focal scenarios, consideration of utilitarian consequences was the only reason reported to be more influential on decision-making in *Switch* than in *Bridge*, $t(337.97) = 8.38, p < .001$. Reasons reported as more important for decision-making in *Bridge* than in *Switch* were nature of the action ($t(338) = 7.48, p < .001$), identity ($t(338) = 4.85, p < .001$), personal feelings ($t(338) = 2.95, p < .01$), partiality ($t(338) = 2.79, p < .01$), and consequences for the self ($t(338) = 2.75, p < .01$).

Table 2: *Reported disagreement or agreement that hypothetical decisions were affected by various reasons.*

<i>Reported reason</i>	<u>Appeal</u> <i>n</i> =166	<u>Bridge</u> <i>n</i> =181	<u>Fire</u> <i>n</i> =182	<u>Pond</u> <i>n</i> =206	<u>Switch</u> <i>n</i> =159	<u>Torture</u> <i>n</i> =165	<i>M</i> <i>n</i> =1059	<i>F</i>
Utilitarian consequences	3.67 ^{c,d} (2.01)	3.88 ^c (1.90)	4.04 ^{c,d} (1.96)	6.74 ^a (.66)	5.50 ^a (1.65)	3.76 ^f (1.76)	4.66 ^c (2.07)	102.21
Partiality	4.73 ^a (1.97)	5.63 ^a (1.45)	6.29 ^a (1.19)	2.10 ^g (1.48)	5.15 ^{a,b} (1.64)	5.55 ^{b,c} (1.60)	4.83 ^b (2.11)	177.40
Consequences for self	3.71 ^{b,c,d} (1.77)	4.63 ^b (2.02)	3.51 ^d (1.96)	2.91 ^f (1.80)	4.04 ^d (1.89)	4.64 ^{d,e} 2.00	3.87 ^e (2.00)	23.52
Nature of the action	4.11 ^{a,b,c} (1.90)	5.50 ^a (1.78)	3.64 ^d (1.66)	3.58 ^e (2.06)	3.96 ^d (2.00)	6.32 ^a (1.33)	4.48 ^{c,d} (2.08)	67.52
My feelings	4.31 ^{a,b} (1.86)	5.54 ^a (1.54)	5.64 ^b (1.41)	5.54 ^{b,c} (1.59)	5.02 ^{a,b} (1.59)	5.75 ^b (1.56)	5.32 ^a (1.66)	19.88
Relationship between self and other(s)	3.33 ^d (1.72)	4.39 ^{b,c} (1.84)	5.57 ^b (1.54)	3.85 ^e (2.00)	4.48 ^{c,d} (1.85)	4.25 ^{e,f} (1.91)	4.31 ^d (1.94)	30.11
Identity	3.97 ^{b,c} (1.78)	5.49 ^a (1.34)	4.32 ^c (1.71)	5.42 ^c (1.65)	4.73 ^{b,c} (1.52)	5.67 ^b (1.58)	4.95 ^b (1.72)	32.87
Wanting to do the right thing	4.08 ^{a,b,c} (1.85)	5.22 ^a (1.40)	4.08 ^{c,d} (1.89)	5.83 ^b (1.36)	5.34 ^a (1.56)	5.55 ^b (1.45)	5.03 ^b (1.74)	40.25
Not wanting to do the wrong thing	3.43 ^d (1.75)	5.38 ^a (1.47)	3.97 ^{c,d} (1.87)	4.44 ^d (2.03)	5.16 ^{a,b} (1.69)	5.08 ^{c,d} (1.77)	4.57 ^c (1.91)	31.84
	<i>F</i> 12.46	28.88	77.56	203.04	19.93	45.25	77.45	

Note: All *F* values significant at $p < .001$. Means within columns without a common superscript letter differ significantly using Sidak post hoc comparisons.

Particularly noteworthy among the other across-scenario results was that consideration of utilitarian consequences was reported as being a reason for decision-making to an even greater extent in *Pond* than in *Switch* ($t(197.03) = 8.87, p < .001$) and that partiality (i.e. consideration of decisions' consequence for the most obvious beneficiaries of inaction) was reported as being much less important for decision-making in *Pond* than in either *Bridge* ($t(385) = -23.79, p < .001$) or *Switch* ($t(363) = -18.89, p < .001$).

Reasons within scenarios. The bottom row of Table 2 shows *F* values from a series of within-subject ANOVAs which examined the reported influence of each reason upon action-decisions within scenarios.

In *Appeal*, participants agreed that hypothetical action decisions were influenced, in descending order, by partiality, their feelings, the nature of the action, wanting to do the right thing, identity, consequences for the self, utilitarian consequences, not wanting to do the wrong thing, and relationships.

In *Bridge*, participants agreed that hypothetical action decisions were influenced, in descending order, by partiality, their feelings, the nature of the action, identity, not wanting to do the wrong thing, wanting to do the right thing, consequences for the self, relationships, and utilitarian consequences.

In *Fire*, participants agreed that hypothetical action decisions were influenced, in descending order, by partiality, their feelings, relationships, identity, wanting to do the right thing, utilitarian consequences, not wanting to do the wrong thing, the nature of the action, and consequences for the self.

In *Pond*, participants agreed that hypothetical action decisions were influenced, in descending order, by utilitarian consequences, wanting to do the right thing, their feelings,

identity, not wanting to do the wrong thing, relationships, the nature of the action, consequences for the self, and partiality.

In *Switch*, participants agreed that hypothetical action decisions were influenced, in descending order, by utilitarian consequences, wanting to do the right thing, not wanting to do the wrong thing, partiality, their feelings, identity, relationships, consequences for the self, and the nature of the action.

In *Torture*, participants agreed that hypothetical action decisions were influenced, in descending order, by the nature of the action, their feelings, identity, wanting to do the right thing, their partiality, not wanting to do the wrong thing, consequences for the self, relationships, and utilitarian consequences.

For current purposes, the most important of these findings are probably that (a) whereas utilitarianism was clearly the dominant concern affecting reported decision-making in *Pond*, multiple other concerns were reported as being as important as utilitarianism in *Switch* and as more important than utilitarianism for decision-making in *Bridge*, (b) in *Switch* utilitarian consequences were reported as being more important and partiality was reported as being less important than was the case in *Bridge*, and (c) in *Bridge* (as well as in *Torture*), utilitarian consequences was reported as the concern least influential on decision-making.

In all but one of the scenarios, small numbers of participants choosing either action or inaction made separate exploration of their reasons inappropriate and uninformative. However, because participants' decisions were uniquely broadly distributed in *Switch*, it was possible to compare the reported influence upon decision-making for participants who indicated being no more than "quite likely" to act with participants who indicated that it was at least "likely" that they would act. As shown in Table 3, almost every reason was reported as being approximately equally influential upon decision-making for those participants who

reported being relatively unlikely to act. For participants who reported being relatively likely to act in this scenario, however, utilitarian concerns appeared most influential. Independent t-tests also suggested that utilitarian concerns and wanting to do the right thing were significantly more influential upon decision-making for those who reported being relatively likely to act, while concerns about consequences for the self were more influential upon the decisions of participants who reported being relatively unlikely to act.

Table 3: *Switch dilemma: reported reasons for decisions by those more and less likely to act.*

<i>Reported reason</i>	<u>Not act</u> <i>n</i> =71	<u>Act</u> <i>n</i> =88	<i>t</i>
Utilitarian consequences	4.59 ^{a,b}	6.24 ^a	-6.75 ^{***}
Partiality	4.89 ^{a,b}	5.39 ^{b,c}	-1.93
Consequences for self	4.79 ^{a,b}	3.44 ^f	4.76 ^{***}
Nature of the action	4.20 ^b	3.78 ^{e,f}	1.30
My feelings	5.25 ^a	4.86 ^{c,d}	1.56
Relationship between self and other(s)	4.77 ^{a,b}	4.25 ^{d,e}	1.79
Identity	4.70 ^{a,b}	4.76 ^{c,d}	-0.24
Wanting to do the right thing	4.92 ^{a,b}	5.68 ^b	-3.08 ^{**}
Not wanting to do the wrong thing	5.18 ^a	5.15 ^{b,c}	0.13
<i>F</i>	2.34 [*]	24.61 ^{***}	

Note: Means within columns without a common superscript letter differ significantly using Sidak posthoc comparisons. * = $p < .05$. ** = $p < .01$. *** = $p < .001$.

Predicting decisions from considered reasons: Having checked for a lack of substantial collinearity (all tolerance values > .48; all VIF values < 2.1; see Field, 2013), logistic regression analysis was used to predict whether participants were “actors” or “bystanders” according to whether or not they reported being at least “quite likely” to engage in the apparently utility-maximising action. The null model, predicting that everyone was a bystander, made accurate predictions 56.7% of the time. In combination, using the 9 reasons as predictors increased accurate prediction to 87.0%, correctly predicting 88.7% of bystanders and 84.7% of actors (Nagelkerke $R^2 = .721$, $\chi^2(9) = 816.488$, $p < .001$).

Table 4: *Logistic regression predicting reported likelihood of engaging in apparently utility-maximising action, averaged across scenarios.*

<i>Reported reason</i>	<u>B</u>	<u>SE</u>	<u>Wald</u>	<u>Exp(B)</u>	<i>p</i>
Utilitarian consequences	1.26	.09	190.72	3.52	.000
Partiality	-0.56	.07	59.02	0.57	.000
Consequences for self	-0.07	.06	1.33	0.93	.250
Nature of the action	-0.26	.06	16.63	0.77	.000
My feelings	-0.04	.08	0.30	0.96	.586
Relationship between self and other(s)	0.05	.06	0.65	1.05	.420
Identity	-0.11	.09	1.65	0.90	.200
Wanting to do the right thing	0.50	.10	25.68	1.65	.000
Not wanting to do the wrong thing	-0.16	.08	4.69	0.85	.030

Table 4 shows that, averaged across the scenarios, 5 reported reasons made independent contributions to explaining whether participants were actors or bystanders. The most influential predictor was utilitarian consequences, a reported reason which made action more likely. Wanting to do the right thing also made action more likely. Bystanding was made more likely by the nature of the action, partiality, and not wanting to do the wrong thing.

Table 5: *Exp(B)* from logistic regressions within each scenario predicting reported likelihood of engaging in actions apparently maximising utility.

<i>Reported reason</i>	<i>Appeal</i>	<i>Bridge</i>	<i>Fire</i>	<i>Pond</i>	<i>Switch</i>	<i>Torture</i>
Utilitarian consequences	2.40***	2.70**	3.61***	1.56	9.69***	2.64**
Partiality	0.71	0.63	0.51*	0.65	0.25**	0.71
Consequences for self	1.38	0.78	0.86	0.75	0.98	0.83
Nature of the action	0.93	0.67*	1.83**	0.68	0.89	0.55*
My feelings	1.03	1.23	0.64*	1.23	1.12	0.91
Relationship between self and other(s)	0.93	1.19	0.98	1.02	0.72	1.17
Identity	1.54*	0.56*	1.01	2.10	0.71	1.04
Wanting to do the right thing	1.99**	2.03	1.33	1.59	2.26**	1.53
Not wanting to do the wrong thing	0.82	0.53*	0.81	0.49	0.63	0.96
Null prediction	73.5%	88.4%	68.7%	98.1%	74.4%	90.9%
	bystand	bystand	bystand	act	act	bystand
$\chi^2(9)$	96.289***	60.489***	124.980***	16.879	94.650***	35.918***
Nagelkerke R^2	.642	.555	.698	.451	.657	.429
Model prediction (bystand/act)	84.9% (90/71)	92.3% (98/48)	89.0% (92/83)	98.1% (25/100)	90.0% (73/96)	93.9% (99/40)

Note: Bold figures indicate significant predictors. * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Table 5 shows the odds ratios associated with each reason within each scenario. In line with the results just reported, utilitarian consequences was a significant predictor of acting in 5 of the 6 scenarios. The exception was *Pond*, where no reasons were significant predictors (although it should be recognised that there was essentially no variation in the dependent measure in *Pond*). Beyond this, the striking thing about Table 5 is the *lack* of a coherent pattern of predictors of anticipated action or bystanding. Different combinations of reasons were significant predictors across scenarios. Also, reported reasons to engage in “utilitarian” acts in some situations were given as reasons not to do so in others, e.g. identity concerns in *Appeal* and *Bridge*, respectively.

4. Discussion

Arising from concerns about the validity of measures of “utilitarianism” and “non-utilitarianism” in classic hypothetical dilemmas typified by *Bridge* and *Switch*, we asked participants to report the extent to which their decisions were influenced by a variety of factors within these and other scenarios. Most participants reported being at least “quite likely” to pull the lever in *Switch* but “not at all likely” to push the fat man in *Bridge*, thus broadly replicating the standard findings obtained with these scenarios.

Participants were able to express reasons for their decisions in decision-coherent ways. Over 85% of participants’ choices could be accurately predicted from only five of the measures of potential influences upon decision-making that were examined: utilitarian concerns, wanting to do the right thing, not wanting to do the wrong thing, partiality, and the nature of the action.

Utilitarian concern was the most important determinant of “utilitarian” choices, i.e. ones which maximised utilitarian outcomes. Such concern was the strongest predictor of action across scenarios and also in each individual scenario other than *Pond* (which had

almost no variance). It also dominated participants' reported reasons for action in the two scenarios in which such action was common, i.e. *Pond* and *Switch*. To that extent, then, it seems appropriate to say both that utilitarian concerns seemed to motivate "utilitarian" choices and that "utilitarian" choices seemed to result primarily from utilitarian concerns.

Nevertheless, it seems also true both that utilitarian concern did not always result in "utilitarian" choice and that "utilitarian" actions were not motivated solely by utilitarian concerns. Utilitarian concerns were among the most prominent concerns of bystanders in *Switch*, for example, and prediction of action was improved in each scenario (other than in *Pond*) when concerns other than simply utilitarian ones were taken into account. Thus, while utilitarian concerns seemed to motivate "utilitarian" choices and "utilitarian" choices seemed to be motivated largely by utilitarian concerns, it would seem prudent to clearly differentiate "utilitarian" choices (i.e. ones which maximise utilitarian outcomes) and utilitarian concern (i.e. which may or may not result in "utilitarian" choices).

"deontological" choices – i.e. those consistent with moral rules – appeared to result from shifting mixes of concerns (cf. Moore, Clark & Kane, 2008; Nichols & Mallon, 2006; Spino & Cummins, 2014). In *Switch*, for example, *all* of the concerns measured (including utilitarian concern) were reported by bystanders to be similarly influential upon their decision-making whereas in *Torture* the nature of the action required to promote utilitarian outcomes was a particularly potent determinant of bystanding. Thus, to the extent that having concerns which silence or overpower utilitarian ones results in bystanding and that such bystanding results when utilitarian concerns do not dominate, there is some justification for calling such actions "non-utilitarian" (cf. Laakasuo & Sundval, 2016). However, the fact that utilitarianism was sometimes among the concerns of bystanders suggests that the label "non-utilitarian" may not be ideal to describe people not selecting the "utilitarian" choice (Białek, & De Neys, 2016; Wheeler & Laham, 2016).

The combination of people seeming to have an impressive ability to articulate their reasoning and decisions being influenced by shifting mixes of reasons across situations raises exciting possibilities for future research. Studies of moral decision-making using genuinely open-ended methods (cf. Goodwin & Landy, 2014, Study 4) could help to identify *which* moral and non-moral rules people aspire to conform to (Graham et al., 2013), what *forms* of utilitarianism people are most influenced by (Sinnott-Armstrong, 2015), how multiple reasons *interact* to influence people's moral decisions (Haidt, 2003), the extent to which reasons apply consistently across situations (Dancy, 2013), and whether resolution of genuine dilemmas is followed by a sense of accomplishment or of guilt (De Wijze, 2005).

Past research has suggested considerable limits on people's abilities to articulate principles guiding their behaviours (Haidt, 2001). Nevertheless, participants in this study were able to identify the reasons for their actions with such specificity that most of their choices could be predicted from those self-reported reasons. Given the utility of being able to simply ask participants why they do what they do, it would be very beneficial if future research could more systematically investigate how much insight people have into their own motivation and how such insight varies across situations. One possibility is that people are sometimes able to recognise relatively 'obvious' factors affecting their decision-making, even if they are less able to recognise the operation of quite complex philosophical distinctions such as doctrines of double effect and unintended consequences (Cushman et al., 2006; Mikhail, 2002).

A striking result from this study is the combination of participants reporting that their feelings were a very important influence upon their decision-making and those self-reported feelings playing such a small role in predicting participants' choices. These findings would not be contradictory if feelings accompanied almost *all* of the decisions that participants made. That is, rather than decisions being influenced by deliberation *or* by feelings (Greene

et al., 2001), feelings may in some circumstances influence decisions whether or not deliberation occurs. Alternatively, participants in this study may have been reporting as “feelings” affect that they *anticipated* if they made one or other decision, i.e. counter-factual *cognitions* about anticipated feelings. These and related possibilities are likely to be among the many issues addressed by the already-thriving research activity investigating the relationship between affect (broadly conceived) and moral motivation (Teper, Zhong, & Inzlicht, 2015).

This study suggests that responses in classic hypothetical dilemmas have some – but also somewhat limited – validity as indicators of people being influenced by “utilitarian-relative-to-non-utilitarian” concerns. This is mainly because both possible decisions in such scenarios can be affected by numbers of concerns, because the influence of particular concerns differs across situations depending in part upon what other concerns are present, and because particular concerns can be present even when they are not decisive in affecting which decisions are made and which actions are taken. More positively, this study also suggests both that people may be much more able to report the reasons for their decision-making than has often been thought and that moral actors’ decisions may be substantially affected by a relatively limited list of concerns.

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Appendix

Appeal

Browsing on the internet one day, you chance upon an appeal spearheaded by an internationally renowned academic and supported by an impressive array of people with experience and expertise in multiple relevant areas. The appeal presents compelling evidence that a £100 donation from you would probably be enough to prevent five children in the 'developing world' dying from an easily curable condition. It also convincingly demonstrates that, no matter how poor you may be relative to some, by living in the 'developed world', you are considerably richer than most people on the planet. You are then invited to make a £100 donation. It's up to you. What do you do?

Bridge

One day while walking, you see an out-of-control train hurtling through a deep, narrow valley with steep walls on both sides of the track. You see that if the train continues unchecked on its present course, it will round a bend and run over and kill 5 workmen working on the tracks. The workmen do not know the train is coming and would not be able to escape even if they did know. You are standing on a bridge and a man much bigger and heavier than you is leaning precariously far over the railing, watching the oncoming train. You know that with even a gentle push, the man will fall on the track and be bulky enough to stop the train before it gets to the five workman, but of course he will die. No one else is around. It's up to you. What do you do?

Fire

One day you are visiting an exhibition with the person you love most in the world. While temporarily separated, you become aware that a fire has started and is spreading rapidly. Five people are in a room you have just left, where loud music is playing. If someone does not alert them of the risk immediately, they will almost certainly die in the fire. You are the only person who could warn them of the danger but to do so you would have to rush back down the corridor, open the door, and shout over the music. If you do this, you will not have time to rush down the corridor in the opposite direction to warn the person you came with about the fire. Without receiving the warning from you, that person will almost certainly perish in the fire. It's up to you. What do you do?

Pond

You pass a pond on the way to work. On hot days, children sometimes play in the pond, which is only about knee-deep. The weather's cool today, though, and the hour is early, so you are surprised to see a child splashing about in the pond. As you get closer, you see that it is a very young child, just a toddler, who is flailing about, unable to stay upright or walk out of the pond. You look for the parents or babysitter, but there is no one else around. The child is unable to keep his head above the water for more than a few seconds at a time. If you don't wade in and pull him out, he seems likely to drown. Wading in is easy and safe, but your new shoes will be ruined and your outfit will get wet and muddy. By the time you hand the child over to someone responsible for him, and change into clean clothes, you will be late for work. It's up to you. What do you do?

Switch

One day while walking, you see an out-of-control train hurtling through a deep, narrow valley with steep walls on both sides of the track. You see that if the train continues

unchecked on its present course, it will round a bend and run over and kill 5 workmen working on the tracks. The workmen do not know the train is coming and would not be able to escape even if they did know. You are standing by a lever and you know that if you pull it, the train will be diverted onto a side-track where it will instead run over and kill a single workman who also would not be able to escape. No one else is around. It's up to you. What do you do?

Torture

You are contacted by a terrorist organisation. They demand that you kidnap a child from the street and then torture it to death over a period of several hours. Unless you send documentary proof within 24 hours that this has been done, the terrorists promise that they will themselves kidnap and torture to death five children. If you tell anyone about this arrangement before the 24 hours is up, the terrorists promise that they will kidnap and torture to death a great many more children. Recent history leaves no room for doubt: these threats are real. It's up to you. What do you do?