

Is pulling the lever sexy? Deontology as a downstream cue to long-term mate quality

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Abstract

Deontological and utilitarian moral decisions have unique communicative functions within the context of group living. Deontology more strongly communicates prosocial intentions, fostering greater perceptions of trust and desirability in general affiliative contexts. This general trustworthiness may extend to perceptions of fidelity in romantic relationships, leading to perceptions of deontological persons as better long-term mates, relative to utilitarians. In two studies, participants indicated desirability of both deontologists and utilitarians in long-term mating (LTM) and short-term mating contexts. In Study 1 ($n = 102$), women perceived a deontological man as more interested in long-term bonds, more desirable for LTM, and less prone to infidelity, relative to a utilitarian man. However, utilitarian men were undesirable as short-term mates. Study 2 ($n = 112$) had both men and women rate opposite-sex targets' desirability after learning of their moral decisions in a trolley problem. We replicated women's preference for deontological men as long-term mates. Interestingly, both men and women reporting personal deontological motives were particularly sensitive to deontology communicating long-term desirability and fidelity, which could be a product of the general affiliative signal from deontology. Thus, one's moral basis for decision-making, particularly deontologically motivated moral decisions, may communicate traits valuable in LTM contexts.

Keywords

Evolutionary psychology, infidelity, mating, morality

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In mate selection, the desired relational context determines which traits are valued to facilitate the selection of partners who best offset reproductive costs. Individuals can infer prospective mates' suitability for long- or short-term relationships based on their behavioral repertoire (i.e., knowledge of past relationships, including frequency and duration). One behavior from which one may infer mating suitability could include prospective mates' decisions in moral domains. Human morality may have evolved to navigate specific adaptive problems related to interpersonal processes, including the facilitation of social living and communication of one's mate value (Krebs, 2008).

Deontological and utilitarian moral decisions appear to have signaling functions in group living. Although extensive research indicates an adaptive utility in communicating either type of moral decision (Bostyn & Roets, 2017a, 2017b; Capraro et al., 2017; Everett, Pizarro, & Crockett, 2016; Robinson, Page-Gould, & Plaks, 2017; Rom & Conway, 2018; Rom, Weiss, & Conway, 2017; Sacco, Brown, Lustgraaf, & Hugenberg, 2017), research has not fully addressed how such signaling influences mate preferences. Affiliative signals from communicated morality may possess downstream cues facilitating optimal mate selection. Because deontology more strongly signals benevolence and trustworthiness than utilitarianism (Everett et al., 2016), it may also be preferred by individuals motivated by long-term mating (LTM) goals for whom fidelity holds significant importance. This research extends previous findings by demonstrating how social signals produced by moral decision-making provide downstream mate value cues in the service of selecting contextually desirable mates.

Long-term and short-term mate preferences

Human mating is pluralistic and includes both short-term mating (STM) and LTM goals. Different traits are perceived as more desirable in one context versus another based on that context's superordinate goals (Buss & Schmitt, 1993; Li et al., 2013; Trivers, 1972). STM emphasizes acquiring multiple partners for uncommitted sexual encounters and prioritizes prospective mates' physical attractiveness (Kenrick, Groth, Trost, & Sadalla, 1993; Li & Kenrick, 2006). For example, women strategically prefer muscular men for STM, a trait connoting good genes (Frederick & Haselton, 2007), and facial structures that connote a mate's similar short-term interests (e.g., facially communicated extraversion; Brown & Sacco, 2017). Men interested in STM prioritize features of women's bodies connoting fertility (e.g., .7 waist-to-hip ratio), which would increase opportunities for reproductive success (Confer, Perilloux, & Buss, 2010; Singh, 1993). Although women incur reduced parental investment in STM, they may ultimately benefit from preferring these traits in such contexts to acquire good genes to compensate for a long-term partner who potentially has relatively low mate value with respect to good genes cues.

LTM emphasizes committed, monogamous pair-bonding. Although both men and women prefer attractive mates in long-term contexts, women additionally emphasize traits indicating men's enhanced access to resources, earning potential, and willingness to invest in relationships (Jonason, Li, & Madson, 2012; Li, Bailey, Kenrick, & Linsenmeier, 2002). Nonetheless, both sexes ultimately prioritize benevolence in LTM

(Barclay, 2010; Li et al., 2002; Phillips, Barnard, Ferguson, & Reader, 2008). Prosocial behavioral repertoires could cue predictability and trustworthiness, traits desired in LTM, which would connote likelihood of following normative relationship rules (e.g., fidelity). Importantly, preferring fidelity solves men's and women's adaptive problems for long-term relationships. For men, women's fidelity cues would reduce concerns of their partner mating outside of the pair-bonded relationship, thereby reducing concerns that offspring produced within the relationship are not genetically their own. For women, men's fidelity cues would connote likelihood of committing resources to their partner and any offspring produced during the pair bond. Because individuals can infer others' prosocial intentions through their communicated morality, additionally inferring a person's preferred mating strategy from this information could be adaptive in facilitating reproductive goals. Specifically, behavioral repertoires connoting benevolence could subsequently cue LTM quality.

Women are especially receptive to benevolence displays from a prospective long-term mate (Phillips et al., 2008). Such interest may be related to women's greater reproductive costs relative to men's. Compared to men's minimal investment of sperm provision for a single act of intercourse, women's minimal investment is much larger, involving pregnancy and lactation. It would thus be adaptive for women to be particularly judicious in mate selection to determine who would best offset their reproductive costs in a long-term context, particularly as it relates to childrearing (Haselton & Buss, 2000). When offsetting these costs, women are sensitive to behavioral repertoires from which they can infer morality and benevolence. Indeed, women view men's benevolence displays toward children as "moral" and therefore desirable in LTM, as these displays could connote willingness and ability to engage with offspring (Bleske-Rechek, Remiker, Swanson, & Zeug, 2006; Guéguen, 2014).

Morality as an interpersonal cue

Group living is paramount for human survival and affords opportunities to acquire resources and mates. However, group living leaves humans vulnerable to exploitation. Selection likely favored groups that developed rules to which members adhered to maximize gains from group living that were contingent upon cooperation and reciprocal altruism among group members (Trivers, 1971). Nonhuman primates employ analogous social rules, ensuring cooperation to resolve conflicts and sanctions against those unwilling to participate (de Waal, 1989; Flack & de Waal, 2000). These rules may have evolved into what humans label morality, a creed defining correct treatment of others and expectations for reciprocal exchange to facilitate cooperative behavior necessary for adaptive group living (Krebs, 2008). A shared system of morality would further facilitate bonding and cooperation among group members. For example, abiding by religious traditions (i.e., moral doctrines) should signal prosociality (Hall, Cohen, Meyer, Varley, & Brewer, 2015), thus LTM value.

Humans have evolved to be guided by morality in group living. According to a dual-process theory of morality, this guidance appears rooted in either deontological or utilitarian concerns shaped by various cognitive, emotional, and contextual factors (for a review, see Denton & Krebs, 2017). Deontologists adhere to rule-based logic, *absolutely*

disallowing social rule violations (Kant, 1785/1959). For example, group rules largely disallow directly harming another, thus precluding deontologists from potentially harming another person, even if harming one were to save a greater number of others. Conversely, utilitarians utilize cost–benefit analyses to determine the defensibility of actions based on their net gains (Mill, 1861/1998). Utilitarians’ rule-breaking would be defensible if such actions would save more individuals than they would harm. Within this framework, deontological decisions appear to be automatic emotional responses to moral transgressions with utilitarian decisions requiring a requisite amount of cognitive resources to enact (Conway & Gawronski, 2013; Greene, Morelli, Lowenberg, Nystrom, & Cohen, 2008; Haidt, 2001; McDonald, Defever, & Navarrete, 2017). Deontology is most prevalent in social contexts presenting little social information (Koop, 2013), low-cost prosocial opportunities (Baron, Scott, Fincher, & Metz, 2015), and when a majority espouses deontological intent (Bostyn & Roets, 2017b). Deontology appears to serve impression management functions to other group members. Despite the economic benefits provided by utilitarianism (e.g., more lives saved making a utilitarian decision than when making a deontological decision), such decisions require additional processing resources with individuals becoming hesitant before espousing a utilitarian decision (e.g., Conway & Gawronski, 2013; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001). Such an aversion may suggest that utilitarian decision-making is less socially desirable within a group context compared to deontological decision-making.

Deontology could be the default, adaptive response in initial interactions to communicate adherence to social rules necessary to establish reciprocal altruism. Those espousing deontological decision-making are perceived as more trustworthy, likable, and warm compared to utilitarians, prompting greater willingness to cooperate with deontologists in interdependent tasks (Bostyn & Roets, 2017a; Everett et al., 2016; Kreps & Monin, 2014; Rom & Conway, 2018; Rom et al., 2017; Sacco et al., 2017). Given rules of reciprocal exchange requiring one’s behavior to be initially cooperative, deontologists may be perceived as more trustworthy and thereby more capable of establishing mutual prosocial behavior (Capraro et al., 2017; Jordan, Hoffman, Nowak, & Rand, 2016). In fact, wanting to appear prosocial motivates public deontological decision-making (Rom & Conway, 2018). Conversely, relying on utilitarian motives may implicate one as willing to break social rules in the service of attaining the greater collective good. Individuals may be wary of utilitarians’ intentions, as reflected by lower perceptions of trustworthiness (Sacco et al., 2017).

Deontologists may be perceived as affording better affiliative opportunities compared to utilitarians, as their behavior would signal predictability and trustworthiness. However, this affordance does not guarantee the most benefits in every possible context. For example, although deontologists’ prosociality implicates them as ideal for jobs requiring interpersonal warmth (e.g., pediatricians; Rom et al., 2017), such warmth may dually signal an inability to make difficult, yet rational, decisions. Indeed, utilitarians are ultimately perceived as pragmatic and capable of making difficult decisions (Uhlmann, Zhu, & Tannenbaum, 2013), decisions implicating them as praiseworthy and competent (Rom & Conway, 2018). Utilitarian decisions are physiologically stressful (McDonald et al., 2017), and individuals capable of overcoming such stress could be less averse to difficult choices and subsequently preferable for positions requiring competence (e.g.,

surgeons; Rom et al., 2017). In fact, individuals become more utilitarian when tasked with forming an impression of competence (Rom & Conway, 2018). Thus, preferring deontologists or utilitarians represents trade-offs for what is contextually desirable.

Morality as a mate cue. Research has extensively demonstrated morality's signaling function, but only in general affiliative contexts. It may prove advantageous to understand how this signal may be co-opted for mating decisions. Given overlap between ideal traits for optimum group members and other types of relationships, morality's social signal may have communicative properties in other domains. Individuals' utilization of various cues to determine prospective mates' suitability (Jonason, Raulston, & Rotolo, 2012) would make it seem sensible to predict behavioral repertoires communicating moral inclinations could contribute to the multifaceted concept of an ideal mate.

The prosociality communicated by deontology may connote benevolent intentions necessary for LTM. Deontologists appear warmer and more likely to engage in social conventions than utilitarians (Everett et al., 2016; Rom & Conway, 2018), which may subsequently communicate the requisite kindness for sustaining long-term relationships and maintaining fidelity, both of which are valued in LTM. Indeed, LTM strategies predict greater social and moral rule following, altruism, and religiosity (Figueredo et al., 2007; Figueredo, Vasquez, Brumbach, & Schneider, 2004). Thus, communicating social rule-abiding morality (i.e., deontology) should elicit desirability in LTM. Given utilitarians' reduced aversion to breaking social rules, they should be undesirable long-term mates.

Although deontology is desirable in contexts prioritizing benevolence, utilitarianism remains attractive for communicating interpersonal agency and the ability to make aversive decisions (Rom & Conway, 2018; Rom et al., 2017). For example, ending a relationship could be an aversive experience and individuals may continue undesirable relationships if they cannot end them. Utilitarians' ability to make difficult decisions (e.g., directly ending a short-term relationship when appropriate) could communicate a willingness to prevent undesirable long-term relationships from forming, thus making them desirable in STM (Jonason & Buss, 2012; Uhlmann et al., 2013). Utilitarianism may further communicate STM attractiveness because the agency connoted by utilitarianism may coincide with the good genes attractive for such contexts (e.g., Aitkens, Lyons, & Jonason, 2013; Kruger, Fisher, & Jobling, 2003; Lukaszewski & Roney, 2011). However, such agency may simultaneously communicate greater proclivity toward infidelity or disinterest in committed relationships, which would undermine LTM desirability (Jonason, Garcia, Webster, Li, & Fisher, 2015).

Current research

This research extends work demonstrating how different moral decisions shape social perception. We were interested in how perceptions of deontologists as generally more trustworthy may translate to contextual mate desirability and the specific interpersonal behaviors coinciding with long-term relationship success (e.g., long-term commitment, sexual fidelity). We sought to demonstrate how morality's affiliative signaling function can be co-opted to cue mate value. We argue the warmth and socially

benevolent intentions of deontology can be co-opted to communicate LTM desirability. Further, we posit utilitarianism's interpersonal agency communicates STM desirability. We predicted deontologists would be perceived as more interested and desired for LTM compared to utilitarians. Conversely, we predicted utilitarians would be perceived as more desirable in STM and having greater propensity toward infidelity relative to deontologists.

Study 1

This study investigated differential cuing in both LTM and STM contexts for deontology and utilitarianism from prospective mates. Study 1 solely investigated women's evaluation of both epistemic bases toward morality. Women's larger preference for deontological interaction partners would suggest identifying a deontological long-term mate is more critical than it is for men (Sacco et al., 2017). This larger preference may implicate women as especially sensitive to morality's communicative properties. Though not implicating men as insensitive to moral signaling, women's high investment in childrearing (Trivers, 1972) and judicious criteria for mate selection (Haselton & Buss, 2000) necessitated us to initially consider women's responses exclusively. Nonetheless, our second study includes men to empirically determine the extent to which our sex-specific predictions are supported.

Method

Participants

A power analysis based on previous morality-attraction results (e.g., Sacco et al., 2017), calculated using G*Power (Cohen's $f = .20$, $\beta = .80$; Faul, Erdfelder, Lang, & Buchner, 2007), indicated 52 participants sufficed to detect medium-sized effects. We oversampled and recruited 114 women ($M_{\text{Age}} = 20.72$, $SD = 5.20$; 63.2% White) at a Southeastern U.S. public university for course credit. Twelve women not in a typical reproductive window (17–40 years) or not reporting heterosexual attraction were excluded from final analyses ($n = 102$).

Material and procedure

Social target descriptions. Participants viewed two biographical statements of men describing how they “do the right thing.” Statements described men named “Steve” and “Jeff,” with half of participants reading about Jeff as deontological and Steve as utilitarian or vice versa; we further counterbalanced target presentation. Participants were instructed to imagine interacting with targets and evaluate them on romantic interests. Descriptions were paragraphs explicating basic principles of deontology or utilitarianism, of approximately equivalent length. The deontologist's statement was derived from a description of Immanuel Kant's (1785/1959) moral philosophy, emphasizing social rule adherence (i.e., “the ends *do not* justify the means”). The utilitarian's statement was framed around Jeremy Bentham's philosophy emphasizing optimum well-being for the most amount of people (Burns, 2005). These vignettes described behavioral repertoires

not confining morality to one decision, or implicating one target as harmful, in chronic behavioral patterns (Kahane, 2015, see Appendix 1). Both targets have been found in previous research to have equivalent likability (Sacco, Brown, Lustgraaf, & Hugenberg, under review).

Mating desirability. Participants indicated the targets' LTM and STM desirability using single-item, 9-point Likert-type measures (1 = *not at all desirable*; 5 = *average*; 9 = *very desirable*) assessing desirability in both contexts (Brown & Sacco, 2017). The questions were worded as follows: "A short-term (long-term) partner is someone whom you would desire for casual dating or a one-night stand (long-term, committed romantic relationship). Overall, how desirable would you find this person as a short-term (long-term) partner?"

Context preference perception. Participants indicated their perceptions of targets' interest in LTM (e.g., "This person seems like he could make a relationship last") and STM (e.g., "I think this person would be more interested in dating more than one person at a time"). Two 5-item ad hoc subscales operated on 7-point Likert-type scales (1 = *not at all*; 7 = *very much*); higher scores indicated greater preference for LTM or STM. Removing one item notably improved LTM reliability and one item made STM reliabilities acceptable, resulting in 4-item aggregated composites of contextual mate preference perceptions (LTM deontology $\alpha = .80$; LTM utilitarianism $\alpha = .92$; STM deontology $\alpha = .62$; STM utilitarianism $\alpha = .79$).

Infidelity. Participants reported perceptions of targets' proclivity toward infidelity using two ad hoc items (e.g., "This person would probably remain faithful to his partner"). Items operated on 7-point Likert-type scales (1 = *not at all*; 7 = *very much*; one item reverse-scored) with higher scores indicating perceptions of the targets' greater proclivity toward infidelity. Items correlated for both targets and were aggregated separately ($r_s > .61$, $p_s < .01$).

Consenting participants read the biographical statements and assessed targets in randomized and counterbalanced order (four counterbalances; no superordinate conventional interactions emerged based on order in preliminary analyses, $p_s > .05^1$). This was followed by demographics and debriefing.

Results and discussion

Desirability

We used a 2 (Target Morality: Deontological vs. Utilitarian) \times 2 (Context: LTM vs. STM) repeated-measures analysis of variance (ANOVA). A context main effect indicated that targets were more desirable in LTM ($M = 5.32$, $SD = 2.51$) than STM ($M = 4.00$, $SD = 2.25$), $F(1, 101) = 36.49$, $p < .01$, $\eta_p^2 = .26$. The utilitarian ($M = 4.69$, $SD = 2.40$) and deontological targets ($M = 4.63$, $SD = 2.36$) were equivalently desirable, $F(1, 101) = .06$, $p = .81$, $\eta_p^2 = .00$. An interaction qualified effects (Figure 1, Panel A), $F(1, 101) = 45.32$, $p < .01$, $\eta_p^2 = .31$. Post hoc paired-samples t -tests indicated that

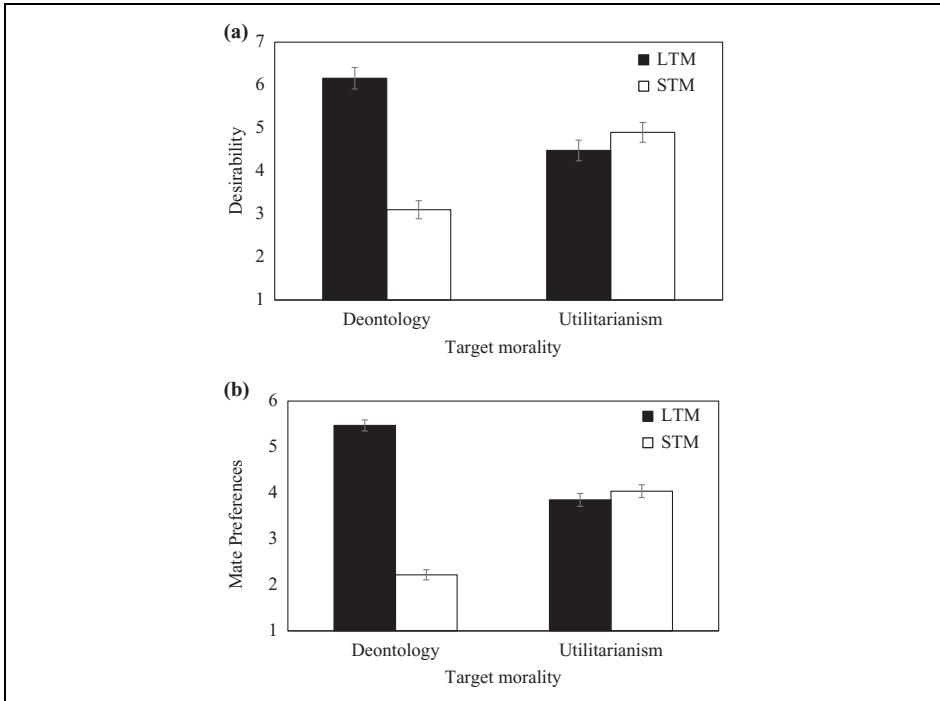


Figure 1. Long-term and short-term mating desirability (Panel A) and preferences (Panel B) for deontological and utilitarian targets (Study 1).

utilitarians did not differ in LTM ($M = 4.48$, $SD = 2.49$) and STM desirability ($M = 4.90$, $SD = 2.32$), $t(101) = 1.23$, $p = .22$, $d = .17$, 95% confidence interval (CI) $[-.26, 1.10]$. Deontologists were more desirable in LTM ($M = 6.16$, $SD = 2.55$) than STM ($M = 3.10$, $SD = 2.17$), $t(101) = -9.16$, $p < .01$, $d = 1.28$, 95% CI $[-3.72, -2.39]$.

Categorical desirability. We conducted supplemental analyses to determine whether targets were categorically (un)desirable in a context. We used 4 one-sample t -tests weighing scores against a midpoint of 5 (i.e., average desirability). Scoring significantly below the midpoint indicated categorical undesirability in the given context; significantly above the midpoint indicated categorical desirability. Deontological targets were perceived as categorically desirable in LTM, $t(101) = 4.58$, $p < .01$, $d = .66$, 95% CI $[.66, 1.96]$, but *undesirable* in STM, $t(101) = -8.78$, $p < .01$, $d = .66$, 95% CI $[-2.23, -1.47]$. Although utilitarians were not desirable in STM, $t(101) = -.42$, $p = .67$, $d = .08$, 95% CI $[-.55, .36]$, they were predictably undesirable in LTM, $t(101) = -2.11$, $p = .04$, $d = .41$, 95% CI $[-1.01, -.03]$.

Mate preference perceptions

We analyzed perceptions of contextual mating interest with a 2×2 repeated-measures ANOVA. A context main effect indicated participants perceived targets as preferring

LTM ($M = 4.66$, $SD = 1.36$) more than STM ($M = 3.13$, $SD = 1.30$), $F(1, 100) = 108.10$, $p < .01$, $\eta_p^2 = .52$. Participants perceived the utilitarian ($M = 3.94$, $SD = 1.48$) and deontological targets ($M = 3.84$, $SD = 1.18$) as equivalently interested in mating, $F(1, 100) = 1.50$, $p = .22$, $\eta_p^2 = .01$. The effects were qualified by an interaction (Figure 1, Panel B), $F(1, 100) = 89.21$, $p < .01$, $\eta_p^2 = .47$. Deontological targets were perceived as preferring LTM ($M = 5.47$, $SD = 1.25$) over STM ($M = 2.22$, $SD = 1.12$), $t(100) = 16.73$, $p < .01$, $d = 2.74$, 95% CI [2.86, 3.63]. Utilitarian targets were perceived as preferring LTM ($M = 3.85$, $SD = 1.48$) and STM ($M = 4.04$, $SD = 1.47$) equally, $t(101) = -.71$, $p = .48$, $d = .12$, 95% CI [-.71, .33].

Infidelity

A paired-samples t -test found participants perceived utilitarian targets ($M = 4.03$, $SD = 1.55$) as more prone to infidelity than deontological targets ($M = 2.05$, $SD = 1.36$), $t(101) = -8.58$, $p < .01$, $d = 1.35$, 95% CI [-2.43, -1.52].

As predicted, deontology appears to cue one's suitability in LTM contexts. Conversely, when considering LTM desirability and preferences together, deontologists' STM undesirability may not be surprising. Being oriented toward LTM could undermine one's attractiveness in short-term contexts; derogating deontologists in STM could serve to prevent investment in a partner who would be undesirable in that context (Jonason & Buss, 2012). Because women desire so-called "bad boys" in STM (e.g., Kruger et al., 2003), deontology's STM undesirability seems sensible, considering deontology signals rule adherence. Utilitarians were also undesirable long-term partners. Utilitarianism could have communicated unpredictability and potentially greater proclivity to harm in a certain situation (e.g., when harm must befall another to save multiple lives; Everett et al., 2016). However, this study was limited in inferring the latter; neither target explicitly communicated willingness to harm. A complementary test for desirability would be to compare perceptions of those deciding to harm or not in moral decisions.

Although LTM with utilitarians may be costly, deontologists may be more vulnerable to undesirable relationships, given their rigid social rule adherence. If deontologists prefer to cooperate with other deontologists (Everett et al., 2016), perhaps their sensitivity to others' decisions, in the service of optimum group living, is the basis of this differential favorability of one target versus another. Study 2 extended findings by considering how one's own moral decision-making influences mate choices.

Study 2

Study 2 extended findings in three capacities. First, it considered participants' own epistemic basis of morality. Second, it considered harm in a moral decision through a trolley dilemma. Third, it considered the potential costs men face through mate selection. Men are not impervious to social costs (e.g., infidelity) of unpredictable partners. For example, men do not bear offspring and therefore do not have complete certainty of paternity. The possibility of their partner having relations outside of their long-term relationship unbeknownst to them and rearing a genetically unrelated child unknowingly is costly (Platak & Shackelford, 2006). We considered both sexes' preferences for

morality in both contexts. Although we predicted both men and women would prefer deontologists in LTM, we predicted women's preferences would be larger than men's, which would be consistent with past research demonstrating women's heightened sensitivity to moral decision-making (Sacco et al., 2017).

Method

Participants

A power analysis from G*Power derived from Study 1 accommodating two additional independent variables (Cohen's $f = .15$, $\beta = .80$) indicated 92 participants sufficed to detect small–medium effects. We intentionally oversampled and recruited 124 participants (58 males, 66 females; $M_{Age} = 31.23$, $SD = 6.10$; 81.5% White) through Amazon's Mechanical Turk for \$.35 (U.S.); we deliberately oversampled to ensure we obtained enough participants espousing either a deontological or utilitarian moral compass. Twelve participants reporting themselves older than 40 years or not indicating any heterosexual attraction were excluded from analyses ($n = 112$). Our final analysis included 40 (34) deontological women (men) and 18 (20) utilitarian women (men). No violations in assumptions of homogeneity occurred ($ps > .28$), suggesting similar variance between conditions and appropriate amounts of deontologists and utilitarians for subsequent analyses comparing the decision-making strategies.²

Materials and procedures

Trolley problem vignettes. Participants read two accounts of the same trolley problem, a hypothetical scenario pitting one moral response versus another (Greene et al., 2001). Participants indicated their biological sex initially and were directed to read about two hypothetical opposite-sex targets' decisions after learning about the dilemma themselves. This dilemma required targets to decide whether pushing one person in front of a runaway trolley to prevent it from hitting five people would be an acceptable or unacceptable decision (Everett et al., 2016). Indicating the action was acceptable connoted utilitarianism; indicating the action was unacceptable connoted deontology. Participants viewed targets' responses in random order with target names counterbalanced. Participants also made the decision themselves following evaluations of each target, which we used as an individual difference predictor in our analyses. Although an order effect could emerge with participants only making the decision after indicating their perceptions, this approach sought to mitigate similarity effects (Montoya & Horton, 2013), or preferring those making similar decisions.

Consenting participants read each vignette in randomized counterbalanced orders (four counterbalances for both sexes; no superordinate interactions emerged based on order effects, all $ps > .18^3$) before indicating targets' LTM and STM desirability and infidelity perceptions ($rs > .44$, $ps < .01$) immediately after reading each vignette. Then, participants made their own decision regarding the dilemma, provided demographics, and were debriefed before receiving compensation codes.

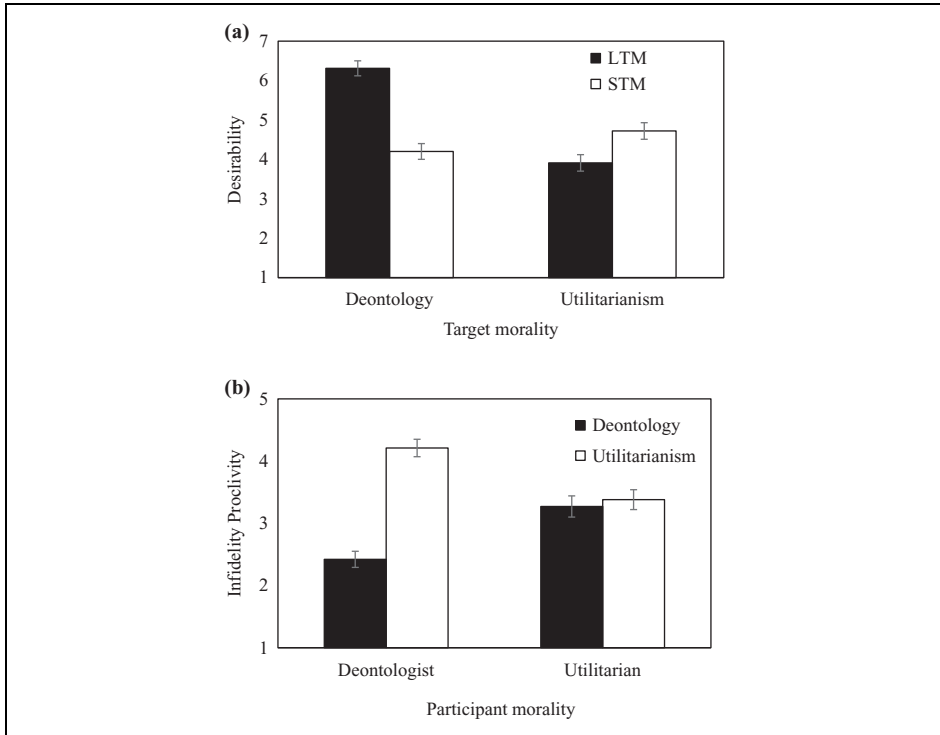


Figure 2. Long-term and short-term mating desirability (Panel A) and perceptions of infidelity proclivity (Panel B) for targets as a function of participant morality (Study 2).

Results and discussion

Desirability

We conducted a 2 (Participant Sex: Male vs. Female) \times 2 (Participant Decision: Utilitarian vs. Deontological) \times 2 (Target Decision: Utilitarian vs. Deontological) \times 2 (Context: STM vs. LTM) mixed-model ANOVA with repeated factors over the latter two factors. A context main effect indicated targets were more desirable in LTM ($M = 5.13$, $SD = 1.96$) than STM ($M = 4.49$, $SD = 1.81$), $F(1, 107) = 29.37$, $p < .01$, $\eta_p^2 = .21$. The effects were qualified by a Participant Decision \times Target Decision \times Context Interaction (Figure 2, Panel A), $F(1, 107) = 15.62$, $p < .01$, $\eta_p^2 = .13$. No other conventionally significant main effects or interactions emerged ($F_s < 3.85$, $p_s > .05$). This model's complexity necessitated that we only decompose omnibus effects reaching conventional significance to prevent Type I error.

We subsequently conducted two separate Context \times Target ANOVAs for participant decisions. Deontological participant effects were qualified by an interaction, $F(1, 73) = 40.18$, $p < .01$, $\eta_p^2 = .35$. Post hoc paired-samples t -tests indicated that deontologists found deontological targets more desirable in LTM ($M = 6.31$, $SD = 1.64$) than in STM ($M = 4.20$, $SD = 1.76$), $t(73) = -7.85$, $p < .01$, $d = 1.09$, 95% CI [1.57, 2.64].

Deontologists found utilitarian targets more desirable in STM ($M = 4.72$, $SD = 1.86$) than in LTM ($M = 3.91$, $SD = 1.88$), $t(73) = -3.09$, $p < .01$, $d = .48$, 95% CI [-1.33, -.29]. No interaction emerged for utilitarians, $F(1, 36) = .14$, $p = .70$, $\eta_p^2 = .00$.

Infidelity

We conducted a 2 (Participant Sex: Male vs. Female) \times 2 (Participant Decision: Deontological vs. Utilitarian) \times 2 (Target Decision: Deontological vs. Utilitarian) mixed-model ANOVA with repeated factors over Target Decision. A main effect indicated the utilitarian target ($M = 3.93$, $SD = 1.22$) appeared more prone to infidelity than the deontological target ($M = 2.71$, $SD = 1.17$), $F(1, 108) = 30.40$, $p < .01$, $\eta_p^2 = .22$. The effects were qualified by a Participant Decision \times Target Decision interaction (Figure 2, Panel B), $F(1, 108) = 24.65$, $p < .01$, $\eta_p^2 = .186$. Deontologists perceived the utilitarian target ($M = 4.21$, $SD = 1.23$) as more prone to infidelity than the deontological target ($M = 2.42$, $SD = 1.11$), $t(73) = -8.36$, $p < .01$, $d = 1.52$, 95% CI [-2.21, -1.36]. For utilitarians, the utilitarian target ($M = 3.38$, $SD = 1.01$) did not differ from the deontological target ($M = 3.27$, $SD = 1.08$), $t(37) = -.47$, $p = .63$, $d = .10$, 95% CI [-.55, .34]. No other main effects or interactions emerged ($F_s < .79$, $p_s > .37$).

Like Study 1, deontology was desirable for LTM but only for deontologists. Deontologists' sensitivity toward moral decision-making seems sensible because deontologists actively facilitate group cohesion more than utilitarians. With LTM as the goal for conventional group living, it would be adaptive to select mates who follow societal rules, which would reliably signal trustworthiness necessary for committed relationships (Everett et al., 2016; Li et al., 2002). Deontology's communicated trustworthiness could form the basis of LTM attraction. Interestingly, deontologists did not prefer deontological targets in STM, suggesting awareness of what constitutes optimum STM and the ensuing trade-off. Despite recognizing deontologists' value in facilitating LTM goals, they nonetheless recognized value of utilitarianism in STM.

General discussion

These two studies contribute to a growing research trend investigating the broad signaling functions of moral decision-making. Specifically, our results contextualize previous research by demonstrating how morality may serve as a behavioral cue within mating domains. People prefer deontologists in situations requiring prosociality and warmth, implicating them as ideal long-term mates (Everett et al., 2016; Li et al., 2002). Deontologists were desirable for LTM, but were undesirable for STM. Because deontologists are perceived as rule adherent, that could implicate them as following committed relationship conventions and attractive for a long-term partner. Conversely, perceptions of rule adherence and warmth may dually implicate deontologists as too interested in LTM, thus undermining STM attractiveness. That is, the LTM cue provided by deontology would connote a prospective mate's behavior as being inconsistent with traits deemed desirable in a short-term context (see Jonason & Buss, 2012). Results suggest deontology's signal in affiliative domains may be co-opted in mate selection as a convenient proxy for the extent one could and would commit to a partner, thus providing

impetus for subsequent attraction. Our evidence suggests downstream inferences can be made for mating intent from deontology's prosocial signal and subsequent interest in a deontologist can be adaptively calibrated based on the desired context.

Utilitarians are preferable in positions requiring competence, potentially communicating the agency ideal for STM (Kruger et al., 2003; Rom et al., 2017). Although sensible to predict utilitarianism as desirable in STM, our results provided limited support for this hypothesis. Utilitarians were only desirable in STM when compared to deontologists; they were not categorically desirable in STM. This could suggest that utilitarianism may only cue undesirability in LTM contexts. Much like how deontology's signal could be co-opted to infer LTM suitability, mating concerns appeared to co-opt utilitarians' untrustworthiness signal implicating them as prone to infidelity, which could elicit LTM aversion. Utilitarian targets were perceived as more prone to infidelity relative to deontological targets, a mating-specific analog to reduced perceptions of trustworthiness. This seems sensible when considering deontologists' desirability and utilitarians' undesirability in long-term contexts. A methodological limitation imposed by these current studies also comes from the continuous scales participants used to report attraction toward targets. These perceptual scales could have been tantamount to indicating *ideal* mate preferences instead of assessing *actual* mating decisions or behaviors (see Eastwick, Luchies, Finkel, & Hunt, 2014; Montoya, Faiella, Lynch, Thomas, & DeLuca, 2015). Ipsative scales may have better assessed utilitarians' STM desirability with participants having to make the trade-off between utilitarian and deontologist in LTM and STM contexts (Jonason, Luevano, & Adams, 2012; Lyons, Marcinkowska, Helle, & McGrath, 2015). Given deontologists' STM undesirability, perhaps participants would be willing to make the trade-off in STM for utilitarians through behaviors indicating a choice of utilitarian mates. Conversely, results could suggest general disinterest in utilitarians, given research indicating those interested in STM are rather ambivalent about the intentions of their partner (Jonason et al., 2015).

Deontology preferences were unexpectedly equivocal for men and women. Nonetheless, these preferences may hold different motives. Women's preferences could potentially be explained through error management theory (Haselton & Buss, 2000), which suggests women's greater reproductive costs necessitated their evolution of judicious selection criteria. Deontological men's ability to engage in conventional group living could connote paternal ability, or the ability to assist in childrearing. Men's favorability toward deontological women in LTM could indicate a desire to find mates who similarly value social rule adherence, but in the service of reducing paternal uncertainty. That is, deontological women may appear disinterested in infidelity, thereby providing men a greater guarantee than utilitarian women that the offspring produced in the relationship would be genetically related to them.

Interestingly, deontologists' decisions drove the desirability effects. This suggests that sensitivity to the implications of moral decisions operates based on one's need for group cohesion. Deontologists may participate in group living more readily and rely on its benefits to a greater degree than utilitarians. This would necessitate heightened sensitivity toward individuals signaling benevolent intent to facilitate mutually beneficial interactions. Deontologists' recognition of deontological targets as optimum LTM opportunities suggests an ability to recognize those who can satisfy relevant mating goals. Although this

could suggest similarity effects (Montoya & Horton, 2013), deontologists nonetheless derogated deontological targets in STM, suggesting awareness of optimal mates for given contexts. For utilitarians, such sensitivity to others' decisional strategies may be less critical because of their relative disengagement in group living standards.

It is also worth noting that the interactive effects with Participant Decision in Study 2 were based on nonequivalent sample sizes with a relatively small number of utilitarians. Although these results mirror studies indicating the overall prevalence of deontology over utilitarianism among deontologists (e.g., Everett et al., 2016), one should ultimately consider the naturally occurring imbalance between deontologist and utilitarian in the population, which could make it difficult to draw certain inferences from a utilitarian population. Replications would benefit from larger sample sizes to ameliorate these concerns.

Limitations, future directions, and conclusions

Despite consistent and theoretically sensible results, our studies have limitations. First, it could be possible that participants perceived deontological targets as more religious (Piazza & Sousa, 2014), a perception coinciding with an association between non-theistic thinking and utilitarianism (Piazza & Landy, 2013). This perception would implicate deontologists as more religious, thus desirable in LTM contexts, and utilitarian targets as nonreligious, thus undesirable in LTM contexts. Indeed, past research indicates considerable distrust toward atheists with perceptions of them being uncaring (Simpson & Rios, 2017), which could have elicited derogation of utilitarians in LTM (Gervais, Shariff, & Norenzayan, 2011). However, given past research indicating prospective mates with uncaring appearances are derogated in STM along with LTM (e.g., Lyons et al., 2015), utilitarians would have been derogated in STM if they were being perceived similarly to atheists. Furthermore, both deontological and utilitarian targets in these studies communicated decisions based on what is morally the right thing, whereas nonreligious people are perceived as lacking morality (Gervais, 2014), thus suggesting our targets communicate epistemologies distinct from religiosity. Nonetheless, whether these perceptions covary with perceptions of religiosity should be considered in future research, particularly if perceived religiosity mediates the link between morality and desirability.

Although we provided evidence for *what* is desirable, there has yet to be evidence for *why* one moral decision-making strategy would be contextually desirable. Given that displays of benevolence, particularly toward children, implicate men as better long-term mates (Guéguen, 2014), it would seem sensible that deontological men may be perceived as better fathers. This perception could serve as a mechanism for their LTM attractiveness. The reduced risk of infidelity from deontological women would implicate them as ideal long-term mates because of men's prioritization of fidelity in LTM (Buss, 1989), thus attenuating paternal uncertainty.

Along with considering ipsative measures to indicate attraction, future research should further investigate circumstances under which utilitarians would be desirable in STM. Because physical attractiveness is paramount in STM (Li & Kenrick, 2006), and those with such orientations are more physically attractive (Lukaszewski & Roney,

2011), physically attractive utilitarians may be categorically desirable short-term mates. Such individuals would communicate both interest in uncommitted sex and provide requisite heritable fitness. Another potential manner to investigate these morality preferences may include personality moderators, particularly those implicated in STM interest (e.g., sociosexual orientation, Dark Triad), which could identify how similarity with prospective mates may facilitate attraction. Indeed, sociosexually unrestricted individuals are sensitive and receptive to sexual receptivity cues (Brown & Sacco, 2017). This receptivity could suggest disinterest in deontologists in favor of utilitarians. When considering the connections between Dark Triad traits with both STM strategies (e.g., Jonason, Li, Webster, & Schmitt, 2009) and utilitarianism (e.g., Patil, 2015), those high in Dark Triad traits may also be particularly interested in utilitarians.

Another potential outlet for research could be to heighten interest in deontologists to provide converging evidence of their attractiveness in LTM domains. If deontology becomes prioritized in LTM domains, activating such concerns should elicit prioritization of deontological motives in a prospective mate. Specifically, activation of LTM motives (e.g., thoughts of a lasting relationship; Griskevicius et al., 2007) could elicit heightened favorability toward deontological targets because they would be perceived as less prone to infidelity. Conversely, given deontologists' unfavorability in STM, activating such motives could elicit a preference for utilitarianism over deontology, as activating STM motives elicits derogation of prospective mates lacking STM quality (Brown & Sacco, 2017).

Successful mate acquisition is contingent upon one's ability to identify a mate who can best satisfy salient needs for a given context. Recognizing a prospective mate's value in LTM and STM contexts appears possible through their communicated behavioral repertoire when tasked with deciding what actions are the most moral. Although individuals adopt utilitarian and deontological strategies to traverse moral conflicts, these results suggest that deontology appears highly desirable among those looking to acquire a reliable and caring long-term mate.


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Notes

1. Although not conventionally significant, we decomposed the three-way interaction for desirability with counterbalance as a moderator. All counterbalances elicited the same desirability effects for deontology and three elicited the nondifference for utilitarianism. However, the counterbalance in which participants read about a utilitarian named Steve first reported

marginally greater short-term mating desirability for utilitarianism than long-term mating, $t(27) = 1.99, p = .06, d = .47$.

2. Given deontology's prevalence in a normal population, it was unsurprising there were substantially more deontologists than utilitarians in the current sample. This composition is consistent with previous findings assessing individuals' moral decisions (e.g., approximately 70%; Everett et al., 2016). This suggests our sampling is typical of previous research.
3. To determine order effects, we conducted separate analyses of variance for male and female targets with counterbalance as a moderator, because participants never viewed targets of their own sex.

References

- Aitken, S. J., Lyons, M., & Jonason, P. K. (2013). Dads or cads? Women's strategic decisions in the mating game. *Personality and Individual Differences, 55*, 118–122.
- Barclay, P. (2010). Altruism as a courtship display: Some effects of third-party generosity on audience perceptions. *British Journal of Psychology, 101*, 123–135.
- Baron, J., Scott, S., Fincher, K., & Metz, S. E. (2015). Why does the cognitive reflection test (sometimes) predict utilitarian moral judgment (and other things)? *Journal of Applied Research in Memory and Cognition, 4*, 265–284.
- Bleske-Rechek, A., Remiker, M. W., Swanson, M. R., & Zeug, N. M. (2006). Women more than men attend to indicators of good character: Two experimental demonstrations. *Evolutionary Psychology, 4*, 248–261.
- Bostyn, D. H., & Roets, A. (2017a). Trust, trolleys and social dilemmas: A replication study. *Journal of Experimental Psychology: General, 146*, e1–e7.
- Bostyn, D. H., & Roets, A. (2017b). An asymmetric moral conformity effect: Subjects conform to deontological but not consequentialist majorities. *Social Psychological and Personality Science, 8*, 323–330.
- Brown, M., & Sacco, D. F. (2017). Unrestricted sociosexuality predicts preferences for extraverted male faces. *Personality and Individual Differences, 108*, 123–127.
- Brown, M., & Sacco, D. F. (2017). Put a (limbal) ring on it: Women perceive men's limbal rings as a health cue in short-term mating domains. *Personality and Social Psychology Bulletin*. Advance online publication. doi: 0146167217733072
- Burns, J. H. (2005). Happiness and utility: Jeremy Bentham's equation. *Utilitas, 17*, 46–61.
- Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences, 12*, 1–14.
- Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: An evolutionary perspective on human mating. *Psychological Review, 100*, 204–232.
- Capraro, V., Sippel, J., Zhao, B., Hornischer, L., Savary, M., Terzopoulou, Z., . . . Griffioen, S. F. (2017). Are Kantians better social partners? People making deontological judgments are perceived to be more prosocial than they actually are.
- Confer, J. C., Perilloux, C., & Buss, D. M. (2010). More than just a pretty face: Men's priority shifts toward bodily attractiveness in short-term versus long-term mating contexts. *Evolution and Human Behavior, 31*, 348–353.
- Conway, P., & Gawronski, B. (2013). Deontological and utilitarian inclinations in moral decision making: A process decision approach. *Journal of Personality and Social Psychology, 104*, 216–235.

- Denton, K. K., & Krebs, D. L. (2017). Rational and emotional sources of moral decision-making: An evolutionary-developmental account. *Evolutionary Psychological Science*, 3, 72–85.
- de Waal, F. B. (1989). Food sharing and reciprocal obligations among chimpanzees. *Journal of Human Evolution*, 18, 433–459.
- Eastwick, P. W., Luchies, L. B., Finkel, E. J., & Hunt, L. L. (2014). The predictive validity of ideal partner preferences: A review and meta-analysis. *Psychological Bulletin*, 140, 623–665.
- Everett, J. A., Pizarro, D. A., & Crockett, M. J. (2016). Inference of trustworthiness from intuitive moral judgments. *Journal of Experimental Psychology: General*, 145, 772–787.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175–191.
- Figueredo, A. J., Brumbach, B. H., Jones, D. N., Sefcek, J. A., Vásquez, G., & Jacobs, W. J. (2007). Ecological constraints on mating tactics. In G. Geher & G. F. Miller (Eds.), *Mating intelligence: Sex, relationships and the mind's reproductive system* (pp. 335–361). Hove, United Kingdom: Psychology Press.
- Figueredo, A. J., Vasquez, G., Brumbach, B. H., & Schneider, S. M. (2004). The heritability of life history strategy: The k-factor, covitality, and personality. *Social Biology*, 51, 121–143.
- Flack, J. C., & de Waal, F. B. (2000). 'Any animal whatever'. Darwinian building blocks of morality in monkeys and apes. *Journal of Consciousness Studies*, 7, 1–29.
- Frederick, D. A., & Haselton, M. G. (2007). Why is muscularity sexy? Tests of the fitness indicator hypothesis. *Personality and Social Psychology Bulletin*, 33, 1167–1183.
- Gervais, W. M. (2014). Everything is permitted? People intuitively judge immorality as representative of atheists. *PloS One*, 9, e92302.
- Gervais, W. M., Shariff, A. F., & Norenzayan, A. (2011). Do you believe in atheists? Distrust is central to anti-atheist prejudice. *Journal of Personality and Social Psychology*, 101, 1189–1206.
- Greene, J. D., Sommerville, R. B., Nystrom, L. E., Darley, J. M., & Cohen, J. D. (2001). An fMRI investigation of emotional engagement in moral judgment. *Science*, 293, 2105–2108.
- Greene, J. D., Morelli, S. A., Lowenberg, K., Nystrom, L. E., & Cohen, J. D. (2008). Cognitive load selectively interferes with utilitarian moral judgment. *Cognition*, 107, 1144–1154.
- Griskevicius, V., Tybur, J. M., Sundie, J. M., Cialdini, R. B., Miller, G. F., & Kenrick, D. T. (2007). Blatant benevolence and conspicuous consumption: When romantic motives elicit strategic costly signals. *Journal of Personality and Social Psychology*, 93, 85–102.
- Guéguen, N. (2014). Cues of men's parental investment and attractiveness for women: A field experiment. *Journal of Human Behavior in the Social Environment*, 24, 296–300.
- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, 108, 814–834.
- Hall, D. L., Cohen, A. B., Meyer, K. K., Varley, A. H., & Brewer, G. A. (2015). Costly signaling increases trust, even across religious affiliations. *Psychological Science*, 26, 1368–1376.
- Haselton, M. G., & Buss, D. M. (2000). Error management theory: A new perspective on biases in cross-sex mind reading. *Journal of Personality and Social Psychology*, 78, 81–91.
- Jonason, P. K., & Buss, D. M. (2012). Avoiding entangling commitments: Tactics for implementing a short-term mating strategy. *Personality and Individual Differences*, 52, 606–610.
- Jonason, P. K., Li, N. P., & Buss, D. M. (2010). The costs and benefits of the Dark Triad: Implications for mate poaching and mate retention tactics. *Personality and Individual Differences*, 48, 373–378.

- Jonason, P. K., Li, N. P., & Madson, L. (2012). It's not all about the Benjamins: Understanding preferences for mates with resources. *Personality and Individual Differences, 52*, 306–310.
- Jonason, P. K., Li, N. P., Webster, G. D., & Schmitt, D. P. (2009). The dark triad: Facilitating a short-term mating strategy in men. *European Journal of Personality, 23*, 5–18.
- Jonason, P. K., Luevano, V. X., & Adams, H. M. (2012). How the Dark Triad traits predict relationship choices. *Personality and Individual Differences, 53*, 180–184.
- Jonason, P. K., Raulston, T., & Rotolo, A. (2012). More than just a pretty face and a hot body: Multiple cues in mate-choice. *The Journal of Social Psychology, 152*, 174–184.
- Jonason, P. K., Garcia, J. R., Webster, G. D., Li, N. P., & Fisher, H. D. (2015). Relationship dealbreakers: Traits people avoid in potential mates. *Personality and Social Psychology Bulletin, 41*, 1697–1711.
- Jordan, J. J., Hoffman, M., Nowak, M. A., & Rand, D. G. (2016). Uncalculating cooperation is used to signal trustworthiness. *Proceedings of the National Academy of Sciences, 113*, 8658–8663.
- Kahane, G. (2015). Sidetracked by trolleys: Why sacrificial moral dilemmas tell us little (or nothing) about utilitarian judgment. *Social Neuroscience, 10*, 551–560.
- Kant, I. (1785/1959). *Foundation of the metaphysics of morals* [Grundlegung zur Metaphysik der Sitten] (L. W. Beck, Trans.). Indianapolis, IN: Bobbs-Merrill.
- Kenrick, D. T., Groth, G. E., Trost, M. R., & Sadalla, E. K. (1993). Integrating evolutionary and social exchange perspectives on relationships: Effects of gender, self-appraisal, and involvement level on mate selection criteria. *Journal of Personality and Social Psychology, 64*, 951–969.
- Koop, G. J. (2013). An assessment of the temporal dynamics of moral decisions. *Judgment and Decision Making, 8*, 527–539.
- Krebs, D. L. (2008). Morality: An evolutionary account. *Perspectives on Psychological Science, 3*, 149–172.
- Kreps, T. A., & Monin, B. (2014). Core values versus common sense: Consequentialist views appear less rooted in morality. *Personality and Social Psychology Bulletin, 40*, 1529–1542.
- Kruger, D. J., Fisher, M., & Jobling, I. (2003). Proper and dark heroes as dads and cads. *Human Nature, 14*, 305–317.
- Li, N. P., Bailey, J. M., Kenrick, D. T., & Linsenmeier, J. A. (2002). The necessities and luxuries of mate preferences: Testing the tradeoffs. *Journal of Personality and Social Psychology, 82*, 947–955.
- Li, N. P., & Kenrick, D. T. (2006). Sex similarities and differences in preferences for short-term mates: What, whether, and why. *Journal of Personality and Social Psychology, 90*, 468–489.
- Li, N. P., Yong, J. C., Tov, W., Sng, O., Fletcher, G. J., Valentine, K. A. . . . Balliet, D. (2013). Mate preferences do predict attraction and choices in the early stages of mate selection. *Journal of Personality and Social Psychology, 105*, 757–776.
- Lukaszewski, A. W., & Roney, J. R. (2011). The origins of extraversion: Joint effects of facultative calibration and genetic polymorphism. *Personality and Social Psychology Bulletin, 37*, 409–421.
- Lyons, M. T., Marcinkowska, U. M., Helle, S., & McGrath, L. (2015). Mirror, mirror, on the wall, who is the most masculine of them all? The Dark Triad, masculinity, and women's mate choice. *Personality and Individual Differences, 74*, 153–158.

- McDonald, M. M., Defever, A. M., & Navarrete, C. D. (2017). Killing for the greater good: Action aversion and the emotional inhibition of harm in moral dilemmas. *Evolution and Human Behavior, 38*, 770–778.
- Mill, J. S. (1861/1998). *Utilitarianism*. New York, NY: Oxford University Press.
- Montoya, R. M., Faiella, C. M., Lynch, B. P., Thomas, S., & Deluca, H. K. (2015). Further exploring the relation between uncertainty and attraction. *Psychologia, 58*, 84–97.
- Montoya, R. M., & Horton, R. S. (2013). A meta-analytic investigation of the processes underlying the similarity-attraction effect. *Journal of Social and Personal Relationships, 30*, 64–94.
- Patil, I. (2015). Trait psychopathy and utilitarian moral judgement: The mediating role of action aversion. *Journal of Cognitive Psychology, 27*, 349–366.
- Phillips, T., Barnard, C., Ferguson, E., & Reader, T. (2008). Do humans prefer altruistic mates? Testing a link between sexual selection and altruism towards non-relatives. *British Journal of Psychology, 99*, 555–572.
- Piazza, J., & Landy, J. F. (2013). “Lean not on your own understanding”: Belief that morality is founded on divine authority and non-utilitarian moral judgments. *Judgment and Decision Making, 8*, 639–661.
- Piazza, J., & Sousa, P. (2014). Religiosity, political orientation, and consequentialist moral thinking. *Social Psychological and Personality Science, 5*, 334–342.
- Platak, S. M., & T. K. Shackelford (Eds.). (2006). *Female infidelity and paternal uncertainty: Evolutionary perspectives on male anti-cuckoldry tactics*. Cambridge, MA: Cambridge University Press.
- Robinson, J. S., Page-Gould, E., & Plaks, J. E. (2017). I appreciate your effort: Asymmetric effects of actors’ exertion on observers’ consequentialist versus deontological judgments. *Journal of Experimental Social Psychology, 73*, 50–64.
- Rom, S. C., & Conway, P. (2018). The strategic moral self: Self-presentation shapes moral dilemma judgments. *Journal of Experimental Social Psychology, 74*, 24–37.
- Rom, S. C., Weiss, A., & Conway, P. (2017). Judging those who judge: Perceivers infer the roles of affect and cognition underpinning others’ moral dilemma responses. *Journal of Experimental Social Psychology, 69*, 44–58.
- Sacco, D. F., Brown, M., Lustgraaf, C. J. N., & Hugenberg, K. (under review). Deontological motives as a prosocial signal.
- Sacco, D. F., Brown, M., Lustgraaf, C. J. N., & Hugenberg, K. (2017). The adaptive utility of deontology: Deontological moral decision-making fosters perceptions of trust and likeability. *Evolutionary Psychological Science, 3*, 125–132.
- Simpson, A., & Rios, K. (2017). The moral contents of anti-atheist prejudice (and why atheists should care about it). *European Journal of Social Psychology, 47*, 501–508.
- Singh, D. (1993). Adaptive significance of female physical attractiveness: Role of waist-to-hip ratio. *Journal of Personality and Social Psychology, 65*, 293–307.
- Trivers, R. L. (1971). The evolution of reciprocal altruism. *The Quarterly Review of Biology, 46*, 35–57.
- Trivers, R. L. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual selection & the descent of man* (pp. 136–179). New York, NY: Aldine de Gruyter.
- Uhlmann, E. L., Zhu, L. L., & Tannenbaum, D. (2013). When it takes a bad person to do the right thing. *Cognition, 126*, 326–334.

Appendix I

Deontological target

Imagine this man's name is Jeff. Importantly, Jeff has a unique moral perspective on life and makes decisions in a manner that reflects his perspective.

When it comes to doing the "right thing," Jeff believes in strict adherence to moral rules. Jeff believes that rules were made for a reason and that we, as a society, should follow them. He believes that we must focus on the rightness or wrongness of actions, not on the consequences of those actions. Because of this, Jeff does not believe that people should break moral rules for any reason, even if some potential good can occur, or potential harm can be avoided, by breaking those rules. Jeff thinks that any potential good that comes from breaking these rules would likely set a dangerous precedence to disregard future rules that would undermine important moral principles. Doing the right thing for the right reason, even if others might be harmed, is Jeff's central philosophy.

Utilitarian target

Imagine this man's name is Steve. Importantly, Steve has a unique moral perspective on life and makes decisions in a manner that reflects his perspective.

When it comes to doing the "right thing," Steve believes that moral behavior is defined by the outcomes it has for those affected. Steve believes that the best course of action one can take is trying to get the best outcomes for the most people, even if such behavior might ultimately violate long-standing moral rules. He thinks that moral rules should be broken if they fail to benefit the most people. To Steve, the consequences of actions justify the means of those actions. The right thing to do is whatever creates the most happiness for the most people, even if it means typical moral rules are broken, is Steve's central philosophy.