

Harmless bodily pleasures are moralized because they are perceived as reducing self-control and cooperativeness

Léo Fitouchi^{1*}, Jean-Baptiste André¹, Nicolas Baumard¹ & Daniel Nettle²

¹Institut Jean Nicod, Département d'Études cognitives, ENS, EHESS, PSL University, CNRS, Paris, France

²Population Health Sciences Institute, Newcastle University

* Corresponding author: leo.fitouchi@gmail.com

Abstract: Why do some people moralize overindulgence in inherently victimless bodily pleasures, such as gluttony, masturbation, drinking, or laziness, when these behaviors appear devoid of any harmful consequences to other people? We test the hypothesis that these moral judgements stem from perceptions that overindulgence alters people's self-control, thus making them more likely to cheat in cooperative interactions. In an online experiment on 400 American adults, participants judged that a target who was caused to increase his indulgence in bodily pleasures would reduce his self-control and disposition to cooperate. Participants judged, by contrast, that sustained restraint from bodily pleasures over several months would improve a target's self-control and disposition to cooperate. The effect of indulgence (vs. restraint) on perceived change in cooperativeness was fully mediated by perceived change in self-control. This supports the idea that bodily pleasures are perceived as increasing people's propensity to cheat because they are perceived as reducing their self-control, which is perceived necessary for cooperative behavior. Finally, the more people perceived indulgence as reducing self-control and cooperativeness, the more they regarded indulgence in victimless bodily pleasures as morally wrong (e.g., masturbation, gluttony, harmless drinking and laziness). These results provide preliminary support for the Moral disciplining theory of puritanism, according to which, although inherently harmless, bodily pleasures are condemned as indirectly facilitating antisocial behaviors through their perceived effect on self-control.

Keywords: cooperation, morality, moral character, puritanism, purity, self-control, sin, temptation

Introduction

In many societies, people moralize immoderate indulgence in seemingly victimless bodily pleasures, such as food, sex, alcohol, gambling, or laziness; and regard restraint, temperance, and self-discipline as fundamental moral virtues (Dabhoiwala, 2012; Glucklich, 2020; Haidt, 2012; Haidt & Graham, 2007). Such puritanical values are found across the most widespread world religions, from Christian morality (e.g., the "deadly sins" of gluttony, lust, and sloth; Le Goff, 1984; Newhauser & Ridyard, 2012; Sweeney, 2012) to Hinduism (Doniger, 2014), Buddhism (Sterckx, 2005), Islam (Garden, 2014; Mernissi, 2011; Michalak & Trocki, 2006), Chinese religions (Nylan, 2011; Yü, 2021) and Ancient Greco-Roman spiritualities (Gaca, 2003; Langlands, 2006).

Converging with this historical recurrence, psychological and survey data reveal that a substantial part of the world's population moralizes excessive eating (Mooijman et al., 2018; Ringel & Ditto, 2019), masturbation (Haidt et al., 1993; Helzer & Pizarro, 2011), casual sex (Horberg et al., 2009; Weeden & Kurzban, 2013, 2016), alcohol use (Najjar et al., 2016; Poushter, 2014), gambling (Lugo et al., 2013; Poushter, 2014), intemperance (Mooijman et al., 2018), hedonism (Saroglou et al., 2004; Saroglou & Craninx, 2021), and reluctance to needless work (Celniker et al., 2020; Tierney et al., 2021). Why do people, across many societies and historical periods, develop this constellation of puritanical values?

The question is all the more puzzling that, as opposed to most other moral norms such as fairness, reciprocity, or loyalty, puritanical values condemn behaviors apparently devoid of any harmful consequences to other people (Haidt & Graham, 2007). They moralize failure to restrain impulses for food pleasure even when this doesn't amount to failing in one's duty to share, or to respect others' property (Hill, 2007, 2011; Mooijman et al., 2018). They condemn immoderate indulgence in sexual pleasure even when the latter is neither adulterous nor socially harmful, such as in masturbation, or lustful sexuality within marriage (Dabhoiwala, 2012; Haidt et al., 1993; Haidt & Hersh, 2001; Seidman, 1990). They condemn alcohol and drug use even in private, non-social contexts (see Goode & Ben-Yehuda, 2010; Levine, 1993; Michalak & Trocki, 2006); and value self-discipline and industriousness even when work would be needless and effort unproductive (Celniker et al., 2020; Tierney et al., 2021).

These "harmless wrongs", thus, are often deemed as critical blind spots of cooperation-based theories of morality, which regard morality as a cognitive adaptation to the challenges of cooperation recurrent in human social life (Alexander, 1987; Baumard et al., 2013; Curry, 2016; Stanford, 2018; Tomasello, 2016). Explaining the full breadth of the moral domain, researchers argue, requires (i) recognizing that "there is more to morality than harm and fairness" (Haidt, 2012), and (ii) adopting "pluralist" theories of the moral mind that make room for mechanisms generating moral intuitions without functioning for cooperation (Graham et al., 2013; Haidt, 2012; Haidt & Joseph, 2007; see also Beal, 2020).

Moral Foundations Theory, in particular, proposes that disgust—an emotion evolved for the non-social challenge of pathogen avoidance—explains moral concerns of "Purity/Sanctity", analogous to those we here labelled "puritanical values" (Graham et al., 2013; Haidt, 2012; Haidt & Joseph, 2007). Giving in to "base impulses", such as gluttony,

lust, or intemperance, would be moralized because it elicits disgust in face of behaviors perceived as threatening “spiritual purity” (Haidt & Graham, 2007). Proponents of this hypothesis point to abundant research finding associations between moralizations of purity and feelings of disgust (Haidt et al., 1993; Haidt & Hersh, 2001; Rozin et al., 1999), disgust-sensitivity (e.g., Crawford et al., 2014; Horberg et al., 2009; Inbar et al., 2009; Wagemans et al., 2018), or experimentally induced disgust (Horberg et al., 2009; Inbar et al., 2012). The ability of disgust to generate moral judgements, however, is increasingly disputed (Inbar & Pizarro, 2021; Kayyal et al., 2015; Piazza et al., 2018; see also Cameron et al., 2015), as correlations between disgust-sensitivity and purity moralizations disappear when perceptions of harm are controlled for (Gray & Schein, 2016; Schein et al., 2016), and meta-analytic evidence (Landy & Goodwin, 2015), highly powered replications (Ghelfi et al., 2020; Johnson et al., 2016), and recent studies (Jylkkä et al., 2021) strongly suggest that feelings of disgust do not increase moral condemnation, nor cause moralization of otherwise morally neutral actions.

Contesting the disgust hypothesis, many researchers have argued that apparently harmless wrongs are, despite appearances, reducible to concerns for harm and fairness (Fitouchi et al., in press; Gray et al., 2014; Gray & Schein, 2016; Royzman et al., 2014; Royzman et al., 2009, 2015; Schein & Gray, 2018). Focusing on puritanical moralizations, the Moral Disciplining Theory of puritanism proposes that overindulgence in bodily pleasures is condemned because they are perceived as indirectly facilitating uncooperative behavior by altering people’s self-control (Fitouchi et al., 2021a; see also 2021b).

Psychological evidence indeed shows that people perceive self-control as necessary for cooperative behavior, expect individuals with lower self-control to behave less cooperatively, and grant more trust to individuals perceived as more self-controlled (Buyukcan-Tetik et al., 2015; Buyukcan-Tetik & Pronk, 2021; Peetz & Kammrath, 2013; Righetti & Finkenauer, 2011). The intuition that self-control is necessary for cooperation appears somewhat justified, as cooperative behaviors often require renouncing the *immediate* rewards of cheating (e.g., immediate access to resources, sex, rest), this short-term cost being only repaid *in the future* by the benefits of others’ reciprocations and a trustworthy reputation (Axelrod, 2006; Lie-Panis & André, 2021; Manrique et al., 2021; Roberts, 2020; Stevens et al., 2005; Stevens & Hauser, 2004). Accordingly, psychological evidence shows that cooperative behavior depends on people’s ability to resist temptations of immediate rewards (resisting the “temptation to cheat”; Hofmann et al., 2018; Knoch et al., 2009; Sjästad, 2019; Vonasch & Sjästad, 2021), and that self-controlled individuals are less prone to behaving uncooperatively in a wide range of ways (e.g., stinginess, adultery, free-riding, aggression; Burnette et al., 2014; Cohen et al., 2014; Fan et al., 2020; Fehr & Leibbrandt, 2011; Moffitt et al., 2011; Schmitt, 2004; Sebastián-Enesco & Warneken, 2015; Sjästad, 2019; Vazsonyi et al., 2017),

People may also perceive that repeated indulgence in bodily pleasures reduces self-control, and, symmetrically, that regular practice of restraint and moderation improves self-control. Field experiments on parents suggest a widespread belief that children’s self-control can be improved, associated with training practices, such as giving children unhealthy snacks less often, or bringing them less frequently to fast-food restaurants (Mukhopadhyay & Yeung,

2010). Some evidence suggests that a substantial share of people believe that high-fat, high-sugar foods, drugs, and pornography can be addictive (Bradley et al., 2016; Droubay & Butters, 2020; Edelstein et al., 2020; Grubbs et al., 2018; Ruddock & Hardman, 2017), and may thus disrupt people's self-control (Vonasch et al., 2017). This converges with historical and ethnographic observations that puritanical cultures describe bodily pleasures as dangerously addictive, and self-control as a virtue that can be maintained only through sustained restraint, daily self-discipline, and consistent training of temperance (e.g., Victorian England: Seidman, 1990; world religions: Glucklich, 2020; Medieval Christianity: Dabhoiwala, 2012; Hinduism: Doniger, 2014; North India: Vatuk & Vatuk, 1967; Early China: Nylan, 2001; Ancient Greco-Roman wisdoms: Gaca, 2003; Zanzibar: Beckmann, 2010; Amhara, Ethiopia: Levine, 1965).

If people perceive both that self-control is necessary for cooperative behavior (Righetti & Finkenauer, 2011), and that overindulgence in bodily pleasures reduces self-control, they may moralize bodily pleasures as indirectly facilitating antisocial behaviors (Fitouchi et al., 2021a).

Here, we test several predictions of this general hypothesis. We investigate whether overindulgence in bodily pleasures is perceived as reducing people's self-control, and hence their cooperativeness and moral character. Participants judged whether a target recently led to increase his consumption of bodily pleasures had become, as a result of this lifestyle change, more likely to commit uncooperative behaviors, compared to a target led to practice restraint and moderation over a period of three months. We tested whether the effect of indulgence (vs. restraint) on perceived change in cooperativeness was associated with, and mediated by, the perceived effect of indulgence (vs. restraint) on self-control—in line with the idea that people perceive indulgence as facilitating uncooperative behaviors because of indulgence's deleterious effect on self-control. We also predicted that the more people perceive indulgence (or restraint) as reducing (or increasing) self-control and cooperativeness, the more they would judge harmless bodily pleasures to be morally wrong.

Methods

Pre-registration. Design and predictions for this study were pre-registered prior to data collection. Pre-registration, data, and analysis scripts are available at <https://osf.io/52thu/>. Numbered predictions in the Results section (e.g. P1) refer to the pre-registration document.

Participants. 401 participants (199 males, 198 females, 4 unknown; $M_{\text{age}} = 33.22$, $SD_{\text{age}} = 12.54$) were recruited from online research participation platform www.prolific.co. Our pre-registered sample size was determined by a priori power analysis using G*Power 3, based on a minimal effect size of interest of $d = 0.3$ for our main experimental effects, which is conventionally considered a small-to-medium effect size (Cohen, 1988). 400 participants provide more than 80% power ($\alpha = 0.05$, two-sided t-tests) for testing our experimental predictions. Twenty-two participants who failed the attention check were excluded from the sample, bringing sample size to 379.

Procedure. The study used a between-subjects design. After consenting, participants were randomly assigned to one of 2 conditions (Restraint or Indulgence). In the Restraint condition, participants read a vignette about a target led to decrease his consumption of bodily pleasures in the last three months:

Three months ago, Max won a free discovery pack to participate in a lifestyle change program. This program involves exercising more restraint and moderation with regard to bodily pleasures (alcohol, food, sex, etc.), for a period of three months. During these three months, Max has regularly avoided overindulging in these pleasures. He has greatly reduced his consumption of alcohol, fatty and sugary foods, and pornography. He has also lazed on the couch much less often, and has got into the habit of exercising regularly.

In the Indulgence condition, participants read a vignette about a target lead to increase his consumption of bodily pleasures in the last three months:

Three months ago, Max moved to another city for the purpose of his job. The neighborhood he now lives in has fewer gyms than his previous neighborhood. It also has many more bars, fast-food restaurants, and sex shops. As a result of this new environment, Max has indulged in bodily pleasures on a regular basis in the last three months, without restraint nor moderation. He has greatly increased his consumption of alcohol, fatty and sugary foods, and pornography. He has also lazed on the couch much more frequently in his free time.

In both conditions, the cause of the target's lifestyle change was described as exogenous to his internal dispositions (e.g. he moved, for reasons independent of the motivation to indulge, in a new area where indulgence happened to be more tempting). The goal was to make sure that the lifestyle change does not appear as a consequence of the target's character in the first place, and that participants' responses reflect the perceived *effect* of indulgence (vs. restraint) on character. Participants then completed a set of dependent measures, asking them to "indicate how Max's lifestyle change over the past months may have affected [several of his] character traits".

Dependent measures

Perceived change in cooperativeness. Participants answered 4 questions about whether Max had likely become more or less cooperative as a result of his lifestyle change over the past three months, such as: "As result of this lifestyle change, would you say that Max is now more or less likely to refuse to help a friend if he has better to do?". Answers were given on a scale from - 3 (*Much less*) to 3 (*Much more*), with 0 indicating no perceived change (*Neither more nor less*). The other questions asked about perceived change in the target's likelihood "to cheat his partner if he had the chance" (reverse-coded), to "slack off and let colleagues to his part of the

job” (reverse-coded) and to “give back a significant amount of money lent to him”. The four questions had good reliability ($\alpha = 0.91$).

Perceived change in moral character. Providing a complementary measure of disposition to cooperative behavior, similar questions assessed participants’ perception of the effect of Max’s lifestyle change on his moral character: “As a result of this lifestyle change, would you say that Max is now more or less trustworthy / honest / reliable / loyal / responsible” (from $-3 = \textit{Much less}$ to $3 = \textit{Much more}$, with $0 = \textit{Neither more nor less}$). These traits were selected from previously established measures of moral character (Goodwin et al., 2013; Goodwin, 2015). The 5 questions had good reliability ($\alpha = 0.94$).

Perceived change in warmth and competence. Participants also completed measures of target’s change in warmth and competence (Fiske et al., 2007), used only to disguise the aim of the study. As planned in the pre-registration, these measures were not analyzed.

Perceived change in trait-self-control. Six questions measured perception of the effect of the target’s lifestyle change on his dispositional self-control. These questions were adapted and selected from the trait-self-control scale (Tangney et al., 2004), so that their target was not the self but the individual described on the vignette (e.g., “As a result of this lifestyle change, would you say that Max is now more or less able to work himself effectively toward long-term goals”). The six items had good reliability ($\alpha = 0.96$).

Moralization of harmless bodily pleasures. Four questions assessed participants’ endorsement of puritanical values, by asking them to rate the moral desirability of several inherently harmless behaviors, from $1 = \textit{Highly morally undesirable}$ to $7 = \textit{Highly morality desirable}$. These behaviors comprised: “Regularly drinking too much alcohol when one is alone after work”, “Regularly eating to excess, in particular fat and sugar, to get as much pleasure as possible”, “Taking pleasure in laziness on a regular basis”, and “Masturbating regularly for the sake of pleasure”. Notably, these questions assessed participants’ condemnation of bodily pleasures in general, not their moralization of Max’s behavior specifically. The 4 items showed acceptable reliability ($\alpha = 0.77$).

Results

Perceived effects of indulgence and restraint on cooperativeness, moral character, and trait-self-control. Figure 1 summarizes the experimental effects. Confirming P1, lifestyle change characterized by increased indulgence in bodily pleasures was perceived as generating a more negative change in the target’s cooperativeness ($M = -0.81$, $SD = 0.86$), compared to increased restraint ($M = 0.97$, $SD = 0.81$), $t(377) = -20.5$, $p < .001$, $d = -2.11$. Importantly, mean rating of cooperativeness change was significantly lower than the 0-point of the response scale in the indulgence condition, $t(193) = -13.07$, $p < .001$, and significantly greater than the 0-point of the scale in the restraint condition, $t(182) = 16.11$, $p < .001$. This indicates

that, while increased indulgence was perceived as *reducing* the target's cooperativeness, increased restraint was perceived as *increasing* his cooperativeness (Figure 1.A).

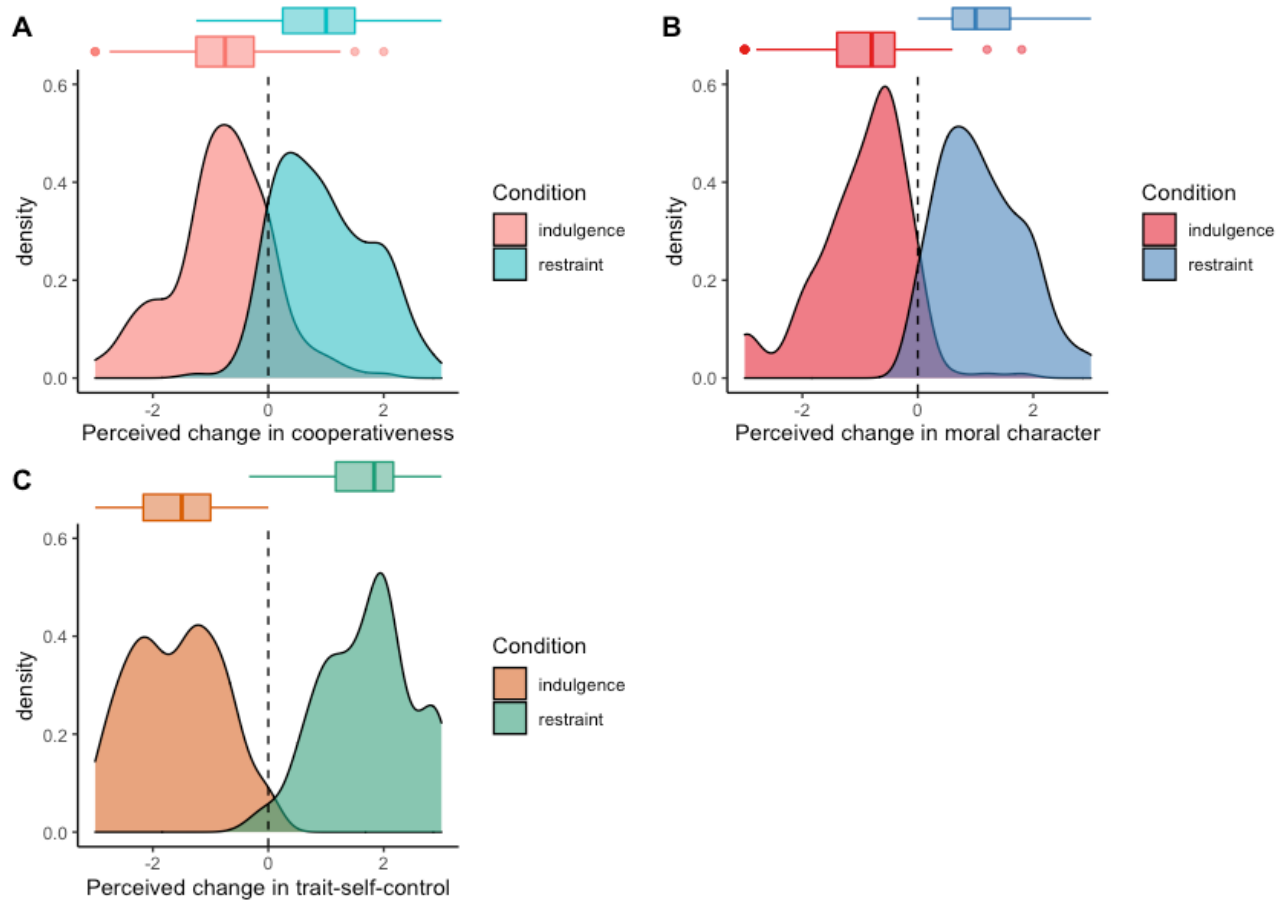


Figure 1. Distributions of perceived change in cooperativeness (A), moral character (B), and trait-self-control (C) of targets who increased (indulgence) vs. decreased (restraint) consumption of harmless bodily pleasures over the last three months. Vertical dashed lines correspond to no perceived change. Values inferior to 0 indicate perceived reduction in a given trait; values greater than 0 indicate perceived increase in the trait.

Supporting P2, increased indulgence in bodily pleasures was perceived as generating a more negative change in the target's moral character than increased restraint (indulgence: $M = -0.97$, $SD = 0.80$; restraint $M = 1.11$, $SD = 0.73$), $t(376) = -26.44$, $p < .001$, $d = -2.71$. Mean rating of change in moral character was significantly lower than the 0-point of the scale in the indulgence condition, $t(193) = -16.83$, $p < .001$, and significantly greater than 0 in the restraint condition, $t(182) = 20.65$, $p < .001$. Thus, while increased indulgence was perceived as degrading moral character, increased restraint was perceived as improving moral character (Figure 1.B)

In line with P3, as a result of increased indulgence, the target was also perceived as having undergone a much more negative change in trait-self-control ($M = -1.59$, $SD = 0.78$) compared to the restraint condition ($M = 1.71$, $SD = 0.78$), $t(375) = -41.16$, $p < .001$, $d = -4.23$. Mean rating of trait-self-control change was again significantly lower than 0 in the

indulgence condition, $t(193) = -28.31, p < .001$, and significantly greater than 0 in the restraint condition, $t(182) = 29.72, p < .001$. This suggests that, while sustained indulgence was perceived as reducing self-control, sustained restraint was to the contrary perceived as increasing self-control (Figure 1.C).

Perceived change in self-control predicts perceived change in cooperativeness and moral character. We further predicted that participants' judgements about the target's change in cooperativeness (P4) and moral character (P5) would be predicted by their perceptions of the target's change in self-control, both within and across conditions. In line with these predictions, in the indulgence condition, the more participants' perceived indulgence as reducing the target's self-control, the more they perceived indulgence as reducing the target's cooperativeness, $r(192) = .59, p < .001$, and moral character, $r(192) = .60, p < .001$ (Figure 2). In the restraint condition, the perception that restraint increased self-control also predicted the perception that restraint improves cooperativeness, $r(181) = .57, p < .001$, and moral character, $r(181) = .57, p < .001$ (Figure 2). Across conditions, perceptions of self-control change were also strongly associated with perceptions of cooperativeness change, $r(377) = .83, p < .001$, and moral character change, $r(377) = .88, p < .001$.

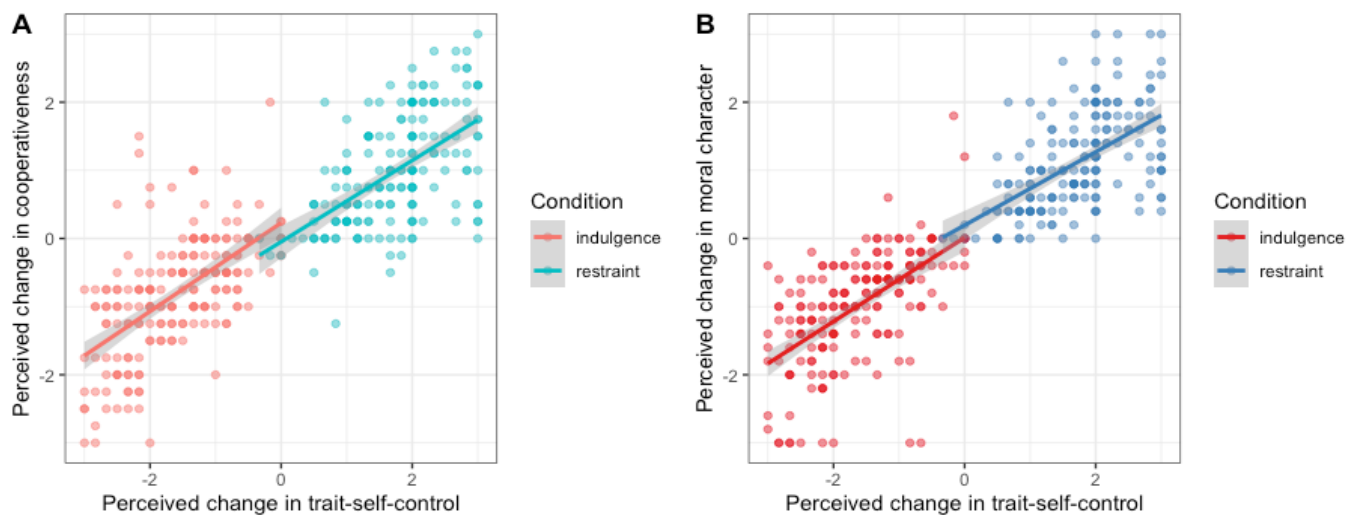


Figure 2. Relationships between perceived change in trait-self-control (following indulgence or restraint), and perceived change in cooperativeness (A) and moral character (B). Values inferior to 0 indicate perceived reduction in a given trait; values greater than 0 indicate perceived increase in the trait.

Mediation analyses. The moral disciplining theory of puritanism posits that people perceive indulgence (vs. restraint) as degrading cooperativeness because they perceive indulgence (vs. restraint) as degrading self-control, which they perceive necessary for cooperativeness. It thus follows that perceptions of self-control change would mediate the effects of condition (indulgence vs. restraint) on both perceptions of cooperativeness change and perceptions of moral character change—although this mediation prediction was not pre-specified in our pre-

registration. Model-based mediation analyses were performed with R package “mediation” (Tingley et al., 2014). Perceptions of self-control change fully mediated the effect on condition on perception of cooperativeness change (Figure 3A). The indirect effect was estimated to be 2.04, 95% CI [1.76, 2.31], $p < .001$, with 100 bootstrap samples, leaving a nonsignificant direct effect, $b = -0.25$, 95% CI [-0.52, 0.09], $p = .14$. The proportion of effect mediated was 100%, suggesting that people perceived sustained indulgence, as opposed to restraint, as altering cooperativeness exactly to the extent that they perceived it as altering self-control.

Perceived self-control change also fully mediated the effect of condition on perceived moral character change (Figure 3.B), with an indirect effect of 1.909, 95% CI [1.67, 2.13], $p < 0.001$, leaving a nonsignificant indirect effect, $b = 0.18$, 95% CI [-0.06, .05], $p = .2$. Proportion of effect mediated was 92%, suggesting participants perceived indulgence, as opposed to restraint, as altering moral character almost exactly to the extent that they perceived indulgence (vs. restraint) as altering self-control.

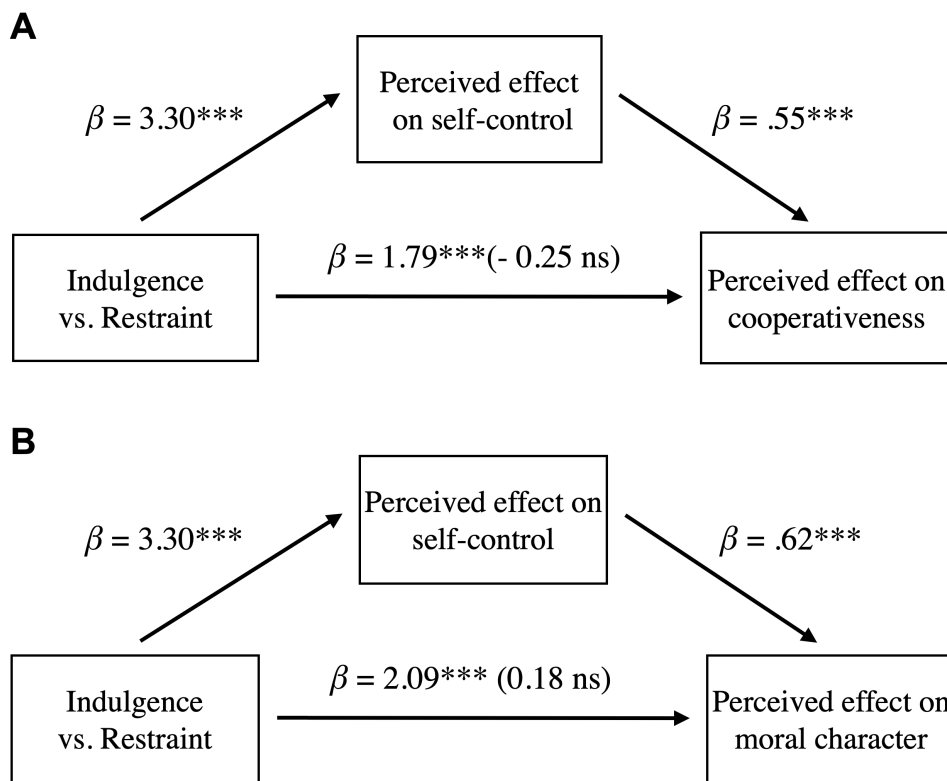


Figure 3. (A) Unstandardized regression coefficients for perceived effect of lifestyle change on cooperativeness as mediated by perceived effect on trait-self-control. (B) Perceived effect of lifestyle change on moral character as mediated by perceived effect on trait-self-control. On the center paths, the coefficients in parentheses are the direct effects, and the coefficients outside parentheses are the total effects ($^{***} p < .001$).

Moralizations of bodily pleasures. If bodily pleasures are moralized because perceived as increasing—by altering people’s self-control—the probability of uncooperative behaviors, moral condemnation of bodily pleasures should be predicted by perceptions that they alter

cooperativeness, moral character, and self-control. Our last pre-registered predictions were thus that, the more people perceive indulgence as reducing cooperativeness, the more they will rate harmless bodily pleasures as morally undesirable, whereas the more they perceive restraint as *increasing* cooperativeness, the more they will rate them as morally undesirable (P6). We similarly predicted that perceived effect of indulgence on moral character would negatively correlate with moralization, while perceived effect of restraint would *positively* correlate with moralization (P7). We also investigated the existence of such a differential effect on self-control, although this analysis was not on our pre-registration. In line with these predictions, in the indulgence condition, the more people perceived that indulgence reduces cooperativeness, the more they morally condemned gluttony, drinking, masturbation and laziness, $r(192) = -0.31, p < .001$. Perception that indulgence alters moral character $r(192) = -0.56, p < .001$, and self-control, $r(192) = -0.36, p < .001$, also predicted moralization of bodily pleasures. In the restraint condition, puritanical moral judgements were also predicted by perception that restraint improves moral character, $r(181) = 0.15, p = 0.04$, and self-control, $r(181) = 0.18, p = 0.01$. However, P6 received only partial support, as the relationship between perception that restraint improves cooperativeness and condemnations of indulgence in bodily pleasures was not significant, $r(181) = 0.12, p = 0.11$. Figure 4 summarizes these relationships.

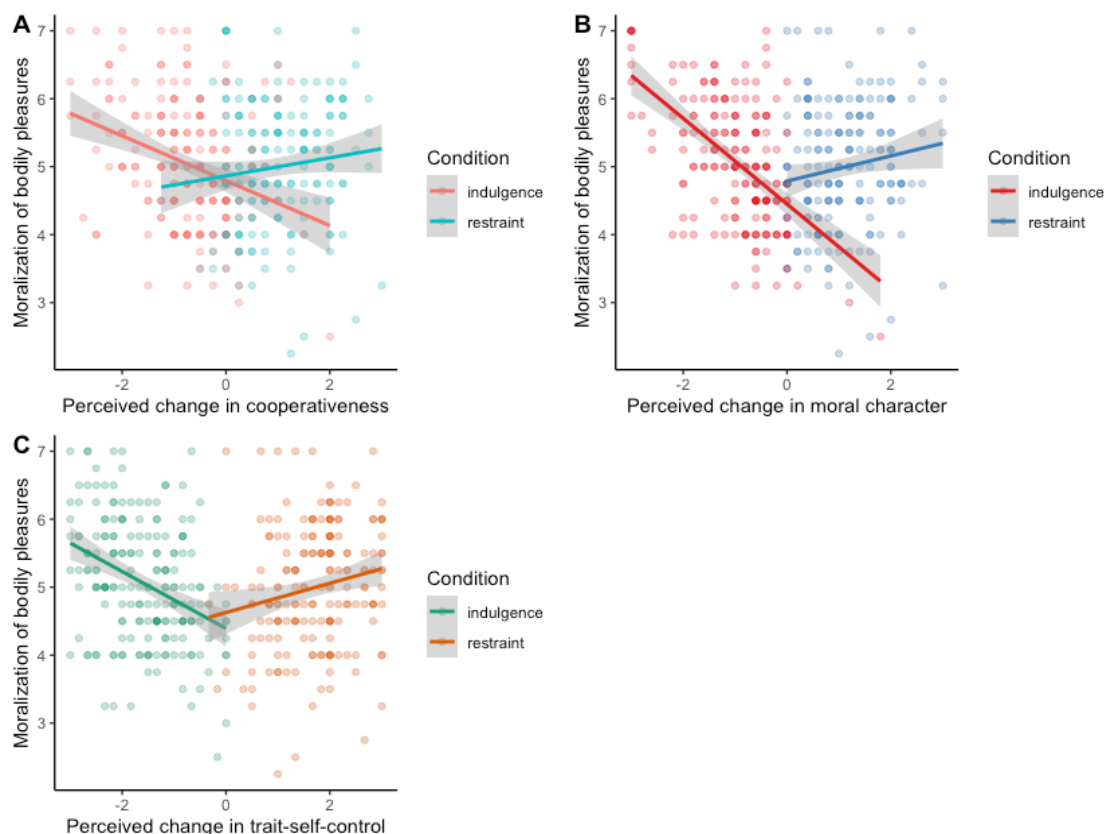


Figure 4. Relationships between puritanical moral judgements and perceptions that indulgence (or restraint) decreases (or increases) cooperativeness (A), moral character (B), and self-control (C). Values inferior to 0 indicate perceived reduction in a given trait; values greater than 0 indicate perceived increase in the trait.

Discussion

This study finds support for the idea that harmless bodily pleasures are moralized because they are perceived as indirectly affecting cooperation, through their effects on self-control. These findings support the central contention of the Moral Disciplining Theory of puritanism (Fitouchi et al., 2021a). We find evidence that (a) people perceive indulgence as reducing self-control, cooperativeness, and moral character, while moderation improves self-control, cooperativeness, and character; (b) the perceived effect of indulgence (vs. restraint) on cooperativeness and moral character is fully mediated by the perceived effect of indulgence (vs. restraint) on self-control; and (c) this perception that indulgence has deleterious effects on self-control, character, and cooperativeness predicts moral condemnation of harmless bodily pleasures.

Perceptions that restraint improves self-control and character also predict moral condemnation of bodily pleasures, albeit to a lesser extent than perceived effects of indulgence. We find, however, no significant association between moralization and perception that restraint improves cooperativeness. This may stem from our moralization questions, which assessed the moral *disapproval of indulgence* rather than the moral praise of restraint. Another possibility is that fears of deleterious effects of indulgence on self-control and cooperativeness actually contribute more strongly to puritanical moral concerns than perceived positive effects of restraint. This would be consistent with widely documented asymmetries between moral blame for negative behaviors and moral praise for positive behaviors (Anderson et al., 2020, for a review).

Implications

“Purity” values have sparked intense debates in moral psychology: is human morality unified by its functional relationship to cooperation? Is morality about more than harm and fairness? (Baumard et al., 2013b; Beal, 2020; Curry, Jones Chesters, et al., 2019; Curry, Mullins, et al., 2019; Goodwin, 2017; Graham et al., 2013; Greene, 2015; Piazza et al., 2019; Schein & Gray, 2018). Condemnations of purity violations (e.g., gluttony, lustful sexuality, intoxicants) have widely appeared as a critical argument in those debates. Being both inherently harmless and morally condemned, purity violations would show that moral mind is not only sensitive to cooperation-related challenges, but also to disgust-based concerns for sacredness and the purity of the soul (Graham et al., 2013; Graham & Haidt, 2012; Haidt, 2012; Haidt & Graham, 2007; Horberg et al., 2009). Our results contribute to this debate by suggesting that “impure” behaviors, although inherently harmless (e.g., gluttony, masturbation, drinking in private), can in fact be perceived as indirectly affecting cooperative interactions—and are thus, despite appearances, within the explanatory reach of cooperation-based theories of morality. These results add to a body of research suggesting that “harmless crimes” are in fact perceived by people as socially harmful (Gray et al., 2014; Royzman et al., 2009, 2015; Schein et al., 2016), and that perceptions of harm more robustly predict their

moralization than disgust or disgust-sensitivity (Schein et al., 2016; see also Gray & Schein, 2016).

Our findings also adds to recent work suggesting the importance of taking into account people's lay theories of human behavior for explaining moral judgements and their variations (Fitouchi et al., 2021a; Fitouchi & Singh, 2022; Moon et al., 2021; Nettle & Saxe, 2021). Puritanical condemnations, our results suggest, may stems from lay beliefs that repeatedly indulging in bodily pleasures would impair people's self-control, thus making future temptations—including uncooperative ones—harder to resist. This is consistent with recent evidence for the importance of lay theories of self-control in the moralization of immodesty—another puritanical norm. Moon et al. (2021) indeed found that lay beliefs that males have low sexual self-control predict the moralization of female immodest clothing. Although inherently harmless, immodesty seems perceived as indirectly favoring socially harmful behaviors by triggering hard-to-control sex drives in impulsive males (Moon et al., 2021). Besides puritanical values, Nettle & Saxe (2021) recently found evidence that authoritarian values stem from the lay theory that people—in particular when under conditions of war and scarcity—are not spontaneously motivated to behave cooperatively, so that strong, punitive leaders appear necessary to ensure their cooperation (see also Crimston et al., 2021; Sprong et al., 2019).

Finally, this study contributes to the literature on the role of perceived self-control in inferences about others' trustworthiness and moral character. Previous experimental evidence have suggested that, when seeing other individuals indulge in immediate pleasure, people infer that these individuals have low self-control, and accordingly judge them to be less trustworthy (Merritt, 2013; Righetti & Finkenauer, 2011; Steim & Nemeroff, 1995). Our results confirm that perceptions of others' self-control, trustworthiness, and moral character are strongly related. On top of that, they further suggest that indulgence in short-term temptations is perceived not only as a *cue* of low trustworthiness or bad moral character, but also as having a *causal effect* on people's trustworthiness and character, by not only revealing, but also causally affecting their ability to resist temptations.

Limitations and future directions

Our experimental manipulation supports the idea that people perceive indulgence, as opposed to restraint, as having more negative effects on self-control and cooperativeness. However, this study only provides correlational evidence for the relationship between moralization of bodily pleasures and perception that they reduce self-control and cooperativeness. Future studies may experimentally investigate the effect of perceptions of indulgence's effect on participants moral judgements.

Second, this study amalgamates several types of "indulgent" behaviors into one vignette (e.g., gluttony, masturbation, drinking). Although this is consistent with the observation that puritanical traditions often prescribe temperance *in general*, and condemn all types of immoderate behaviors simultaneously (Doniger, 2014; Hill, 2011; Le Goff, 1984; Yü, 2021), future studies should investigate whether similar effects emerge with more targeted

vignettes, displaying indulgence (vs. restraint) in only one bodily pleasure (e.g. gluttony vs. dietary restraint, masturbation vs. chastity, drinking vs. sobriety, laziness vs. regular exercise).

Finally, our findings only derive from a single participant pool of American adults. Future research should of course investigate the replicability and generalizability of these results in other populations—in particular in more puritanical societies.

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