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Physical Pain and Guilty Pleasures

Brock Bastian¹, Jolanda Jetten¹, and Elizabeth Stewart¹

Abstract

Across two studies, the authors show that simply experiencing physical pain facilitates indulgence in guilty pleasures. This is because people feel justified in rewarding themselves when they are the victims of unfair treatment and concepts of punishment are embodied within the experience of physical pain. Study 1 demonstrates that pain leads to self-reward but only in contexts that frame the experience of pain as “unjust.” Study 2 shows that after pain people are more likely to self-reward with guilty pleasures (chocolate) in preference to other kinds of rewards (a pen). The authors find that this effect is only evident for people who are especially sensitive to personal injustice. The findings provide support for the notion that painful experiences may increase entitlement to rewards through implicit activation of justice-related concepts, allowing people to take liberty with pleasures that might otherwise arouse feelings of guilt.

Keywords

pain, morality, justice, entitlement, punishment, pleasure

All indulgences in life are bad for us—or at least it often seems that way. Be it alcohol, chocolate cake, cigars, or sweets, we regularly desire things that provide short-term satisfaction, yet may harbor long-term negative consequences. In order to enjoy these “guilty pleasures” however, we often find ways to justify their consumption. Challenging or adverse experiences serve this purpose well, providing a convenient rationale for self-indulgence and making us feel more entitled to a little pleasure.

Supportive of this link between adversity and self-reward, research has demonstrated that victims of misfortune indulge in self-rewarding behavior (Bishop & Lane, 2000; Fetchenhauer & Huang, 2004; Freud, 1917; Li & Moore, 2001). Other work has shown that unfair treatment makes people feel more entitled, and more likely, to compensate the self (Austin & Walster, 1975; Davis, 1945; Zitek, Jordan, Monin, & Leach, 2010). People feel justified and less guilty about indulging in self-rewarding behavior when they have been the victims of injustice. In these contexts, self-indulgence provides for a sense of justice (e.g., Lerner, 1975, 1980) thereby annulling feelings of guilt.

Feeling victimized by injustice appears to justify self-indulgence. But what of self-indulgence in response to everyday experiences such as hard exercise, dental procedures, or even minor accidents? A cold beer after a long run or desirable yet unnecessary purchases after a visit to the dentist often feel justified. Although these events are not easily framed as injustices, we argue that justice-related concepts play an equally central role in these instances of self-indulgence and that this occurs through the experience of physical pain. Simply experiencing physical pain may allow people to indulge in self-rewarding behavior. This is because concepts of pain and justice are closely associated and people often experience their pain as punishment (Glucklich, 2001; Koffman, Morgan, Edmonds, Speck, & Higginson, 2008; Morris, 1991). This link between pain and punishment is often explicit: Parents spank their children, crime has historically had torturous consequences (Glucklich, 2001), and pain is often used as an effective negative reinforcement for behavior (Skinner, 1938). Indeed, the Latin word for pain, poena, is literally translated as “to pay the penalty.”

Pain may also be linked to punishment in more implicit ways. Specifically, pain may be experienced as the embodiment of punishment. This may be for two reasons. First, as highlighted above, a routine pairing of experiences of pain and acts of punishment may encourage a close association between the physical sensation of pain and justice-related concepts. Second, people often rely on early physical experiences to ground abstract concepts (Williams, Huang, & Bargh, 2009), and pain may provide a convenient mapping for concepts related to punishment and fairness. From both perspectives, sensory experiences may activate higher order concepts to which they are paired. Providing support for this possibility, Bastian, Jetten, and Fasoli (2011) found that enduring physical pain as part of an unrelated task absolved feelings of guilt over a past misdeed. That is, pain was experienced as the embodiment of

¹ School of Psychology, University of Queensland, Queensland, Australia

Corresponding Author:
Brock Bastian, University of Queensland, St Lucia, Queensland 4072, Australia.
Email: b.bastian@uq.edu.au
atoning, having the capacity to restore justice (cf. Darley & Pittman, 2003).

If pain is implicitly experienced as punishment, then “unfair” pain may allow people to feel justified in their indulgence of “guilty pleasures.” We explored this possibility in two studies. In Study 1, we focused on whether experiencing pain would lead to increased self-reward by taking more sweets from a bowl. In order to demonstrate that it is only “unfair” pain that leads to self-indulgence, we examined the effect of pain in the context of a past immoral deed compared to a past moral deed. We predicted that in the context of an immoral deed the “punishment” of pain would feel just and fair, weakening the justification for self-reward. In Study 2, we explored whether pain increases indulgence in “guilty pleasures” compared to other kinds of rewards. To bolster our argument that pain is experienced as punishment, we also explored whether the effects of pain are dependent on people’s preexisting orientation to justice. To this end, we focused on the construct of Justice Sensitivity (Schmitt, Gollwitzer, Maes, & Arbach, 2005; Schmitt, Neumann, & Montada, 1995), which measures individual differences in sensitivity to personal injustice. If it is the “injustice” of pain which facilitates self-indulgence, then we would expect that this should be moderated by how sensitive people are to personal injustices.

Study 1

In Study 1, we explored whether experiencing physical pain would increase the tendency to self-reward by taking more sweets from a bowl. We predicted that participants who experienced pain after being reminded of past ethical behavior would feel at liberty to indulge in self-rewards, more so compared to those who were reminded of an ethical deed but did not have pain, or those who had pain in the context of past unethical behavior.

Method

Fifty-eight undergraduates (40 women, $M_{\text{age}} = 21.57$) were allocated to one of three conditions. In the “ethical pain” ($n = 21$) and “ethical control” ($n = 18$) conditions they wrote (7 min) about a past ethical deed. In the “unethical pain” condition ($n = 19$) they wrote about a past unethical deed.

Next participants were informed that they would complete a physical task with the aim to establish performance norms across a number of different universities. Participants in the pain conditions completed a version of the cold-pressor task (Walsh, Schoenfeld, Ramamurthy, & Hoffman, 1989) and were asked to “immerse your non-dominant hand, up to your wrist, into the ice-bucket for as long as you can” ($0 \, ^\circ \text{C}-2 \, ^\circ \text{C}$). Participants in the no-pain condition were instructed to do the same into room temperature water ($\sim 30 \, ^\circ \text{C}$) and were stopped after $90 \, \text{s}$. Both tasks also required that participants locate small metal ball-bearings in the bottom of the same bucket and put as many of them as possible into a container with a small hole in it. This was to ensure that performance was a factor in both tasks. Participants then rated how much pain they experienced on the Wong-Baker Pain Scale (Wong & Baker, 1988; $0 = \text{no hurt}$ to $5 = \text{hurts worst}$).

Participants were then told there was one more task to complete, but that the experimenter had to get the materials from the print room. At this point, the experimenter picked up a bowl of sweets that had been hidden from sight and told the participant “I was going to give these to you at the end, but I’ll give them to you now while I’m away. Please feel free to take some to take with you.” The bowl contained $15 \times 5$ different types (but similar sized) of individually wrapped sweets. The large number of sweets was to ensure that participants felt the number of items taken would remain relatively unnoticed. The number of sweets taken was determined by counting the remaining sweets in the bowl.

Results and Discussion

Analysis of the time (seconds) participants spent completing the physical acuity tasks revealed that participants in the ethical pain ($M = 55.72, SD = 55.33$) and unethical pain conditions ($M = 60.89, SD = 54.36$) did not differ in how long they held their hand in the ice bath ($p = .497$), but took less time to complete the physical acuity task compared to the time limit enforced ($90 \, \text{s}$) in the ethical control condition ($p \geq .234, p \leq .036$). An analysis of variance (ANOVA) revealed an effect of condition on pain ratings, $F(2,55) = 38.67, p < .001, \eta^2 = .60$, such that pain ratings were higher in the pain conditions (ethical pain: $M = 2.74, SD = 1.10$; unethical pain: $M = 2.56, SD = 1.15$; ethical control: $M = 0.21, SD = .63$) ($p < .001$). There was no difference between the two pain conditions ($p = .602$).

To determine whether pain experienced in the context of an ethical deed elicited more self-reward, we conducted an ANOVA on the number of sweets taken. This revealed a significant effect, $F(2, 55) = 3.60, p = .034, \eta^2 = .12$. Post hoc tests revealed that participants in the ethical pain condition took significantly more sweets ($M = 5.29, SD = 4.41$) than participants in the unethical pain condition ($M = 3.06, SD = 1.73$) or the ethical control condition ($M = 3.05, SD = 1.98$) ($p < .027$). There were no differences between the latter two conditions ($p = .998$; see Figure 1).

Consistent with our hypothesis, participants who experienced pain in the context of an ethical deed indulged in more self-reward than those who experienced pain in the context
of an unethical deed. Self-reward in the unethical pain condition was equivalent to when participants were reminded of an ethical deed, but did not experience pain. This suggests that pain may allow people to self-indulge, but only when it is experienced as “unfair” (i.e., in the context of behavior that does not deserve punishment). When pain is experienced in the context of past unethical behavior, it feels just and fair, weakening the justification for self-reward.

**Study 2**

Study 1 demonstrates that pain facilitates self-reward, but that this only occurs when pain is experienced as “unfair.” In Study 2 we extended on these findings in three important ways. First, we examined whether pain may increase indulgence in “guilty pleasures” in preference to other kinds of rewards. We argue that after pain people feel more entitled to indulge in rewards which bring immediate satisfaction, but which might otherwise arouse a sense of guilt. Second, in Study 1, it is possible that participants were motivated to punish the experimenter for asking them to experience pain. This makes it unclear whether number of sweets taken was specifically motivated by self-reward. In Study 2, participants were asked to choose between two different types of gifts; thus their choice would not affect the experimenter because they were taking the same number of items in each case. Third, if the experience of pain activates justice-related concepts, then people’s response to this experience should be shaped by their preexisting orientation to justice. To this end, we predicted that the link between pain and self-indulgence would be especially evident for people who are highly sensitive to personal injustice.

**Method**

Forty-nine undergraduates (34 women, \( M_{\text{age}} = 22.84 \)) were asked to complete a questionnaire that included a number of measures. Embedded in the questionnaire packet was the Victim subscale of the Justice Sensitivity scale (10 items, e.g., “It makes me angry when I am treated worse than others”; “It bothers me when others receive something that ought to be mine,” \( \alpha = .87 \); Schmitt, Gollwitzer, Maes, & Arbach, 2005). Participants were then allocated to one of two conditions: the pain condition \( (n = 25) \) or no-pain condition \( (n = 24) \) as in Study 1. Participants rated how much pain they experienced during each task on the Wong-Baker Pain scale (Wong & Baker, 1982; 0 = no hurt to 5 = hurts worst). We also asked them to rate how challenging and frustrating each task was \( (1 = \text{very slightly or not at all to 5 = extremely}) \). This was to ensure that our effects were unique to the experience of pain and could not be explained by these other qualities of the task.

Participants were then told that they had one more task to complete, but that the experimenter had to get the materials from the print room. At this point, the experimenter picked up a bowl containing \( 10 \times \) Faber-Castell yellow highlighters (Pen) and \( 10 \times 40 \) g Cadbury Caramello Koalas (Chocolate). Both items had been rated in pretest \( (5 \) females, \( 5 \) males) as similar in perceived value (Pen = $1.20; Chocolate = $0.96) and both had similar actual value (Pen = $1.15; Chocolate = $1.05). A separate pretest (5 females, 5 males) also determined that the chocolate was more immediately rewarding than the pen (Chocolate: \( M = 5.30, SD = 1.34; \) Pen: \( M = 2.50, SD = 0.97; t(9) = 6.33, p < .001 \)) and that people would feel more guilty if they choose the chocolate over the pen (\( M = 3.20, SD = 2.20 \)) compared to choosing the pen over the chocolate (\( M = 1.40, SD = 0.97; t(9) = 2.38, p < .041 \)). This was to ensure that the chocolate was a “guilty pleasure” compared to the pen. The experimenter told the participant “These are some materials left over from a previous study. I was going to give these to you at the end, but I’ll give them to you now. Please feel free to take one of these items with you as a gift.” When the experimenter returned from the print room, the participants were debriefed. The large number of items was designed to make the participant feel that their choice would remain relatively unnoticed.

**Results and Discussion**

One participant in the no-pain condition was identified as a multivariate outlier with a cooks value (.68) twice as large as any other case and was removed from further analysis, leaving \( n = 23 \) in that condition. Participants in the pain condition spent an average of 38.26 s (\( SD = 20.01 \)) completing the physical task, which was significantly less time than those in the control condition (90 s, \( t(46) = 12.34, p < .001 \)). Ratings of pain were significantly higher in the pain condition \( (M = 3.29, SD = 1.08) \) compared to the control condition \( (M = 0.13, SD = 0.46, t(46) = 12.94, p < .001) \). Participant ratings of how challenging (pain: \( M = 3.92, SD = 0.91; \) control: \( M = 1.74, SD = 1.01, t(46) = 7.87, p < .001 \)) or frustrating (pain: \( M = 2.68, SD = 1.15; \) control: \( M = 1.39, SD = 0.72, t(33) = 4.62, p < .001 \)) each task was varied between condition, with the pain condition rated higher on both.

Chi-square analysis revealed a significant effect of condition on choice of gift, \( \chi^2(1, N = 48) = 5.60, p = .018 \). Even though, overall, the highlighter was preferred over the chocolate (chosen 56.2% of the time), participants in the pain condition preferred the chocolate, choosing this gift 60% of the time, whereas participants in the no-pain condition preferred the highlighter, choosing this gift 73.9% of the time (see Figure 2). Controlling for how frustrating and challenging the task was using logistic regression did not alter the pattern of results.

![Figure 2. Choice of chocolate versus pen by condition.](image-url)
We next explored whether sensitivity to personal injustices moderated the effect of condition on choice of gift (coded 0 = highlighter, 1 = chocolate). We entered condition (coded 0 = no pain, 1 = pain), justice sensitivity (centered), and their interaction term into a logistic regression. The overall model was significant, $\chi^2(3, N = 48) = 12.58, p = .006$, with a direct effect of condition ($B = 2.54$, odds ratio [OR] = 12.65, Wald $\chi^2 = 5.03, p = .025$) and a marginal direct effect of justice sensitivity ($B = -2.86, OR = 0.06, Wald \chi^2 = 2.85, p = .092$). This was qualified by an interaction of condition and Justice Sensitivity ($B = 3.59, OR = 36.12, Wald \chi^2 = 4.06, p = .044$). Simple slope analysis revealed that for those higher in Justice Sensitivity there was a significant effect of condition on choice ($B = 5.42, OR = 224.70, Wald \chi^2 = 5.15, p = .023$); however, for those lower on Justice Sensitivity, there was no effect of condition on choice ($B = -0.34, OR = 0.71, Wald \chi^2 = 0.12, p = .728$; see Figure 3). That is, pain only led to an increased preference for chocolate for those higher in justice sensitivity.

Consistent with our hypothesis, the findings show that after experiencing pain (compared to no-pain), participants were more likely to select the "guilty pleasure" compared to another reward. Critically, this effect was only obtained for those who were particularly sensitive to personal injustices. This interaction of physical pain and sensitivity to injustice provides greater confidence that justice-related concepts are involved in the pain-self-indulgence relationship.

**General Discussion**

Across two studies, we provide evidence that the experience of physical pain facilitates indulgence in guilty pleasures. In Study 1, participants took more sweets for themselves after experiencing pain; however, this effect was diminished when participants experienced pain in the context of unethical (compared to ethical) behavior, highlighting that only “unfair” pain appears to enable self-indulgence. In Study 2, we demonstrate that pain increases indulgence in “guilty pleasures” (chocolate) in preference to other kinds of rewards; however, this is only evident for those who are especially sensitive to personal injustices. Across both studies, we provide support for the role of justice-related cognition in determining responses to physical pain: both the moral context (Study 1) and preexisting orientations to justice (Study 2) were found to shape pain-related self-indulgent behavior. That is, in Study 1 we find that experiencing pain in the context of a past immoral deed weakens the justification for self-reward, presumably because in this context the “punishment” of pain feels “just” and “fair”. In Study 2, we show that pain only increases indulgence in “guilty pleasures” for those who are particularly sensitive to personal injustices. This suggests that pain aroused justice-related cognition which in turn increased self-reward, but this effect only occurred for those who are especially sensitive to being victims of unfair treatment. Together the findings provide support for the notion that people experience physical pain as the embodiment of punishment. In this way, physical pain increases a sense of entitlement to indulge the self.

We note a limitation to our research design in Study 1. Our approach was to focus on specific comparison conditions against which to evaluate the effects of “unfair” pain (i.e., compared to “fair” pain or ethical reminders without pain). This design, however, did not allow us to fully test the interaction between pain and ethical reminders. Study 1 cannot rule out that the effect is due to ethical people self-rewarding more (cf. Sachdeva, Iliev, & Medin, 2009) or, separately, people who experience pain self-rewarding more. Study 2 provides greater reassurance that it is “unfair” pain which is linked to increased self-reward, demonstrating that the effect of pain is most apparent for individuals who are sensitive to personal injustice.

Our findings suggest that painful experiences may increase entitlement to rewards through implicit activation of justice-related concepts, allowing people to take liberty with pleasures that might otherwise arouse feelings of guilt. Pain, it seems, may be an early physical experience which is used to ground abstract concepts associated with justice (cf. Williams et al., 2009). This possibility suggests a number of potential links between pain and justice-related processes, such as the demonstrated ability of pain to absolve feelings of guilt (Bastian, Jetten, & Fasoli, 2011). Exploring the various links between physical pain and moral cognition would provide fruitful avenues for future research.

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Note
1. We note that this differs from findings in Bastian et al. (2011) where participants in the unethical condition endured more pain than those in a control condition (recall everyday experience). This may be due to our use of an ethical prime rather than a control condition in the current study. Consistent with our reasoning, Gray (2010) found that an ethical prime increased persistence at a painful task.

References

Author Biographies
Brock Bastian is an ARC postdoctoral research fellow in the School of Psychology at the University of Queensland. His research focuses on physical pain, morality, and emotion.
Jolanda Jetten is a Professor of Social Psychology at the University of Queensland with an interest in social identity, group processes and intergroup relations. She is currently employed as an ARC Future Fellow examining the effect of social identity on health and wellbeing.
Elizabeth Stewart is a Masters Student in the School of Psychology at the University of Queensland with an interest in organizational psychology and gender.