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Judging Smokers: How Anger and Disgust Shape Our Moral Beliefs

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Abstract

Cigarette smoking is a moralized behavior in American culture, with smokers judged as immoral people. Moral judgments in general are informed by emotions, and the CAD triad hypothesis suggests that three emotions in particular – contempt, anger and disgust – map onto three moral domains, community, autonomy, and divinity. Since smoking can be interpreted as a violation of these moral domains, the applicability of the CAD hypothesis to smoking warrants further investigation. In order to test the effects of two emotions on the moral judgment of smokers specifically, two experiments were conducted in which disgust and anger were experimentally elicited. Experiment 1 (60 participants) found that disgust did not alter judgments of smokers in general or in the divinity domain, and it did not inspire desire avoidance desire. Similarly, Experiment 2 (44 participants) found that negative affect did not cause participants to make more severe moral judgments of smokers in general, or to express greater desire to punish or avoid them. The implications of these findings in the context of the moralization of smoking are discussed. Future research should continue to investigate how morality is acquired and how moral censoring affects both smokers and society at large.
Judging Smokers: How Anger and Disgust Shape Our Moral Beliefs

In the last few decades of the twentieth century, the place of smokers in society has changed. Smoking used to be considered a marker attractiveness and independence (Brandt, 1998), but today it is seen as dumb, embarrassing, gross and dirty (Helweg-Larsen, Tobias, & Cerban, 2010). The strong anti-smoking sentiment in Western societies is characterized by the stigmatization of smokers (Farrimond, & Joffe, 2006; Kim, & Shanahan, 2003; Louka, Maguire, Evans, & Worrell, 2006) and the redefinition of smoking as a moralized behavior (Helweg-Larsen, et al., 2010; Rozin, & Singh, 1999). The moralization of smoking means not only that the behavior is considered a moral violation, but also that individuals who engage in it are seen as moral transgressors. Since the moral status of smoking is closely related to both public policy and national health (Brandt, 1998), understanding how individuals come to judge smokers as immoral is paramount. Thus, the present research aims to investigate one of the factors influencing moral judgments, emotions, and the extent to which smokers in particular are judged as immoral because of the negative emotions associated with smoking.

How are moral judgments made? Moral psychologists have generally studied how individuals make moral judgments – about what is “right”/“good” and “wrong”/“bad” – by pitting reason against emotions (Monin, Pizarro, & Beer, 2007). Haidt’s (2001) social intuitionist model solves this dichotomy by proposing that both emotions (“intuitions”) and cognition (“moral reasoning”) play important roles in moral judgments. These judgments are the result of a primary intuition (i.e., a good or bad feeling), produced immediately by an automatic affective system (Haidt, 2007), which in some cases is followed by conscious reasoning. For example, you may see someone driving a car and smoking at the same time,
and notice that there is a child seat in the back, but no child sitting in it. If you were asked whether this person is a good or bad parent, you would be likely to judge them negatively, and you may not even know why. The moral reasoning process that follows such a judgment consists of a reassessment of the morally-relevant information, especially if the conclusion is not immediately salient, and the production of justifications for the judgments. In the example above, moral reasoning may lead you to think that this person is not a good parent because they can expose a child to passive smoke, even though there is no evidence that he/she ever smokes around children.

If moral judgments arise from affect-laden intuitions as the social intuitionist model proposes, moral judgments should be influenced by emotions. Indeed, emotional reactions to moral infractions have been found to predict the severity of moral judgments (Haidt, 2007; Haidt, Koller, & Dias, 1993). Moreover, neuroscientific evidence has shown engagement of brain areas related to emotion processing – the medial frontal gyrus, the posterior cingulate gyrus, and the bilateral superior temporal sulcus – while making judgments on moral dilemmas (Graham, Sommerville, Nystrom, Darley, & Cohen, 2001; Greene, & Haidt, 2002). The emotion-judgment connection at the neural level is explained by the somatic marker hypothesis (Damasio, 1996), a neuroscientific framework which posits that social decisions are influenced by marker signals, which may arise from the bioregulatory processes involved in emotional response, and sometimes occur unconsciously. Thus, the social intuitionist model and the somatic marker hypothesis can be understood as complementary theories that conceptualize (moral) decision-making as the result of a mainly unconscious, emotive process.
It is clear that emotions and morality are interconnected, but not all emotions affect moral judgments equally: emotions are considered moral when they "are linked to the interests or welfare either of society as a whole or at least of persons other than the judge or agent" (Haidt, 2003, p. 853). According to Haidt (2003), moral emotions tend to be elicited by events that do not directly affect the individual judging the transgression, and generally inspire behaviors that serve to protect moral norms. For example, of the various types of anger, such as personal anger, empathic anger and moral outrage, only the latter is a moral emotion (Montada, & Schneider, 1989). Similarly, Rozin and colleagues (2009) described four types of disgust – core, animal reminder, interpersonal and socio-moral – with only the last one categorized as a moral emotion.

Several studies have provided evidence not only of a general relationship between emotions and morality, but also of links between specific emotions (such as disgust, anger, empathy, guilt) and specific moral dimensions (e.g., purity, harm, agency, one's own transgressions; for a review see Keltner, Horberg, & Oveis, 2006). In other words, emotions relate to moral concerns in a domain-specific fashion, so that moral concerns of one type trigger an associated emotion. The emotion-moral domain relationship can be explained by the appraisal-tendency framework, whereby a specific type of affective reaction signals a transgression of the related domain because they are both defined by the same perception of the social environment (Lerner, & Keltner, 2001). For example, anger is defined by appraisals of certainty and individual control (Lerner, & Keltner, 2000), so situations dealing with individual rights will be interpreted in line with the level of anger being experienced. The appraisal influences not only the judgment itself, but also the ensuing action tendency, meaning that the individual making the judgment will be compelled to take certain actions.
but not others (Lerner, & Keltner, 2000; 2001). In the case of anger, the associated action tendency is toward punishment of the individual who thought to be in control of the situation. In this sense, both the appraisals and the action tendencies have important roles in the regulation of social interactions. For moral dimensions that prescribe rules for the behaviors of others, a cluster of emotions that Haidt (2003) calls the other-condemning emotions, has been recruited. These emotions serve to protect the social order by associating negative feelings with individuals who violate social commitments. The main other-condemning emotions are anger, disgust, and contempt, whose function in relation to moral judgments is explained by the CAD hypothesis (Rozin, Lowery, Imada & Haidt, 1999).

The CAD hypothesis describes three moral domains (i.e., ethics) and matches them to their associated emotions in the following dyads: Community-Contempt, Autonomy-Anger, and Divinity-Disgust. First, the ethics of autonomy, according to Rozin, et al.’s (1999) definition, concern violations of individual rights, including concepts such as harm, rights, freedom, fairness, and choice. Unjustified actions are seen as particularly violating of this code (Haidt, 2003). Anger serves to protect the autonomy code by promoting punishment, revenge and humiliation of the transgressor (Haidt, 2003). The association of anger with violations of these principles has been found to determine allocation of intentionality of a transgression and desire for punishment of the agent (Cushman, Young, & Hauser, 2006; Gutierrez, & Giner-Sorolla, 2007). Smoking violates the ethics of autonomy by imposing unwarranted harm on innocent victims (i.e., nonsmokers). The gratuitous harm caused to children in particular is viewed as morally inexcusable (Rozin, 1999). The ethics of autonomy is the main moral code in Western cultures (Rozin, 1999), which explains why
concerns about harm and rights of nonsmokers have had such a strong influence on the redefinition of the (im)morality of smoking (Brandt, 1998).

Second, the ethics of divinity concern the protection of the sacredness of the soul, and therefore focus on violations of purity, spirituality and the natural order (Rozin, et al., 1999). According to this view, the physical body is seen as the residence of the soul (Haidt, Rozin, McCauley & Imada, 1997), whose integrity is determined by behaviors that affect the body. For this reason, the purity of the body is prescribed by moral rules, which are culturally-dependent (Haidt, 2003; Haidt, et al., 1997). Ethics of divinity also include concerns about degradation, and are aimed at preventing humans from acting in animalistic ways (Haidt, et al., 1997), such as not being able to control one’s impulses and acting irrationally. Disgust signals violations of this code by inspiring avoidance, defined as internal motivation to avoid contact with the disgusting object. The avoidance reaction can be expressed in the form of ostracism of offending individuals, thus protecting the purity of the entire group (Haidt, 2003). A special characteristic of disgust is that it is transmitted from offensive agents to neutral agents through the magical law of contagion, meaning that the negative qualities associated with an object or person are transferred to anything or anyone that comes into contact with them (Haidt, et al., 1997). Research investigating this relationship has found that individuals who are highly sensitive to disgust tend to be morally hypervigilant, showing biases that help them avoid moral transgressors (Jones, & Fitness, 2008). Highly disgust-sensitive individuals have also been shown to be more censoring of homosexuality (Inbar, Pizarro, Knobe, & Bloom, 2009). Smoking may be thought of as a violation of the divinity code because it entails the introduction of toxic substances into the body, which transgresses the moral norms about healthful behavior currently in place in American society (Katz,
The concern with physical and spiritual purity is maintained in Western cultures even when religious values are replaced with secular ones (Katz, 1997), making smokers immoral because they engage in a known unhealthy behavior. Disgust about smoking was found to be associated with evaluations of immorality, so that individuals who saw smoking as immoral also felt disgusted by it (Rozin & Singh, 1999). Smokers are also stereotyped in degrading ways, being described as “smelly,” “out of control,” “unclean” and “dirty” (Helweg-Larsen, et al., 2010), a finding consistent with the protective character of disgust.

The third domain in the CAD hypothesis, the ethics of community, refers to community and hierarchy transgressions, including duty, loyalty and respect for authority (Rozin, et al., 1999). Contempt is seen as the associated emotion because it tends to be expressed toward out-groups, especially those of inferior hierarchy. It inspires feelings of moral superiority, and a tendency to treat the transgressor with less respect and warmth (Haidt, 2003), thus maintaining a sense of rank distinction. Contempt is the least understood emotion of the three in the CAD model, and has arguably the weakest effect on moral judgments of transgressions that do not directly involve the judging agent. However, a relationship between contempt and smoking may be deduced from smokers’ reports of being stigmatized and treated as an outgroup (Farrimond & Joffe, 2006). In this sense, smoking is a violation of community codes because it signals belonging to an outgroup, particularly in societies where most smokers are also of low socioeconomic status.

Of the CAD emotions, only disgust has been empirically shown to make moral judgments of specific scenarios more severe, even in cases in which the emotion was not elicited by the transgression being judged, but by incidental factors. In an experiment using hypnotically-induced disgust, participants judged a transgression to be more morally wrong if
the word hypnotically linked to disgust was present, rather than absent in the story (Wheatley, & Haidt, 2005). Schnall, Haidt, Clore, and Jordan (2008) found that when disgust was elicited by exposing participants to a bad smell or a messy room, or by having them recall a disgusting episode or watch a disgusting film clip, they were more morally censoring in their judgments of moral dilemmas than participants who were not exposed to the elicitors. In both studies the effects of disgust were present only in judgments for moral transgressions, and not other kinds of behaviors. In a related set of experiments, Schnall, Benton and Harvey (2008) showed that priming concepts of cleanliness and purity caused participants to make less severe moral judgments in the same moral dilemmas.

No studies have investigated the specific effects of anger on moral judgments, although one study found that individuals who reacted with anger to a moral transgression assumed that harm was being done to the subject in the scenario, and this was used as a justification for feelings of anger (Gutierrez, & Giner-Sorolla, 2007). This is consistent with evidence showing that anger is associated with attributions of agency in ambiguous social situations (Keltner, Ellsworth, & Edwards, 1993). These findings are consistent with Haidt’s (2001; 2007) intuitionist perspective, supporting the notion that anger precedes judgments of harm/rights violations, that anger may influence judgments, and that those judgments are followed by moral reasoning.

The present research aims to investigate the effects of experimentally eliciting anger or disgust on moral judgments of smokers and smoking behavior. Anger and disgust are the specific affective responses to violations of ethics of autonomy and divinity, respectively. As previously discussed, smoking can be seen as a violation of these two moral domains. However, the extent to which incidental emotions (i.e. emotions not elicited by the situation...
being judged) affect the moral judgment of smokers specifically has not been investigated. Thus, two experiments were conducted in which anger and disgust were elicited, and participants were asked to respond to a series of scenarios describing smokers’ moral violations in the three CAD domains. Following the CAD hypothesis (Rozin, et al., 1999), it was expected that for each emotion, judgments would be made more severe in the related moral domain. Moreover, according to the appraisal-tendency framework (Lerner, & Keltner, 2001), it was expected that anger and disgust would inspire distinct actions that restored the moral principle being violated, in the form of desire for punishment or avoidance of the transgressor respectively.

**Experiment 1**

Experiment 1 was designed to address the question of how incidental disgust affects moral judgments of smokers. The predictions were that (1) moral judgments for all scenarios would be more severe for participants in the disgust condition than in the control condition, and (2) participants in the disgust condition compared to the control condition would make more severe moral judgments for the scenarios pertaining to violations of the divinity code – i.e. transgressions about the proper use of the body, its purity and sacredness – than for the scenarios pertaining to the other two domains. Moreover, because disgust is known to inspire an avoidance response, I also predicted that (3) participants in the disgust condition, compared to control condition, would express a stronger desire to avoid the transgressor when the violation referred to the divinity code, rather than the autonomy or community codes.

**Method**
Participants. A convenience sample of 60 (46 female, 14 male) undergraduate psychology students was drawn from the participant pool at a small liberal arts college in Pennsylvania. All participants were prescreened for smoking status, and only those who reported never having smoked were eligible to participate in the study. Participants ages ranged from 18 to 22 ($M = 19.00, SD = 1.06$).

Materials. All participants watched a short film clip and then completed an online questionnaire, which included a manipulation check, nine moral judgment scenarios, the Private Body Consciousness Scale, the Disgust Sensitivity Scale, the Moralization of Smoking Scale, and demographic questions.

Experimental disgust manipulation. Participants were randomly assigned to watch either a disgusting or a neutral film clip. Both clips were approximately the same length (just under two minutes), and were taken from the popular movie “Nick & Norah’s Infinite Playlist.” For the disgust condition, the clip showed one of the protagonists stumbling into a bathroom, vomiting into a toilet, dropping her cell phone and a piece of gum into the same toilet, and then reaching into her own vomit to retrieve both and putting the piece of gum back in her mouth. This clip received high disgust ratings during pilot testing. For the neutral condition, participants watched a clip of two of the protagonists talking on the phone and arranging to meet at a restaurant soon after. As part of the cover story, three questions were asked after the film clips were played. These were: “Have you seen this movie before?”; “Think about the clip you just watched and write the first three words that come to mind”; and “What other reactions do you have to the video clip?” The last two questions also served to collect data on participants’ reactions to the manipulation.
Mood rating scale. This scale served as the manipulation check and was successfully used in previous experiments manipulating disgust (Gutierrez, & Giner-Sorolla, 2007). Participants were asked to rate their feelings immediately after the manipulation on 17 emotions from 1 (don’t feel at all) to 9 (feel very strongly). Three items measuring disgust were included (“disgust,” “repulsion,” and “grossed out”) which were combined into a single self-reported disgust scale, with a Cronbach’s alpha of .96 (M = 13.49, SD = 9.27).

Moral judgment. The severity of participants’ moral judgments was measured through nine self-developed scenarios describing a smoker in a situation that could be interpreted as violating one of Rozin et al.’s (1999) moral codes of community, autonomy or divinity. Three scenarios corresponded to each of the three moral domains (see Appendix). In contrast with previous research, the scenarios aimed to depict smokers in a realistic way, rather than exaggerating their transgressions, and the emotional content of each scenario was mild. Following each scenario, two questions addressing the morality of the subject in the scenario were asked: “How wrong were [this person’s] actions in this situation?” rated from 0 (extremely wrong) to 9 (perfectly OK), and “How immoral is [this person]?” rated from 0 (perfectly moral) to 9 (extremely immoral), with question two reverse coded. Because these the two questions were correlated by domain, divinity: r(60) = .62, p < .01; autonomy: r(60) = .54, p < .01; community: r(60) = .52, p < .01, they were combined into a single moral judgment measure for each domain. Another two questions gauged participants’ reactions to the moral evaluation: “Would you wish to avoid [this person] in a social context?” and “Do you think [this person] should be punished in any way?” both rated from 0 (absolutely not) to 9 (definitely yes).
Private Body Consciousness Scale (PBC). The five items from the Private Body Consciousness scale (Miller, Murphy & Buss, 1981) asked participants to indicate their agreement with the following statements: “I am sensitive to internal bodily tensions”; “I know immediately when my mouth or throat gets dry”; “I can often feel my heart beating”; “I am quick to sense the hunger contractions of my stomach”; and “I am very aware of changes in my body temperature.” Response format was a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). All items were combined into a single scale, Cronbach’s alpha was .66 (M = 21.25, SD = 4.66).

Disgust Sensitivity Scale (DS). Disgust sensitivity was measured using Haidt, McCauley and Rozin’s (1994) scale, consisting of two sections. The first section included 13 true or false statements, such as “It bothers me to hear someone clear a throat full of mucus” and “If I see someone vomit, it makes me sick to my stomach.” The second section was composed of 12 statements, which participants had to rate from 1 (not disgusting) to 3 (very disgusting). Some examples are “You are walking barefoot on concrete, and you step on an earthworm” and “A friend offers you a piece of chocolate shaped like dog-doo.” Scores from both sections were recoded into a 0-1 scale, and then combined into a single scale. Cronbach’s alpha for the combined 25 items was .85 (M = 14.34, SD = 4.75).

Moralization of Smoking Scale (MS). Overall moralization of smoking was measured with the Moralization of Smoking scale (Helweg-Larsen, 2010), composed of three sections, each addressing one of the factors of moralization. For the disgust factor, three questions were included: “It is uncomfortable when people smoke indoors”; “Smoking exposes others to discomforts” and “Smoking cigarettes is disgusting.” Another three questions were asked about the stigma factor: “If I were choosing to hire one of two equally
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qualified applicants I would probably hire a non-smoker over a smoker”; “I would have no objection to my child or grandchild marrying a smoker” (reverse scored) and “In looking for the ideal partner or spouse, I would not care if the person was a smoker” (reverse scored). Two questions addressed the last factor, harm to others: “Children should not be exposed to cigarette smoke at home” and “People should not be exposed to cigarette smoke against their will.” All items were rated on a scale of 1 (strongly disagree) to 7 (strongly agree). All items were combined into a single scale, Cronbach’s alpha .75 ($M = 23.54$, $SD = 4.85$).

Suspicion probes. All participants were checked for suspicion by answering the following two questions: “What was this experiment about?” and “Did you notice anything strange about this experiment?” No participants were able to state the hypothesis, so no cases were excluded before data analyses.

Procedure. Participants who met the prescreening criteria voluntarily signed up for the study. Prior to their arrival participants were randomly assigned to one of the two conditions (disgust vs. control). Upon arrival at the computer lab, participants were asked to sit at a computer with the appropriate film clip. After being told what the study entailed they gave verbal informed consent.

Since it was important for participants not to explicitly associate the emotion with the moral judgment questions, they were told that they would be taking part in two short unrelated studies instead of just one. The first study was concerned with individuals’ emotional reactions to films, and it required participants to watch a short film clip, then answer questions about the film and rate the emotions they felt at the time. The second study was an ostensibly unrelated survey on moral judgment, for which participants had to
complete a questionnaire. Once all participants had finished completing the two studies, they were verbal debriefed.

Results

Manipulation check. A one-way analysis of variance (ANOVA) was conducted to test whether self-reported disgust varied across the two conditions: participants in the disgust condition ($M = 7.03, SD = 1.92$) were significantly more disgusted than those in the control condition ($M = 1.87, SD = 1.34$), $F(1, 59) = 143.99, p < .01, \eta^2 = .71$. Neither anger nor contempt differed as a result of condition, $Fs < 1.30, ps > .26$. Surprisingly, sadness varied as a function of condition, with participants in the disgust condition ($M = 3.20, SD = 1.92$) being significantly more saddened than participants in the control condition ($M = 2.03, SD = 1.64$), $F(1, 59) = 6.28, p = .02, \eta^2 = .10$. However, previous studies have found sadness to have no effect on participants’ judgment of moral transgressions (Schnall, et al., 2008).

Effects of disgust on the severity of moral judgments. The first hypothesis stated that being more disgusted would cause participants to make more severe moral judgments of smokers across all moral domains. The second hypothesis stated that for participants in the disgust condition, judgments for violations of the divinity domain would be more severe than for violations of the community and the autonomy domains. Both of these hypotheses were tested in a 2 (condition: disgust vs. control) X 3 (violation domain: divinity vs. autonomy vs. community) mixed ANOVA. The results revealed no main effect of condition, $F(1, 58) = 0.01, p = .94, \eta^2 = .00$, meaning that ratings for the combined morality questions did not differ between the disgust ($M = 4.76, SD = 1.36$) and control conditions ($M = 4.78, SD = 1.32$). Since participants who were exposed to a disgust elicitor did not make more severe moral judgments across moral domains, the first hypothesis was not supported.
The analysis also revealed a main effect of violation domain, $F(2, 116) = 14.16, p < .01, \eta^2_p = .20$, with the most severe moral judgments being made in the community domain ($M = 5.09, SD = 1.36$), followed by the autonomy domain ($M = 4.90, SD = 1.42$), and the divinity domain ($M = 4.32, SD = 1.67$). Follow-up t-tests showed that judgments in the divinity domain were significantly lower than judgments in the community domain, $t(59) = -4.90, p < .01$, and in the autonomy domain, $t(59) = -3.59, p < .04$. This difference has been found in other studies (e.g. Horberg, et al., 2009) and is related to the relative relevance of the various domains within a culture; thus, it will not be discussed further. Lastly, since the interaction between domain and experimental condition was not significant, $F(2, 116) = 0.40, p = .68, \eta^2_p = .01$, hypothesis two received no support.

**Interactions of disgust manipulation with personality characteristics.** The lack of significant results may have been due to individual differences in response to emotional stimuli. Indeed, previous research suggests that incidental disgust may strengthen moral judgment only for individuals with certain personality characteristics (Schnall, et al., 2008). Therefore, post hoc tests were conducted to explore the possibility that the disgust manipulation interacted with such traits. Data for three different personality characteristics measures were collected in this study: Private Body Consciousness (PBC), Disgust Sensitivity (DS), and Moralization of Smoking (MS). For all measures, a median-split procedure was used to categorize participants as low or high, and a 2 (condition: disgust vs. control) X 2 ([personality characteristic measure]: low vs. high) X 3 (violation domain: divinity vs. autonomy vs. community) mixed ANOVA was conducted in each case. It was expected that individuals who scored high on any of these measures would be more sensitive to the disgust manipulation, and therefore make more severe moral judgments when in the
disgust rather than the control condition. The result of interest was a 2-way interaction between condition and personality characteristic or a 3-way interaction.

In the three analyses, a significant main effect of violation domain was observed, $F$s > 11.63, $p$s < .01. This result was described above and indicated that judgments of violations in the community domain were significantly more severe than those in the divinity domain. There were no significant main effects of condition, $F$s < .44, $p$s > .51, or two-way interactions between condition and PBC/DS/MS, $F$s < 1.52, $p$s > .22. There was a significant Condition X Violation domain X PBC 3-way interaction, $F$ (2, 112) = 3.22, $p$ = .04, $\eta_p^2$ = .05. Follow-up 2 (condition: disgust vs. control) X 3 (violation domain: divinity vs. autonomy vs. community) mixed ANOVAs revealed a marginally significant interaction between these two variables only for high PBC participants, $F$ (2, 38) = 2.81, $p$ = .07, $\eta_p^2$ = .13, and not for low PBC participants, $p$ = .90. For high PBC participants, judgments of divinity violations were higher in the disgust condition ($M$ = 4.54, $SD$ = 2.53) than in the control condition ($M$ = 3.57, $SD$ = 1.55), though this difference did not reach significance ($p$ = .34), while the trend was the opposite for the other two domains, $p$s > .62 (Figure 1). This 3-way interaction provides weak support for the predicted effect: for participants high in PBC, the pattern of judgments was reversed between the disgust and control conditions. Divinity code transgressions were judged to be the most severe in the disgust condition, and the least severe in the control condition. No other significant differences were found. In sum, only weak evidence that personality traits may have interacted was found.

**Disgust and avoidance.** The third hypothesis predicted that participants who were disgusted would express a greater desire to avoid the agent of the violation (i.e., the smoker), and was tested in a 2 (condition: disgust vs. control) X 3 (violation domain: divinity vs.
autonomy vs. community) ANOVA with desire to avoid the transgressor as the dependent variable. Results revealed a significant main effect of violation domain, $F(2, 116) = 16.98, p < .01, \eta_p^2 = .23$, with divinity code violations inspiring greatest avoidance desire ($M = 6.03, SD = 1.69$), followed by autonomy violations ($M = 5.68, SD = 1.75$), and community violations ($M = 4.92, SD = 1.53$). Follow-up t-tests showed that all differences were significant, $ps < .04$. However, there was no main effect of condition, $p = .90$, and no interaction, $p = .72$. Thus, the third hypothesis received no support, with participants expressing the highest desire to avoid the transgressor in the divinity domain violations in both conditions, regardless of the disgust manipulation.

**Discussion**

The manipulation successfully induced disgust in participants in the experimental condition, compared to the control condition. However, contrary to predictions, feeling disgusted did not cause participants to make more severe moral judgments in scenarios depicting a range of smokers’ violations overall, or in violations of the divinity moral code in particular. Moreover, feelings of disgust did not cause participants to express a greater desire to avoid the individual committing the violation, although overall this desire was stronger when participants judged divinity code violations than autonomy or community violations.

This pattern of results is inconsistent with research on the effects of disgust on moral judgments (e.g., Schnall, et al., 2008). However, research suggests that the relative relevance of moral domains varies by culture (Haidt, & Graham, 2009). According to this view, more individualistic societies tend to follow a moral code that focuses on concerns about harm/care, and fairness/reciprocity, which are addressed by the ethics of autonomy (Haidt, & Joseph, 2007). From this follows that autonomy, and not divinity, may be the main moral...
code followed by individuals in American society. If moral violations are judged mainly though the ethics of autonomy, there is a possibility that judgments regarding smokers are prescribed within this category and therefore affected by its related emotion, anger. This possibility is explored in Experiment 2, in which anger, the emotion associated with autonomy violations, is manipulated.

**Experiment 2**

Experiment 2 focused on the effects of incidental anger on the judgment of the same moral violations involving smokers as presented in the previous experiment. As in Experiment 1, it was hypothesized that (1) moral judgments for all scenarios would be more negative for participants in the anger condition, as opposed to the control condition, and (2) moral judgments pertaining to the autonomy domain would be more severe than for other domains for participants in the anger condition, and not for control participants. Anger and violations of the autonomy code have been associated with an increased desire to punish the agent of the transgression (Gutierrez & Giner-Sorolla, 2007), so (3) participants in the anger condition were expected to report a greater desire for punishment, but not avoidance, compared to controls.

**Method**

**Participants.** A total of 49 undergraduate psychology students, recruited in the same way as in Experiment 1, volunteered to participate in this study in exchange for course credit. Only non-smokers completed this experiment. Six participants were removed from analysis because they guessed the hypothesis. The final sample was composed of 43 participants (32 females, 11 males), ranging in age from 18 to 22 ($M = 19.38, SD = 1.13$).
**Materials.** Participants completed the study on a computer in the laboratory. The anger manipulation was included with the survey. It consisted of a negative feedback task in which participants wrote a short essay, and then received very negative feedback on it in the form of a personality evaluation (in the control condition participants received positive feedback). Participants then completed the same questionnaire used in Experiment 1, including the mood rating scale, the moral judgment scenarios, the Moralization of Smoking Scale (Cronbach’s alpha .77; $M = 20.94$, $SD = 4.58$) and the suspicion probes. The Disgust Sensitivity and Private Body Consciousness Scales from Experiment 1 were replaced with the Dimensions of Anger Reactions 5 Scale (DAR5).

**Experimental anger manipulation.** A negative feedback task was used as the anger manipulation, adapted from Harmon-Jones and Sigelman (2001). Participants were told that they would be randomly paired with another participant who was completing the same study at the time, and were then asked to write a short essay on their college’s expected tuition raise for the coming academic year. After submitting their essays online, participants received the essay from the person with whom they had been paired, and were asked to complete an evaluation form containing eight 9-point bipolar rating scales: unintelligent-intelligent, boring-thought provoking, unfriendly-friendly, illogical-logical, unrespectable-respectable, irrational-rational, selfish-generous, and immature-mature. An open-ended question asked participants to add any other thoughts or comments on the writer’s personality. There was no actual pairing, and every participant read the same essay. After submitting the evaluation forms for the essay they received, participants were given the evaluation for their own personalities, ostensibly completed by a fellow student who had read the participant’s essay. The feedback was pre-established by condition, with participants in
the control condition receiving relatively positive feedback, and participants in the anger condition receiving extremely negative feedback. This was composed of scores of 1s or 2s for all measures, and an open-ended comment that read: “I can’t believe an educated person would think like this! This person sounds incredibly immature and spoiled. And I even found typos in the text! He/She really didn’t care about the topic. I really hope this person learns something while at [college].” Positive feedback participants were rated at the positive end of the scale as 7s, 8s or 9s. They also received this open-ended comment: “I can understand why someone would think like this. I think we may have a lot in common.”

**Mood rating scale.** Three items measuring anger were included in the mood rating scale, “anger,” “infuriation,” and “outrage,” which were combined into a single anger scale, with a Cronbach’s alpha of .92 ($M = 8.74, SD = 7.15$), that served as the manipulation check.

**DAR-5.** The DAR-5 (Hawthorne, Mouthaan, Forbes, & Novaco, 2006) consisted of seven statements gauging participants’ reactions to anger elicitors. The statements were: “I often find myself getting angry at people or situations”; “When I get angry, I get really mad”; “When I get angry, I stay angry”; “When I get angry at someone, I really want to clobber the person”; “My anger interferes with my ability to get work done”; “My anger prevents me from getting along with people as well as I’d like to”; and “My anger has a bad effect on my health.” Participants rated their agreement with each statement on a scale ranging from 0 (*not at all*) to 8 (*exactly so*). All items were combined into a single scale, Cronbach’s alpha .86 ($M = 19.14; SD = 10.86$).

**Procedure.** Recruitment followed the same protocol as Experiment 1, with participants being assigned to either the anger or control condition prior to their arrival. Once
in the laboratory, participants were informed of the study’s procedure, asked to sign a
consent form and then assigned a computer on which they would complete the study.

Again, in order to prevent participants from attributing their emotional state to the
moral judgment scenarios, they were told that they would be taking part in two short
unrelated studies instead of just one. The first study was concerned with how individuals
evaluate others’ personalities from their writing styles, and it required participants to write an
essay, and then to read someone else’s essay and evaluate that person’s character. The second
study was an ostensibly unrelated survey on moral judgment, for which participants had to
complete a questionnaire. Once all participants had finished completing the two studies,
participants were extensively debriefed to ensure that participants were no longer
experiencing negative emotions.

Results

Manipulation check. The effectiveness of the anger manipulation was tested in a
one-way ANOVA, which revealed that participants in the anger condition (M = 4.36, SD =
2.53) reported feeling more anger than participants in the control condition (M = 1.40, SD =
0.70), F (1, 37) = 55.85, p < .01, η² = .60. Surprisingly, one-way ANOVAs for 7 of the other
emotions included in the mood rating scale yielded significant results (Table 1). Participants
in the anger condition, compared to those in the control condition, reported feeling more
disgust, contempt, depression and sadness and less happiness, pleasure, and satisfaction.
These results indicate that the manipulation failed to induce only anger, and any differences
between the two groups should be attributed to a general negative emotional state rather than
feelings of anger in particular.
Hypothesis 1 was modified to test the effects of negative affect, rather than anger, on severity of moral judgment. Furthermore, since participants in the anger condition felt both more anger and more disgust than control participants, the effects of negative affect on desire for both avoidance and punishment were tested (hypothesis 3). The second hypothesis, which predicted that for participants in the anger condition, judgments for violations of the autonomy domain would be more severe than for violations of the community and the divinity domains, could not be tested due to the manipulation’s lack of specificity. Thus, two hypotheses were tested: (1) participants in the negative affect condition should make more severe judgments than participants in the positive affect condition, and (2) participants in the negative affect condition should express greater desire to both punish and avoid the transgressor.

**Effects of negative affect on severity moral judgment.** Because the manipulation failed to discriminate between anger and other negative emotions, judgments for scenarios in the three moral domains were collapsed into a single moral judgment measure. According to hypothesis 1, participants in the negative affect condition should have made more severe moral judgments. This was tested in a one-way ANOVA, which revealed no significant differences in severity of moral judgment between participants in the negative affect condition \( (M = 4.85, SD = 0.78) \) and participants in the positive affect condition \( (M = 4.92, SD = 0.75) \), \( F(1, 37) = 0.63, p = .80, \eta^2_p = .00 \). Negative affect did not cause participants to make more severe moral judgments, and the first hypothesis was thus not supported.

**Interactions with personality characteristics.** Following the same logic as in Experiment 1, data for personality characteristics that may make participants more sensitive to the manipulation were collected. Post hoc tests were conducted to assert whether the affect
manipulation interacted with personality traits. Two personality measures were used in this case, the Dimensions of Anger Response-5 scale and the Moralization of Smoking scale. Again, for both measures, a median-split procedure was used to categorize participants as low or high, and a 2 (condition: anger vs. control) X 2 ([personality characteristic measure]: low vs. high) ANOVA was conducted in each case. Participants who were highly prone to respond with anger, or who highly moralized smoking were expected to show the effects stated in hypothesis 1, so the interactions were the key results.

For both personality variables, there were no significant interactions between condition and DAR5/MS, $F$s $< 2.46$, $p$s $> .13$, and no main effects of condition, $F$s $< 0.59$, $p$s $> .45$. Moreover, no main effects of DAR5, $F (1, 37) = 1.86, p = .18, \eta_p^2 = .05$, or of MS, $F (1, 35) = 1.07, p = .31, \eta_p^2 = .03$, were found. Thus, negative affect did not cause participants who scored high on these two personality measures to judge smokers more severely, and hypothesis 1 was again not supported.

Avoidance and punishment. The third hypothesis predicted that a greater desire to punish and to avoid the moral transgressor would be expressed by participants in the anger condition rather than the control condition. A one-way ANOVA on the combined punishment ratings for all scenarios revealed no difference between participants in the anger ($M = 5.12, SD = 0.94$) and control ($M = 5.86, SD = 1.83$) conditions, $F (1, 37) = 2.39, p = .13, \eta_p^2 = .06$. A second one-way ANOVA on the combined avoidance ratings for all scenarios showed no difference between the anger ($M = 5.90, SD = 1.04$) and control ($M = 6.19, SD = 1.41$) conditions, $F (1, 37) = 0.53, p = .47, \eta_p^2 = .01$. Hypothesis 3 was thus not supported.

Discussion
The Experiment 2 results showed that negative affect did not cause participants to produce more severe moral judgments of smoker’s transgressions, even if the participants were highly moralizing of smoking behavior, or had a greater tendency to react with anger. Participants also did not express a greater desire to punish or avoid the moral transgressor as a result of their negative emotional state. This pattern of behavior is inconsistent with the current literature on the relationship between negative affect and condemning moral judgments (Luo, Nakic, Wheatley, Richell, Martin, & Blair, 2006), as well as that between positive affect and moral leniency (Valdesolo & DeSteno, 2006). Since these results are similar to those found in Experiment 1, a combined interpretation is presented below.

**General Discussion**

Two studies were conducted to investigate the effects of incidental emotion on the severity of moral judgments in the transgressions of smokers. The Experiment 1 examined the effects of incidental disgust, elicited by watching a disgusting film clip, and found that it did not increase moral censoring, even if the individual making the judgment was high in disgust sensitivity, high in private body consciousness, or highly moralized smoking. This was true for scenarios depicting violations of the divinity code, as well as the other two moral codes (autonomy and community). Further, disgust made no difference in individual desire to avoid the transgressor. Experiment 2 focused on the effects of anger, elicited by negative feedback of one’s personality, but the manipulation failed to distinguish anger from other negative emotions, so the effects of general affect (positive vs. negative) were analyzed instead. Again, moral judgments were no more severe for participants who were in a negative affective state compared to those who were in a positive affective state, even if participants
moralized smoking highly or tended to react with anger. Affect did not influence participants’ desire to either punish or avoid the transgressor.

This pattern of results contradicts much of the recent evidence addressing the role of emotions in the production of moral judgments, and the domain-specific relationship between moral emotions and moral concerns. The disgust-divinity association has been supported by various types of evidence: (1) violations of the divinity code triggered feelings of disgust (Gutierrez, & Giner-Sorolla, 2007; Rozin, et al., 1999); (2) incidental disgust amplified censoring of divinity transgressions (Horberg, Oveis, Keltner, & Cohen, 2009; Schnall, et al., 2008); (3) trait disgust predicted moral censoring (Horberg, et al., 2009) and disgust sensitivity predicted moral hypervigilance (Jones, & Fitness, 2008); and (4) disgust was correlated with moralization of behaviors that were related to violations of the divinity code (Rozin, Markwith, & Stoess, 1997; Rozin, & Singh, 1999). These findings are complemented by research showing that priming concepts of cleanliness and purity resulted in less condemning moral judgments (Schnall, et al., 2008a), and that individuals seek physical cleansing after recalling unethical actions (Zhong, & Liljenquist, 2006). In sum, information at both ends of the purity spectrum (cleanliness and disgust) seems to trigger intuitions that affect moral judgments.

Much less work has been done on the anger-autonomy dyad. Only one study has shown that anger predicts moral judgments of justice violations, but not of purity violations (Horberg, et al., 2009). Nevertheless, other studies provide evidence that anger affects various cognitive processes in specific ways (i.e. differentially from other emotions) because of the particular appraisals that trigger it (Lerner, & Keltner, 2000). Some of these cognitive processes are closely related to moral judgments, such as attributions of responsibility and
presumption of harm, both of which are associated with feelings of anger (Gutierrez, & Giner-Sorolla, 2007; Keltner, et al., 1993; Lerner, & Keltner, 2001).

In view of these findings, it seems unlikely that results from the current studies reflect the irrelevance of affect in the process of moral judgment about smokers. Rather, the discrepancy likely arose due to methodological differences pertaining to the scenarios being judged. Monin, et al. (2007) proposed that conflicting theories of morality, based on either reason or emotion, may have developed because researchers use two different types of scenarios: moral dilemmas and moral reactions. In moral dilemmas, two moral principles are pitted against each other and the subject has to take a first person perspective to give a solution. Because any possible solution requires violating a moral code, careful reasoning and prioritizing are involved. Thus, moral dilemmas are thought to encourage a rationalist approach to morality. On the other hand, moral reactions record individuals’ quick judgments of other people’s overt transgressions. This third party perspective has been used by researchers supporting an emotionalist view of morality. In order to present smokers in realistic situations, the scenarios used in the present research combined elements from both types: they placed participants as third party judges, but the transgressions being depicted were mild and potentially ambiguous. In contrast, most of the studies reporting effects of emotion used moral reactions in which the transgression was highly emotional (Monin, et al., 2007). Thus, it is plausible that the hypotheses were not supported because the ambiguity of the scenarios triggered moral reasoning, correcting the original affect-based judgments.

A second possibility is that because the scenarios depicted real-life situations of individual smokers, appraisals of their social context may have included both the social transgression and the individual’s right or virtue. Following the appraisal-tendency
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framework (Lerner, & Keltner, 2001), participants could have been processing the negative emotions that signal a moral violation as well as the positive emotions associated with appropriate social behavior. Thus, the resulting moral judgment is unlikely to reflect the consequences of one emotional state, but rather the combination of all the different appraisals triggered by one scenario. In either of these possibilities, it seems that presenting a smoker in context, rather than smoking as an isolated transgression, creates a qualitative difference in both emotional state and moral reasoning that makes moral judgment a more complex and nuanced process. Moreover, either moral reasoning or the multiple appraisals triggered by the scenarios may have overshadowed the effects of the emotional manipulations, so that new feelings and cognitions interfered with the elicited emotion.

Studying individuals’ reactions to smokers’ real-life behaviors, as opposed to more explicit moral transgressions, is relevant because it can help us understand how smoking behaviors have become moralized in American culture, and how other behaviors may follow the same path given a particular social context. The fact that moral value has been attached to many health-related behaviors across cultures (Brandt, & Rozin, 1997) is consistent with Haidt & Kesebir’s (2010) idea that morality serves an important, and evolutionarily adaptive, social role: morality helps bind individuals into groups, and fosters the survival of those groups by punishing or deterring free-riders. Indeed, differences in moral principles are known to create deep social and political divisions (Haidt, & Kesebir, 2008; Graham, Haidt, & Nosek, 2009). On a social level, the moralization of smoking was determined by concerns about the harm posed by it, in combination with the feelings of disgust it triggers (Rozin, & Singh, 1999). In this light, it is clear that understanding how individuals judge smokers partially depends on our knowledge of how members of a culture learn which entities and
behaviors are moralized. In addition to our innate response to violations of moral issues of harm and care (see Haidt, & Kesebir, 2010 for a review), we seem to shape our individual morality around our parents' messages, and our personal experiences and knowledge (Rozin, 1999). Understanding how these vary between smokers and non-smokers can illuminate the extent to which the two groups are morally different, and why some smokers continue to smoke in the face of negative judgments from society.

The following limitations of the present research should be noted. First, these studies did not control for socioeconomic status or political affiliation, two factors known to affect people's tendency to use different moral codes (Horberg, et al., 2009; Graham, et al., 2009). Second, the failure of the anger manipulation in Experiment 2 did not allow for testing of the effects of anger in terms of its moral domain specificity. Future studies should pursue this question using a different manipulation for emotion elicitation. For example, Lobbestael, Arntz and Wiers (2008) found that manipulations involving harassment or punishment of the subject are the most effective ways of eliciting an anger response.

The present studies call for further research to illuminate the relationship between emotion and the moralization of smoking. Two main directions are suggested. First, future studies should examine the emotions spontaneously triggered by smoking as a moral violation: asking participants to report their feelings as they witness such transgressions may help understand what moral codes smokers are perceived to violate. In the same vein, a careful reconsideration of the language used to assess morality is recommended, in agreement with Monin et al.'s (2007) suggestion that the use of words such “moral/immoral” may cue subjects to the moral relevance of an event. Second, cross-cultural research replicating the present studies in cultures where smoking is not considered a moral
transgression would help estimate the degree to which recruiting negative emotions serves to amplify moral judgments of behaviors that fall outside the realm of morality, but that could potentially become moralized (Helweg-Larsen, et al., 2010). Lastly, investigating these hypotheses in an environment in which participants are free to perform the action tendencies inspired by their judgments would show the extent to which negative evaluations affect smokers’ social interactions. In other words, if negative judgments of smokers cause people to act more negatively toward them (i.e. expressing their moralized views; Helweg-Larsen, et al., 2010), it is relevant to understand how those actions may impair smokers’ lives.

The present research attempted to establish whether two emotions, disgust and anger, inform individuals’ moral judgments of smokers’ transgressions. The results obtained here call for further research to pursue this question attending to both the emotional and reasoned factors that make up moral judgments. As the mainstream position on smoking becomes more censoring, it is increasingly relevant to understand what drives such moral condemnation and what actions it may entail. Social and political actions are particularly important, since heightening moral condemnation of smoking and smokers may alienate smokers (Helweg-Larsen, et al., 2010) and put them at greater health risk (Bayer, & Stuber, 2006). Smoking cessation programs that use negative moral evaluations to help smokers quit may need to be revised, and the general approach to smoking legislation may be shifted to focus on less condemning associations with smokers.
References


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Footnotes

\(^i\) The Community-contempt relationship was not investigated due to (a) the poor understanding we currently have about the emotion, and (b) the less important role of community concerns relative to autonomy and divinity in American culture.
Appendix

Divinity code violations

**Situation #1.** Karl is a chef at a popular restaurant. Whenever he has a break, he goes outside and smokes a cigarette. After he is done, he goes back inside and spends several minutes brushing his teeth, gargling mouthwash, and washing his hands so that people won’t know he smokes. However, sometimes if he is in a rush, he just goes straight back to cooking without doing these things (like washing his hands).

**Situation #2.** Margaret is a graduate student working on her art history degree. She likes to keep fit, so she runs three miles every other day and watches her diet. She also likes to spend time with her friends, so she goes out to dinner with them every time she gets a chance. They usually smoke cigarettes during and after dinner, even though sometimes people stare at them. Even if it is late and she needs to go back to studying, Margaret will stay out longer just to smoke with her friends.

**Situation #3.** Harry was raised in a very religious family, and he thinks of himself as a religious and deeply spiritual person. One of his favorite pastimes is trekking through the woods close to his house. He especially likes coming back from a long walk and sitting out on his porch with a good book and cigarette. He figures that since he is an active person, a couple cigarettes a day won’t cause him any harm.

Autonomy code violations

**Situation #1.** Anna is a mother of two, and every morning she drives her young children, ages 6 and 8, to school. This is the first chance she gets to leave the house in the morning, so she usually smokes a cigarette in the car while driving to school. The drive only takes about fifteen minutes and she usually holds the cigarette out the window, so her
children don’t have to breathe the smoke. However, if it is cold or raining the windows are
rolled up in the car.

**Situation #2.** John is a young guy who lives away from his parents’ home with two
friends. The three of them take turns doing household chores, like vacuuming and washing
dishes. They like to keep their place organized. John and his friends smoke cigarettes on a
regular basis, especially when they have guests over for dinner or parties. However, when
John visits his parent, he doesn’t smoke. If his parents ask him whether he smokes, he says
he doesn’t.

**Situation #3.** Jenny is college student living in a big university town. She is of age,
so every now and then she goes out to bars and clubs with her friends. However, she often
prefers to throw her own parties because then she can smoke whenever she wants to. She
figures that since it is her house, she should not have to worry about other people being
bothered by the smoke.

**Community code violations**

**Situation #1.** Mary works as a maid for several upper-middle class families in a
suburb to a major city. She usually works very long hours. During most of her breaks, she
sits alone outside and smokes a cigarette or two. At one house she knows her boss doesn’t
like that she smokes. Her boss has told her on several occasions she should quit, and asked
her not to smoke outside on the porch during her breaks, but Mary is not willing to give up
her habit.

**Situation #2.** David is an up-and-coming lawyer at an important law firm in a major
city. He has been assigned a new big case, and has been working on it with a team of six
young lawyers and assistants. They spend long hours together in the office on a daily basis.
David smokes cigarettes at work, and he tends to smoke more when he is stressed. His team doesn’t like that he smokes around them, but they never told him that the smoke bother them.

**Situation #3.** Thomas lives in an apartment building which has just adopted the new state regulations prohibiting individual to smoke in their own homes, to prevent smoke from filtering through the walls and into other apartments. He says he will not abide by this new regulation because he believes he is not affecting anyone but himself, and he should be allowed to do in his own house as he pleases. His neighbors think he is wrong, that he is doing something harmful and illegal.
Table 1. Means and standard deviations for emotions in Experiment 2.

<table>
<thead>
<tr>
<th>Emotion</th>
<th>$F$</th>
<th>$\eta_p^2$</th>
<th>Anger condition</th>
<th>Control condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined anger scale</td>
<td>55.85**</td>
<td>.60</td>
<td>4.36 (2.53)</td>
<td>1.40 (0.70)</td>
</tr>
<tr>
<td>Contempt</td>
<td>13.61**</td>
<td>.27</td>
<td>4.78 (2.26)</td>
<td>2.19 (2.11)</td>
</tr>
<tr>
<td>Depression</td>
<td>15.54**</td>
<td>.30</td>
<td>3.39 (2.50)</td>
<td>1.19 (0.51)</td>
</tr>
<tr>
<td>Combined disgust scale</td>
<td>22.15**</td>
<td>.37</td>
<td>2.80 (2.06)</td>
<td>1.06 (0.23)</td>
</tr>
<tr>
<td>Happiness</td>
<td>5.80*</td>
<td>.14</td>
<td>3.61 (2.15)</td>
<td>5.57 (2.82)</td>
</tr>
<tr>
<td>Pleasure</td>
<td>4.36*</td>
<td>.11</td>
<td>2.28 (1.53)</td>
<td>3.81 (2.77)</td>
</tr>
<tr>
<td>Sadness</td>
<td>38.42**</td>
<td>.51</td>
<td>4.22 (2.34)</td>
<td>1.05 (0.22)</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>16.83**</td>
<td>.31</td>
<td>2.33 (1.68)</td>
<td>5.05 (2.33)</td>
</tr>
</tbody>
</table>

*p < .05.

**p < .01.
Figure 1. Judgment ratings for three domains for participants high in PBC.