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**Delineating impurity and harm through language:  
Conceptual semantics analysis and vignette studies**

For Review Only

## DELINEATING IMPURITY AND HARM THROUGH LANGUAGE

**Abstract**

We describe the results of empirical studies involving conceptual semantics analysis (Studies 1a-c) and vignettes (Studies 2a-b) that delineate the disputed concepts of harm and impurity. First, we find that people apply the active and passive descriptors conveying contamination equivalently, indicating they infer an active corrupting nature in passive contamination. This is not the case for injury: being passively injured is inconsistent with being actively injuring. Next, we reveal non-moral mechanisms of contamination judgments (Studies 2a-b): inferences about complete and irreversible personal change, that do not drive injury judgment. Contamination and injury judgments additively drove protagonist blame. Collectively, the results elucidate the cognitive-linguistic roots of distinctions between impurity and harm, and their social-moral implications.

*Keywords:* moral cognition; psycholinguistics; blame; harm; impurity; conceptual semantics

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*“...arrogant, selfish actions by the Clintons contaminated three of the purest brands in Washington...Their vast carelessness drags down everyone around them, but they persevere, and even thrive. ... Hillary’s goo got on Obama.”*

-- “The Clinton Contamination”, *The New York Times*, (Dowd, July 2016)

*“Who could want me now? I felt so dirty and so filthy. I understand, so easily, all too well, why someone wouldn't run.”*

-- rape and kidnapping survivor Elizabeth Smart (Frumin, 2013)

*“... coming off the plane, his wife handed him his new baby daughter. ...he almost dropped her...[she] was so beautiful and perfect and pure that he didn't want his filth to contaminate her.”*

-- Michael Castellana, psychotherapist recounting a soldier’s experience of coming home after killing insurgents who used women and children as shields (Wood, 2014)

## 1. Introduction

A growing literature in moral psychology is concerned with understanding how people carve up the moral domain. Recent work has focused on moral judgment of actions that are considered impure but not harmful (Parkinson & Byrne, 2017; Dungan, Chakroff, & Young, 2017; Graham, Haidt, Motyl, Meindl, Iskiwitch, & Mooijman, 2017; Chakroff & Young, 2015; Gray, Schein & Ward, 2014; Young & Saxe, 2011); the impact of fairness versus loyalty values on whistleblowing decisions (Waytz, Dungan, & Young, 2013; Hildreth, Gino, & Bazerman, 2016); and strikingly diverse moral values (e.g., “binding” versus “individualizing” values) that

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are linked to ranging interpersonal orientations (Mooijman et al, 2017; Napier & Luguri, 2013; Graham et al., 2011; Haidt, 2007; Niemi & Young, 2013; 2016).

The current research focuses on understanding whether and how the moral domains of harm and impurity should be distinguished, combining approaches from conceptual semantics and moral psychology. Some researchers have argued that impure acts are instances of harm, based on work revealing that participants refer to the harmful nature of impure acts and identify “victims” of purity violations that appear on the surface to be victimless (Gray, Schein & Ward, 2014; Schein, Ritter, & Gray, 2016; Schein & Gray, 2017). Other researchers looking beyond language use to the possible evolutionary roots of these moral norms argue for distinct dissociation of the moral domains of harm and impurity – harm norms are posited to protect *individuals* regardless of group membership, whereas purity norms protect *groups* by obligating individuals to adhere to group norms (Haidt, 2003; 2007; Graham et al, 2017). Furthermore, findings from Dungan and colleagues (2017) oppose an idea that impurity judgments are merely a means to protect from pathogens; their findings that impure acts are judged as most immoral when committed against oneself rather than others are at odds with the idea that impurity is only about biological disease. Rather, the findings support the idea of moral purity existing as a concept that protects the in-group by perceiving acts violating social norms to be immoral.

Other work has delineated harm and impurity by revealing different attributional patterns associated with impure versus harmful actions: people are more likely to explain impure versus harmful acts with reference to the person rather than the situation (Chakroff & Young, 2015). Moreover, moral judgments of harmful actions are modulated by information about agents’ intentions, whereas moral judgments of impure actions are relatively insensitive to information

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about intent (Chakroff, Russell, Piazza, & Young, 2016; Barrett et al, 2016; Chakroff, Dungan & Young, 2013; Young & Saxe, 2011).

Moral emotion researchers have separated the domains of impurity and harm by tracing the patterns of cognition associated with disgust and anger-inducing actions and stimuli. They have found, for example, that participants employ simplistic reasoning to justify moral condemnation of disgust-eliciting sexual acts versus anger-eliciting harmful acts—reflected in greater use of evaluative (e.g., “X is bad”) versus elaborative judgments (e.g., “X violated others’ human rights”), respectively (Russell & Giner-Sorolla, 2011). Convergent evidence has revealed disgust to be generally resistant to reasoning. For example, participants report a distaste for juice that has come in contact with a sterilized cockroach and feces-shaped fudge, even when both are perfectly safe to consume (Rozin, Millman, Nemeroff, 1986).

The importance of investigating the boundary-lines of harm and impurity extends beyond current debates in the literature; delineating these concepts has practical implications. The concepts of contamination and harm are often put to use in approaches to community safety and public health campaigns. Indeed, it’s been argued that smoking cessation campaigns focused on contamination versus harm have opposing implications for health (Kozlowski, 2017). Harm-focused messaging provides ways for those already smoking to find alternatives with fewer health consequences; contamination-focused messaging, by contrast, counterproductively focuses on the permanent effects from taking just once single puff. Implicitly, contamination framing conveys that those already smoking are a lost cause due to irreversible damage. Kozlowski (2017) highlights a mechanism of contamination rhetoric – total, irreversible damage – and its potential practical ramifications. The power of contamination judgments is especially apparent when the distinction between the agent and the patient breaks down, that is, when the

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agent = patient: when one judges one's self (Dungan et al, 2017; Rottman, Keleman, & Young, 2014; Parkinson & Byrne, 2017). Dungan and colleagues (2017) showed that participants made the *harshes*t moral judgments when they caused impurity to themselves and were in the shoes of the agent/patient rather than an onlooker. The self-relevance of purity judgments is supported in other work in which moral judgments of self-harm were driven by concern about moral purity (Rottman et al., 2014). Purity and contamination rhetoric is routinely employed in public health initiatives, social and political messaging, and other putatively positive pursuits – it is important to understanding the relationship of impurity to harm, their cognitive-linguistic roots, and their respective links to moral judgments.

**The present research.** The current work offers a novel, language-based approach to understanding harm and impurity through conceptual semantics analysis and vignette experiments. In the next sections, we describe the semantics of verbs conveying the impurity and harm and the design of Studies 1a-c, which reveal that people infer that being passively contaminated also involves the potential of contaminating others – whereas being passively injured is inconsistent with being actively injuring. We then describe Studies 2a-b, our investigation of the mechanisms behind contamination judgments, which shows being judged as contaminated is increased when one's communicates being totally or irreversibly negatively affected. Contamination judgments, in turn, predict judgments of blame.

### 1.1 Conceptual Semantics of Contamination and Injury

The semantics of verbs that communicate impurity, including *contaminate* and *taint*, contrast in important ways with verbs that convey harm, such as *injure* and *wound*. According to a prominent theory of verb semantics (Levin, 1993), *contaminate* and *taint* are classified in the

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*fill* class (9.8) (see Figure 1) along with other verbs that convey that an entity entered another entity and affected it completely (VerbNet, Kipper-Schuler 2006).

**FILL 9.8** *adorn, anoint, bathe, coat, contaminate, cover, soil, sully, surround, swathe, taint*

Figure 1. Sampling of the 97 verbs in the “fill” class;  
see Supplementary Material for full list.

The “**holistic effects**” of *contaminate* and *taint* can be observed through a particular linguistic feature: they do not allow the “holistic/partitive” alternation (Levin, 1993, p. 50). This alternation is found in other verbs (e.g., *spray*) which allow “partitive” or “holistic” constructions – that is, they are capable of taking as their direct object both the substance whose location changes (e.g., *water*) or the location where it ends up (e.g., *sink*). For example, you may say (partitive alternation), “*I sprayed water into the sink.*” and also (holistic alternation), “*I sprayed the sink with water.*” *Spray* accommodates sentences with the prepositions *into/onto*, or *with* and neither is awkward or “infelicitous”. The implied coverage of water differs, but both types work.

By contrast, *contaminate* and *taint*, and the other “*fill*” verbs, do *not* allow the “partitive” alternation. They only accommodate sentences with the preposition *with* – sentences with *into* or *onto* are infelicitous. For example, (holistic alternation) “*He tainted the woman with evil*” is felicitous, whereas (partitive alternation) “*He tainted evil into the woman*” is infelicitous. Importantly, the holistic alternation implies the direct object was completely affected by evil, whereas the partitive alternation implies that the object was only partly affected by *some* evil entering it (Levin, 1993). The fact that partitive alternations are infelicitous with verbs that

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convey impurity support the hypothesis that people expect contamination and taint to involve a process that affects an entity completely.

By contrast, the verbs *injure* and *wound* do not necessarily evoke “complete affectedness” of the object. *Injure* is among the “*hurt*” verbs (Levin, 1993, p. 34) which include as their objects *particular parts* of the body (e.g., “*She injured her ankle*”). The injurious nature of an injury can be unaffected by the harm being localized, whereas contamination’s power is lessened by constraining its spread and localizing it.

In Studies 1a-c, we designed experiments that synthesized this prior work in verb semantics with research in psycholinguistics on active and passive descriptors and agents and patients, respectively, to examine our questions about impurity and harm in the moral domain. Passive participles (adjectival forms of verbs that end in *-ed*) are typically considered “patient-oriented,” appropriately applied to previously affected entities; active participles (end in *-ing*) are considered “agent-oriented,” applied to entities having progressive effects (Haspelmath, 1994). We expected that people infer that being passively contaminated involves the active potential of contaminating others (e.g., as the *OED* definition for “tainted” puts it: “affected with some corrupting influence”) – a feature *not* present for injury. To investigate this, our measure utilized active and passive participles that conveyed impurity and harm to examine how people understood humans as agents and patients of contamination and injury.

We asked participants to assign the active participles (“contaminating or tainting”, “injuring or wounding”), and the passive participles (“contaminated or tainted”, “injured or wounded”) to generic victims and perpetrators of crimes. We expected (1) congruence for assignment of active and passive participles for contamination (indicating its perceived corrupting nature in a passive state), and (2) a lack of congruence for injury showing dissociation

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between these concepts. We also expected, (3) that perpetrators and victims would be assigned the descriptors in importantly different ways: victims were likely to be considered injured but unlikely to qualify as anything else, whereas perpetrators might qualify as everything *but* injured in people's ratings. Finally, prior work with a similar paradigm investigated passive participles (e.g., "contaminated", "injured") with victims; here we tested the inverse relationships they observed between contamination and injury ratings (Niemi & Young, 2016): the more victims were viewed as contaminated, the less they were viewed as injured. By testing how people assigned the contamination and injury descriptors in both the active and passive forms across perpetrators and victims, we were able to assess the contribution of role and descriptor type fully.

### 1.2 Mechanics and Moral Implications of Contamination Judgments

In Studies 2a-b, we investigated potential mechanisms behind contamination judgments across the "perpetrator-victim" dyad, this time communicating these roles *indirectly*: the protagonist in a vignette was either harmed (victim) or harmed someone (perpetrator). To investigate mechanisms, we varied the features of changes that the protagonist endorsed. We selected features identified as relevant to contamination and contagion in linguistics (as described in last section) and psychological science: whether changes were complete, irreversible, or affected other people (Rozin et al., 1986; Nemeroff & Rozin, 1994).

We also tested effects on blame judgments to investigate the moral implications of dissociating these domains. In prior work Niemi and Young (2016) found the passive participles for contamination ("contaminated or tainted") and injury ("injured or wounded") to be inversely related to responsibility judgments for victims: the more contaminated people judged victims, the *more* responsible they judged them; whereas the more injured they judged victims, the *less*

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responsible they judged them. By manipulating the features of changes the protagonist expressed and determining effects on participants' ratings of contamination, injury, and blame, the current research aimed to both identify mechanisms of contamination judgments and elucidate their moral implications for victims and perpetrators.

### 2.1 Study 1a

#### 2.1.1 Study 1a: Method

Participants were 153 individuals on Amazon's Mechanical Turk; 27 participants were excluded for not completing the study or not providing their worker identification number. We aimed for approximately 50 individuals per condition (active/passive participle). Participants took part in the study for a small payment; our final sample after these exclusions was 126 ( $Mage(SD)=34.63(12.13)$ ; 62 female, 63 male, 1 selected other).

Participants were asked about both hypothetical perpetrators and victims of crimes, with descriptor type (active participle “-ing”, passive participle “-ed”) varied between subjects. Prompts were in the form: “Please consider the following hypothetical crime {victim, perpetrator}: a {victim, perpetrator} of {crime}.” The crimes included molestation, rape, strangling, and stabbing.<sup>1</sup> In the passive participle condition, participants (n=63) were asked: “How injured or wounded is this person?” and “How contaminated or tainted is this person?” in counterbalanced order. In the active participle condition, participants (n=63) were asked: “How injuring or wounding is this person?” and “How contaminating or tainting is this person?” in counterbalanced order. Participants provided their ratings using labeled sliding scales with the

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<sup>1</sup> We were also interested in whether crime *type* [i.e., sexual (rape, molestation) versus non-sexual (stabbing, strangling)] would exacerbate effects on contamination ratings. We found small effects suggestive of this which are not our focus here. See Supplementary Material for additional analyses broken down by crime type.

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instructions: “Please use the slider to indicate your response, [0 = Not at all] to [7 = Very much]”. Data and materials for this and all studies are available at <https://github.com/BLINDED/>. We report all measures, manipulations, and exclusions in these studies.

### 2.1.2 Study 1a: Results

We conducted an ANOVA on RATINGS (CONTAMINATION, INJURY) with between-subjects variable DESCRIPTOR (ACTIVE, PASSIVE) and within-subjects variable ROLE (VICTIM, PERPETRATOR). There were main effects of ROLE (VICTIM:  $M(SEM) = 3.54(.16)$ ; PERPETRATOR =  $4.67(.13)$ ;  $F(1,124) = 30.78, p < .001$ , partial  $\eta^2 = .199$ ) and RATING (CONTAMINATION =  $3.97(.13)$ ; INJURY =  $4.24(.12)$ ;  $F(1,124) = 4.12, p = .04$ , partial  $\eta^2 = .032$ ). There was no main effect of DESCRIPTOR (ACTIVE =  $4.16(.15)$ ; PASSIVE =  $4.06(.15)$   $p = .65$ ).

All two-way interactions were significant. The DESCRIPTOR X ROLE interaction ( $F(1,124) = 109.32, p < .001$ , partial  $\eta^2 = .47$ ) indicated that perpetrators ( $M(SEM) = 5.79 (.19)$ ) received higher ratings in the ACTIVE participle (agent-oriented) condition — they were rated as more “contaminating” and “injuring” than victims ( $M(SEM) = 2.52 (.23)$ ). By contrast, victims ( $M(SEM) = 4.56 (.23)$ ) received higher ratings in the PASSIVE participle (patient-oriented) condition — they were rated as more “contaminated” and “injured” than perpetrators ( $M(SEM) = 3.56 (.19)$ ). The DESCRIPTOR X RATING interaction ( $F(1,124) = 12.84, p < .001$ , partial  $\eta^2 = .09$ ) indicated that in the ACTIVE participle condition, “contaminating” ratings ( $3.78 (.19)$ ) were lower than “injuring” ratings ( $4.53 (.17)$ ); whereas in the PASSIVE participle condition, “contaminated” ratings ( $4.16 (.18)$ ) were higher than “injured” ratings ( $3.95(.17)$ ). Finally, the

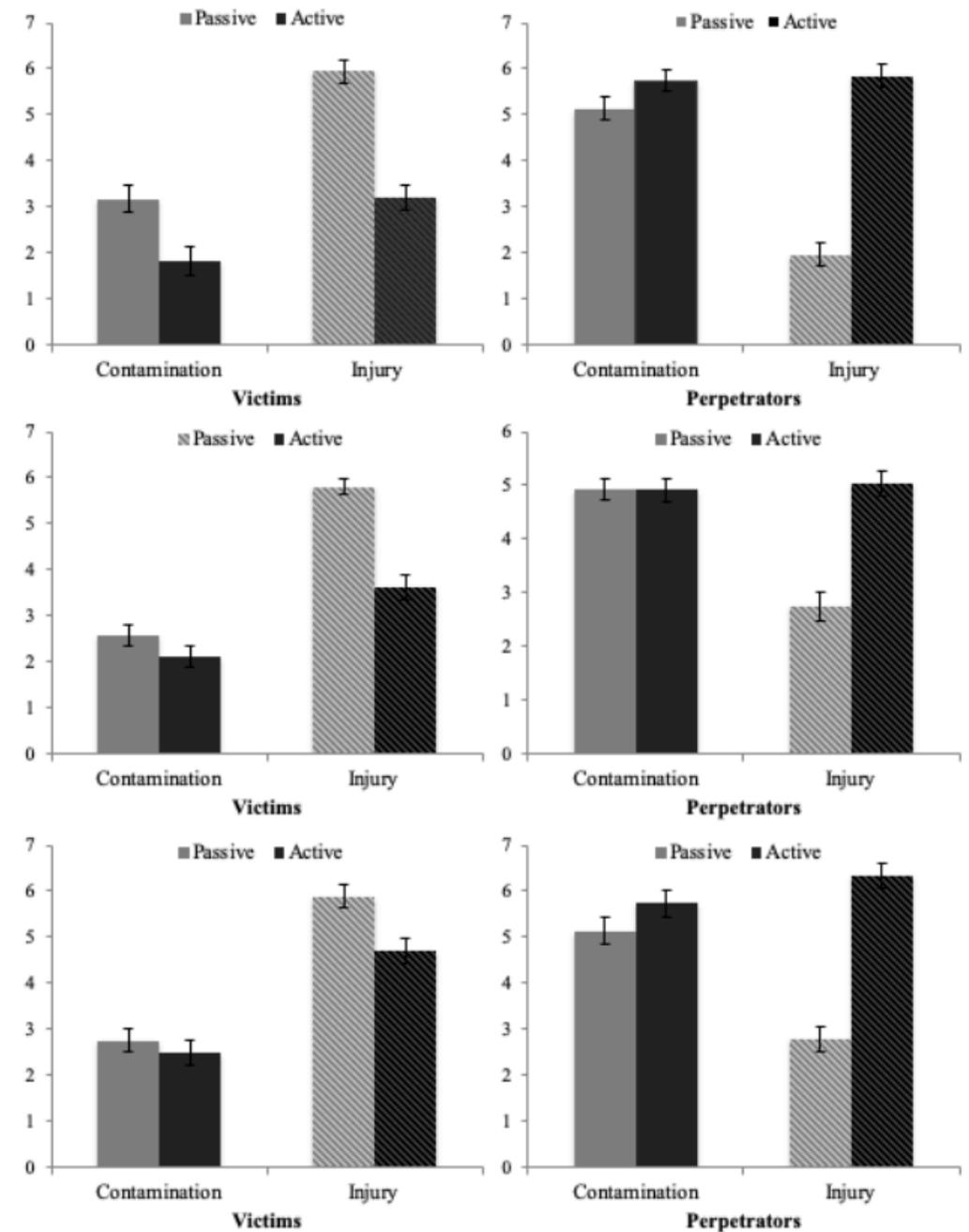
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ROLE X RATING interaction ( $F(1,124) = 96.49, p < .001$ , partial  $\eta = .438$ ) indicated that victims received higher ratings in the case of injury (4.58(.19)) versus contamination (2.50(.21)), whereas perpetrators received higher ratings in the case of contamination (5.44(.17)) versus injury (M(SEM)).

Importantly, there was a three-way interaction of DESCRIPTOR X ROLE X RATING ( $F(1,124) = 40.24, p < .001$ , partial  $\eta = .245$ ; see Figure 2). This interaction indicated that perpetrators were rated equivalently, and highly, “contaminating” (M(SEM) = 5.74(.23)) and “injuring” (5.85(.26)). Follow-up pairwise comparison testing showed no significant difference between ratings of perpetrators as “contaminating” and “injuring” ( $t(62) = .43, p = .67$ ). Victims, by comparison, were rated comparatively low for these descriptors (3.21 (.26) and 1.83 (.30), respectively). In the passive participle condition (see Figure 2), there was a very different pattern by DESCRIPTOR and ROLE: perpetrators were rated substantially more “contaminated” (5.14 (.23)) than “injured” (1.97(.26)); whereas victims were rated more “injured” (5.94(.26)) than “contaminated” (3.18(.30)). Moreover, importantly, high ratings of perpetrators as passively “contaminated” were not significantly different from high ratings of them as actively “contaminating” ( $p > .074$ ).

*Correlations among ratings.* In prior work, ratings of victims as “contaminated” were *negatively* correlated with ratings of victims as “injured” (Niemi & Young, 2016). Here, in the active participle condition, “injuring” and “contaminating” ratings were correlated for victims ( $r = .588, p < .001$ ) and perpetrators ( $r = .308, p < .014$ ). In the passive participle condition, “injured” and “contaminated” ratings were unrelated for victims ( $r = -.106, p = .41$ ) and perpetrators ( $r = .05, p = .69$ ).

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*Figure 2.* Ratings of contamination and injury (“not at all” - “very much”) in the active participle (“contaminating” and “injuring”) and passive participle (“contaminated” and “injured”) conditions for victims and perpetrators. Pattern of results was maintained across Study 1a (TOP) with active / passive participle condition between-subjects, Study 1b (MIDDLE) with active / passive participle condition within-subjects, and Study 1c (BOTTOM) with active / passive participle condition and victim / perpetrator conditions between subjects. Error bars indicate SEM.

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*Summary.* The pattern of results in Study 1a (Figure 2) indicated, first, for perpetrators, in the case of contamination, consistent with our expectation of its perceived corrupting nature in a passive state, the active participle “contaminating” was assigned to perpetrators to the same extent as the passive participle “contaminated”. Also as expected, this was not the case for injury: the active and passive participles were assigned in an intuitively straightforward manner. Perpetrators were “injuring” and not “injured”. For victims, as expected, the picture was different: they were rated highly “injured” and substantially lower in the other descriptors. In order to ascertain whether people would be influenced in their ratings for “contaminating” and “injuring” people are if they were *also* for “contaminated” and “injured” ratings, we next repeated the study (Study 2b) with the DESCRIPTOR condition varied within-subjects.

### 2.2 Study 1b

#### 2.2.1 Study 1b: Method

Study 1b was identical to Study 1a with the exception that conditions were varied within-subjects: participants completed both DESCRIPTOR conditions for victims and perpetrators in randomized order. This increased the length of the study. Participants included 154 individuals on Amazon’s Mechanical Turk who took the study for a small payment; 49 participants were excluded for not completing the study or for not providing their worker identification number. Our final sample comprised 105 individuals ( $Mage(SD)=36.94(12.01)$ ; 55 female, 50 male).

#### 2.2.2 Study 1b: Results

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We conducted an ANOVA on RATINGS (CONTAMINATION, INJURY) with within-subjects variables DESCRIPTOR (ACTIVE, PASSIVE) and ROLE (VICTIM, PERPETRATOR). As when DESCRIPTOR was varied between subjects (Study 1a), there was no main effect of DESCRIPTOR (ACTIVE:  $M(SEM) = 3.92(.13)$ ; PASSIVE =  $4.01(.12)$ ;  $F(1,104) = .95, p = .33$ ). There were main effects of ROLE (VICTIMS =  $3.53(.16)$ ; PERPETRATORS =  $4.41(.16)$ ;  $F(1,104) = 14.62, p < .001$ , partial  $\eta^2 = .123$ ) and RATING (CONTAMINATION:  $M(SEM) = 3.63(.15)$ ; INJURY:  $M(SEM) = 4.30(.13)$ ;  $F(1,104) = 19.78, p < .001$ , partial  $\eta^2 = .160$ ).

Also as when DESCRIPTOR was varied between subjects (Study 1a), there was a two-way interaction of DESCRIPTOR X ROLE ( $F(1,104) = 62.18, p < .001$ , partial  $\eta^2 = .37$ ) which indicated that perpetrators ( $M(SEM) = 4.98(.19)$ ) received higher ratings in the ACTIVE participle (agent-oriented) condition—as in Study 1a, they were rated as more “contaminating” and “injuring” than victims ( $2.86(.23)$ ); by contrast, victims ( $4.19(.15)$ ) received higher ratings in the passive participle (patient-oriented) condition—they were rated as more “contaminated” and “injured” than perpetrators ( $3.84(.18)$ ). This time however, the two-way interaction of DESCRIPTOR X RATING was marginal ( $F(1,104) = 3.42, p = .067$ , partial  $\eta^2 = .032$ ). Finally, also as when DESCRIPTOR was between subjects, there was a two-way interaction of ROLE X RATING ( $F(1,104) = 106.78, p < .001$ , partial  $\eta^2 = .507$ ) indicating that victims received higher ratings in the case of injury ( $4.71(.18)$ ) versus contamination ( $2.34(.22)$ ), whereas perpetrators received higher ratings in the case of contamination ( $4.92(.19)$ ) versus injury ( $3.89(.20)$ ).

The important three-way interaction of DESCRIPTOR, ROLE, and RATING ( $F(1,104) = 65.72, p < .001$ , partial  $\eta^2 = .387$ ; see Figure S2) was observed once again, when DESCRIPTOR was varied between subjects. Perpetrators were rated highly and equivalently “contaminating”

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and “injuring” ( $M(SEM) = 4.92(.21)$  and  $5.03(.24)$ , respectively), much more than victims, who were rated more “injuring” than “contaminating” ( $M(SEM) = 3.61(.28)$  and  $2.11(.23)$ , respectively). In the passive participle condition (Figure 2, right panel), perpetrators were again rated more “contaminated” than “injured” ( $4.92(.20)$  vs.  $2.75(.26)$ ); whereas victims were rated more “injured” than “contaminated” ( $5.80(.16)$  vs.  $2.58(.23)$ ).

*Correlations among ratings.* In the active participle condition, “injuring” and “contaminating” ratings were correlated for victims ( $r = .565, p < .001$ ), and perpetrators ( $r = .360, p < .001$ ). In the passive participle condition, “injured” and “contaminated” ratings were unrelated for victims ( $r = .15, p = .12$ ), and perpetrators ( $r = .18, p = .06$ ), replicating Study 1a. Next, in our final iteration of Study 1, we again assessed all participles (*contaminating*, *injuring*, *contaminated*, and *injured*) but this time varied between subjects whether participants rated victims *or* perpetrators, in case moral judgments of perpetrators might have influenced victims or vice versa, in the prior results.

### 2.3 Study 1c

#### 2.3.1 Study 1c: Method

Study 1c was identical to Study 1a except participants rated *either* victims or perpetrators.

Participants were 198 individuals on Amazon’s Mechanical Turk who completed the study for a small payment ( $Mage(SD) = 35.39(11.77)$ ; 102 female, 94 male, 2 other).

#### 2.3.2 Study 1c: Results

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We conducted an ANOVA on RATINGS (CONTAMINATION, INJURY) with between-subjects variables DESCRIPTOR (ACTIVE, PASSIVE) and ROLE (VICTIM, PERPETRATOR). This time, there was a main effect of DESCRIPTOR<sup>2</sup> (ACTIVE:  $M(SEM) = 4.82 (.15)$ ; PASSIVE =  $4.14 (.15)$ ;  $F(1,194) = 10.46, p = .001$ , partial eta = .051). There were main effects of ROLE (VICTIM =  $3.96 (.14)$ ; PERPETRATOR =  $5.00 (.15)$ ;  $F(1,194) = 24.71, p < .001$ , partial eta = .113) and RATING (CONTAMINATION =  $4.03(.14)$ ; INJURY =  $4.93(.13)$ ;  $F(1,194) = 27.17, p < .001$ , partial eta = .123).

There were again two-way interactions of DESCRIPTOR X ROLE ( $F(1,194) = 44.32, p < .001$ , partial eta = .19); descriptor type and rating ( $F(1,194) = 8.57, p = .004$ , partial eta = .04); and ROLE X RATING interaction ( $F(1,194) = 105.60, p < .001$ , partial eta = .352). The important three-way interaction of DESCRIPTOR X ROLE X RATING persisted ( $F(1,194) = 32.19, p < .001$ , partial eta = .142; see Figure 2). Perpetrators were again rated highly and equivalently “contaminating” and “injuring” ( $5.73(.28)$  and  $6.34(.28)$ , respectively), much more than victims (who were rated more “injuring” than “contaminating” ( $4.70(.27)$  and  $2.51(.28)$ , respectively). In the passive participle condition (see Figure 2), perpetrators were again rated more “contaminated” than “injured” ( $M(SEM) = 5.14(.28)$  and ( $M(SEM) = 2.79(.28)$ , respectively); whereas victims were rated more “injured” than “contaminated” ( $M(SEM) = 5.89(.25)$  and ( $M(SEM) = 2.75(.25)$ , respectively).

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<sup>2</sup> See Figure 2: “injuring” ratings for victims were higher compared to Study 1a-b, driving the emergence of this effect. This is likely because participants assumed experimenter error as they did not see “injured” for victims in this between-subjects version, just “injuring”: 5 of the 48 participants who took the victim active participle condition wrote in with a comment that they found the task confusing, e.g., “I wasn't sure why you used the *ing* on the words. Now I think I might have answered wrong. Did you mean how *injured* was the person or how *injuring* which would mean they could injure someone else?” Such comments specifying concerns are rare; this suggests that other participants in the victim active participle condition who did not write in a comment interpreted the “injuring” prompt as “injured”.

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*Summary.* The pattern of results in Study 1c, like Studies 1a-b, indicates that for perpetrators, in the case of contamination, people perceive passive contamination (being “contaminated”) to be consistent with active contamination (being “contaminating”). By contrast, there was no such active-passive congruency in the case of injury: perpetrators were rated “injuring” and not “injured”. Victims were considered highly “injured” and substantially lower in the other descriptors.

Next, in Study 2a we examine the cognitive mechanisms behind people’s ratings of victims and perpetrators as passively contaminated. We employed vignettes with the victim or perpetrator status of the protagonist conveyed indirectly. We investigated mechanisms by manipulating features posited in linguistics and psychological science to underlie contamination in the protagonists’ communications. We tested effects of the manipulation on ratings of contamination, injury and blame, as well as on distractor variables including resilience and disrespect.

### 4.1 Study 2a

#### 3.1.1 Study 2a: Method

Participants were 2400 individuals on Amazon’s Mechanical Turk who completed the study for a small payment ( $Mage(SD)=36.92(12.17)$ ; 1303 female, 814 male, 7 selected other, 2 n/a). 275 participants were excluded for not completing the study. We aimed for approximately 150 participants per condition in a between-subjects designs. Participants rated “Kim” in either the victim ( $n=1079$ ) or perpetrator ( $n=1046$ ) condition. In the victim condition, as seen in the vignette sample below, “Kim was mugged”. In the perpetrator condition, “Kim mugged someone”. We investigated three mechanisms: (1) complete change – ( $n_{perp}=176$ ;  $n_{vic}=180$ ) vs.

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partial change ( $n_{\text{perp}}=177$ ;  $n_{\text{vic}}=178$ ), (2) irreversible change ( $n_{\text{perp}}=172$ ;  $n_{\text{vic}}=181$ ) vs. reversible change ( $n_{\text{perp}}=175$ ;  $n_{\text{vic}}=178$ ), (3) whether the change affects others ( $n_{\text{perp}}=172$ ;  $n_{\text{vic}}=181$ ) vs. whether its effects were isolated ( $n_{\text{perp}}=174$ ;  $n_{\text{vic}}=181$ ). Each participant received a vignette with one of these aspects varied, for Kim as the victim or as the perpetrator, e.g., “**victim: complete change**” condition:

Kim was mugged on April 7, 2013. After the court proceedings, Kim received a lot of treatment. As might be expected, all of this strongly affected Kim in many ways. Years later, Kim noted that “there was no part of herself that felt okay.”

The list of variations by condition is presented in Table 1.

-- TABLE 1 HERE --

Following the vignette, participants were presented with five questions about Kim, presented in Table 2.

-- TABLE 2 HERE --

### 3.1.2 Study 2a: Results

*Kim as “tainted or contaminated”*. We conducted an ANOVA with ROLE (VICTIM / PERPETRATOR) and CONDITION (COMPLETE / PARTIAL / IRREVERSIBLE / REVERSIBLE / OTHERS / ISOLATED) entered as between-subjects variables on “tainted or contaminated” RATINGS. We found a main effect of ROLE: victim Kim ( $M(SEM) = 3.33(.07)$ )

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was rated as slightly more “tainted or contaminated” than perpetrator Kim ( $2.93(.07)$ ;  $F(1,2075) = 17.06$ ,  $p < .001$ , partial  $\eta = .01$ ). In Study 1, by contrast, we saw that explicitly-deemed perpetrators were rated substantially more “contaminated” than explicitly-deemed victims. We found a main effect of CONDITION: ( $F(5,2075) = 3.85$ ,  $p = .002$ , partial  $\eta = .01$ ).

Bonferroni-corrected follow-up comparisons indicated Kim was rated more contaminated in the COMPLETE condition ( $3.55(.12)$ ) relative to most other conditions: AFFECTS OTHERS ( $2.99(.12)$ ,  $p = .014$ ); ISOLATED AFFECTS ( $2.96(.12)$ ,  $p = .006$ ); REVERSIBLE ( $2.95(.12)$ ,  $p = .005$ ); PARTIAL (trend:  $3.09(.12)$ ,  $p = .09$ ) – but not the IRREVERSIBLE condition. These findings indicate that people’s ratings of Kim as contaminated were increased in two conditions relative to the other conditions: when she noted “*there was no part of herself that felt okay*”, i.e., complete change, and when she noted she would “*never be the same again*”, i.e., irreversible change. There was not a significant difference in these effects based on her implied role as victim or perpetrator. Notably, it was not implied effects on Kim’s social connections, her contagiousness, but her *personal* experience of being completely and irreversibly affected that altered participants’ ratings of her as contaminated.

*Kim as “harmed or injured”*. We conducted an ANOVA with ROLE (VICTIM / PERPETRATOR) and CONDITION (COMPLETE / PARTIAL / IRREVERSIBLE / REVERSIBLE / OTHERS / ISOLATED) entered as between-subjects variables on “harmed or injured” RATINGS. We found a main effect of ROLE ( $F(1,2083) = 1790.23$ ,  $p < .001$ , partial  $\eta = .46$ ). Consistent with Studies 1a-c, and unsurprisingly, victim Kim ( $M(SEM) = 5.23(.05)$ ) was rated as substantially more “harmed or injured” than perpetrator Kim ( $1.95(.069)$ ). There was no effect of CONDITION; thus, the manipulations hypothesized to be contamination-relevant had no effect on participants’ ratings of Kim as “harmed or injured”.

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*Kim as “disrespected or disobeyed”.* We conducted an ANOVA with ROLE (VICTIM / PERPETRATOR) and CONDITION (COMPLETE / PARTIAL / IRREVERSIBLE / REVERSIBLE / OTHERS / ISOLATED) entered as between-subjects variables on “disrespected or disobeyed” RATINGS. We found a main effect of ROLE ( $F(1,2073) = 1337.53, p < .001$ , partial  $\eta^2 = .39$ ). Unsurprisingly, victim Kim (5.24(.06)) was rated as substantially more “disrespected or disobeyed” than perpetrator Kim (1.92(.06)). The main effect of CONDITION was significant ( $F(5,2073) = 3.23, p < .007$ , partial  $\eta^2 = .008$ ). Bonferroni-corrected pairwise comparisons indicated that this was driven by ratings of Kim as more disrespected in the PARTIAL change condition relative to the ISOLATED AFFECTS ( $p = .04$ ) condition.

*Kim as blameworthy.* Follow-up regression analyses examined the contributions of ratings of Kim as harmed, disrespected, and contaminated on ratings of blame. For both Kim the mugger/perpetrator and mugged/victim Kim, increased contamination ratings ( $\beta = .166, p < .001$ ;  $\beta = .136, p < .001$ ), reduced injured ratings ( $\beta = -.356, p < .001$ ;  $\beta = -.203, p < .001$ ), and reduced disrespected ratings ( $\beta = -.283, p < .001$ ;  $\beta = -.156, p < .001$ ) significantly contributed to increased blame ratings ( $F(3,994) = 132.42, p < .001, R^2 = .29$ ;  $F(3,1048) = 31.60, p < .001, R^2 = .08$ , respectively). In sum, viewing Kim as more tainted (and less injured and disrespected), whether she was the victim or perpetrator, contributed to an impression of her as blameworthy.

### 3.2 Study 2b

#### 3.2.1 Study 2b: Method

Participants were 817 individuals on Amazon’s Mechanical Turk who completed the study for a small payment ( $Mage(SD) = 35.6(11.6)$ ; 484 female, 323 male, 2 selected other, 8 n/a). The study was identical to Study 2a in that we manipulated the identical mechanisms of

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perceptions of contamination for “Kim” presented as either the victim (n=411) or the perpetrator (n=406) of a mugging event. This time each participant received a vignette that contained all three dimensions varying for Kim as the ‘victim’ or as the ‘perpetrator’; this within-subjects presentation aligns with a more typical, complex self-presentation.

As an example, a participant in the Kim “**victim: complete, irreversible, affects others**” condition read the following vignette:

Kim was mugged on April 7, 2013. After the court proceedings, Kim received a lot of treatment. As might be expected, all of this strongly affected Kim in many ways.

Years later, Kim noted that “there was no part of herself that felt okay,” that she would “never be the same again,” and that “many people close to her were also affected.”

Following the vignette, participants were presented with same questions as in Study 2a.

### 3.2.2 Study 2b: Results

*Kim as “tainted or contaminated”.* We conducted an ANOVA with ROLE (VICTIM, PERPETRATOR) and the three CONDITIONS (COMPLETE, PARTIAL), (IRREVERSIBLE, REVERSIBLE), (OTHERS, ISOLATED) entered as between-subjects variables on “tainted or contaminated” ratings. We found a main effect of ROLE: victim Kim (3.71(.11)) was rated as slightly more “tainted or contaminated” than perpetrator Kim (3.24(.11);  $F(1,798) = 8.92$ ,  $p = .003$ , partial  $\eta^2 = .01$ ), as in Study 2a.

There was an interaction of ROLE with the CONDITION (IRREVERSIBLE, REVERSIBLE,  $F(1,798) = 6.98$ ,  $p = .008$ , partial  $\eta^2 = .01$ ). In the VICTIM condition, Kim was

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rated as more contaminated in the IRREVERSIBLE condition (when she would “*never be the same again*” (4.00(.16)) compared to the REVERSIBLE condition (when she “*was just starting to go back to how she used to be*” (3.42(.16)). In the perpetrator condition, Kim was rated as *less* contaminated in the IRREVERSIBLE condition (3.11(.16)) compared to the REVERSIBLE condition (3.37(.16)), which is logical considering she was attesting to positive change in this case.

*Kim as “harmed or injured”*. We conducted an ANOVA with ROLE (VICTIM, PERPETRATOR) and the three CONDITIONS (COMPLETE, PARTIAL), (IRREVERSIBLE, REVERSIBLE), (OTHERS, ISOLATED) entered as between-subjects variables on “harmed or injured” RATINGS. We found a main effect of ROLE ( $F(1,798) = 452.10, p < .001$ , partial  $\eta^2 = .36$ ). Again, victim Kim (5.36(.09)) was rated as substantially more “harmed or injured” than perpetrator Kim (2.57(.09)). There was no effect of CONDITION – again, the manipulations had no effect on participants’ ratings of Kim as “harmed or injured”.

*Kim as “disrespected or disobeyed”*. We conducted an ANOVA with ROLE (VICTIM, PERPETRATOR) and the three CONDITIONS (COMPLETE, PARTIAL), (IRREVERSIBLE, REVERSIBLE), (OTHERS, ISOLATED) entered as between-subjects variables on ratings of Kim as “disrespected or disobeyed”. We found a main effect of ROLE: victim Kim (5.50(.10)) was rated as substantially more “disrespected or disobeyed” than perpetrator Kim (2.25(.10);  $F(1,798) = 528.50, p < .001$ , partial  $\eta^2 = .40$ ). Unlike Study 2a, there was no effect of CONDITION, indicating the small effect observed there was likely spurious.

*Kim as blameworthy*. Follow-up regression analyses examined the contributions of ratings of Kim as harmed, disrespected, and contaminated on ratings of blame. Identical to Study 2a, for Kim the mugger/perpetrator, and for mugged/victim Kim, increased contamination ratings

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( $\beta=.187, p<.001$ ;  $\beta=.145, p=.004$ ), reduced injured ratings ( $\beta=-.341, p<.001$ ;  $\beta=-.178, p<.001$ ), and reduced disrespected ratings ( $\beta=-.312, p<.001$ ;  $\beta=-.129, p<.001$ ) significantly contributed to increased blame ratings ( $F(3,388)=52.37, p<.001, R^2=.29$ ;  $F(3,403)=8.85, p<.001, R^2=.06$ ). In sum, viewing Kim as more tainted (and less injured and disrespected), whether she was the perpetrator or victim, contributed to an impression of her as blameworthy.

#### 4. General Discussion

In this research, we used a language-based approach involving conceptual semantics analysis (Studies 1a-c) and vignette experiments (Studies 2a-b) to uncover boundary-lines between the concepts of harm and impurity in the moral domain. First, we demonstrated that people use words that convey injury and contamination quite differently. They apply terms that convey active and passive contamination nearly equivalently, i.e., the active participles “contaminating” and “tainting” are used alongside the passive participles “contaminated” and “tainted”. These results support our hypothesis that people infer that to be contaminated is to be contaminating — that patients of contamination are also agents of contamination.

We also observed that perpetrators of harm were rated highly “injuring” and “wounding”, whereas victims were rated highly “injured” and “wounded”. In this case, the active and passive participles mapped cleanly onto the agent and patient roles (perpetrator / victim). The fact that this was not the case for contamination, people rated perpetrators both highly contaminated and contaminating, and victims relatively low in both, further suggest that people infer a progressive, damaging process in contamination that is appropriate for people who are “harm-doers”— perpetrators.

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These results indicate people think about contamination as a powerful, damaging process with which perpetrators of violent crimes are highly afflicted. Studies 2a-b demonstrated that the mechanics of contamination judgments for perpetrators and victims are consistent with account from linguistics and psychological science. In these studies, we manipulated dimensions hypothesized to underlie judgments of contamination (complete and irreversible affectedness; contagiousness) in “Kim,” a person indirectly described as a victim or a perpetrator of a mugging. We found, first, across victim Kim was rated as *more* contaminated than perpetrator Kim across both studies. This contrast with the findings of Studies 1a-c, where the *explicitly identified* perpetrators were rated much more contaminated than victims. It suggests that Kim in the vignette might have been viewed as tainted for a different reason than the anonymous perpetrators in Studies 1a-c. We return to this point later.

Second, taking the results across Studies 2a-b together, we found that when Kim was presented as completely and irreversibly affected, this led participants to increase their contamination ratings (and not injury ratings) compared to other statements about herself, including that her experiences affected others (i.e., were contagious). Thus, although contamination is a process evoking contagion, the protagonist’s statements about personal change of a complete and permanent nature had effects on perceptions of contamination stronger than statements implying social changes, which might compel thoughts of contagion.

These results have implications for our understanding of the applicability of theories of verb semantics to social and moral psychology. Effects on objects on the spatial dimension – “complete affectedness” -- allow the verbs *contaminate* and *taint* to be classified along with the *fill* verbs (based on alternation behavior; Levin, 1993). It has been proposed that the notions of *complete* and *continuous* affectedness may be hard to disentangle for theories of verb semantics

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because of the confoundedness of space and time (Croft, 2012). In line with this, across Studies 2a-b, manipulation of the temporal *and* spatial dimensions affected ratings of Kim as contaminated or tainted. And, again, in Study 2a, manipulating both of these factors affected contamination ratings more than manipulating “contagiousness” (whether the changes affected others or not) directly, a factor straightforwardly related to the idea of contamination. Thus, in our scenarios at least, the core concepts of complete spatial and temporal affectedness that drive theories of verb semantics also drove people’s *morally* relevant judgments of people as contaminated.

In prior exploratory work (see a sample of responses in Supplementary Materials), these core concepts of complete and irreversible affectedness appear when people were asked to write freely about what they meant when they rated victims as “*contaminated or tainted*” in a study they took. Their responses described a long-lasting temporal dimension to victims’ experience and complete, total change, e.g., in the case of rape: “*nothing will be the same*”, “*every aspect of the rape victim’s life is negatively affected*”, the victim “*may never be able to get over it*”. When people describe contaminated victims, they describe personal, often intra-psychological, features they believe to be affected – less often do they specify how a person will affect others by being contaminated. As victim-blaming is generally frowned upon, and rating victims as contaminated can be construed along these lines, it’s unsurprising that people would find it difficult or impossible to write in a comprehensive way about the meaning of contamination in this context.

Without the victim and perpetrator labels, Studies 2a-b, allowed us to understand how people applied the passive participle when victim/perpetrator status was conveyed indirectly. Interestingly, harmed (victim) Kim was actually rated slightly *more* “tainted or contaminated” than perpetrator Kim. One possibility is that the simple framework uses in Studies 1a-c caused

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participants to focus on different aspects of contamination. Participants may have been judging the explicitly identified “perpetrators” as contaminated with a special focus on the aspect of contamination that involves active transmission of negative effects to others. And, when they judged explicitly identified “victims”, as contaminated, they may instead have focused on the aspect of contamination that involves the affected entity undergoing complete, continuous change. A second possibility is that because Kim’s status as “victim” / “perpetrator” was varied while keeping as much of the vignette constant as possible (which meant stipulating that “after the court proceedings, she received a lot of treatment,” and that she was “strongly affected”), that Kim might have appeared as a less-than-contaminated perpetrator than usual. Further research would be needed to examine whether people’s judgments of perpetrator contamination are fixed (e.g., based on inherent “evil”) or flexible (e.g., based on time served, receipt of treatment, expression of remorse).

Ultimately, Studies 2a-b demonstrated that regardless of status as harm-doer or harmed person, judgments of contamination most depended on the protagonist’s communication of complete and irreversible change. Importantly, also regardless of harm-doer or harmed status, the blame analyses across Studies 2a-b, revealed that the more participants judged Kim to be “tainted or contaminated”, in addition to lower injury ratings, the more she was rated as blameworthy. This finding further reveals that judgments of a person as “contaminated or tainted” are likely to be found alongside incriminating judgments, which has different normative implications for people who have harmed or who have been harmed. These results also further dissociate harm and impurity: The more perpetrators *or* victims were rated contaminated, the *more* they were rated as blameworthy. By contrast, the more they are viewed as harmed, the *less* they were rated as blameworthy.

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**5. Conclusions**

The present research indicates that impurity and harm are not domains that can be collapsed together if we adequately pay mind to the cognitive-linguistic underpinnings of the non-moral processes of contamination and injury at their roots. We demonstrated that there are differences in the domains of impurity and harm that emerge at the lexical level: people ignore the active/passive nature of contamination descriptors; this is not the case for injury. Then, informed by linguistics and prior work in psychological science, we identified the features of the contamination process that are important for contamination judgments: complete and irreversible affectedness. These concepts, conveyed through everyday speech in vignettes, altered people's contamination ratings, which in turn altered blame ratings. Not only are the harm and impurity domains clearly dissociable, they are directly linked with moral judgments that are consequential to people's lives.

We acknowledge that the concepts of harm and impurity share the major feature of negatively affecting their objects. However, as impurity describes the unique process of contamination, which has distinct functional patterns that include affecting an object in a total and irreversible way, this exceeds the impact of their shared features. As such, these domains ultimately dissociate. It is also crucial that contamination judgments about people who have done harm or been harmed were altered by intervening on inferences about complete and irreversible affectedness, with normatively significant downstream effects on blame. Practically, whether they have been a "victim" or "perpetrator", it could be socially significant for a person to communicate that *every* aspect of their life has been negatively affected or that they will *never* be the same again. As clinicians know, global, stable beliefs like these are maladaptive and good treatment targets (e.g., Ehlers & Clark, 2000); this research suggests they may be good to target

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for reasons beyond personal therapeutic well-being. How people who have been harmed or who have harmed others present themselves on these dimensions may matter for others' judgments of them as contaminated, and also for how they're judged as morally blameworthy agents.

## 7. ACKNOWLEDGMENTS: BLINDED FOR REVIEW

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Table 1. The conditions varied and items used in Studies 2a-b.

Complete	Years later, Kim noted that " <i>there was no part of herself that felt okay.</i> "
Partial	Years later, Kim noted that " <i>some parts of herself felt okay, but other parts did not.</i> "
Irreversible	Years later, Kim noted that she <i>would "never be the same again."</i>
Reversible	Years later, Kim noted that she <i>"was just starting to go back to how she used to be."</i>
Affects others	Years later, Kim noted that " <i>many people close to her were also affected.</i> "
Isolated effects	Years later, Kim noted that " <i>no one close to her seemed to be affected.</i> "

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Table 2. The items used in Studies 2a-b.

- (1) How resilient is Kim, compared to other people you know?
- (2) To what extent was Kim harmed or injured?
- (3) To what extent was Kim tainted or contaminated?
- (4) To what extent was Kim disrespected or disobeyed?
- (5) How much blame do you believe Kim deserves for the mugging?

*Note.* Question 1 on resilience was presented first as a distractor item followed by questions 2-4 in randomized order; question 5 on blame was presented on a separate screen last. Responses were provided using a Likert scale anchored at 0 = “Not at all” and 7 = “Very much” for questions 1-4; and 0 = “None at all” and 7 = “A lot” for question 5. A short demographic survey completed the study.

**Delineating impurity and harm through language:  
Conceptual semantics analysis and vignette studies**

**Supplementary Material**

**A. Study 1: Additional Analyses**

**B. Contaminate, taint, and the other verbs in the “Fill” class**

**C. Data from Exploratory Free Text Items**

## A. Study 1: Additional Analyses

A repeated-measures ANOVA was conducted with DESCRIPTOR type [ACTIVE / PASSIVE] entered as the between-subjects variable and ROLE [VICTIM / PERPETRATOR], RATING [CONTAMINATION / INJURY], and CRIME [SEXUAL (MOLESTATION, RAPE) / NONSEXUAL (STABBING, STRANGLING)] entered as the within-subjects variables. A four-way interaction of DESCRIPTOR, ROLE, RATING, & CRIME ( $F(1,124) = 13.09, p < .001$ , partial  $\eta^2 = .095$ ) was observed, described next.

*Victims.* In the ACTIVE participle condition, sexual crime victims were rated as more “contaminating” ( $M(SEM) = 1.94(.33)$ ) than nonsexual crimes victims ( $M(SEM) = 1.71(.29)$ ), by contrast, nonsexual crimes victims were rated more “injuring” ( $M(SEM) = 3.25(.27)$ ) than sexual crime victims ( $M(SEM) = 3.18(.29)$ ). In the PASSIVE participle condition (see Figure S1: right panel), sexual crime victims were rated as more “contaminated” ( $M(SEM) = 3.77(.33)$ ) than nonsexual crime victims ( $M(SEM) = 2.59(.29)$ ); whereas nonsexual crime victims were rated more “injured” than sexual crimes ( $M(SEM) = 6.08(.27)$ ) than sexual crime victims ( $M(SEM) = 5.80(.29)$ ).

*Perpetrators.* Sexual crime perpetrators were rated more “contaminating” ( $M(SEM) = 6.28(.23)$ ) than nonsexual crimes perpetrators ( $M(SEM) = 5.20(.28)$ ); and also more “injuring” (sexual crime perpetrators:  $M(SEM) = 5.98(.27)$ ; nonsexual crime perpetrators:  $M(SEM) = 5.71(.26)$ ). Sexual crime perpetrators were rated more “contaminated” than ( $M(SEM) = 5.44(.23)$ ) nonsexual crime victims ( $M(SEM) = 4.84(.28)$ ); and also more “injured”, also ratings of perpetrators as “injured” were very low overall (nonsexual crime perpetrator:  $M(SEM) = 1.89(.26)$ ; sexual crime perpetrators:  $M(SEM) = 2.05(.27)$ ).

Thus, the sexual nature of crimes increased the perception of contamination in particular. Participants rated perpetrators of sexual crimes as more “contaminating” and “contaminated” than perpetrators of nonsexual crimes; and, victims of sexual crimes were rated as more “contaminated” than victims of nonsexual crimes.

## **B. Contaminate, taint, and the other verbs in the “fill” class (VerbNet, Kipper-Schuler 2006)**

### **FILL 9.8**

adorn anoint bandage bathe bestrew bind blacktop blanket block  
blockade blot bombard carpet choke cloak clog clutter coat **contaminate**  
cover dam dapple deck decorate deluge dirty disguise dope dot douse  
drench edge embellish emblazon encircle encrust endow enrich entangle  
face festoon fill fleck flood frame garland garnish gild grace gum up  
inject inlay interlace interlard interleave intersperse interweave inundate  
lard lash line litter marinate mask mottle ornament pad panel pave plate  
plug prefill redecorate replenish repopulate resupply riddle ring ripple  
robe saturate sauce season shroud smother smut soak soil speckle  
splotch spot staff stipple stop up stud suffuse sully surround swaddle  
swathe **taint** tile tinge tool trim veil vein

### C. Data from Exploratory Free Text Items

Participants provided free text responses about “what they meant by “**contaminated/tainted**” when selected between 1 and 7 for “**contaminated/tainted**” on a scale for victims of crimes in earlier studies. The following are responses for the “**victim of rape**” item”. Items are colored in red that convey **continuous** or **complete** change.

I am using the term "contaminated/tainted" in the sense that one usually hears it when some people - usually men - refer to a victim of rape. Used most frequently when referring to a partner, girlfriend or wife who is a victim of rape. I think in their tiy minds they are blaming the victim and have some idiotic macho feeling that someone has "touched" HIS property. Often these men turn away from the woman victim as if she is somehow dirtied.

Rape victims, like molestation victims are percieved as dirty and/or the guilty ones as if they did something to cause it to happen.

I think **every aspect of the rape victims life is affected negatively** by rape.

Unwanted, shame.

No need the person is a victim therefore she is not contaminated/tainted

Mental/spiritual contamination as a result of rape.

An individual that has been raped **may never be able to get over it and the shadow of that event will affect their actions for the rest of their life.**

They may not feel clean or pure anymore

Someone who has been raped has not in any fashion been contaminated.

A person who is raped will deal with many emotions and these are some of the things each person will have to sort through.

This person will have experienced a feeling which would have made him/her feel as if they were useless and that what happen to them they did not deserve. The will have to deal with this disgusting feeling of what they experience night after night and may contribute to them developing low self esteem issues and soon going in to deep depression.

Same as before... penetration equals disease and dirt.

Something that is forced on you that is disgusting and unwanted, violently forced, against your will.

Rape is a **violation of every aspect of someone's existence. Nothing will be the same.** Open wounds will exist for a very long time. The victim will find it difficult to trust, to be open, to be comfortable. There will always be anxiety and worry.

The body may be contaminated by viruses, diseases, etc.

A person who is a victim of rape will most likely have their minds contaminated with dirty images of sex and feel dirty, especially if they have never engaged in sexual behavior. The person's mind might recall the rape incident each time they were about to engage in sexual activity willingly.

Well, you know, if there is sperm...

Trusting someone enough to get close again would be a tremendous challenge.

How hurt you feel inside, not physical.

When I say contaminated/tainted I mean it has been affected in a negative way.

This means that it has become impure.

Degraded.

Something that is **not as whole as it was before**

Can negatively impact relationships/ may blame themselves/ feel dirty/ they deserved it/ can ruin ability to trust

Something that is **no longer the same as before**, due to the rape.

This person will **never** be able to look at the opposite sex the same way without thinking about the rape

Contaminated means to be spoiled or perhaps unusable, or is only usable to a lesser degree than before.

Contaminated or tainted means that those attributes have been lessened somehow. That they may think about the rape and that "taints" their choices. They might not act themselves for the fears instilled in them by that rape.

A part of the person has been violated and **a part has been taken that they won't get back.**

Rape has a negative impact on a woman's mental health.

I think of contamination as **something that is made unusable** or bad. I don't consider a rape victim to be contaminated in that way. Rape has certainly harmed her in many ways but she is still a vital, uncontaminated human being.

How others may see the victim

In this case I think it means to be **spoiled without possibility of recovery**. You'll have a life afterwards, but parts of **you will not be the same again**.

**messed up in a way that is hard to fix**. changed physically.

It is possible that a victim of rape could obtain a physical illness from his/her rapist.

I think everything is contaminated in this case.

Well, although it's not a victim's fault that they were raped, if they were a virgin before, they are no longer a virgin. Which is a form of contamination/tainting, although those words maybe too strong a word, I would probably refer to it as innocence.

It puts a severe strain on the mind to accept

body can apply to contamination if the rapist has a disease. Otherwise, there is not spiritual or physical contamination or taint to a rape victim.

ruined

I guess has been infected badly which changes the person.

It can be literally or figuratively

Stained by an unfair stigma

I think everything is contaminated as the result of a rape. A rape is such an invasion of the mind and body that a person is **never the same as they were before**. When I think of the contamination aspect, I think of the heart being hardened and faith in goodness being destroyed.

Rape victims are often said to be defiled by their attackers. I see how this could be so, not as in, "She was raped, now she's dirty," but more of how the victim might feel contaminated by their attacker.

You would feel violated by being raped. It's hard to feel worthy of love.

Certainly rape victims have reported feeling unclean after a rape & that describes my idea of contamination.

A victim of rape has had their mental health contaminated/tainted - they will need much mental help or family help to recover from the trauma they have been put through. Their spirit (as in, their will, not "spirit" like ghost) is usually crushed as well during this violation.

The rapist has contaminated/tainted the purity, chastity, peace of mind and social status of the victim. The victim will have to work to overcome the mental obstacles and stigma of a rape.

I feel the same way about rape that I do about molestation. It is not the victim that is contaminated it is the suspect that is.

i dont think that they are contaminated because it is an act that was forced upon them victims of rape have been violated mind body and soul and **they will probably never get over this** . this is what i mean by contaminated

I would consider rape a violation of anyone's being. After which, the individual is going to feel dirty and contaminated by another persons desire and overpowerment. A violation of one's body is like leaving someone else's dirty laundry laying around.

Some people's perception of the victim might change after the attack.

harmed

not sure

Contaminated and tainted tend to be connected to the ideas of purity and chastity for women, which are absolute garbage ideas and part of a horrible double standard.

The water is contaminated means the water is impure. **not original**

I have no comment.

Something that has been changed and **can't be changed back**

When you are raped you are contaminated with evil from the other person doing the raping. Your mind and body has been violated. You will find it **hard to think and act the way you used to.**

I would say contaminated/tainted means to be violated in someway without consent.

A person's mental health, confidence, and wellbeing has been ruined.

It means that it is somehow made impure and **cannot become the way it was before.**

Contaminated means that those parts have become dirtied and bad.

I mean hurt in a non-physical way. As in psychologically damaged or somehow compromised.

something that is no longer pure because of it being poisoned.

It is an unwanted experience that changes/impacts the victim's body/soul/etc. and has **changed their life forever.**

I only said their social status is contaminated/tainted because their are stupid people who blame the victim, even though it is not their fault.

A victim of rape would be **forever** contaminated/tainted with the actions of the rapist.

Many people who are raped say that they just feel dirty afterwards, like they feel their rapists hands on them **long after it's over**.

Tainted in a **negative forever way**

It has nothing to do with the goodness of a person.

One of the worst contaminated/tainted survey topics. Not as physically harming, but an extremely damaging act causing immediate and **prolonged** mental and emotional side effects.

Moved from the baseline state toward the negative. #3 would depend on culture & perception.

**Means to me that this will stick with them. Injuries eventually heal but contamination may stick around for awhile.**

Contaminated refers to which mental effects will suffer because of the rape-- how it will affect her mentality and affect her outlook on the world.

Victims often report FEELING dirty and contaminated after a sexual assault, but they're not, really.

Something foreign or unnatural is brought into the specified item, usually unwanted.

In this case it's more the way society looks at a rape victim, that they are somewhat blamed sometimes for being raped. Or the victim themselves feels like they are being blamed.

Same as definition given for during "molestation" section.

Contaminated/tainted means that something is impure/bad.

Rape is the ultimate offense.

The way a person feel after the situation

Nope. Not the Victim's fault.

To be spoiled or invaded by something unnatural or unwanted

Something that the person treasures has been negatively affected. I think these are more emotional things rather than physical.

The connotation of others in society.

Again, I guess I mean "impure," which sounds terrible. It's **almost like something has changed that can never be reversed**; some dark thing has entered their life and **they won't ever be the same**. I don't mean that they are worthless or undesirable.

Like the last one, mental and unfair societal stigmas last.

These terms, to me, mean ruined or destroyed.

I don't think a person is contaminated when they are raped. I think they are definitely wounded, but they are not dirty or contaminated. They may feel that way after an assault.

Not as clean or pure as before the rape

Mental defects that **will probably last a lifetime**

I do not believe that a rape victim has been contaminated or tainted.

this is being contaminated or tainted

mental wounds

A change or shift in the natural quality, the original quality. This shift would be a negative one; a shift that is unpleasant to live with.

It contaminates one's thoughts, feelings, body and how one sees the world and themselves.

Contamination/tainted means to me that the person is no longer as good as they were.

Violated against the victim's will.

You would feel dirty, guilty, unclean, ruined, tainted, unpure.

I interpret contaminated/tainted as mentally wounded.

I imagine that a victim of rape would experience a great range of contamination. It may be physical, such as STDs or even an unwanted pregnancy. On the other hand, it can also contaminate and distort a person's mental state and world outlook as well.

**Everything will be affected.**

Takes a strong person to rise above this crime.

Same as I said before, contamination is emotional damage and could possibly be reversed throughout the person's life but not through physical healing.

Not really

Although the victim may feel that way, they would not be so.

Made unpure. Dirtied or stained.

Things that are dirty and ruined.

It is not just physical contamination. A victim of rape is affected in all areas and for a long time (if not forever).

Being raped would seem to affect current relationships with others like spouses in that the rape would taint the intimate relationship that married couples have.

Changing one's perception negatively, making something impure.

Same as other descriptions. Rape victims, as any of the past examples, should not be shunned by something they had no control over. Others should not consider them dirty or unworthy. This applies to all past categories.

A person that is raped is in no way contaminated or tainted

being raped can hurt people in every way possible

I mean all of those things have been hurt in some way.

no

Something that has been spoiled in some way.

Dirtied, not as pure as before

no

diminished

Changed in a bad way. Made unclean somehow.

Being the victim of a rape would taint and contaminate someone in many ways. Your mind, heart and soul would forever be tainted, such a horrific event would be impossible to forget.

It means to feel no longer in control of your own body.

Rape is an awful form of degradation, a personal attack on the mind and body

Means soiled or made dirty.

As I said in my previous answer, a person who is a crime victim is not "tainted" in any way. If a pedestrian was struck down in a crosswalk by a drunk driver he would not be "tainted." Rape is a crime, not a social choice, and for this reason the victim is not contaminated.

I believe the rape victim will be blamed by a large part of society for the rape and so will suffer a poisoned social status. Memories of the attack will infect their thoughts.

Being married to a rape victim I see rape as having contaminated my wife's idea of sex as something used too hurt her than something to be enjoyed.

Violated.

Damaged in a non-physical way.

Mind and mental health **ruined for a long period of time** due to thoughts of unwanted sexual acts against your will.

Tainted means affected by an undesirable quality.

No.

Contamination can occur both mentally and physically.

Same as before, anything not physically harmed is fair game.

**Abused or gone completely.**

Feeling as though you will **never be truly clean again**, mentally and physically.

Something that is impure, and changed from what it use to be, not necessarily physically but emotionally

On the issue of rape, contamination can mean many things. For a virgin to be raped, the offender contaminates the victim's body with their seed and takes their chastity. There are germs and other viruses and STDs that can be contracted by rape not to mention the mental damage it causes.

Something that is affected that was once pure or free from something bad.

Contaminated/tainted means to be impure, polluted, or dirty.

I don't think that people who are victims or crimes are contaminated or tainted in any way. To be contaminated or tainted means that whatever you have/have had happen to you can be passed to another person simply by association.

Some kind of purity loss

Tainted is when you do something of your own free will that paints you in a negative light.

In the instance of any sex crime, a victim might be able to get rid of the 'bad' (emotions). Again, as before, the 'bad' is mixed in with the 'good' that was there prior to the incident.

Dirtied.

Innocence and purity can be tainted by rape, the rapist takes contaminates your **whole being**.

Sullied

Again, I think of these words as describing **something that cannot be improved upon or fixed**. I want to be optimistic and not think of rape victims in this way.

Same as previous, being changed in a negative way through no fault of the person's own.

It makes you different. I become less loving and feel with hate, becoming tainted.

Nothing has been contaminated.

N/A

As I said before it's something that reduces a person's worth, value and dignity in the eyes of others.

n/a

Negatively affected.

They are victims of a crime. Not to blame.

Not clean.

Nothing to comment really, my answers suffice.

They have been violated against their will and it **leaves a mark** on their psyche.

I think it means that something that's not physical has been changed in a negative way.

Person might feel dirty

I think people feel dirty after they have been raped. There is a social stigma that is attached to it that is felt more or less depending on the religion or cultural identity you have. And people are often made to feel that they have caused it in some way.

Mixing of more than one type of thing.

I take it to mean some kind of character or worthiness demerit, the concept of the woman being less desirable as a marriage prospect, for example, because her goods have been sampled.

Same

It means which cannot be pured again by washing or cleaning or praying

To make worsen. To weaken. To break down.

It's not any good now.

Tarnished or largely affected in a negative way by the rape.

It is when something has been harmed but not physically.

After a sexual assault, your body is contaminated temporarily by the sweat, spit or other bodily fluids of the attacker. However, your mind is contaminated by the memory and the trauma which pervades your thoughts and reactions to certain situations. The **experience stays in the back of your mind for the rest of your life** and cannot be washed away by counseling or by medication. THAT is what I mean by contaminated/tainted.

In my opinion, and in this particular case I think that contaminated means something that has been harmed/disturbed.

Dirtied; tainted.

A person who was raped may suffer as far as their reputation goes, because a lot of people think that those who were raped (especially women) are crying wolf and weren't actually raped... Which is very, very sad.

Again, to me contaminated/tainted means that **ones sense of self has been taken away**. They are **never able to look at some situations the same way ever again**. Like a piece of your soul being ripped out.

Out of respect for victims, I can't speak on their behalf.

Made impure.

In the case of rape, the body may be contaminated if an STD is contracted.

A person that has been raped often has their reputation tainted. Even though they were the victim people treat them like it was their fault. They might be afraid to report the rape because of the fear of being called a slut or a liar. Their spirit and soul are affected because they blame themselves for what has happened. The person's relationship with their spouse changes because of the violation. The person may avoid being intimate with their partner after the attack. They might also be afraid of meeting people or going places alone.

Same as my answer for the first question about molestation. Not the words I would choose.

Rape is violent and about domination and control...it taints the victim's view of themselves, of sexuality, and of trust in others. It often taints relationships because the partner either feels that the victim is now "damaged goods" or the partner cannot deal with the victim's emotional upsets, fears, and distrust.

I don't feel a victim of rape has been contaminated or tainted.

Making something dirty.

Tainted is more a **long-term effect** on the body / mind.

Being forced into submitting to sexual activity is horrific. It should be a choice how we share our bodies and really taints the idea of the control we should have over our sexuality. It also might taint a person's worth or feelings of how they feel they can express their love. I cannot imagine a much more horrific way a person could be tainted and **change their whole identity** because of that experience.

By this event occurring, the **victim's life will forever be altered**. The victim will have to carry the burden of the memory as well the burden placed upon them by society. Family and loved ones will **always remember** the event, and while they may feel pity, their actions and feelings may only cause the victim more suffering.

It's caused a disturbance in both the victim's physical and mental well-being whereas just being injured/wounded would be purely physical.

SAME.

I think it means affected by.

I don't feel that rape "contaminates" anything in the sense that I don't think rape victims have somehow been sullied or dirtied. It's very serious and hurtful, but I think it's equally awful to accuse someone of being "tainted" because of something out of their control. Something they didn't choose.

It would affect how a rape victim views the world.

They may go through a lot of mental anguish. Also their body may need to heal.

I think it means **something that you can never really wash away**, it is **always going to be there** no matter how many times you shower

"Unclean" in the eyes of whom? My opinion means little as to what the victim may feel.

The above words mean something which is spoiled by the wicked or bad actions of others.

The victim of rape's body is contaminated. ex someone is raped and gets HIV or their blood is in their blood against their will. it is the worst crime.

I mean it in both the physical way of medical contamination from harm to the physical body and in the way of **forever changing a persons life**.

No one is contaminated by rape. It's not their fault.

In this instance I mean mentally contaminated more than anything. The victim's mind perceives themselves as contaminated, often they consider their own goodness or morality contaminated, though I did not list those here because that is not my personal opinion.

It has **long lasting effects into the future**.

Same as before

No

As viewed by society, many would see rape as carrying a stigma or questions.

Same as before.

Rape victims have a fear of trusting someone else. Their minds have done a quick turn down a long, dark corridor that **takes a long time to get through.**

Again the thought that a victim would be considered tainted is abhorrent.

I do not consider a rape victim contaminated. or somehow dirtied. Their honor is not affected by rape.

Victims of rape are not to blame for what has happened to them, so in no way is their actual morality, purity, etc. diminished. However, there will always be people who will say that rape victims must have been engaging in certain behaviors or dressing a certain way to end up getting raped. There may also be people who will refuse to believe that someone was actually raped. Due to these factors, rape victims may lose the loyalty or friends and family members and lose respect from other people as well. Some individuals in society will see rape as a mark against the victims that **ruins the victims' reputations forever.**

I don't think they have been contaminated/tainted.

Spread of disease, mental damage

In this case, injured and contaminated are really similar. Any detriment can be injured, or can be considered damaged or contaminated with this scenario.

No longer clean or pure. Used and dirty.

Sense of safety, self respect are gone.

To me the words connote spoiled, or ruined.

I mean that something horrible has been done to them and has taken away that person's feeling of safety and security in their body and in the world. The victim will most likely have a difficult time seeing themselves, including their body, in the same way

It would **change everything about the person.**

This is how I would feel if I were a victim of rape. That my mind and body had been contaminated by someone, and it would take a lot to wash that feeling off. Like I would never feel the same. I wouldn't ever be as open or comfortable **ever again.**

That its former state has been harmed

Unless the victim of rape was contaminated or tainted in that they received an STD as part of the rape, then I don't consider any part of them contaminated or tainted. Tainted and contaminated to me means hazardous and harmful to someone else and a victim of a rape, unless then contracted an STD during the incident, would not be health hazardous.

What the person most likely feels is dirty, or wrong.

No

I think these qualities are ones perceived by others than the victim. They are the views of much of society in regard to victims of rape.

Hatred will develop.

I don't view it as the person is dirty or tainted but more mean it towards their well being. I think in any serious circumstance this happens.

Dirty or unclean.

When someone it raped they have had someone do things to them. They don't know where the other person has been.

No.

**Life will never be the same**, these ideals have been changed for the worse.

Once again almost **every aspect of a rape victims life is tainted** even if others don't see it that way. A victims body was attacked but so was **every other part of their life**.

In this case, as before, a rape victim may feel contaminated/tainted--she (most likely a she) may feel her spirit and soul sag. Tainted is like a Scarlet A--whatever is tainted is somehow lesser and worse than before, not as pure. No fault of the victim of course, but she may feel that way or people may judge her that way. (Hopefully not, but they may say she was at fault-wrong place, wrong outfit, etc)

how it affects ones mental/spirit

My personal view is this person will be affected by this event but not tainted nor contaminated.

The feeling of helplessness and the putting up of mental walls toward others.

I don't really believe a victim of rape is contaminated in the traditional sense. The problem for many is they feel contaminated which can be just as hard of an issue to deal with. Also like previous definitions I have stated by contaminate I also mean th issues a victim will have to deal with **will affect them for a long time and require time** and attention to help with the issues.

As a woman who was raped, I can say that as much as I washed and showered and scrubbed, I felt contaminated. It was a very long time before I could get in the shower

and just wash. Explaining that feeling of being tainted in this way is almost impossible but - when I was younger, I struggled with the 'purity/goodness/soul/chastity thing. That manifested in my feelings of shame and guilt, and it took me a **very long time** to recognize that the shame and guilt did not belong to me but to the perpetrator.

Again this a sad offense that ends up being the burden of the victim. So much is contaminated for this person. The person is not contaminated but all sense of right and wrong is.

No doubt a little more cynical.

Contaminated and tainted in the category of rape is mostly how the victim's mind perceives it and how others in society judge the victim with contaminated thoughts.

**Nothing would be the same.** The victim's body is physically harmed but the severity of what it would do to the mental health would be much worse

I would not consider a person contaminated or tainted but they may see themselves that way.

There would be psychological effects; the victim should have help working through the issues.

Victims of rape are unfairly tainted by the act itself, more so than with molestation the body is affected.

***FILL 9.8*** *adorn, anoint, bathe,*  
*coat, contaminate, cover, soil,*  
*sully, surround, swathe, taint*