An exploration of psychological and physical injury schemas in civil cases

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Summary
Civil plaintiffs often seek compensation for their psychological injuries. Yet little is known about jurors' preconceived notions (or schemas) for a prospective plaintiff's pain and suffering. The present studies examined (a) whether jurors have psychological injury schemas (Studies 1 and 2), (b) whether their existence and development vary by the type of civil case (Studies 1 and 2) or its severity (Study 2), and (c) how psychological injury schemas compare with physical injury schemas on a number of theoretically and legally relevant judgments (e.g., injury severity, availability, and plaintiff credibility; Study 2). Study 1 (N = 233) presented undergraduate mock jurors with 2 negligence incidents (car accident and slip and fall) and 2 intentional tort incidents (sexual assault and kidnapping) and asked them to report the typical incident and injuries that would result from the defendant's conduct. Results supported the sparse existence of psychological injury schemas but found that they were more developed in the kidnapping and sexual assault incidents than in the car accident and slip and fall incidents. Study 2 (N = 288) additionally manipulated incident schema severity (mild vs. severe) while having participants separately report and rate their psychological and physical injury schemas on judgments of legal and theoretical interest. Results indicated that although mock jurors' psychological injury schemas contained fewer injuries than their physical injury schemas, the reported psychological injuries were rated as more severe than physical injuries. We discuss how schemas may underlie the disparate treatment of psychological and physical injuries by legal decision-makers.

KEYWORDS
civil law, juror decision-making, physical injury, psychological injury, schemas

1 INTRODUCTION
The experience of mental distress is an unavoidable consequence of human existence. Unfortunately, some individuals experience additional psychological injury due to the wrongful conduct of another (Stockdale, Logan, & Weston, 2009) and seek monetary compensation as plaintiffs in standard negligence claims (e.g., car accident) or stand-alone civil claims (e.g., intentional infliction of emotional distress). Specifically, these plaintiffs allege that the defendant's actions (or inactions) resulted in their pain and suffering, which can range from mild (e.g., embarrassment and humiliation) to severe (e.g., major depressive disorder and panic disorder; Kovera & Cass, 2002).

Although pain and suffering claims actually result in significant compensatory damage awards (see the National Center for State Courts, 2005), surprisingly little is known about how jurors perceive psychological injuries and how these perceptions may differ by civil action (e.g., negligence vs. intentional torts). These perceptions and resulting legal judgments are likely governed, at least in part, by jurors' preconceived notions (or schemas) for the typical conduct and injuries they expect a victim to suffer in such cases (Vallano, 2012; Vallano, 2013; Vallano, Winter, & Charman, 2013). Indeed, research indicates that jurors have specific schemas or prototypes for wrongful conduct that affect their legal decisions (in criminal cases—Skeem & Golding, 2001, prototypes; V. L. Smith, 1991, 1993, schemas; Wiener, Richmond, Seib, Rauch, & Hackney, 2002, prototypes; in civil cases—Hart, Evans, Wissler, Feehan, & Saks, 1997, schemas; Huntley & Costanzo, 2003, prototypes; Popovich et al., 1995, prototypes).

Few studies have specifically investigated whether civil cases evoke images of the typical injuries that may result—that is, jurors' injury schemas. Even less empirical guidance exists regarding whether jurors specifically expect psychological injuries to result in civil cases. Additionally important are legal decision-makers' relative perceptions...
of psychological versus physical injuries, as differing perceptions may underlie their disparate treatment within the legal system (see D. Smith, 2009). Perhaps the oft-expressed skepticism regarding the severity and credibility of a plaintiff’s psychological injury claim is rooted in beliefs held at the schema level. The present study sought to fill these gaps by instructing participants to visualize, record, and evaluate their injury schemas for four commonly litigated civil incidents known to result in both psychological and physical injury: two negligence (car accident and slip and fall) and two intentional torts (kidnapping and sexual assault). We operationalized schema existence as the presence of any injury and schema development as the number of injuries within jurors’ schemas.

1.1 Do jurors have psychological injury schemas?

One of the few direct examinations of this issue suggests that jurors have injury schemas, but they primarily contain physical injuries (Hart et al., 1997). Hart and colleagues asked participants to visualize and record the typical conduct and injuries they would expect to occur in four civil negligence incidents that can result in both psychological and physical injury: car accident, slip and fall, medical malpractice, and product liability. Content analyses revealed that participants’ injury schemas almost exclusively contained physical injuries, with less than 1% making any mention of psychological injury.

As Hart and colleagues solely utilized negligence cases, perhaps stronger evidence of psychological injury schemas exists in other civil cases that predominantly result in mental distress such as sexual harassment (e.g., Huntley & Costanzo, 2003; Schneider, Swan, & Fitzgerald, 1997). Specifically, Popovich et al. (1995) asked undergraduates to visualize and record the typical harassing conduct and its resulting consequences to the victim. Content analyses revealed that only 25% of participants’ scripts mentioned any “emotional response by the victim,” suggesting poorly developed psychological injury schemas.

1.2 Do psychological injury schemas vary by incident type?

This research suggests that civil jurors either do not have psychological injury schemas or that these schemas are underdeveloped. However, this may be a premature conclusion because certain incidents may be less likely to activate images of mental distress than others. Specifically, perhaps Hart and colleagues’ incidents were less strongly associated with psychological than physical injury and therefore less frequently reported. This may be especially true for the products liability and medical malpractice incidents that often receive extensive media coverage due to the oft-egregious conduct resulting in extreme physical injury (see Cefaratti v. Aranow, 2016). Thus, participants’ predominant reporting of physical vs. psychological injuries may instead speak to their relative accessibility in a given case. This notion is consistent with the availability heuristic stating that judgments regarding the frequency of an occurrence (e.g., the likelihood a plaintiff would suffer psychological injury) are impacted by the ease in which they come to mind (Tversky & Kahneman, 1973). Therefore, the present study replaced the medical malpractice and products liability incidents with two intentional torts (sexual assault and kidnapping). Although both torts can produce physical and psychological injury, their oft-classification as dignitary torts reflects the fundamental harm they cause to a person’s dignity (Hebert, 2015; Wells, 2012), therefore making these torts more likely to conjure images of psychological injury.

It is additionally possible that the prompts used to elicit jurors’ injury schemas affect their displayed existence and development. Specifically, Hart and colleagues’ general prompt to report the typical injuries may not have been specific enough to activate participants’ psychological injury schemas, particularly if they are weakly associated with certain incidents. This idea is consistent with retrieval cue theory (Tulving, 1974) that emphasizes the sensitivity of memory reports to the type and quality of prompts used at retrieval (Jonker, Seli, & MacLeod, 2012).

Taken together, this research suggests that jurors likely have general injury schemas that contain specific psychological and physical injury schemas—yet their reporting likely depends upon the type of incident and type of prompt. Further support for these propositions comes from general schema and prototype theory (Pansky & Koriat, 2004; Rogers & Patterson, 2007; Rosch, 1976). Specifically, individuals hold basic-level categorical representations of a concept that contain more specific subcategories (in the form of prototypes and/or exemplars), with some more or less representative of a given category (known as graded membership; Rouder & Ratcliff, 2006; Vanpaemel & Storms, 2008). Although individuals frequently represent concepts as basic-level categories (e.g., chair), these general categories often contain more specific subcategories (e.g., desk chairs—office, home) varying in accessibility. Applied to the present research, jurors likely have basic-level representations of the typical injuries that contain more specific representations of psychological and physical injuries. Whether subordinate psychological injury schemas will be specifically recalled—and how deeply—depends upon their base level of accessibility (how strongly they are associated with an incident) and the specific prompt used to elicit their reporting.

1.3 How do psychological injury schemas compare with physical injury schemas?

Although jurors likely have psychological injury schemas, they may be weakly associated with certain civil cases and therefore underrepresented or underreported relative to physical injuries. But it is additionally possible that legal decision-makers hold corresponding beliefs that psychological injuries are of low severity (and not severe enough to warrant reporting) and/or have concerns over their legitimacy.

There is evidence that legal decision-makers believe plaintiffs experience “garden variety” psychological injuries of questionable credibility compared with their physically injured counterparts (Restatement (Third) of Torts, 2009; Ware v. ANW Special Educational Coop., 2008). Historically, these beliefs have made it difficult for plaintiffs to initiate psychological injury claims as many states have an “impact rule” that prohibits emotional distress claims unless accompanied by physical injury or the victim was in the “zone of danger” whereby physical injury was likely (Grey, 2011; Perrin & Sales, 1993). Yet even legally recoverable emotional distress claims remain difficult for victims to obtain adequate compensation. For example, many
states have adopted noneconomic damage award caps in medical malpractice cases that limit compensation for (predominantly) mental anguish, largely due to the concern of frivolous lawsuits and excessive damage awards (Kritzer, Liu, & Vidmar, 2014; Saks, Hollinger, Wissler, Evans, & Hart, 1997; Vidmar, Gross, & Rose, 1998). And research suggests that jurors sometimes devalue psychological injury, as evidenced by wide-ranging and unreasonably low damage awards (Diamond & Salerno, 2013; Hans & Vadino, 2007).

The disparate treatment of psychological and physical injuries may stem from differing perceptions at the schema level. After all, the more concrete and visible nature of physical injuries generally makes them more amenable to behavioral observation and objective testing (e.g., x-rays and brain scans; Young, 2008). Conversely, the intangible nature of psychological injury makes them more difficult to verify and therefore reliant on self-report (Grey, 2015). These differences are reflected in their descriptions within psychiatry and psychology. The Diagnostic and Statistical Manual of Mental Disorders, which provides a comprehensive description of clinical disorders, describes a psychological disorder as a “clinically significant disturbance in an individual’s cognition, emotion regulation, or behavior,” p. 20). More relevant to the present study is the distinction between these injury types provided by the legal community. The Restatement (Third) of Torts (2009), an influential treatise summarizing the American common law of torts, states that “usually the existence of bodily harm can be verified objectively while the existence and severity of emotional harm is normally dependent on self-report” § 45). Thus, the more concrete nature of physical injuries may make them more available—easier to visualize and verbalize—as compared with psychological injuries, which could facilitate the belief that psychological injuries are less likely to occur—and therefore less severe and credible—than physical injuries.

Study 1 examined the presence and extent of mock jurors’ psychological injury schemas for varying civil incidents. Specifically, we sought to replicate and extend Hart et al. (1997) by empirically establishing that participants’ injury schemas in these new intentional tort cases (kidnapping and sexual assault) were in fact more psychological in nature as compared to the negligence cases (car accident and slip and fall). Therefore, Study 1 asked participants to visualize and record their injury schemas for each incident, rate their severity, and classify their injury schemas as physical or psychological. It was hypothesized that participants’ injury schemas would sparsely contain psychological injuries but that psychological injuries would be more frequently reported and rated as more severe in the tort incidents.

2 | METHOD

2.1 | Participants

Participants (N = 233) were recruited from the psychology subject pool at a northeastern university and completed the study for course credit. Eighteen participants did not respond to one or more of the primary measures, leaving 215 participants for data analysis. Most participants were White (86%), female (62%), with mean (M)age = 18.46 (standard deviation [SD] = 1.25).

2.2 | Materials and procedure

Participants accessed an online database and were presented with four civil incident prompts: two negligence (car accident and slip and fall) and two intentional dignitary torts (kidnapping1 and sexual assault). Incidents were counterbalanced whereby each participant received one of 24 possible incident orders.

As in Hart and colleagues, participants were first instructed to “visualize the typical [car accident] [slip and fall] [kidnapping] [sexual assault] incident” and then “describe the circumstances that led to the incident and the injured person.” This constituted their incident schema. Participants subsequently rated its severity (1 = not severe, 7 = very severe). Participants were then instructed to “visualize the injuries that the typical victim would likely suffer in this incident,” describe those injuries, and rate its severity (1 = not severe, 7 = very severe). This constituted their injury schema. Next, participants self-classified whether their injury schemas contained only physical injuries, mostly physical injuries, only psychological injuries, mostly psychological injuries, or an equal amount of physical and psychological injuries. Last, participants rated the likelihood that the incident would actually result in (a) physical and (b) psychological injury, respectively (1 = not likely, 7 = very likely). Participants underwent the identical procedure for all four incidents. After completing the final incident, participants completed a demographic questionnaire additionally assessing whether they had been a witness or victim of the four civil incidents.

2.3 | Coding injury reports

Two research assistants (hereafter “scorers”) independently classified participants’ injury schema descriptions. To maintain consistency, each scorer utilized a coding sheet created by the first author to determine the total number and type of injuries within participants’ injury schema descriptions. Inter-rater reliability was assessed via kappa coefficients between the scorers’ injury classifications for the total number of injuries, number of psychological injuries, and number of physical injuries. The resulting coefficients ranged from .70 to .98 indicating strong inter-rater reliability (Cohen, 1988).

First, each scorer examined each segment—a word or series of words used by a participant to indicate an injury. Second, each scorer determined whether the segment constituted an injury, defined as “thoughts, feelings, or behavioral manifestations that were a direct consequence of the defendant’s conduct” (Schultz, 2009; Young, 2008). Any difficult-to-classify segments that could not be resolved via discussion with the first author were designated as subjective interpretations. Third, each scorer further classified an injury as either physical or psychological2 and specifically noted the classification of the first reported injury. The coding sheet defined and distinguished between psychological and physical injuries in a manner generally

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1We acknowledge the legal distinction between false imprisonment and kidnapping but believe that the two cases are sufficiently similar to justify the use of the label “kidnapping” instead of false imprisonment to obtain a more accurate assessment of mock jurors’ schemas.

2Soft-tissue injuries were classified as physical injuries because they can be diagnosed by functional magnetic resonance imaging or magnetic resonance imaging data (see Johansson, 2006) and to maintain consistency with existing legal and psychological classifications of these injuries.
consistent with existing legal and psychological conceptualizations (e.g., the Restatement of Torts and the Diagnostic and Statistical Manual of Mental Disorders-5). Specifically, injuries were classified as physical if they could be directly observed or verified through visible symptomatology (e.g., bruising and swelling) and/or medical testing (e.g., x-ray and brain scan) and not solely reliant on self-report. Examples included cuts, broken limbs, and paralysis. Conversely, injuries were classified as psychological if they could not be directly observed or verified and reliant on self-report. Examples included embarrassment, anxiety, and depression. Each scorer utilized a running tally to record participants’ specific physical and psychological injuries to maintain consistency regarding their classification.

3 | RESULTS AND DISCUSSION

3.1 | Overview

The following results stem from repeated measures analyses of variance (ANOVAs) with the order in which participants received the incidents as a between-participants variable.

3.2 | Incident severity

We first examined participants' severity ratings of their incident schema descriptions. A repeated measures ANOVA comparing participants' incident severity ratings across incidents revealed an incident type main effect, multivariate $F(3, 184) = 196.67, p < .001$, partial $\eta^2 = .76$. Pairwise comparisons adjusting for family wise error ($\alpha = .0083$) revealed that participants rated their kidnapping incident schema ($M = 5.75, SD = 1.17$) as significantly more severe than their car accident ($M = 4.72, SD = 1.58$) and slip and fall schemas ($M = 3.12, SD = 1.25$) t$(210) = 7.94, 23.88, p's < .001$. Similarly, participants rated their sexual assault schema ($M = 5.58, SD = 1.18$) as more severe than their car accident and slip and fall schemas, $t$(212) = 7.23, 22.40, $p's < .001$. Participants' ratings for their sexual assault and kidnapping schemas were not significantly different, $t$(210) = 2.07, $p = .04$. In sum, when only provided with bare-bones incident prompts, participants held more severe conceptions for the conduct in the intentional torts (kidnapping and sexual assault) than in the negligence (car accident and slip and fall) incidents.

3.3 | Injury severity

We then examined participants' severity ratings of their injury schema descriptions. A repeated measures ANOVA comparing participants' injury severity ratings across incidents revealed an incident type main effect, multivariate $F(3, 186) = 92.53, p < .001$, partial $\eta^2 = .60$. Pairwise comparisons ($\alpha = .0083$) revealed that participants rated their sexual assault injury schema ($M = 5.47, SD = 1.32$) as significantly more severe than their car accident ($M = 4.87, SD = 1.72$) and slip and fall schemas ($M = 3.41, SD = 1.39$), $t$(213) = 4.24, 16.94, $p's < .001$. Participants also rated their kidnapping injury schema ($M = 5.24, SD = 1.63$) as significantly more severe than their car accident and slip and fall schemas, $t$(212) = 2.58, 13.22, $p's < .005$. Participants' injury schema severity ratings for the sexual assault and kidnapping incidents were not significantly different, $t$(211) = 1.92, $p = .06$. Thus, participants also held more severe conceptions for the injuries in the intentional torts versus the negligence incidents.

3.4 | Did injury schemas contain psychological injury?

Descriptive content analyses were conducted on participants’ actual injury schemas for the number of total injuries, number of physical injuries, and type of first injury reported (a measure of injury accessibility). Across incidents, participants’ injury schemas primarily contained physical injuries (74%) but also contained a sizable minority of psychological injuries (26%). And 44% of participants’ injury schemas contained at least one psychological injury. The first injury that participants reported was classified as physical 79% of the time. These results suggest that although participants’ injury schemas contained psychological injury, they were largely underrepresented and underreported—as well as weakly accessible—relative to physical injuries.

3.5 | Did injury schemas vary by incident type?

We first examined participants’ self-classifications of their injury schemas followed by the number of psychological and physical injuries they actually reported by incident.

3.5.1 | Car accident

A majority of participants (69%) rated their injury schemas as containing only or mostly physical injuries (22% and 47%, respectively), whereas a significant minority of participants rated their injury schemas as containing an equal amount of physical and psychological injuries (27%; see Table 1). The remaining participants (4%) classified their injury schemas as containing mostly or only psychological injuries (3% and 1%, respectively). A repeated measures ANOVA revealed that participants believed it was more likely that the typical car accident would result in physical ($M = 5.60, SD = 1.45$) than psychological injury ($M = 4.13, SD = 1.59$), multivariate $F(1, 191) = 160.61, p < .001$, partial $\eta^2 = .46$.

Content analyses revealed that participants’ injury schemas contained four injuries ($M = 4.06, SD = 2.10$). A repeated measures ANOVA revealed that participants’ injury schemas contained significantly more physical ($M = 3.47, SD = 1.94$) than psychological injuries.
TABLE 1  Participants’ classifications of their injury schemas as physical or psychological by incident

<table>
<thead>
<tr>
<th>Incident type</th>
<th>% of physical injuries</th>
<th>% of psychological injuries</th>
<th>Equal amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car accident</td>
<td>69</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Slip and fall</td>
<td>92</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Kidnapping</td>
<td>12</td>
<td>52</td>
<td>36</td>
</tr>
<tr>
<td>Sexual assault</td>
<td>6</td>
<td>53</td>
<td>41</td>
</tr>
</tbody>
</table>

Note. These percentages are based upon participants’ self-classifications of their injury schemas. The category % of physical (psychological) injuries combines those who rated their injury schemas as containing only or mostly physical (psychological) injuries. The category Equal amount refers to participants who rated their injury schemas as containing an equal amount of physical and psychological injuries.

(M = .53, SD = .96), multivariate F(1, 189) = 359.01, p < .001, partial η² = .66 (see Table 2). Similarly, 87% of all injuries contained within participants’ injury schemas were classified as physical. The first injury mentioned by participants was almost always classified as physical (97%). However, 34% of participants’ injury schemas contained at least one psychological injury. These results revealed that car accidents primarily evoked physical injury.

3.5.2  | Slip and fall

A majority of participants (92%) rated their injury schemas as containing only or mostly physical injuries (58% and 34%, respectively). The remaining participants classified their injury schemas as containing only or mostly psychological injuries (4%; 3% and 1%, respectively) or an equal amount of physical and psychological injuries (4%). A repeated measures ANOVA revealed that participants believed it was more likely that the typical slip and fall would result in physical (M = 4.66, SD = 1.64) than psychological injury (M = 2.04, SD = 1.18), multivariate F(1, 189) = 550.49, p < .001, partial η² = .74.

Content analyses revealed that participants’ injury schemas contained three injuries (M = 3.02, SD = 1.51). A repeated measures ANOVA revealed that participants’ injury schemas contained significantly more physical (M = 2.76, SD = 1.51) than psychological injuries (M = .22, SD = .49), multivariate F(1, 190) = 488.12, p < .001, partial η² = .72. Similarly, 93% of all injuries contained within participants’ injury schemas were almost always classified as physical. The first injury mentioned by participants was typically physical (96%). However, 19% of participants’ injury schemas contained at least one psychological injury. It appears that the slip and fall incident almost exclusively evoked images of physical injuries.

TABLE 2  Number and type of injuries reported by incident (standard deviation in parentheses)

<table>
<thead>
<tr>
<th>Incident type</th>
<th>Physical injuries</th>
<th>Psychological injuries</th>
<th>Total injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car accident</td>
<td>3.47 (1.94)a</td>
<td>0.53 (0.96)a</td>
<td>4.06 (2.10)</td>
</tr>
<tr>
<td>Slip and fall</td>
<td>2.76 (1.51)b</td>
<td>0.22 (0.49)b</td>
<td>3.02 (1.51)</td>
</tr>
<tr>
<td>Kidnapping</td>
<td>1.32 (1.32)</td>
<td>1.16 (1.31)</td>
<td>2.62 (1.87)</td>
</tr>
<tr>
<td>Sexual assault</td>
<td>1.55 (1.41)</td>
<td>1.35 (1.48)</td>
<td>3.03 (2.10)</td>
</tr>
</tbody>
</table>

Note. Means with the same superscripts indicate significant differences where p < .0084.

3.5.3  | Kidnapping

A majority of participants (52%) rated their injury schemas as containing mostly or only psychological injuries (46% and 6%, respectively), whereas fewer participants rated their injury schemas as containing an equal amount of psychological and physical injuries (36%). The remaining participants (12%) classified their injury schemas as containing mostly or only physical injuries (7% and 5%, respectively). A repeated measures ANOVA revealed that participants believed it was more likely that the typical kidnapping would result in psychological (M = 6.58, SD = 0.79) than physical injury (M = 4.62, SD = 1.53), multivariate F(1, 191) = 335.69, p < .001, partial η² = .64.

Content analyses revealed that participants’ injury schemas contained two and a half injuries (M = 2.62, SD = 1.87). A repeated measures ANOVA revealed that participants’ injury schemas contained a similar number of physical (M = 1.32, SD = 1.32) and psychological injuries (M = 1.16, SD = 1.31), multivariate F(1, 187) = 1.25, p = .27. Likewise, 53% of all injuries contained within participants’ injury schemas were classified as physical. The first injury mentioned by participants was most frequently classified as physical (62%). However, 61% of participants’ injury schemas contained at least one psychological injury. In contrast to the negligence incidents, the kidnapping incident evoked more images of psychological injury, at a comparable degree to physical injury.

3.5.4  | Sexual assault

A majority of participants (53%) rated their injury schemas as containing mostly or only psychological injuries (47% and 6%, respectively), whereas a significant percentage rated their injury schemas as containing an equal amount of psychological and physical injuries (41%). The remaining participants (6%) rated their injury schemas as containing only or mostly physical injuries (3% and 3%, respectively). A repeated measures ANOVA revealed that participants believed it was more likely that the typical sexual assault would result in psychological (M = 6.67, SD = 0.65) than physical injury (M = 4.79, SD = 1.48), multivariate F(1, 190) = 338.80, p < .001, partial η² = .64.

Content analyses revealed that participants’ injury schemas contained three injuries (M = 3.03, SD = 2.10). A repeated measures ANOVA revealed that these injury schemas contained a similar number of physical (M = 1.55, SD = 1.41) and psychological injuries (M = 1.35, SD = 1.48), multivariate F(1, 182) = 2.75, p = .10. Similarly, 53% of all injuries contained within participants’ injury schemas were classified as physical. The first injury mentioned by participants was most frequently classified as physical (62%). However, 65% of participants’ injury schemas contained at least one psychological injury. In contrast to the negligence incidents, the sexual assault incident evoked more images of psychological injury, at a comparable degree to physical injury.

3.6  | Prior experience with civil incidents

A majority of participants reported being a victim or witness of a car accident (72%) or slip and fall (70%). Few participants reported being a victim or witness of a sexual assault (5%) or kidnapping (n = 1). Independent samples t tests on participants’ car accident and slip and fall schemas revealed that participants with prior experience rated their
incident and injury schemas as less severe than participants without prior experience, \( t(212) = 1.99, 2.24, p's = .005, .05 \), respectively (see Table 3). Additionally, participants claiming prior experience with the car accident believed it was significantly or marginally less likely to result in physical and psychological injuries than participants without prior experience, \( t(213) = 2.48, 1.91, p's = .01, .06 \), respectively, and participants claiming prior experience with the slip and fall reported fewer total and fewer physical injuries than participants without prior experience, \( t(212) = 2.24, p = .03 \). These results indicate that participants’ schemas are affected by direct experience, which is unsurprising because schemas consist of direct experience (Bartlett, 1932; Rumelhart, 1980). These results additionally reveal that schemas exist in the absence of direct experience, as the incidents where participants reported little experience (kidnapping and sexual assault) evinced the more developed (and severe) schemas.

### 3.7 Summary and conclusions

Study 1 confirmed that mock jurors exhibited psychological injury schemas whose existence and development varied by incident. Although participants reported few psychological injuries overall, these preconceived notions were more developed (and on par with physical injury) in the intentional tort (vs. negligence) incidents. The fact that participants’ incident and injury schemas were correspondingly rated as more severe in the tort (vs. negligence) incidents also underscores that the severity of the envisioned incident ostensibly guided the severity of the envisioned injuries. It is additionally noteworthy that participants’ self-classifications of their injury schemas were sometimes discrepant from the actual injury types contained within their schemas. Specifically, participants rated their kidnapping and sexual assault injury schemas as more psychological than physical yet actually reported a similar number of these injury types in both incidents. In sum, these data confirm the predicted pattern—participants’ negligence injury schemas were more physically oriented, whereas participants’ tort injury schemas were more psychologically oriented.

### 4 STUDY 2

Study 1 revealed that although participants evinced psychological injury schemas, they were not well-developed. One possible reason may be that participants primarily visualized mild rather than severe incidents. This was particularly true for the negligence incidents, where participants reported relatively low incident severity ratings. To account for this possibility, Study 2 examined whether incident severity influenced injury schema existence and development. We hypothesized that severe (vs. mild) incidents would produce a larger number of psychological injuries—particularly for the less psychologically oriented car accident and slip and fall incidents.

Another reason that psychological injury schemas may have appeared underrepresented is because participants were not prompted to report these injuries. Thus, Study 2 specifically prompted participants’ psychological and physical injury schemas, thereby expecting an increased overall reporting of psychological injuries as compared with Study 1. We also explored whether these prompts would produce a similar number of physical and psychological injuries for all incidents.

This methodology allowed for a direct comparison of participants’ psychological and physical injury schemas. Due to legal decision-makers’ skepticism of psychological injuries along with their lessened availability, we hypothesized that participants would perceive their psychological injury schemas as less credible and severe than their physical injury schemas. Study 2 more directly examined injury availability, hypothesizing that psychological injuries would be rated as less available than physical injuries and that availability would be positively related to participants’ injury severity and plaintiff credibility ratings.

### 5 METHOD

#### 5.1 Participants

Participants (N = 288) were recruited from the psychology subject pool at a northeastern university and completed the online study for course credit. Seventeen participants did not respond to one or more of the primary measures, leaving 271 participants for data analysis. Participants were mainly White (71%) and male (59%), with \( M_{\text{age}} = 19.29 \) (SD = 1.86).

#### 5.2 Design

The present study utilized a 4 (Incident Type: car accident, slip and fall, sexual assault, kidnapping) × 2 (Incident Severity: mild vs. severe) between-subjects design. Participants separately visualized and recorded their psychological and physical injury schemas, with half randomly assigned to report their psychological injury schemas first. The

| TABLE 3 Injury schema content and evaluations by experience (standard deviation in parentheses) |
|-----------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| Car accident experience | No experience | Car accident experience | No experience | Car accident experience | No experience |
| Incident severity rating | 4.59 (1.58) | 5.07 (1.53) | 2.99 (1.26) | 3.42 (1.14) |
| Injury severity rating | 4.70 (1.70) | 5.28 (1.73) | 3.24 (1.46) | 3.82 (1.14) |
| Likelihood of physical injuries | 5.45 (1.46) | 5.98 (1.35) | 4.57 (1.70) | 4.88 (1.48) |
| Likelihood of psych. injuries | 4.01 (1.64) | 4.47 (1.42) | 2.00 (1.13) | 2.11 (1.28) |
| Physical injuries reported | 3.29 (1.93) | 3.17 (2.03) | 2.64 (1.52) | 3.15 (1.66) |
| Psychological injuries reported | 0.52 (0.92) | 0.59 (1.05) | 0.23 (0.48) | 0.20 (0.51) |
| Total injuries reported | 3.73 (2.24) | 3.59 (2.24) | 2.84 (1.55) | 3.29 (1.65) |

Note. Means sharing the same superscript are significantly different where \( p < .05 \) (except for \( f \) where \( p = .057 \)). The label ‘Experience’ combines participants who reported being a victim and/or witness of a particular incident.
primary dependent variables were the number of injuries within participants’ injury schemas and their ratings of injury severity, plaintiff credibility, and injury availability.

5.2.1 Incident severity pretest
Incidents were pretested to ensure that the mild and severe prompts evoked the reporting of mild and severe incidents, respectively. Undergraduates from the same university (N = 215) who did not participate in Study 2 randomly received one of the incident prompts (mild or severe), visualized and recorded the typical incident, and rated its severity. For all four incidents, the severe prompts produced incident schemas that were rated as more severe than the mild prompts, all p’s < .05.

5.3 Procedure
Participants were randomly assigned to one of four civil incidents and given either a mild (e.g., a two-car fender bender on a side street) or a severe (e.g., a three-car pileup on a highway) prompt (see Appendix for all prompts). These prompts were used to ensure the creation of a mild or severe incident schema. For example, participants receiving the mild car accident prompt were instructed to visualize the “typical car accident involving an individual in a 2 car fender-bender on a side street,” record the circumstances that led to the incident and the injured person, and then rate its severity.

Participants were then instructed to visualize and record “the psychological (physical) injuries the typical victim would suffer in this typical incident.” Participants then rated their perceptions of its (a) injury severity; (b) injury availability (via separate ratings of their ability to verbalize and visualize the injuries); and (c) the credibility of a plaintiff adding the injuries (via separate ratings of the likelihood the plaintiff would lie or exaggerate the injuries), all on 7-point scales. Participants were then instructed that the typical victim of the same previously described incident also suffered from the other injury type. That is, if participants had initially visualized and recorded their psychological injury schema for this incident, they then visualized and recorded their physical injury schema for that same incident and completed the same questionnaire containing the same dependent measures.5

5.4 Coding injury reports
The same coding scheme used in Study 1 was employed to determine the number of injuries contained within participants’ psychological and physical injury schemas. Kappa coefficients ranged from .75 to .95 for all incidents.

6 RESULTS AND DISCUSSION
6.1 Order effects
All analyses included the order in which participants reported their injury schemas (physical or psychological first) as a between-participants variable. Any order effects that impacted our results are noted as they arise.

6.2 Did incident type and severity affect injury schemas?
We conducted separate 4 (Incident Type) × 2 (Incident Severity) ANOVAs on the number of injuries reported within participants’ psychological and physical injury schemas.

A 4 × 2 ANOVA on participants’ psychological injury schemas revealed a marginal main effect for Incident Severity, F(1, 238) = 3.30, p = .07, partial η² = .01. Participants’ psychological injury schemas contained more injuries in the severe (M = 3.07, SD = 2.34) than in the mild incident (M = 2.53, SD = 2.02).6 Results also revealed a significant main effect for Incident Type, F(3, 245) = 17.97, p < .001, partial η² = .18. As expected, Tukey post hoc analyses indicated participants’ psychological injury schemas contained more injuries in the sexual assault (M = 3.91, SD = 2.56) and kidnapping (M = 3.40, SD = 1.79) than in the car accident (M = 2.11, SD = 1.48) and slip and fall incidents (M = 1.59, SD = 1.99).

A 4 × 2 ANOVA on participants’ physical injury schemas also revealed an Incident Severity main effect, F(1, 243) = 8.17, p < .005, partial η² = .03. Participants’ physical injury schemas contained more injuries in the severe (M = 3.68, SD = 2.36) than in the mild incident (M = 2.91, SD = 1.75).7

6.3 Did injury schemas differ in their existence and development?
We conducted repeated measures ANOVAs to compare the number of injuries within participants’ psychological and physical injury schemas. Across incidents, participants’ psychological injury schemas contained significantly fewer injuries (M = 2.82, SD = 2.23) than their physical injury schemas (M = 3.33, SD = 2.13), multivariate F(1, 242) = 9.74, p = .002, partial η² = .04 (see Table 4).

Repeated measures ANOVAs comparing participants’ psychological and physical injury schemas for each incident indicated significant differences for two incidents. For the car accident incident, participants’ psychological injury schemas contained fewer injuries (M = 2.11, SD = 1.48) than their physical injury schemas (M = 2.91, SD = 1.44), multivariate F(1, 64) = 12.06, p = .001, partial η² = 16. For the slip and fall incident, participants’ psychological injury schemas also contained fewer injuries (M = 1.59, SD = 1.99) than their physical injury schemas (M = 3.71, SD = 2.63), multivariate F(1, 54) = 32.71, p < .001, partial η² = .38. However, participants’ psychological and physical injury schemas contained a similar amount of injuries in the kidnapping (p = .32) and sexual assault incidents (p = .17).

6This analysis also produced an Incident Severity × Order interaction, F(1, 238) = 6.03, p = .02. A further examination revealed that the severe incident produced more injuries than the mild incident, but only for participants who reported their psychological injury schemas first, t(131) = 2.68, p = .008.
7This analysis also produced an Incident Severity × Order interaction, F(1, 243) = 3.76, p = .05. A further examination revealed that the severe incident produced more injuries than the mild incident, but only for participants who reported their psychological injury schemas first, t(133) = 3.57, p = .001.
Did injury schemas differ on injury severity, credibility, and availability?

6.4.1 Injury severity

Across incidents, a repeated measures ANOVA revealed that participants rated their psychological injury schemas as significantly more severe (M = 4.24, SD = 1.94) than their physical injury schemas (M = 3.90, SD = 1.61), multivariate F(1, 264) = 7.99, p = .005, partial η² = .03.

Repeated measures ANOVAs comparing participants’ psychological and physical injury schema severity ratings for each incident indicated significant differences for three incidents. For the slip and fall incident, participants rated their physical injury schemas as more severe (M = 3.72, SD = 1.62) than their psychological injury schemas (M = 2.63, SD = 1.79), multivariate F(1, 62) = 18.90, p < .001, partial η² = .23. Conversely, for the kidnapping incident, participants rated their psychological injury schemas as more severe (M = 5.05, SD = 1.29) than their physical injury schemas (M = 4.06, SD = 1.49), multivariate F(1, 64) = 39.31, p = .000, partial η² = .38. Similar findings emerged for the sexual assault incident, multivariate F(1, 65) = 49.92, p < .001, partial η² = .43 (M = 5.75, SD = 1.19 vs. M = 4.31, SD = 1.69).

An Incident Type × Incident Severity ANOVA on psychological injury schema severity revealed a main effect for Incident Severity, F(1, 253) = 9.41, p = .002, partial η² = .04. Participants who received the severe incident rated their psychological injury schemas as more severe (M = 4.59, SD = 1.92) than participants who received the mild incident (M = 3.89, SD = 1.89). This analysis also revealed a main effect for Incident Type, F(3, 253) = 63.98, p < .001, partial η² = .04. Tukey post hoc analyses revealed that participants rated their psychological injury schemas as most severe in the sexual assault (M = 5.76, SD = 1.19), followed by the kidnapping (M = 5.05, SD = 1.29), car accident (M = 3.49, SD = 1.69), and slip and fall incident (M = 2.67, SD = 1.77).

An Incident Type × Incident Severity ANOVA on physical injury schema severity revealed a main effect for Incident Severity, F(1, 251) = 50.66, p < .001, partial η² = .17. Participants rated their physical injury schemas as more severe in the severe incident (M = 4.57, SD = 1.45) than in the mild incident (M = 3.22, SD = 1.48). This analysis also revealed a main effect for Incident Type, F(3, 251) = 3.89, p = .01, partial η² = .04. Tukey post hoc analyses indicated that participants rated their physical injury schemas as significantly more severe in the sexual assault (M = 4.31, SD = 1.69) than in the car accident incident (M = 3.51, SD = 1.56) and as marginally more severe than in the slip and fall incident (M = 3.72, SD = 1.62).

6.4.2 Credibility

As the two credibility measures were highly correlated (Cronbach’s α’s were .79 and .70 for psychological and physical injury schemas, respectively), we created a combined measure with 1 = credible and 7 = not credible. Across incidents, a repeated measures ANOVA revealed that plaintiffs adducing psychological injuries was perceived as marginally less credible (M = 4.22, SD = 1.66) than plaintiffs adducing physical injuries (M = 4.03, SD = 1.62), multivariate F(1, 254) = 2.60, p = .10, partial η² = .01.9

Repeated measures ANOVAs comparing the credibility of participants’ psychological and physical injury schemas for each incident indicated a marginally significant difference only for the slip and fall incident, multivariate F(1, 60) = 3.18, p = .08, partial η² = .05. Specifically, plaintiffs were perceived as less credible when adducing psychological (M = 4.90, SD = 1.80) than physical injuries (M = 4.50, SD = 1.73).

An Incident Type × Incident Severity ANOVA on the credibility of participants’ psychological injury schema revealed a main effect for Incident Type, F(3, 246) = 9.77, p < .001, partial η² = .11. Tukey post hoc analyses revealed that participants rated the plaintiff adducing psychological injuries as more credible in the sexual assault incident (M = 3.60, SD = 1.49) than in the car accident (M = 4.55, SD = 1.50) and slip and fall incidents (M = 4.90, SD = 1.80). This analysis also revealed a marginally significant Incident Type × Incident Severity interaction, F(3, 246) = 2.50, p = .06, partial η² = .03. Follow-up simple effects analyses indicated that for the mild incident, participants rated the plaintiff adducing psychological injuries in the car accident as less credible than in all three remaining incidents.10

An Incident Type × Incident Severity ANOVA on the credibility of participants’ physical injury schema revealed a main effect for Incident

Note. Means with the same superscripts indicate significant differences where p < .01.

<table>
<thead>
<tr>
<th>Incident type</th>
<th>Physical injuries</th>
<th>Psychological injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car accident</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>2.25 (1.34)</td>
<td>1.88 (1.23)</td>
</tr>
<tr>
<td>Severe</td>
<td>3.62 (1.16)</td>
<td>2.34 (1.70)</td>
</tr>
<tr>
<td>Total</td>
<td>2.91 (1.44)*</td>
<td>2.11 (1.48)*</td>
</tr>
<tr>
<td>Slip and fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>3.18 (1.76)</td>
<td>1.38 (1.27)</td>
</tr>
<tr>
<td>Severe</td>
<td>4.18 (3.06)</td>
<td>1.81 (2.56)</td>
</tr>
<tr>
<td>Total</td>
<td>3.71 (2.63)*</td>
<td>1.59 (1.99)*</td>
</tr>
<tr>
<td>Kidnapping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>3.23 (2.21)</td>
<td>3.06 (1.59)</td>
</tr>
<tr>
<td>Severe</td>
<td>3.06 (1.86)</td>
<td>3.71 (1.93)</td>
</tr>
<tr>
<td>Total</td>
<td>3.14 (2.02)</td>
<td>3.40 (1.79)</td>
</tr>
<tr>
<td>Sexual assault</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>3.11 (1.50)</td>
<td>3.70 (2.71)</td>
</tr>
<tr>
<td>Severe</td>
<td>3.91 (2.82)</td>
<td>4.12 (2.43)</td>
</tr>
<tr>
<td>Total</td>
<td>3.33 (2.13)c</td>
<td>2.82 (2.23)c</td>
</tr>
</tbody>
</table>

TABLE 4 Number and type of injuries reported by incident (standard deviation in parentheses)

9This analysis also produced a Credibility × Order interaction, F(1, 254) = 19.74, p = .000. This interaction revealed that psychological injuries were rated as less credible than physical injuries, but only for participants who reported their psychological injuries first (t(137) = 4.10, p < .001). Conversely, psychological injuries were rated as more credible than physical injuries, but only for participants who reported their physical injuries first, t(118) = 2.16, p = .03.

10For the severe incident versions, participants rated the plaintiff adducing psychological injuries in the car accident incident as less credible than in the slip and fall sexual assault incidents, F(3, 254) = 9.30, p < .001 and F(2, 194) = 4.25, p = .02, respectively.
Type, $F(3, 247) = 6.13, p < .001$, partial $\eta^2 = .07$. Tukey post hoc analyses indicated that participants rated the plaintiff adding physical injuries as more credible in the sexual assault incident ($M = 3.45, SD = 1.51$) than in the slip and fall ($M = 4.60, SD = 1.75$) and car accident incidents ($M = 4.22, SD = 1.47$).

6.4.3 Availability

As the two availability measures were highly correlated (Cronbach's $\alpha$'s were .70 for both psychological and physical injury schemas), we created a combined availability measure with 1 = not available and 7 = very available. Across incidents, a repeated measures ANOVA revealed that participants' physical injury schemas were rated as more available ($M = 4.93, SD = 1.54$) than their psychological injury schemas ($M = 4.26, SD = 1.64$), multivariate $F(1, 260) = 26.43, p < .001$, partial $\eta^2 = .09$.

Repeated measures ANOVAs comparing the availability of participants' psychological and physical injury schemas for each incident indicated significant differences for two incidents. For the car accident incident, participants rated psychological injuries as less available ($M = 4.37, SD = 1.45$) than physical injuries ($M = 5.34, SD = 1.37$), multivariate $F(1, 64) = 16.24, p < .001$, partial $\eta^2 = .20$. For the slip and fall incident, participants rated psychological injuries as less available ($M = 3.98, SD = 2.04$) than physical injuries ($M = 5.62, SD = 1.27$), multivariate $F(1, 62) = 30.10, p < .001$, partial $\eta^2 = .33$.

An Incident Type × Incident Severity ANOVA on the availability of participants' psychological injury schemas revealed an Incident Type × Incident Severity interaction, $F(3, 251) = 3.31, p = .02$, partial $\eta^2 = .04$. Follow-up simple effects analyses indicated significant differences for the severe incident: Participants rated their psychological injuries as more available in the car accident ($M = 4.70, SD = 1.24$) and kidnapping ($M = 4.91, SD = 1.49$) than in the slip and fall ($M = 3.88, SD = 1.94$) and sexual assault incidents ($M = 3.84, SD = 1.44$).

An Incident Type × Incident Severity ANOVA on the availability of participants' physical injury schemas revealed a main effect for Incident Type, $F(3, 249) = 12.99, p < .001$, partial $\eta^2 = .14$. Tukey post hoc analyses revealed that participants rated their physical injuries as more available in the car accident ($M = 5.34, SD = 1.36$) and slip and fall ($M = 5.62, SD = 1.30$) than in the kidnapping ($M = 4.63, SD = 1.50$) and sexual assault ($M = 4.15, SD = 1.57$) incidents.

6.5 Did availability relate to schema evaluations?

Regarding psychological injury schemas, bivariate regressions revealed that participants' injury availability ratings were significantly related to their injury severity ratings, $\beta = .24, t(265) = 4.02, p < .001$. Specifically, psychological injuries rated as more available were correspondingly rated as more severe. However, participants' injury availability ratings were not significantly related to their plaintiff credibility ratings, $\beta = .02, t(260) = -.29, p = .77$. Regarding physical injury schemas, availability ratings were not significantly related to either injury severity, $\beta = .10, t(264) = 1.55, p = .12$, or plaintiff credibility ratings, $\beta = .03, t(260) = .44, p = .66$.

6.6 Summary and conclusions

Study 2 again revealed the existence of psychological injury schemas. And as expected, specifically prompting participants to visualize psychological injuries resulted in their greater overall reporting. Although participants' psychological injury schemas still contained fewer injuries than their physical injury schemas, this finding was qualified by incident type. In the negligence incidents, psychological injury schemas contained fewer injuries than physical injury schemas, but a similar amount of psychological and physical injuries in the tort incidents. These results underscore that injury schema existence and development depends upon the orientation of the incident as an intentional tort (more psychologically oriented) or negligence (more physically oriented), as well as the specific prompt used to elicit these injuries.

Contrary to the devaluation of psychological injury, participants rated their psychological injury schemas as more severe than their physical injury schemas, particularly for the kidnapping and sexual assault incidents. More consistent with this devaluation was that participants rated psychological injuries as marginally less credible than physical injuries in the slip and fall incident. Finally, participants rated psychological injuries as less available than physical injuries—particularly in the negligence incidents—and these availability perceptions were related to their psychological injury severity ratings.

7 General Discussion

This research is the first known empirical investigation of mock jurors' preconceived notions for a civil plaintiff's psychological injuries. The present study not only established that participants have psychological injury schemas but additionally demonstrated that they vary by case type and specific prompt used to elicit these schemas. Indeed, jurors likely access these schemas to "fill in the gaps" when evaluating the plaintiff's alleged injuries (Holst & Pezdek, 1992), perceptions that strongly affect their legal decisions (Goodman-Delahunty & Foote, 1995).

Regarding incident type, participants' psychological injury schemas were generally more developed in the intentional torts than in the negligence incidents. This is consistent with the notion that intentional (dignitary) torts are more likely to produce more psychological injuries than their negligence counterparts. In this way, participants' schemas accurately represented the legal distinctions between these case types. Yet an injury schema that contains $<$1 (Study 1) or even two psychological injuries (Study 2) unlikely represents the breadth and depth of the actual injuries suffered by civil plaintiffs.

Regarding incident severity, more severe incidents generally produced more severe psychological injury schemas. Yet we caution over-interpretation of this finding due to order effects and the possibility that our specific prompts elicited "atypical" schemas in some participants—particularly those who received the severe incident prompts—which may have impacted the type or severity of harm expected in a given incident (e.g., McKimmie, Masser, & Bongiorno, 2014; Pickel &
Gentry, 2017; Stuart, McKimmie, & Masser, 2016). And the fact that the intentional torts were rated as more severe than the negligence incidents and that the severe incidents were not all seen as similarly severe suggests that certain cases are perceived as inherently more severe than others. Future studies should consider using civil cases with similar baseline incident severity ratings to better determine the relative roles of incident type and severity on participants’ injury schemas.

A direct comparison of participants’ physical and psychological injury schemas revealed that psychological injury schemas were rated as more severe than physical injury schemas. This result is consistent with Greene, Goodman, and Loftus (1991) where 66% of jury-eligible respondents surveyed believed that “most people underestimate the pain and suffering of someone who is seriously injured” (p. 814). Yet this finding is at odds with the devaluation of mental distress and suggests that participants sometimes believe that mental injuries are even more harmful to plaintiffs than physical injuries. But concurrently consider that participants’ psychological injury schemas never contained more injuries than their physical injury schemas. This intriguing contradiction suggests that although participants did not consider a wide range of specific psychological injuries, the psychological harm they did consider was viewed as substantially severe.

Other results were more consistent with the devaluation of psychological injury and overall skepticism of mental distress claims (Hans & Hallerudin, 1992; Lorleberg, 1997). Specifically, plaintiffs adducing psychological injuries were perceived as marginally less credible than plaintiffs adducing physical injuries, but only for participants reporting their psychological injuries first. And these specific credibility differences only emerged in the slip and fall incident. As violations of jurors’ schema-level injury expectations can lower their perceptions of the plaintiff’s credibility (Hackett, Day, & Mohr, 2008; Pickel & Gentry, 2017; Vallano, 2012), future studies should account for how participants’ expectations affect their perceptions in these cases.

Overall, these results provide mixed support for the devaluation of psychological injury at the schema level. But these results more clearly support disparate perceptions of psychological and physical injuries, suggesting that legal distinctions between these injury types may be the manifestation of deeper level cognitions regarding injury availability. Indeed, physical injuries were often the first injury reported in all incidents (Study 1) and rated as more available than psychological injuries, particularly for the negligence incidents (Study 2).

From an applied perspective, negative preconceptions of psychological injury may inhibit some jurors’ ability to be fair and impartial. Specifically, the belief that psychological injuries that have questionable credibility may serve as generic prejudice (see Vidmar, 1997) fostering an unreasonable skepticism of even legitimately suffered psychological injury. Attorneys and judges should unravel such prejudicial beliefs that may impact the plaintiff’s right to a fair and impartial jury.

The increased skepticism upon which legal decision-makers sometimes view psychological injuries is not completely unfounded, as their intangible nature often raises legitimate questions about their veracity. However, these concerns may be overblown or unwarranted considering the substantial overlap between some psychological and physical injuries. For example, many psychological injuries are no more susceptible to malingering than physical injuries (Bornstein & Schwartz, 2009), and certain physical and emotional injuries produce similar neurological experiences of pain (Eisenberger, 2012; Kross, Berman, Mischel, Smith, & Wager, 2011). Therefore, their differential treatment may unfairly drive policy decisions that hinder a psychologically injured plaintiff’s ability to initiate claims and receive adequate compensation (Grey, 2011; Perrin & Sales, 1993). However, our data support providing jurors with specific prompts to separately consider physical and psychological injury within attorneys’ closing arguments or model jury instructions, as this could promote deeper processing and a greater appreciation of both injury types (see Gregory & Winter, 2011).

7.2 | Limitations

We acknowledge lessened ecological validity due to presenting incident prompts and brief incident descriptions to college undergraduates. Yet these concerns should be considered within the study’s overall purpose—to examine how jurors cognitively process psychological injury evidence. Even so, we recognize that undergraduates’ schemas may be uniquely affected by their younger age and specific experiences in a college environment. Perhaps younger participants have less overall experience with the studied incidents and therefore less developed schemas compared to (typically) older jurors. However, our sample reported substantial experience with the negligence incidents. And although our sample reported more experience with the negligence than tort incidents which affected their schemas, we believe that their experience is generally representative of the population. Car accidents and slip and falls are some of the most frequently occurring civil cases (Langton & Cohen, 2008; OSHA, 2007), especially compared with kidnapping and sexual assaults (Bublick, 2006; Truman & Morgan, 2016). Despite the recent attention given to sexual assault incidents, this was not the most developed schema. That incidents with less reported experience corresponded with the most developed schemas importantly reveals that schemas are composed of more than direct experience.

Finally, our methodology introduced the possibility of order effects. Though we utilized counterbalancing and found that order effects did not impact most of our findings, there were times when participants’ injury schema evaluations varied by the order in which they were reported (physical or psychological). Perhaps some participants compared their psychological and physical injury schemas, a likely reality when civil jurors must render separate pain and suffering

7.1 | Implications and future directions

From a theoretical perspective, the present study adds to the literature examining jurors’ cognitive decision-making processes (e.g., the story model—Pennington & Hastie, 1988) and specifically jurors’ prototypes (V. L. Smith, 1991) as it relates to psychological injury evidence. The present study applied schema theory (Alba & Hasher, 1983) in finding that jurors have general injury schemas that contain physical and psychological injury schemas, each differing in degree of accessibility. These data further suggest that whether jurors report psychological or physical injuries is partially dependent upon whether they are more or less central to their general injury schema.
awards. But more importantly, the presence of order effects highlight the active and reconstructive nature of schemas. Rather than viewing legal schemas as immutable memories waiting to be consistently recalled, the present study suggests that these schemas vary by the external factors present when they are accessed.

7.3 Summary
The present research establishes that jurors have rudimentary preconceptions of psychological injuries suffered by civil plaintiffs that vary by the type and severity of the incident and the specific prompt used to elicit these injuries. Although jurors’ psychological injury schemas were not well-developed—that is, few injuries were visualized and recorded—the considered injuries were perceived as severe and, in some cases, more severe than physical injuries. These results provide mixed support for the devaluation of psychological injury by legal decision-makers at the schema level and underscore the malleability of legal schemas.

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### APPENDIX A.

**Mild and severe incident versions used in Study 2**

<table>
<thead>
<tr>
<th>Incident type</th>
<th>Mild incident</th>
<th>Severe incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car accident</td>
<td>2 car fender bender on a side street</td>
<td>3 car pile-up on a highway</td>
</tr>
<tr>
<td>Slip and fall</td>
<td>Tripped and fell forward on a ramp, carpeted floor</td>
<td>Slipped and fell backward on a wet, concrete floor</td>
</tr>
<tr>
<td>Kidnapping</td>
<td>Driven around in a stranger’s car for an hour before returning home</td>
<td>Held in a stranger’s house for a week before returning home</td>
</tr>
<tr>
<td>Sexual assault</td>
<td>Pressured to engage in unwanted touching and kissing</td>
<td>Forced to engage in unwanted sexual intercourse</td>
</tr>
</tbody>
</table>

How to cite this article: Vallano JP, McQuiston DE. An exploration of psychological and physical injury schemas in civil cases. *Appl Cognit Psychol*. 2018;32:241–252. https://doi.org/10.1002/acp.3399