



Vincent Coppola¹ , Teenie Matlock² 

¹Laboratoire d'Etudes et de Recherches Appliquées en Sciences Sociales, University Paul Sabatier, France

²School of Social Sciences, Humanities & Arts, University of California, Merced, USA

Verb Aspect and its Role in Reasoning About Guilt

This study investigates the effects of verb aspect on legal judgments. In three experiments, that were presented in French to French speakers, participants received a scenario about a case of HIV transmission, in which the actions of the person referred to as responsible for the transmission were described using imperfective or perfective aspect. Furthermore, in experiment 1, the accused was portrayed as aware (versus unaware) of his HIV status, and in experiment 2, he was portrayed as having (versus not having) a previous criminal record. In experiment 3, the lexical verbs used to describe his behavior made the accused a high volitional agent (versus low volitional). Participants read the report and then made judgments on intentionality, expressed feelings toward the accused and ascribed him a blame and sentence. Results revealed that imperfective descriptions resulted in higher perceived intentionality, higher blame attribution, more dislike and higher sentence. But they also showed that these effects of imperfective versions occurred primarily when the accused was portrayed as knowing his seropositivity (experiment 1), having a criminal record (experiment 2) and when the volition of his behavior was attenuated (experiment 3). These findings provide novel insights about how language subtleties can impact perceptions of criminal intentionality and its related judgments.

Key words: verb aspect, semantics, framing, event understanding, legal judgments

Address for correspondence: Vincent Coppola

Laboratoire d'Etudes et de Recherches Appliquées en Sciences Sociales, University Paul Sabatier
115 route de Narbonne, 31077 Toulouse, Toulouse, France

E-mail: vincent.coppola@iut-tarbes.fr

This is an open access article licensed under the CC BY NC ND 4.0 License.

Everyday communication is complex but manageable. In general, speakers, writers, and signers have little or no problem piecing together linguistic components, such as verbs, tense and aspect markers, subject noun phrases, prepositions, when conveying information about actions and events they have perceived, heard about, or imagined. On the receiving end, people generally have little difficulty making sense of such descriptions. In doing so, they readily construct a “situation model” of the events and states they have interpreted, including what agents were involved, what actions and instruments were used, when the event happened, and where it happened (Glenberg et al., 1987; Matlock et al., 2012; Morrow et al., 1989; Zwaan & Madden, 2004; Zwaan & Radvansky, 1998). The semantics of the lexical items used in event descriptions provide a good deal of information. And the semantics of grammatical systems provide additional information. Integrating with tense, modality, and other grammatical dimensions, aspect specifies the more nuanced temporal characteristics of actions being described (Magliano & Schleich, 2000; Matlock, 2011).

Despite some differences across the distribution and behavior of aspect across languages, there is often a clear distinction between imperfective aspect (“Person A *was doing* something”), which generally reflects a behavior as a dynamic, unfolding sequence of actions, and perfective aspect (“Person A *did* something”), which generally reflects an event or situation as a completed whole (Comrie, 1976; Ćordalija, 2021; De Wit & Brisard, 2020; Madden & Zwaan, 2003; Minor et al., 2022; Morrow, 1985; Mozuraitis et al., 2013). In everyday communication, subtle changes in aspect can modify how people interpret events (e.g., “He ate macaroni” versus “He was eating macaroni” or “I was thinking about life in the Azores” versus “I thought about life in the Azores”). Imperfective aspect is known to direct attention to the internal structure of an action (Bergen & Wheeler, 2010; Liu & Bergen, 2016), and encourage “zooming into the event” (Madden-Lombardi et al., 2017; Pinker, 2007; Vendler, 1957). As such, it makes sense that various studies have shown that the imperfective aspect (relative to the perfective aspect) tends to result in a more detailed processing of the described action (Carreiras et al., 1997). When they are interpreting descriptions with imperfective aspect, people tend to conceptualize a greater number of temporal slices and event details than they would when they are interpreting descriptions with perfective aspect (Coll-Florit & Gennari, 2011; Hall, 2015; Hong et al., 2019; Madden & Ferretti, 2009; Magliano & Schleich, 2000).

By the same token, this difference in processing is assumed to make actions described with imperfective aspect more memorable than those same actions described with perfective aspect. Some studies have demonstrated how verb aspect can influence the availability in memory of described situations and their features (Becker et al., 2013). Characters described in short narratives have been shown to be more accessible to readers when their actions are described with imperfective aspect than with perfective aspect (Carreiras et al., 1997; Ferretti et al., 2009). Similarly, event locations that are typically associated with particular

actions are more accessible when described with verbs marked for imperfective (e.g., *she was exercising in the gym*) than perfective (e.g., *she exercised in the gym*) aspect (Ferretti et al., 2007). Comparable effects are observed for typical agents and instruments (Truitt & Zwaan, 1997).

Past research also indicated that verb aspect can differentially influence interpersonal perceptions and opinions (Fausey & Matlock, 2011; Matlock, 2012; Shreves et al., 2014). In experiments on attitudes about voting behavior, Fausey and Matlock (2011) asked people to read a simple passage about a fictitious U.S. senator who was seeking reelection. The passage described the senator's educational background and reported some things he did while he was in office, including an affair with an assistant as well as hush money from a prominent constituent. Participants who read text in which the senator's actions were framed with imperfective aspect (*Last year, Mark was having an affair with his assistant and was taking money from a prominent constituent*) were shown to be more confident that the candidate would not be re-elected. Also, on average, these people gave higher dollar estimates of the hush money accepted than others who had read the same information with perfective aspect framing (*Last year, Mark had an affair with his assistant and took money from a prominent constituent*). These results were later replicated in a study in the context of Malaysia by Tan (2019), who showed that imperfective descriptions of past negative actions resulted in negative responses to the re-election of a candidate, but there was no effect of verb aspect alteration on attitude toward the re-election of the candidate when descriptions referred to actions that were positively valenced.

Some scholars have assumed that this subtle variation in verb aspect could alter attribution of intentionality processes. They reasoned that framing an action in imperfective aspect could prompt intention-relevant concept in the receiver to a larger extent than framing the same action in perfective aspect. In a scenario that investigated attitudes about criminal behavior, Hart and Albarracín (2011, experiment 3) suggested that by representing the harmful behavior as unfolding, the imperfective aspect may enable receivers to more vividly imagine the actor's concrete, component actions and consequently increase the number of behavioral details, which can be used to infer in the actor a criminal intention to harm the victim. In particular, they demonstrated that when violent, unlawful actions were described in imperfective (i.e. was verb + ing; e.g., *was pulling out his gun and was pointing it at ... was firing gun shots*) rather than perfective (verb + ed; e.g., *pulled out his gun and pointed it at ... fired gun shots*), the perpetrator was perceived as having greater harmful intent. Interestingly, Hart and Albarracín (2011) argued as follows: "compared with the perfective aspect, the imperfective aspect may suggest a longer behavior duration, which may in turn suggest greater persistence and intent" (p. 265).

While some researchers have failed to replicate Hart and Albarracín's (2011) results about the effects of verb aspect on intentionality judgments (Eerland et al., 2016; Holcombe, 2016), others have seen their important practical applications

in judicial decision-making when judgments deal with culpability and blameworthiness. Given that the imperfective aspect typically implies longer event duration than perfective aspect (Anderson et al., 2013; Flecken & Gerwien, 2013; Madden & Zwaan, 2003; Magliano & Schleich, 2000; Matlock, 2010, 2011), Sherrill et al. (2015) hypothesized that verb aspect could moderate inferences about deliberation and planning of action, with the former prompting stronger inferences than the latter. They found that a description of a crime in imperfective aspect (Mark *was hitting* John in the head with a bat) enhanced perceived intentionality, which was strongly linked to the likelihood of a first-degree conviction, compared to a description in perfective aspect (Mark *hit* John in the head with a bat). In a more detailed analysis (Sherrill et al., 2015, experiment 3), they showed that when lethal action was presented in the imperfective (versus perfective) aspect, action iterations were perceived as more frequent, thereby implying more perceived effort and determination from the perpetrator, which in turn predicted higher perceptions of intentionality and higher rates of a first-degree conviction.

Consistent with the claim by Madden and Ferretti (2009) that an imperfective aspect leads to non durative actions to be transformed into iterative actions, Eerland et al. (2017, experiment 4) used a somewhat similar scenario describing violent actions with negative outcomes and showed that actions conveyed with an imperfective aspect (i.e. Mark *was punching* John) were perceived as having more iterations than those conveyed with perfective aspect (i.e. Mark *punched* John). More specifically, they found a strong effect of verb aspect on temporal dynamics such that the number of punches was judged to be higher after reading the imperfective vignette (versus the perfective one). In addition, although their analysis did not include a direct assessment of intentionality, they suggested that verb aspect could affect the perception of temporal dynamics (i.e. the number of iterations), which could influence how one could understand and evaluate the blameworthiness of the protagonist, a concept closely related to intentionality.

Together, these studies show how verb aspect can influence legal judgments, at least to the extent that variability in aspect alters situational model features that align with legal interpretation criteria. Although Hart and Albarracin (2011) focus on criminal intention without an assessment of perceived blame, it may be that the increase in perceived criminal intent in response to the imperfective (versus perfective) vignette could have had an impact on the assessment of blameworthiness. In contrast, although in Eerland et al. (2017)'s study, the focus was on attribution of blame, it would have been interesting to also include in parallel a measure of perceived criminal intent. Furthermore, although perceived intentionality can be considered a distal variable (Hart & Albarracin, 2011, p. 256; Sherrill et al., 2015, p. 10 & p. 16), it is still important in judicial decisions, especially given that identifying criminal intentionality is a factor in jurors' decision-making (Fontaine, 2007; Young & Waytz, 2013).

Current Research

The current study, which uses experiments conducted in French, expands this general line of research by investigating the effects of verb aspect on perceived intentionality, attribution of blame, and punishment. Claims about how subtle shifts in verbal aspect can alter how intentions are interpreted have received some attention in the literature, and so have assumptions about how fine-grained alterations affect the attribution of intentionality (Eerland et al., 2016; Hart, 2016; Holcombe, 2016). The goal of this study is to investigate how verb aspect may influence mock jurors' decisions with regard criminal intent, blameworthiness and punishment.

Three experiments used a similar approach and had a similar goal. They featured short passages that described how a young adult with HIV and a substance use disorder (drug-addicted and HIV positive person) may have been responsible (i.e. the accused) for the transmission of the virus to another person (i.e. the victim). The circumstances that led to the contamination of the victim were similar within all three experiments and can be described as follows. While searching a trash can for a paper he inadvertently lost with a phone number on it, he was injured by a syringe the defendant had used for a drug injection and had discarded a few minutes earlier. He decided to take a screening test that revealed an HIV infection (see Appendix A, B and C for the original vignettes used in the current study together with the French translations of the critical sentences used for the experimental manipulations).

Although the contamination of the complainant resulted from an unfortunate contact with the syringe, the question remained whether the accused abandoned it with the intent to transmit HIV to a third person and could be blamed and punished for this. So, for all experiments presented in this study, verbs used to describe how the defendant abandoned his syringe after using it were systematically altered as regard their verbal aspect (perfective versus imperfective). Therefore, the main interest was to assess the effects of verb aspect on a set of judgments dealing with legal decision-making, namely intentionality, blameworthiness and punishment. Based on the aforementioned studies, it was hypothesized for all experiments that actions described in imperfective aspect would make the defendant as having a higher criminal intent and thus being more culpable for the outcomes of the action than would actions described in perfective aspect.

As these experiments have been conducted in French with native French speakers, a brief discussion of the aspectual system in French is warranted before proceeding to a detailed description of the methods. While English and French aspectual systems differ in the present tense, the English imperfective and past perfect find quite similar counterparts in the French past tense. In terms of imperfect options in the past tense, the French *imparfait* corresponds almost exactly to the English imperfective (was verb + ing). However, contrary to the constrained English tense-aspect system, French offers various ways to express the perfect in

the past tense, such as the *passé composé*, the *plus-que-parfait*, and in particular the *passé simple* (Lindschouw & Reebirk, 2017; Saussure, 2003). Traditionally, a distinction has been made between the French *passé simple* and *imparfait*. According to this conception, the former grasps the process in its globality and encloses it within limits, it is attributed a perfective aspect, not secant or global, i.e., limited line assimilated to point line, whereas the latter envisages the process without limits, at one stage of its development, it is attributed an imperfective or secant aspect, i.e., non-bounded trait assimilated to durative trait (Calas & Rossi, 2001; Michaud & Damay, 2024). Therefore, the French *passé simple* and *imparfait* were used in current experiments for the marking of perfective and imperfective aspect respectively.

On the other hand, as far as we know, the effects of verb aspect on intentionality judgments and blame attributions have been studied until now in scenarios including two feuding agents engaged in a violent physical interaction (see Eerland et al., 2017, p. 3; see Sherrill et al., 2015, p. 6 & 11) or a gun shooting (see Hart & Albarracín, 2011, p. 264). So, in view of the scenario used in the current study which excluded two adversarial agents in the presence of each other, one can argue that it extends the research on the cognitive processing of verbal aspect to a context within which the perpetrator does not overtly aggress the victim in a face to face moment. As such, the current study echoes what scholars in this area of research invited to do, that is, investigating other scenarios and different verb types as well (see Eerland et al., 2017, p. 10; Sherrill et al., 2015, p. 17).

Furthermore, for two experiments, it included pieces of information about the offending actor as extralinguistic factors. In experiment 1, the information was given that the defendant knew (or did not know) he was HIV seropositive. In experiment 2, the information was given that the defendant did (or did not) have a criminal record for past misconduct. The manipulation of these additional factors was motivated by exploratory purposes rather than guided by previous empirical research. As far as we know, previous studies (i.e. Eerland et al., 2017; Hart & Albarracín, 2011; Sherrill et al., 2015) did not manipulate perpetrator's personal characteristics or backgrounds as an experimental factor by crossing them with verbal aspect. On the other hand, the impact of certain types of information about the perpetrator on (mock) jurors' decisions has been an issue widely investigated (Abwender & Hough, 2001; Cheung & Lagnado, 2023; Mazzella & Feingold, 1994), in particular in the area of research regarding the impact of pretrial publicity (Otto et al., 1994; Rhein, 2019; Studebaker & Penrod, 2005; Sue et al., 1974;) and the influence of prior conviction evidence and record (Eisenberg & Hans, 2009; Greene & Dodge, 1995; Haynes, 2023; Laudan & Allen, 2011; Schmittat, 2023; Spohn & Welch, 1987). Nevertheless, in the context of these studies, verbal aspect was not manipulated as additional experimental factor. So, whether these pieces of information about the defendant might act as moderators was an exploratory tentative in the current study. Based on the previous findings about the influence of prior conviction evidence on (mock) jurors' decisions, it was

exploratory hypothesized that these particular pieces of information were likely to moderate the effects of verbal aspect on perceived criminal intention, blame attribution and punishment. Furthermore, the addition of these extralinguistic manipulations echoes to some extent what Sherrill et al. (2015) argued: “Many dynamic boundary conditions exist for the psychological impact of aspect. Texts may be arranged to allow aspectual manipulations to produce effects with a range of magnitudes” (p. 13).

Experiment 1

Method

Stimulus Materials and Factorial Design

The scenario was presented as a short report about an incident that happened on a college campus. Enrolled students at University of Toulouse (France) were recruited to be participants in the study. They were led to believe that the report has been taken from a local newspaper and served as a relevant case study for an introductory law course. They read the following: *“To introduce this course on the concept of responsibility and guilty, we will use the following case study. You will read about an incident that occurred on the campus some months ago and led to the HIV infection of someone, considered here as a victim. The circumstances of this contamination will be presented to you in a short report and we are interested in learning how you attribute blame to the defendant for this incident. So imagine you are a jury member in a criminal court and faced with the decision of whether the defendant is guilty for the HIV infection of the victim. Please read the description of the circumstances that led to the contamination of the victim, reflect upon it carefully, and make your judgments of blame accordingly”*.

The scenario was described in the form of a vignette (see appendix A). It included the two following experimental manipulations. The first was the verbal aspect of two punctual verbs (*put* and *place* / in French: *mettre* and *placer*) used to describe how the defendant had discarded his syringe after using it. This action was phrased with either a perfective aspect (“*he put [...] he placed his syringe in the bin...*” / in French: “*il mit [...] il plaça sa seringue dans la poubelle...*”) or imperfective aspect (“*he was putting [...] he was placing his syringe in the bin...*” / in French: “*il était en train de mettre [...] il était en train de placer sa seringue dans la poubelle...*”). Second, the accused was portrayed as either aware of his HIV status at the time of the incident or not. So, the second experimental manipulation consisted in presenting the defendant either as knowing his HIV status (“*... who knew his HIV status at the time of the incident*” / in French: “*... qui connaissait sa séropositivité à ce moment là...*”) or not (“*... who did not know his HIV status at the time of the incident*” / in French: “*... qui ne connaissait pas sa séropositivité à ce moment là...*”).

A total of 107 students aged 18 to 20 who were enrolled in an introductory law course served as participants in this 2 (verb aspect: *perfective* versus *imperfective*) X 2 (knowledge of HIV status: *awareness of HIV status* versus *unawareness of HIV status*) between-subjects study. Randomly assigned, they read one of four scenarios. One group of participants ($n = 26$) read about a person who was throwing away a syringe (i.e. “*was putting*” ... “*was placing*”) and was aware of his seropositivity at this moment. One group ($n = 27$) read about a person who threw it away (i.e. “*put*” ... “*placed*”) and was aware of his seropositivity. One group ($n = 29$) read about a person who was throwing away a syringe (i.e. “*was putting*” ... “*was placing*”) and was unaware of his seropositivity. Finally, one group ($n = 25$) read about a person who threw it away (i.e. “*put*” ... “*placed*”) and was unaware of his seropositivity. Thereafter, they were asked to answer the following series of questions serving as dependent measures.

Measures

Intentionality. One set of questions probed participants’ perceptions of the degree to which the accused intended to transmit HIV to other people. Three questions were used: “*Did the accused abandon his syringe in the bin with the intention to transmit HIV to other people?*”; “*Did the accused abandon his syringe in the bin with the plan to transmit HIV to other people?*”; “*Did the accused abandon his syringe in the bin with the desire to transmit HIV to other people?*”. Participants’ responses were reported on 7-point Likert-type scale ranging from 1 (“*no, not at all*”) to 7 (“*yes, absolutely*”), and averaged to obtain a general index of perceived intentionality, $\alpha = .96$.

Blame. One question gauged the amount of blame participants assigned to the accused for transmitting HIV to the complainant: “*How much should the accused be blamed for the contamination of the complainant?*” on a scale from 1 (“*not at all to blame*”) to 7 (“*completely to blame*”).

Feelings about the accused. Participants’ feelings about the accused were gauged by asking them to rate on a 7-point scale the extent to which they felt 6 emotions, specifically, indignation, dislike, disdain, compassion, lenity, and commiseration, after reading the article. Their responses were averaged (with the last 3 items reverse-coded) to obtain a general index of the dislike towards the accused, $\alpha = .94$.

Sentence and Damages Recommendation. Finally, participants were asked to recommend a prison sentence for the accused ranging from 0 to 5 years imprisonment, and a payment of damages ranging from \$10,000 to \$30,000. For both of these measures, an open-ended question was provided so that participants were asked to report in a box a number between 0 and 5 for the prison sentence and a number between 10,000 and 30,000 for damages.

Results and Discussion

As outlined in the introduction of this study, the main variable of interest was verb aspect. The information about whether the accused knew or did not know he

was HIV positive was introduced for exploratory purpose, as a moderating factor. Simple main effects analysis showed that verb aspect did have a statistically significant effect so that participants in the imperfective condition perceived a greater intention to hurt someone else ($M_{\text{imperfective}} = 4.41$ versus $M_{\text{perfective}} = 3.87$, $F(1, 103) = 4.97$, $p = .028$, $\eta^2 = 0.046$, $d = 0.44$), attributed a higher blame ($M_{\text{imperfective}} = 4.89$ versus $M_{\text{perfective}} = 4.39$, $F(1, 103) = 4.14$, $p = .044$, $\eta^2 = 0.038$, $d = 0.39$), and recommended a higher imprisonment duration ($M_{\text{imperfective}} = 1.76$ versus $M_{\text{perfective}} = 1.20$, $F(1, 103) = 7.72$, $p < .01$, $\eta^2 = 0.069$, $d = 0.54$). For dislike, the difference between means failed to reach statistical significance ($M_{\text{imperfective}} = 4.72$ versus $M_{\text{perfective}} = 4.27$, $F(1, 103) = 3.65$, $p = .058$, $\eta^2 = 0.034$, $d = 0.37$) and for damages, the difference was not significant ($M_{\text{imperfective}} = 18715.52$ versus $M_{\text{perfective}} = 18064.44$, $F < 1$).

A statistically significant interaction was found for blame attribution ($F(1, 103) = 4.10$, $p = .045$) and duration of imprisonment ($F(1, 103) = 13.01$, $p < .001$), but not for perceived intentionality ($F(1, 103) = 1.42$, $p = .23$), expression of dislike ($F(1, 103) = 1.43$, $p = .23$) and amount of damage ($F < 1$). Planned comparisons (see table 1) showed in particular that the effects of verb aspect were statistically significant only when the accused was portrayed as knowing his HIV status. In this particular condition, the description of the accused's behavior using imperfective aspect heightened significantly judgments about intentionality ($M_{\text{imperfective}} = 5.04$ versus $M_{\text{perfective}} = 4.22$), $F(1, 103) = 5.80$, $p = .017$, $\eta^2 = 0.053$, $d = 0.66$, $\text{Power} = .77$ at $\alpha = .05$ (one-tailed). The same pattern of results emerged for expression of dislike toward the accused ($M_{\text{imperfective}} = 5.27$ versus $M_{\text{perfective}} = 4.54$, $F(1, 103) = 4.80$, $p = .03$, $\eta^2 = 0.044$, $d = 0.64$, $\text{Power} = .74$ at $\alpha = .05$ (one-tailed). Blame attribution was similarly impacted ($M_{\text{imperfective}} = 5.31$ versus $M_{\text{perfective}} = 4.29$, $F(1, 103) = 8.18$, $p < .01$) with a greater value as regards effect size ($\eta^2 = 0.073$, $d = 0.80$) and chance of detecting an effect of this size in the present conditions ($\text{power} = .89$ at $\alpha = .05$ (one-tailed)). The same pattern was revealed for recommended imprisonment duration ($M_{\text{imperfective}} = 2.73$ versus $M_{\text{perfective}} = 1.44$, $F(1, 103) = 20.24$, $p < .001$, $\eta^2 = 0.164$, $d = 1.17$, $\text{Power} = .99$ at $\alpha = .05$ (one-tailed)). For the amount of damages, the same comparison between the two verbal aspect conditions did not show a significant difference ($F < 1$). When the accused was portrayed as being unaware of his HIV status, there was no reliable difference between perfective and imperfective marking conditions whatever the dependent measure ($F < 1$). For a graphical representation of planned comparisons, see Figure 1.

The results suggest that the way people reason about whether or not a HIV-positive and drug-addicted person abandoned his syringe with the intention to hurt other people, and consequently, deserves blame and punishment, could depend on how the action is phrased as regards the verbal aspect. One possible reason could be that “*was placing*” and “*was putting his syringe*” reflected a deliberate and planned action more so than “*placed*” and “*put his syringe*”. Said differently, it could be that the imperfective aspect affected the accessibility of

Figure 1

Planned Comparisons for Perceived Intentionality, Blame Attribution, and Dislike



Note. Y-axis corresponds to Likert scale: 1 = no, not at all; 7 = yes, absolutely

Table 1

Mean & Standard Deviation for Perceived Intentionality, Attribution of Blame, Dislike, Imprisonment Duration and Amount of Damages as a Function of Verb Aspect (Perfective vs Imperfective) and Knowledge of One's HIV Status (Unawareness vs Knowledge)

	Perfective		Imperfective	
	Unawareness <i>n</i> = 25	Knowledge <i>n</i> = 27	Unawareness <i>n</i> = 29	Knowledge <i>n</i> = 26
Intentionality	<i>M</i> = 3.53 (<i>SD</i> = 1.35)	<i>M</i> = 4.22 (<i>SD</i> = 1.13)	<i>M</i> = 3.78 (<i>SD</i> = 1.12)	<i>M</i> = 5.04 (<i>SD</i> = 1.33)
Blame	<i>M</i> = 4.48 (<i>SD</i> = 1.42)	<i>M</i> = 4.29 (<i>SD</i> = 1.26)	<i>M</i> = 4.48 (<i>SD</i> = 1.21)	<i>M</i> = 5.31 (<i>SD</i> = 1.26)
Dislike	<i>M</i> = 3.99 (<i>SD</i> = 1.36)	<i>M</i> = 4.54 (<i>SD</i> = 1.15)	<i>M</i> = 4.16 (<i>SD</i> = 1.19)	<i>M</i> = 5.27 (<i>SD</i> = 1.13)
Imprisonment	<i>M</i> = 0.96 (<i>SD</i> = 1.02)	<i>M</i> = 1.44 (<i>SD</i> = 1.01)	<i>M</i> = 0.79 (<i>SD</i> = 0.94)	<i>M</i> = 2.73 (<i>SD</i> = 1.18)
Damages	<i>M</i> = 18240.00 (<i>SD</i> = 5222.39)	<i>M</i> = 17888.89 (<i>SD</i> = 4725.81)	<i>M</i> = 18931.04 (<i>SD</i> = 4920.30)	<i>M</i> = 18500.00 (<i>SD</i> = 5124.45)

Note. The higher the mean, the higher the perceived intentionality, attribution of blame, dislike, imprisonment, and damages.

cognitions related to intentionality, which in turn affected judgments of how pre-meditated the consequences of the action were. But the results also suggest this pattern of reasoning occurred only when the defendant was presented as knowing his HIV-status. When the defendant was presented as not knowing his HIV-status, judgments were not impacted by verb aspect. Consequently, this experiment demonstrates that some contextual features can work as potential boundary conditions to the effect of verb aspect.

However, it should be noted that for two planned contrasts, a power-determination analysis revealed that the recommended level of .80 was not reached, suggesting that the test was underpowered. For the first comparison specified in Table 1 (intentionality: 5.04 vs. 4.22 with Cohen's $d = 0.66$), the post-hoc power analysis indicated that on the basis of the means, an n of approximately 29 people per condition would be needed to obtain statistical power at the recommended .80 level and alpha set at .05, one tailed. Furthermore, an effect-size sensitivity analysis (Giner-Sorolla et al., 2024; Perugini et al., 2018) showed that with the sample size as pre-determined in the current study along with alpha specified at .05 and power level at .80, the minimally detectable effect referred to as the minimal effect size (i.e. Cohen's d) was estimated at .70. The same procedures were conducted for the second comparison specified in Table 1 (dislike: 5.27 vs. 4.54 with Cohen's $d = 0.64$). These analyses revealed that an n of approximately 31 people per condition would be required to obtain statistical power at .80 level with $\alpha = .05$ (one tailed), and the minimal effect size based on the current design was estimated at 0.69.

Experiment 2

Method

Stimulus materials and factorial design

This experiment was a partial replication and extension of Experiment 1. The scenario described the same actions by the accused (i.e. Mark B., a drug-addicted and HIV positive person) and complainant (i.e. John L.) as regards the circumstances that led to contamination. The same instructions as for Experiment 1 served as cover story, and a new vignette was created wherein two elements were manipulated. First, two synonyms of “put” and “place” served as punctual verbs to refer to the discarding of the syringe, namely “*deposit*” and “*set*” (in French: *déposer* and *poser*), so that a first experimental manipulation consisted in varying their verbal aspect: perfective (“*he deposited [...] he set his syringe in the bin*” / in French: “*il déposa [...] il posa sa seringue dans la poubelle*”) versus imperfective (“*he was depositing [...] he was setting his syringe in the bin*” / in French: “*il était en train de déposer [...] il était en train de poser sa seringue dans la poubelle*”). Second, a new piece of information about the defendant served as an additional experimental and moderating variable in the subsequent analyses. In one

version, participants were informed that the accused was “*totally unknown to the police services and did not have any trouble with the law until now*” / in French: “*il était totalement inconnu des services de police et n’avait eu aucun antécédent judiciaire jusqu’alors*”, whereas in another version, they were told that the accused was “*already known to police services and had a criminal record*” / in French: “*il était déjà connu des services de police et avait eu des antécédents judiciaires*”. As the content of this new vignette was identical to that of the first experiment, with the exception of the two aforementioned variations, it was decided to indicate a shortened version in the reporting of the study (see appendix B).

A total of 122 students aged 18 to 22 enrolled in an introductory law course served as participants in this study. Randomly assigned, they read one of four versions resulting from a 2 (verb aspect: *perfective* versus *imperfective aspect*) X 2 (accused’s backgrounds: *no criminal record* versus *criminal record*) between-subjects factorial design. The questions were similar to those from Experiment 1 for the measure of perceived intentionality ($\alpha = .97$), blameworthiness, dislike (Cronbach’s $\alpha = .95$) and sentence.

Results and Discussion

Simple main effects analyses revealed that imperfective aspect significantly heightened judgments of intentionality ($M_{imperfective} = 4.98$ versus $M_{perfective} = 4.26$, $F(1, 118) = 19.05$, $p < .0001$, $\eta^2 = 0.139$, $d = 0.78$), blame attribution ($M_{imperfective} = 5.35$ versus $M_{perfective} = 4.50$, $F(1, 118) = 17.83$, $p < .0001$, $\eta^2 = 0.131$, $d = 0.77$), expression of dislike ($M_{imperfective} = 5.09$ versus $M_{perfective} = 4.37$, $F(1, 118) = 13.60$, $p < .001$, $\eta^2 = 0.103$, $d = 0.68$), imprisonment ($M_{imperfective} = 2.53$ versus $M_{perfective} = 1.71$, $F(1, 118) = 14.61$, $p < .001$, $\eta^2 = 0.11$, $d = 0.70$) and amount of damages ($M_{imperfective} = 18700.43$ versus $M_{perfective} = 16947.31$, $F(1, 118) = 4.40$, $p = .038$, $\eta^2 = 0.036$, $d = 0.38$).

A significant interaction was found for blame attribution ($F(1, 118) = 4.31$, $p = .040$), duration of imprisonment ($F(1, 118) = 6.56$, $p = .011$), and amount of damages ($F(1, 118) = 7.98$, $p < .01$), but not for perceived intentionality ($F(1, 118) = 3.06$, $p = .083$) and dislike ($F(1, 118) = 1.81$, $p = .18$). Planned comparisons (see table 2) showed that when participants were informed that the accused had a criminal record, those who had read the imperfective version produced higher judgments of intentionality ($M_{imperfective} = 5.71$) than those who read the perfective version ($M_{perfective} = 4.69$), $F(1, 118) = 18.38$, $p < .0001$, $\eta^2 = 0.135$, $d = 1.06$, $Power = .98$). The same pattern of results emerged for blame attribution ($M_{imperfective} = 6.21$ versus $M_{perfective} = 4.93$, $F(1, 118) = 19.51$, $p < .0001$, $\eta^2 = 0.142$, $d = 1.24$, $Power = .99$), expression of dislike ($M_{imperfective} = 5.95$ versus $M_{perfective} = 4.98$, $F(1, 118) = 12.46$, $p < .001$, $\eta^2 = 0.095$, $d = 0.96$, $Power = .97$), imprisonment ($M_{imperfective} = 3.58$ versus $M_{perfective} = 2.22$, $F(1, 118) = 20.05$, $p < .0001$, $\eta^2 = 0.145$, $d = 1.29$, $Power = .99$) and damages ($M_{imperfective} = 22275.86$ versus $M_{perfective} =$

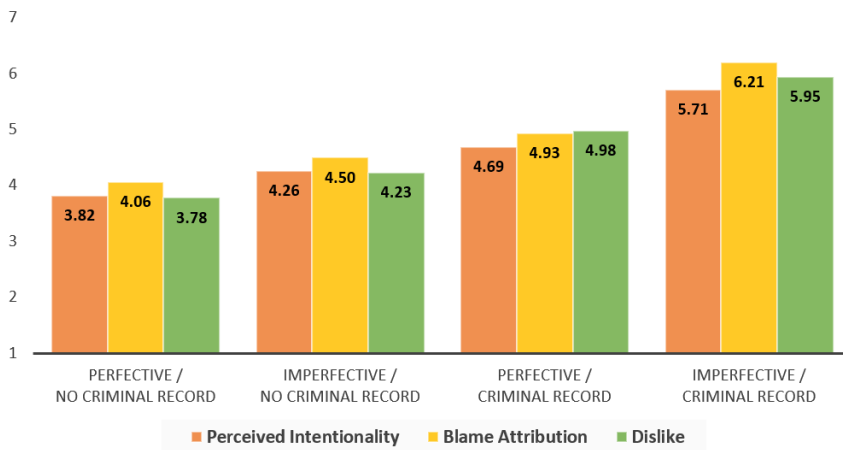
18161.29, $F(1, 118) = 11.92$, $p < .001$, $\eta^2 = 0.092$, $d = 0.90$, $Power = .96$). When the accused had no criminal record, there was no reliable difference in judgments depending on whether participants received imperfective or perfective version (intentionality: $M_{imperfective} = 4.26$ versus $M_{perfective} = 3.82$, $F(1, 118) = 3.47$, $p = .065$; blame: $M_{imperfective} = 4.50$ versus $M_{perfective} = 4.06$, $F(1, 118) = 2.34$, $p = .12$; dislike: $M_{imperfective} = 4.23$ versus $M_{perfective} = 3.78$, $F(1, 118) = 2.80$, $p = .097$; imprisonment: $M_{imperfective} = 1.47$ versus $M_{perfective} = 1.20$, $F < 1$; damages: $M_{imperfective} = 15125.0$ versus $M_{perfective} = 15733.33$, $F < 1$). For a graphical representation of planned comparisons, see Figures 2, 3 and 4.

This experiment further supports the earlier result that verbal aspect can differentially influence the inferences people make about the intentions of a protagonist when his or her action leads to negative outcomes. In this case, imperfective appeared to prompt accessibility of intention-related concepts and subsequently trigger a series of corollary judgments. Again, framing the action with imperfective aspect could have implied that the action was perceived as more enduring, which may have led to assumptions that the action was done on purpose and with premeditation. The experiment also confirmed that the extent to which verb aspect influences judgments involved in legal decision seems to be dependent upon some situational features since statistical analyses revealed that varying the verbal aspect modality produced a significant effect only when the accused was presented as having a criminal record.

Furthermore, these results suggest that the effects of verb aspect might also be bounded to the specific verbs being used for the description of the critical action (i.e. the abandon of the syringe in the scenario of the current study). Indeed, it should be noted that comparisons conducted in the current experiment all revealed effect sizes (i.e. Cohens' d) that were larger than the effect sizes computed for the same comparisons in the previous experiment, both for simple main effects analyses and for planned comparisons. More precisely, while limiting our observation to planned comparisons, it should be pointed out that, in view of Cohen's (1988) interpretation, the observed effect sizes in the current experiment were estimated to be "large" ($d = 1.06$, 1.24 , and 0.96 respectively for perceived intentionality, attribution of blame and expression of dislike), while they were estimated to be "medium" (respectively 0.66 , 0.80 , 0.64) in the previous experiment. So, it raises the interesting question of whether verbs respectively used in experiment 1 and experiment 2 are semantically nuanced and consequently, could this impact the results. More broadly, this finding extends the current study to whether the effects of verb aspect considered as a subtle linguistic marker can be regulated by the type of verbs subject to such marking. This is precisely what inspired the next experiment.

Figure 2

Planned Comparisons for Perceived Intentionality, Blame Attribution, and Dislike



Note. Y-axis corresponds to Likert scale: 1 = no, not at all; 7 = yes, absolutely

Figure 3

Planned Comparison for Prison Years

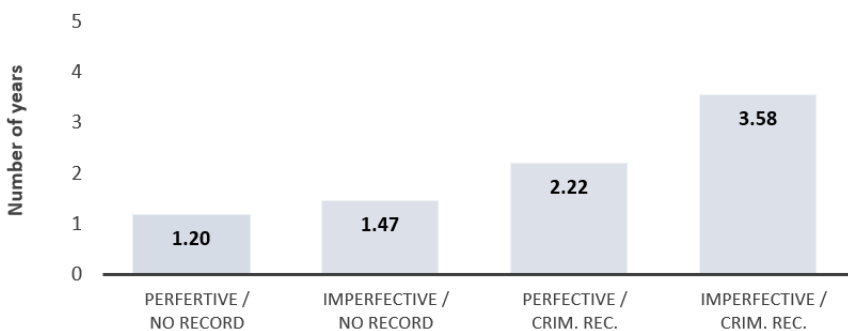
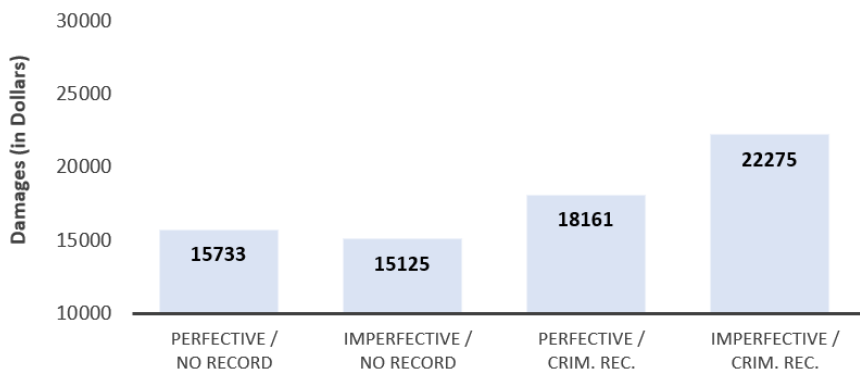


Figure 4*Planned Comparisons for Amount of Damages***Table 2**

Mean (M) & Standard Deviation (SD) for Perceived Intentionality, Attribution of Blame, Dislike, Imprisonment Duration and Amount of Damages as a Function of Verb Aspect (Perfective vs Imperfective) and Criminal Record (No Criminal Record vs Previous Criminal Record).

	Perfective		Imperfective	
	No criminal record <i>n</i> = 30	Previous criminal record <i>n</i> = 31	No criminal record <i>n</i> = 32	Previous criminal record <i>n</i> = 29
Intentionality	<i>M</i> = 3.82 (<i>SD</i> = 0.88)	<i>M</i> = 4.69 (<i>SD</i> = 0.93)	<i>M</i> = 4.26 (<i>SD</i> = 0.80)	<i>M</i> = 5.71 (<i>SD</i> = 1.07)
Blame	<i>M</i> = 4.06 (<i>SD</i> = 1.28)	<i>M</i> = 4.93 (<i>SD</i> = 1.03)	<i>M</i> = 4.50 (<i>SD</i> = 1.11)	<i>M</i> = 6.21 (<i>SD</i> = 1.01)
Dislike	<i>M</i> = 3.78 (<i>SD</i> = 1.14)	<i>M</i> = 4.98 (<i>SD</i> = 1.09)	<i>M</i> = 4.23 (<i>SD</i> = 1.13)	<i>M</i> = 5.95 (<i>SD</i> = 0.90)
Imprisonment	<i>M</i> = 1.20 (<i>SD</i> = 1.40)	<i>M</i> = 2.22 (<i>SD</i> = 0.99)	<i>M</i> = 1.47 (<i>SD</i> = 1.16)	<i>M</i> = 3.58 (<i>SD</i> = 1.12)
Damages	<i>M</i> = 15733.33 (<i>SD</i> = 4940.56)	<i>M</i> = 18161.29 (<i>SD</i> = 4251.25)	<i>M</i> = 15125.00 (<i>SD</i> = 4338.50)	<i>M</i> = 22275.86 (<i>SD</i> = 4920.05)

Note. The higher the mean, the higher the perceived intentionality, attribution of blame, dislike, imprisonment and damages.

Experiment 3

Method

Stimulus materials and factorial design

This experiment was a partial replication of the two previous experiments, but was also built on the notion that verbs can frame the “doer” of an action either as a high volitional or low volitional agent, given that volition meanings are semantically encoded in the lexicon, depending on whether they convey a controlled or an uncontrolled course of action meaning (De Freitas et al., 2017; Kittilä, 2005; Matasović, 2016). In psychology, volition denotes the act of willing or choosing, forming a purpose, the exercise of the will and it encompasses willingness and wish, determination and insistence (Frith, 2013; Hornsby, 1998). In linguistics, a volitional verb (or construction) has been defined as one where the action it refers to takes place as a consequence of the agent’s choice while a non-volitional verb (or construction) has been defined as one where the agent has no determining influence on the action (Chrystal, 2008; Khor, 2020). Scholars interested in the linguistic marking of agentivity and control also argued that verbs can be distributed along a continuum expressing different degrees of volition (Budwig, 1989; Shibatani & Pardeshi, 2008). The idea of a “continuum” inspired a first linguistic manipulation that has consisted in varying the degree of volition conveyed by the lexical entry used to depict how the accused had discarded the syringe. In one version, “*conceal*” and “*disguise*” (in French: *dissimuler* and *camoufler*) were used and supposed to semantically emphasize the degree of deliberateness and insistence of the agent, more than “*put*” and “*place*” which were used in Experiment 1. A second consisted in varying the verbal aspect of these experimental verbs, namely “*he was concealing [...] he was disguising*” versus “*he concealed [...] he disguised his syringe in the bin*”, and “*he was putting [...] he was placing*” versus “*he put [...] he placed his syringe in the bin*”. The vignette used for the current experiment was identical to that of Experiment 1, with the exception of the two aforementioned variations. Only a shortened version of the vignette used in the high volitional involvement condition is reported here for illustration (see appendix C).

A total of 128 students aged 18 to 23 enrolled in an introductory law course participated in this study. Randomly assigned, they read one of four versions resulting from a 2 (lexical framing of volitionality: *low volitional involvement* versus *high volitional involvement*) X 2 (verb aspect: *perfective* versus *imperfective aspect*) between-subjects factorial design. The same questions as for experiment 1 served as main measures for perceived intentionality ($\alpha = .95$), blameworthiness, dislike ($\alpha = .96$), and sentence.

Results and Discussion

Simple main effect analyses showed that the lexical framing of the action did have a significant effect on all dependent measures. When the action was framed as a high volitional behavior, participants were more likely to consider that the accused acted with a criminal intention ($M_{high\ volitional} = 5.31$) than when it was framed as a low volitional behavior ($M_{low\ volitional} = 4.41$), $F(1, 124) = 15.43$, $p < .001$, $\eta^2 = 0.11$, $d = 0.70$). It was the same for attribution of blame ($M_{high\ volitional} = 5.62$ versus $M_{low\ volitional} = 4.64$, $F(1, 124) = 18.47$, $p < .0001$, $\eta^2 = 0.13$, $d = 0.76$), dislike toward the accused ($M_{high\ volitional} = 5.57$ versus $M_{low\ volitional} = 4.69$, $F(1, 124) = 14.63$, $p < .001$, $\eta^2 = 0.105$, $d = 0.68$), imprisonment ($M_{high\ volitional} = 1.98$ versus $M_{low\ volitional} = 1.41$, $F(1, 124) = 6.44$, $p = .012$, $\eta^2 = 0.05$, $d = 0.46$), and damages ($M_{high\ volitional} = 20798.86$ versus $M_{low\ volitional} = 16959.17$, $F(1, 124) = 10.74$, $p < .01$, $\eta^2 = 0.08$, $d = 0.58$).

Simple main effect analyses also revealed that aspectual marking did have a significant effect on all judgments. It was found that participants who had read the imperfective version were more likely to judge that there was a criminal intention ($M_{imperfective} = 5.11$) than those who read the perfective version ($M_{perfective} = 4.62$), $F(1, 124) = 4.76$, $p = .031$, $\eta^2 = 0.037$, $d = 0.38$). The same analysis revealed that attribution of blame was also impacted ($M_{imperfective} = 5.40$ versus $M_{perfective} = 4.86$, $F(1, 124) = 5.70$, $p = .018$, $\eta^2 = 0.044$, $d = 0.42$), as well as dislike toward the accused ($M_{imperfective} = 5.42$ versus $M_{perfective} = 4.85$, $F(1, 124) = 6.28$, $p = .013$, $\eta^2 = 0.048$, $d = 0.45$), imprisonment ($M_{imperfective} = 1.92$ versus $M_{perfective} = 1.47$, $F(1, 124) = 3.99$, $p = .047$, $\eta^2 = 0.03$, $d = 0.36$), and damages ($M_{imperfective} = 20080.64$ versus $M_{perfective} = 17677.40$, $F(1, 124) = 4.21$, $p = .042$, $\eta^2 = 0.033$, $d = 0.36$).

Although the same ANOVA revealed no significant interaction between the two variables (perceived intentionality, $p = .13$; blame attribution, $p = .19$; expression of dislike, $p = .14$; imprisonment, $p = .94$; damages, $p = .70$), subsequent analyses were made, considering the lexical framing, specifically, as a moderating factor. They showed that when the action was lexically framed as highly volitional, there was no reliable difference in judgments depending on whether participants received perfective or imperfective version ($p > .20$ for all dependent measures). However, when the volitionality of the action was attenuated, participants produced higher judgments of intentionality when they had read the imperfective version ($M_{imperfective} = 4.84$) compared to the perfective version ($M_{perfective} = 4.00$), $F(1, 124) = 6.73$, $p = .010$, $\eta^2 = 0.051$, $d = 0.67$, $Power = .83$). It was the same for attribution of blame ($M_{imperfective} = 5.06$ versus $M_{perfective} = 4.22$, $F(1, 124) = 6.79$, $p = .011$, $\eta^2 = 0.052$, $d = 0.64$, $Power = .80$), and dislike toward the accused ($M_{imperfective} = 5.15$ versus $M_{perfective} = 4.24$, $F(1, 124) = 7.78$, $p < .01$, $\eta^2 = 0.06$, $d = 0.71$, $Power = .87$), (see figure 5). On the other hand, for imprisonment, the same comparison failed to reach significance ($M_{imperfective} =$

Table 3

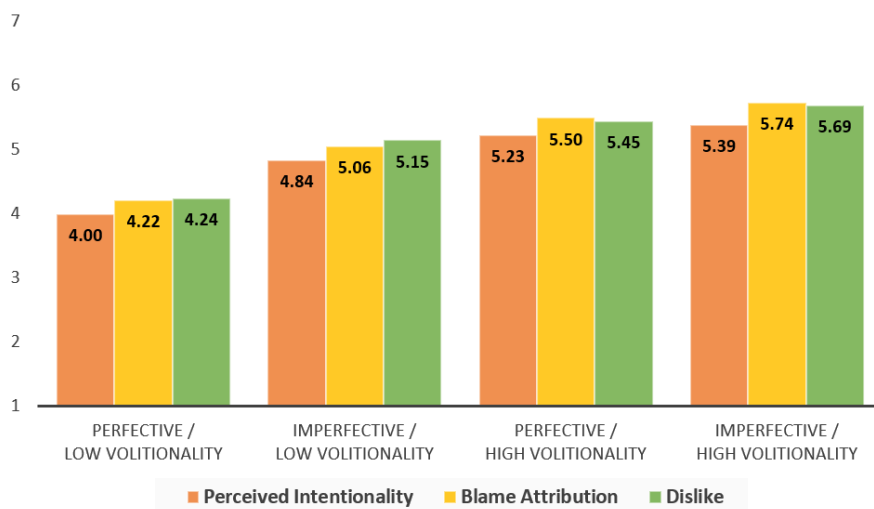
Mean (M) and Standard Deviation (SD) for Perceived Intentionality, Attribution of Blame, Dislike, Imprisonment Duration and Amount of Damages as a Function of Verb Aspect (Perfective vs Imperfective) and Lexical Framing of Volitionality (Low Involvement vs High Involvement)

	Perfective		Imperfective	
	Low volitional involvement n = 32	High volitional involvement n = 34	Low volitional involvement n = 31	High volitional involvement n = 31
Intentionality	M = 4.00 (SD = 1.18)	M = 5.23 (SD = 1.35)	M = 4.84 (SD = 1.34)	M = 5.39 (SD = 1.25)
Blame	M = 4.22 (SD = 1.23)	M = 5.50 (SD = 1.31)	M = 5.06 (SD = 1.39)	M = 5.74 (SD = 1.21)
Dislike	M = 4.24 (SD = 1.17)	M = 5.45 (SD = 1.38)	M = 5.15 (SD = 1.38)	M = 5.69 (SD = 1.23)
Imprisonment	M = 1.18 (SD = 1.23)	M = 1.76 (SD = 1.28)	M = 1.64 (SD = 1.33)	M = 2.19 (SD = 1.16)
Damages	M = 15531.25 (SD = 6016.02)	M = 19823.53 (SD = 7641.47)	M = 18387.10 (SD = 6565.96)	M = 21774.19 (SD = 6053.70)

Note. The higher the mean, the higher the perceived intentionality, attribution of blame, dislike, imprisonment and damages.

Figure 5

Planned Comparisons for Perceived Intentionality, Blame Attribution and Dislike



Note. Y-axis corresponds to Likert scale: 1 = no, not at all; 7 = yes, absolutely

1.64 versus $M_{\text{perfective}} = 1.18$, $F(1, 124) = 2.10$, $p = .15$), as well as for damage ($M_{\text{imperfective}} = 18387.10$ versus $M_{\text{perfective}} = 15531.25$, $F(1, 124) = 2.93$, $p = .089$).

This experiment further supports that verb aspect can influence perceptions of actions and intentions. Again, a behavioral description with an imperfective aspect led to a higher attribution of intentionality, blame and sentence. Nevertheless, this effect of the verb aspect occurred especially as the behavioral description rested on lexical verbs that attenuated the volitionality of the action (i.e. *to place*, *to put* the syringe). One reason could be that, given this particular scenario, verbs such as “*disguise*” and “*conceal*” semantically convey the notion of deliberation and premeditation more than do verbs such as “*place*” and “*put*”, so that using an imperfective verb aspect does not add anything more as regard these dimensions. On the other hand, the variation of verb aspect could work as a subtle linguistic manipulation especially as it is implemented with lexical items that do not reflect a clear semantic notion of deliberation and premeditation, or at least to a lesser extent.

General Discussion

Taken together, these experiments provide insights into how subtle shifts in verb aspect can alter reasoning about the behaviors of others, in particular, whether or not a perpetrator had nefarious intentions in performing a simple action. These results are consistent with prior findings and further support claims about how verb aspect can influence perceptions of actions and whether or not they are intentional and worthy of blame. Experiment 1 and 2 also showed that effects of verb aspect on perceived intentionality, attribution of blame and punishment were moderated by pieces of information about the accused. Interestingly, the use of imperfective verb aspect for describing his behavior impacted participants’ judgments, *but only* when he was presented as knowing his positive HIV status (experiment 1) or having previous criminal record (experiment 2). In addition, experiment 3 showed that the role of the verbal aspect in these judgments also depended on the level of volition inherently attached to verb, given that some lexical verbs semantically have a more volitional quality than others, stressing the doer’s intentional involvement in the event described.

As a whole, these findings suggest that these extralinguistic factors, in relation with the verbal aspect manipulation, may have shaped how participants made sense of the accused’s decision to abandon his syringe. In hindsight, this finding makes sense for Experiment 1. Since the accused was ignorant of his HIV status, the participants probably assumed that there was no reason to believe that he had abandoned his syringe with the intention of harming others, which was sufficient to neutralize the verb aspect variable. This was no longer the case when the protagonist was presented as knowing his HIV status. In this case, describing the abandonment of the syringe with an imperfective aspect, compared to a perfective aspect, could have made this decision more suspicious. In experiment 2, one can suppose that participants held somewhat similar reasoning

in that when the accused was presented as having a criminal record, describing the abandonment of his syringe with an imperfective aspect, as opposed to a perfective aspect, might have made him more suspicious about his motivations. Indeed, it could be advanced that when the accused was identified as a previous offender, the imperfective aspect used to describe his action (i.e. “*depositing*” and “*setting*” the syringe) aroused a sense of suspicion, more so than did the use of perfective aspect (i.e. “*deposited*” and “*set*”). One could also assume that when the accused was presented with a criminal record, the subtle change in the verb aspect of the verbs used in the scenario oriented the meaning of the described action so that for participants in the imperfective aspect condition, as opposed to their counterparts in the perfective aspect condition, it was more like a cover-up. Said differently, the information about the accused may have distorted how the recipients perceived his action, so that “*depositing*” and “*placing*” the syringe led them to interpret this action as a deliberate concealment of the latter to make it dangerous for other people, more than did the perfective aspect formulation.

However, it is necessary to be cautious in drawing definite conclusions from the current findings. Are they limited to this particular scenario or generalizable to other scenarios involving wrongdoing that are not violent interaction? It is an encouraging question for future research. For instance, a future direction of research could take as context the case of needlestick injuries in occupational or non-occupational situations since needlestick injuries are known to occur continuously, particularly in healthcare settings (King & Strony, 2023; Mengistu et al., 2021).

This study primarily examined the effects of verb aspect on perceived intentionality and subsequent related judgments in a legal decision-making scenario, but it also showed that some backgrounds about the defendant could moderate these effects. A large body of research on person perception has shown that prior information about the target person may bias the identification of current behavioral information (Correll et al., 2002; Trope & Gaunt, 2003). Furthermore, a number of studies on juror decision-making also demonstrated that people (i.e. mock jurors) are likely to treat prior crimes as evidence of propensity to commit the current accusation (Greene & Dodge, 1995; Hans & Doob, 1976). Therefore, it would be interesting to further examine how these informational items acted as moderators. In particular, how they were integrated and combined with the verb aspect during the processing of the scenario remains a question for further study. Indeed, let us remind that the scenario was arranged in such a way that these pieces of information appeared *first*, i.e. *before* any reference to the action of the accused. So, a relevant question could regard how these informational items were processed and used when the action of the accused *then* was pointed out in the scenario. For instance, in experiment 2, one might suppose that participants were more sensitive to the imperfective aspect used to describe the behavioral episode *because* they had *previously* received incriminating information about the protagonist. It amounts to saying that at the moment they were reading the

part of the scenario that related to the critical action performed by the accused, the information about his criminal backgrounds predisposed them to be more responsive to the imperfective aspect used to describe this action. In line with this reasoning, it might be interesting in a future study to reverse the order in which these experimental items appear in the text. Would referring *first* to the accused's act (i.e. the abandon of the syringe by manipulating the verbal aspect) *and then* the information about his personal background (i.e. HIV status or criminal record) produce different outcomes? Moreover, it might even be interesting to separate these two occurrences over times, by imagining a procedure in which the time elapsed between these two intakes of information by the receiver would be manipulated. This issue was suggested in the previous research that inspired the current study. For instance, referring to an "*order effect*", Sherrill et al. (2015) suggested "the possibility that the influence of aspect may be contingent on various linguistic features embedded within a given text, and in particular the order of mention" (p. 10), and Eerland et al. (2017), referring to an "*effect of narrated order*", suggested that "it is possible that the impact of grammatical aspect on blame in the context of this study was overridden by ordering effect" (p. 10).

It should also be recalled here that the past research has shown that the aspectual manipulation has a primary effect on temporal dynamics so that when the action was formulated with an imperfective aspect, it was considered more durable (or iterative) by the recipients, which prompted them to think more readily that it was carried out with will and determination (Hart & Albarracín, 2011; Sherrill et al., 2015). So, in the case of our scenario, this reasoning may have been encouraged all the more when the doer was presented as having criminal record or knowing his HIV positive status. A future research should examine this rationale in more details and shed light on the underlying mechanisms likely to direct how these two factors interact with each other. It should also introduce some measures regarding temporal dynamics as potential underlying mechanisms as suggested by Sherrill et al. (2015, p. 17).

Results from experiment 3 show that lexical category also matters, beyond verb aspect. They confirm that verbs used to describe behavior are low-level cues peoples can rely on when judging whether an agent acted intentionally and can be hold fully accountable for the resulting outcomes (Ferstl et al., 2011; Monroe et al., 2015). In our particular scenario, when the action of leaving the syringe in the trash was framed as a concealment (i.e. "disguising the syringe"), harmful intent was perceived to be higher than when it was framed as abandonment (i.e. "putting the syringe"). The results also suggest that varying the verb aspect may be of critical importance for some verbs more than others. Interestingly, when the verbs used to describe this particular action semantically stressed a volitional meaning (i.e. "concealing/disguising"), verb aspect did not affect perceived intentionality, but this was not the case when the volitional dimension was semantically reduced (i.e. "putting/placing"). In the latter case, verb aspect acted on perceived intentionality, with imperfective aspect increasing the latter. One implication of this finding could

be that persuaders (e.g., lawyers) may meaningfully alter mental representations of decision-makers (e.g., jurors) by ingeniously combining verb aspect and lexical verbs to selectively and subtly emphasize advantageous information.

More generally, these experiments contribute to research that investigates how linguistic subtleties can be used to frame an actor involved in a given event as a high volitional or low volitional agent, with subsequent strong implications as regards a series of attributional judgments (Bohner, 2001; Coates & Wade, 2004; Corrigan, 1988; Fausey & Boroditsky, 2010; Formanowicz et al., 2017; Fountain, 2008; Hart, 2018; Hartshorne & Snedeker, 2013; Leets, 2000; Manzanares, 2014; Tillman et al., 2013). Many examples of linguistic encoding of transitive events by means of which the involuntary participation of a given agent is emphasized have been given in the literature, including the likes of the English *misplace* and *mislaid* (as opposed to *put* and *place*) and their equivalent in other languages (Fauconnier, 2011; Kittilä, 2005; Verhoeven, 2017). As De Freitas et al. (2017) argued: “when expressing a public protest, weaving a narrative before a jury, crafting a newspaper headline, or gossiping about everyday offenses, people can choose a lexical causative verb that implicates intentional, direct causality to bolster their moral accusation [...] Conversely, they will opt for periphrastic construction containing generic causative verbs [...] when they seek to conceal agency and hence responsibility” (p. 1180).

To some extent, the current study also confirms the effects on readers’ decisions of knowing about the defendant’s previous criminal record (Cheung & Lagnado, 2023; Oswald, 2009; Schmittat, 2023; Strömwall et al., 2014; Wissler & Saks, 1985). As such, it can be considered as an additional contribution in the field of research on pretrial publicity (Hope et al., 2004; Otto et al., 1994; Studebaker & Penrod, 2005; Wistrich et al., 2005). Nevertheless, the current study, not only investigated “*what*” kind of information can alter the decision, but also “*how*” the linguistic way of delivering this information can alter the judgment. As Coates and Wade (2004) argued: “There are no impartial accounts. All accounts of violence influence the perception and treatment of victims and offenders. Where there is violence, the question of which words are fitted to which deeds is crucial” (p. 513). Maybe it is time for the research on pretrial publicity to be augmented with a better understanding of language variables and their subtleties in particular.

Whatever the future studies in the continuation of the current research, particular attention must be paid to their sample sizes to not make them underpowered. The relationship between study power and the veracity of the resulting finding has become one of the central issues in debates about the quality of research and underpowered studies has emerged as an endemic problem in psychological experiments (Button et al., 2013a). In the current research, sample sizes were approximately aligned with previous studies for which an a priori power analysis was conducted, based on the effect size observed by Hart and Albarracín in their study (2011, experiment 3). For instance, in Sherrill et al.’s (2015) research,

total sample sizes were 123 participants in experiment 1 and 130 participants in experiment 2. It should be noted that by entering in G*Power (Erdfelder et al., 1996) the data extracted from Hart and Albarracín's (2011, experiment 3) study to perform an a priori power analysis with α at .05 and Power ($1 - \beta$) at .80, the resulting total sample size was 44 participants ($n = 22$ per condition). So, retrospectively, sample sizes in the current study were a priori relevant since the number of observations per condition always exceeded 22. It remains the fact that in experiment 1, for two significant results ($p < .05$), the (post hoc) power calculation indicated a value lower than conventional threshold of .80, that could suggest the risk for a false positive (see Christley, 2010, p. 16; Dumat-Mallet et al., 2017, p. 2). For experiment 2 and experiment 3, sample sizes were augmented and the calculation of statistical power for all significant results indicated a value $\geq .80$, allowing for a higher confidence in drawing conclusions (Button et al., 2013b). Greater prudence will be required in the future studies and a priori power analyses should be conducted to maximize the probative value of this program of research.

Despite its limitations, the present study is a contribution to the research on the effect of grammatical aspect on judicial decision-making. By extending it to a scenario not characterized by a violent altercation between the protagonists, it offers new avenues of investigation. Nevertheless, future studies will also need to examine in greater detail how variability in aspect impacts features of the situation model which aligned with criteria for making legal judgements. Indeed, it is only by identifying these particular situational features that it will be possible to pinpoint how verbal aspect influences judicial decision-making.

Authorship Details

Vincent Coppola: research concept and design, collection and/or assembly of data, data analysis and interpretation, and writing the article.

Teenie Matlock: contributed to the research concept and design, data analysis and interpretation, and writing the article.

Conflict of Interest Disclosure

The authors report no conflicts of interest.

Funding

This research received no external funding.

Research Ethics Statement

The research involved the use of non-sensitive, completely anonymous questionnaire procedure. Participants could not be defined as "vulnerable" and participation could not be considered as inducing undue psychological stress or anxiety. At the end of the experimental session, a moment of debriefing was organized during which the authors explained why some degree of deception was an integral feature of the design and conduct of the experiment (i.e. the cover story) and participants were allowed to withdraw their data. Once informed about the true objectives of the study and why some degree of deception was part of the design, participants were asked to express whether they regretted having participated in this study. They were also invited to indicate to what extent they considered that performing such a study was relevant in their academic program.

Data Availability Statement

Data associated with the current study will be made available upon reasonable request to the corresponding author.

References

- Abwender, D. A., & Hough, K. (2001). Interactive effects of characteristics of defendant and mock juror on U.S. participants' judgment and sentencing recommendations. *The Journal of Social Psychology, 141*(5), 603-615. <https://doi.org/10.1080/00224540109600574>
- Anderson, S. E., Matlock, T., & Spivey, M. (2013). Grammatical aspect and temporal distance in motion descriptions. *Frontiers in Psychology, 4*(2013), 337. <https://doi.org/10.3389/fpsyg.2013.00337>
- Becker, R. B., Ferretti, T. R., & Madden-Lombardi, C. J. (2013). Grammatical aspect, lexical aspect and event duration constrain the availability of events in narratives. *Cognition, 129*(2), 212-220. <https://doi.org/10.1016/j.cognition.2013.06.014>
- Bergen, B., & Wheeler, K. (2010). Grammatical aspect and mental simulation. *Brain & Language, 112*(3), 150-158. <https://doi.org/10.1016/j.bandl.2009.07.002>
- Bohner, G. (2001). Writing about rape: Use of the passive voice and other distancing text features as an expression of perceived responsibility of the victim. *British Journal of Social Psychology, 40*(4), 515-529. <https://doi.org/10.1348/014466601164957>
- Budwig, N. (1989). The linguistic marking of agentivity and control in child language. *Journal of Child Language, 16*(2), 263-284. <https://doi.org/10.1017/S0305000900010412>
- Button, K. S., Ioannidis, J. P. A., Mokrysz, C., Nosek, B. A., Flint, J., Robinson, E. S. J., & Munafò, M. R. (2013a). Power failure: why small sample size undermines the reliability of neuroscience. *Nature Reviews Neuroscience, 14*(5), 365-376. <https://doi.org/10.1038/nrn3475>
- Button, K. S., Ioannidis, J. P. A., Mokrysz, C., Nosek, B. A., Flint, J., Robinson, E. S. J., & Munafò, M. R. (2013b). Confidence and precision increase with high statistical power. *Nature Reviews Neuroscience, 14*(8), 585-586. <https://doi.org/10.1038/nrn3475-c4>
- Calas, F., & Rossi, N. (2001). Éléments de réflexion sur l'aspect grammatical et lexical [Considerations on grammatical and lexical aspect]. *L'information Grammaticale, 89*, 15-20. <https://doi.org/10.3406/igram.2001.2711>
- Carreiras, M., Carriedo, N., Alonso, M. A., & Fernández, A. (1997). The role of verb tense and verb aspect in the foregrounding of information during reading. *Memory & Cognition, 25*(4), 438-446. <https://doi.org/10.3758/BF03201120>
- Cheung, V., & Lagnado, D. (2023). Defendant character influences mock juror judgments of blame, guilt, and punishment. In M. Goldwater, F. K. Anggoro, B. K. Hayes, & D. C. Ong (Eds.), *Proceedings of the Annual Meeting of the Cognitive Science Society: Vol. 45* (pp. 1258-1265). <https://escholarship.org/uc/item/8v87v6j9>

- Christley, R. M. (2010). Power and error: increased risk of false positive results in underpowered studies. *The Open Epidemiology Journal*, 3(1), 16-19. <https://doi.org/10.2174/1874297101003010016>
- Chrystal, D. (2008). *A dictionary of linguistics and phonetics*, 6th edition. Wiley Blackwell.
- Coates, L., & Wade, A. (2004). Telling it like it isn't: Obscuring perpetrator responsibility for violence. *Discourse and Society*, 15(5), 499-526. <https://doi.org/10.1177/0957926504045031>
- Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd edition). Routledge. <https://doi.org/10.4324/9780203771587>
- Coll-Florit M., & Gennari, S. P. (2011). Time in language: Event duration in language comprehension. *Cognitive Psychology*, 62(1), 41-79. <https://doi.org/10.1016/j.cogpsych.2010.09.002>
- Comrie, B. (1976). *Aspect: An introduction to the study of verbal aspect and related problems*. Cambridge University Press.
- Čordalija, N. (2021). The theory of aspect and its processing correlates in neuro-linguistics and psycholinguistic studies. *Journal of the Faculty of Philosophy in Sarajevo*, 24, 251-272. <https://doi.org/10.46352/23036990.2021.251>
- Correll, J., Park, B., Judd, C. M., & Wittenbrink, B. (2002). The police officer's dilemma: Using ethnicity to disambiguate potentially threatening individuals. *Journal of Personality and Social Psychology*, 83(6), 1314-1329. <https://psycnet.apa.org/doi/10.1037/0022-3514.83.6.1314>
- Corrigan, R. (1988). Who dun it? The influence of actor-patient animacy and type of verb in the making of causal attributions. *Journal of Memory and Language*, 27(4), 447-465. [https://doi.org/10.1016/0749-596X\(88\)90067-8](https://doi.org/10.1016/0749-596X(88)90067-8)
- De Freitas, J., DeScioli, P., Nemirow, J., Massenkoff, M., & Pinker, S. (2017). Kill or die: Moral judgment alters linguistic coding of causality. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 43(8), 1173-1182. <https://doi.org/10.1037/xlm0000369>
- De Wit, A., & Brisard, F. (2020). Aspect beyond time: Introduction. *Journal of Linguistics*, 56(3), 459-477. <https://doi.org/10.1017/S002222672000016X>
- Dumat-Mallet, E., Button, K. S., Boraud, T., Gonon, F., & Munafò, M. R. (2017). Low statistical power in biomedical sciences: A review of three human research domains. *Royal Society open science*, 4(2), 160254. <https://doi.org/10.1098/rsos.160254>
- Eerland, A., Sherrill, A. M., Magliano, J. P., & Zwaan, R. A. (2017). The blame game: An investigation of grammatical aspect and blame judgments. *Collabra: Psychology*, 3(1), article 29. <https://doi.org/10.1525/collabra.113>
- Eerland, A., Sherrill, A. M., Magliano, J. P., Zwaan, R. A., Arnal, J. D., Aucoin, P., Berger, S. A., Birt, A. R., Capezza, N., Carlucci, M., Crocker, C., Ferretti, T. R., Kibbe, M. R., Knepp, M. M., Kurby, C. A., Melcher, J. M., Michael, S. W., Poirier, C., & Prenoveau, J. M. (2016). Registered replication report: Hart & Albarracín (2011). *Perspectives on Psychological Science*, 11(1), 158–171. <https://doi.org/10.1177/1745691615605826>

- Eisenberg, T., & Hans, V. P. (2009). Taking a stand on taking the stand: The effect of a prior criminal record on the decision to testify and on trial outcomes. *Cornell Law Review*, 94, 1354-1388. http://scholarship.law.cornell.edu/lrsp_papers/90
- Erdfelder, E., Faul, F., & Buchner, A. (1996). G Power: A general power analysis program. *Behavior Research Methods, Instruments, & Computers*, 28(1), 1-11. <https://doi.org/10.3758/BF03203630>
- Fauconnier, S. (2011). Involuntary agent constructions are not directly linked to reduced transitivity. *Studies in Language*, 35(2), 311-336. <https://doi.org/10.1075/sl.35.2.03fau>
- Fausey, C. M., & Boroditsky, L. (2010). Subtle linguistic cues influence perceived blame and financial liability. *Psychonomic Bulletin & Review*, 17(5), 644-650. <https://doi.org/10.3758/PBR.17.5.644>
- Fausey, C. M., & Matlock, T. (2011). Can grammar win elections? *Political Psychology*, 32(4), 563-574. <https://doi.org/10.1111/j.1467-9221.2010.00802.x>
- Ferretti, T. R., Kutas, M., & McRae, K. (2007). Verb aspect and the activation of event knowledge. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 33(1), 182-196. <https://doi.org/10.1037/0278-7393.33.1.182>
- Ferretti, T. R., Rohde, H., Kehler, A., & Crutchley, M. (2009). Verb aspect, event structure, and co-referential processing. *Journal of Memory and Language*, 61(2), 191-205. <https://doi.org/10.1016/j.jml.2009.04.001>
- Ferstl, E. C., Garnham, A., & Manouilidou, C. (2011). Implicit causality bias in English: A corpus of 300 verbs. *Behavior Research Methods*, 43(1), 124-135. <https://doi.org/10.3758/s13428-010-0023-2>
- Flecken, M., & Gerwien, J. (2013). Grammatical aspect influences event duration estimations: Evidence from Dutch. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Cooperative minds: Social interaction and group dynamics: Proceedings of the 35th Annual Meeting of the Cognitive Science Society* (pp. 2309-2314). Austin TX, Cognitive Science Society. <https://escholarship.org/uc/item/4f50f5h0>
- Fontaine, R. G. (2007). Disentangling the psychology and law of instrumental and reactive subtypes of aggression. *Psychology, Public Policy, and Law*, 13(2), 143-165. <https://psycnet.apa.org/doi/10.1037/1076-8971.13.2.143>
- Formanowicz, M., Roessel, J., Suitner, C., & Maass, A. (2017). Verbs as linguistic markers of agency: The social side of grammar. *European Journal of Social Psychology*, 47(5), 566-579. <https://doi.org/10.1002/ejsp.2231>
- Fountain, A. (2008). It's all in the words: Determining the relationship between newspaper portrayal of rape victims and readers responses. *Undergraduate Review*, 4(1), 33-38. https://vc.bridgew.edu/undergrad_rev/vol4/iss1/10
- Frith, C. (2013). The psychology of volition. *Experimental Brain Research*, 229, 289-299. <https://doi.org/10.1007/s00221-013-3407-6>
- Giner-Sorolla, R., Montoya, A. K., Reifman, A., Carpenter, T., Lewis Jr, N. A., Aberson, C. L., Bostyn, D. H., Conrique, B. G., Ng, B. W., Schoemann, A.

- M., Soderberg, C. (2024). Power to detect what ? Considerations for planning and evaluating sample size. *Personality and Social Psychology Review*, 28(3), 276-301. <https://doi.org/10.1177/10888683241228328>
- Glenberg, A. M., Meyer, M., & Lindem, K. (1987). Mental models contribute to foregrounding during text comprehension. *Journal of Memory and Language*, 26(1), 69-83. [https://doi.org/10.1016/0749-596X\(87\)90063-5](https://doi.org/10.1016/0749-596X(87)90063-5)
- Greene, E., & Dodge, M. (1995). The influence of prior record evidence on juror decision making. *Law and Human Behavior*, 19(1), 67-78. <https://psycnet.apa.org/doi/10.1007/BF01499073>
- Hall, D. C. (2015). Imagining accomplishments from differing visual and temporal perspectives. *Theses and Dissertations (Comprehensive)*. 1753. <https://scholar.wlu.ca/etd/1753>
- Hans, V. P., & Doob, A. N. (1976). Section 12 of the Canada evidence act and the deliberations of simulated juries. *Criminal Law Quarterly*, 18, 235-253. <https://scholarship.law.cornell.edu/facpub/337>
- Hart, C. (2018). Event-frames affect blame assignment and perception of aggression in discourse on political protests: An experimental case study in critical discourse analysis. *Applied Linguistics*, 39(3), 400-421. <https://doi.org/10.1093/applin/amw017>
- Hart, W. (2016). A comment on Eerland et al. (2016). *Perspectives on Psychological Science*, 11(2), 309-310. <https://doi.org/10.1177/17456916166637>
- Hart, W., & Albarracín, D. (2011). Learning about what others were doing: Verb aspect and attributions of mundane and criminal intent for past actions. *Psychological Science*, 22(2), 261-266. <https://doi.org/10.1177/0956797610395393>
- Hartshorne, J. K., & Snedeker, J. (2013). Verb argument structure predicts implicit causality: The advantages of finer-grained semantics. *Language and Cognitive Processes*, 28(10), 1474-1508. <https://doi.org/10.1080/01690965.2012.689305>
- Haynes, E. (2023). *The effect of a prior criminal record on juror decision making* (Publication No. 5303). [Master's thesis, University of North Dakota] <https://commons.und.edu/theses/5303>
- Holcombe, A. O. (2016). Introduction to the registered replication report: Hart and Albarracín (2011). *Perspectives on Psychological Science*, 11(1), 156-157. <https://doi.org/10.1177/1745691615625899>
- Hong, J. P., Ferretti, T. R., Craven, R., & Hepburn, R. D. (2019). Time, verbs and imagining events. *Canadian Journal of Experimental Psychology*, 73(1), 55-63. <https://doi.org/10.1037/cep0000163>
- Hope, L., Memon, A., & McGeorge, P. (2004). Understanding pretrial publicity: Pre-decisional distortion of evidence by mock jurors. *Journal of Experimental Psychology: Applied*, 10(2), 111-119. <https://doi.org/10.1037/1076-898X.10.2.111>
- Hornsby, J. (1998). Volitional theories: Actions, parts and causes. In H. Jennifer (Ed.), *Action*. Taylor and Francis. <https://doi.org/10.4324/9780415249126-V001-1>

- King, K. C., & Strony, R. (2023). Needlestick. In *StatPearls*. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK493147/>
- Kittilä, S. (2005). Remarks on involuntary agent constructions. *Word*, 56(3), 381-419. <https://doi.org/10.1080/00437956.2005.11432555>
- Khor, S.Y. (2020). Volition. In J. Stanlaw (Ed.), *The International Encyclopedia of Linguistic*. <https://doi.org/10.1002/9781118786093.iela0399>
- Laudan, L., & Allen R. J. (2011). The devastating impact of prior crimes evidence and other myths of the criminal justice process. *Journal of Criminal Law and Criminology*, 101(2), 493-528. <https://scholarlycommons.law.northwestern.edu/jclc/vol101/iss2/4>
- Leets, L. (2000). Attributional impact of linguistic masking devices. *Journal of Language and Social Psychology*, 19(3), 342-356. <https://doi.org/10.1177/0261927X00019003004>
- Lindschouw, J. J., & Reebirk, C. (2017). L'apprentissage de l'aspect verbal en français [Learning the verbal aspect in French]. *Synergies Pays Scandinaves*, 11-12, 27-39. http://gerflint.fr/Base/Paysscandinaves11_12/lindschouw_reebirk.pdf
- Liu, N., & Bergen, B. (2016). When do language comprehenders mentally simulate locations? *Cognitive Linguistics*, 27(2), 181-203. <https://doi.org/10.1515/cog-2015-0123>
- Madden, C. J., & Ferretti, T. R. (2009). Verb aspect and the mental representation of situations. In W. Klein & P. Li (Eds.), *The expression of time* (pp. 217-231). Mouton De Gruyter. <https://doi.org/10.1515/9783110199031.217>
- Madden, C. J., & Zwaan, R. A. (2003). How does verb aspect constrain event representations? *Memory & Cognition*, 31(5), 663-672. <https://doi.org/10.3758/BF03196106>
- Madden-Lombardi, C. J., Dominey, P. F., & Ventre-Dominey, J. (2017) Grammatical verb aspect and event roles in sentence processing. *PLoS ONE* 12(12), article e0189919. <https://doi.org/10.1371/journal.pone.0189919>
- Magliano, J. P., & Schleich, M. C. (2000). Verb aspect and situation models. *Discourse Processes*, 29(2), 83-112. https://doi.org/10.1207/S15326950dp2902_1
- Manzanares, J. V. (2014). Cognitive linguistics and the law. *Anuari di Filologia. Estudis di Lingüística*, 4, 185-200. <https://raco.cat/index.php/AFEL/article/view/288761>
- Matasović, R. (2016). Volition in grammar and lexical representation of verbs: The case of Karbadian involuntative. In J. Fleischhauer, A. Latrouite & R. Osswald (Eds.), *Explorations of the syntax-semantics interface* (pp. 247-264). Düsseldorf University Press. <http://dx.doi.org/10.1515/9783110720297-009>
- Matlock, T. (2010). Abstract motion is no longer abstract. *Language and Cognition*, 2(2), 243-260. <https://doi.org/10.1515/langcog.2010.010>
- Matlock, T. (2011). The conceptual motivation of aspect. In K. U. Panther & G. Radden (Eds.), *Motivation in grammar and the lexicon* (pp. 133-148). John Benjamins. <https://doi.org/10.1075/hcp.27.09mat>

- Matlock, T. (2012). Framing political messages with grammar and metaphor. *American Scientist*, 100(6), 478-483. <https://doi.org/10.1511/2012.99.478>
- Matlock, T., Sparks, D., Matthews, J. L., Hunter, J., & Huette, S. (2012). Smashing new results on aspectual framing. How people talk about car accidents. *Studies in Language*, 36(3), 700-721. <https://doi.org/10.1075/sl.36.3.09mat>
- Mazzella, R., & Feingold, A. (1994). The effects of physical attractiveness, race, socioeconomic status, and gender of defendants and victims on judgments of mock jurors : A meta-analysis. *Journal of Applied Social Psychology*, 24(15), 1315-1338. <https://doi.org/10.1111/j.1559-1816.1994.tb01552.x>
- Mengistu, D. A., Tolera, S. T., & Demmu, Y. M. (2021). Worldwilde prevalence of occupationnal exposure to needle stick injury among healthcare workers: A systematic review and meta-anaysis. *Canadian Journal of Infectious Diseases and Medical Microbiology*, 21(1), 1-10. <https://doi.org/10.1155/2021/9019534>
- Michaud, G., & Damay, S. (2024). L'enseignement aspectuel des temps du passé selon une approche basée sur les concepts [The aspectual teaching of past tenses according to a concept-based approach]. *Revue de l'Association Québécoise des Enseignants de Français Langue Seconde*, 37(1), 1-14. <https://doi.org/10.7202/1111722ar>
- Minor, S., Mitrofanova, N., & Ramchand, G. (2022). Fine-grained time course of verb aspect processing. *PLoS ONE*, 17(2), article e0264132. <https://doi.org/10.1371/journal.pone.0264132>
- Monroe, A. E., Reeder, G. D., & James, L. (2015). Perceptions of intentionality for goal-related actions: Behavioral description matters. *PLoS ONE* 10(3), article e0119841. <https://doi.org/10.1371/journal.pone.0119841>
- Morrow, D. G. (1985). Prepositions and verb aspect in narrative understanding. *Journal of Memory and Language*, 24(4), 390-404. [https://doi.org/10.1016/0749-596X\(85\)90036-1](https://doi.org/10.1016/0749-596X(85)90036-1)
- Morrow, D. G., Bower, G. H., & Greenspan, S. L. (1989). Updating situation models during narrative comprehension. *Journal of Memory and Language*, 28(3), 292-312. [https://doi.org/10.1016/0749-596X\(89\)90035-1](https://doi.org/10.1016/0749-596X(89)90035-1)
- Mozuraitis, M., Chambers, C. G., & Daneman, M. (2013). Younger and older adults' use of verb aspect and world knowledge in the online interpretation of discourse. *Discourse Processes*, 50(1), 1-22. <https://doi.org/10.1080/0163853X.2012.726184>
- Oswald, M. E. (2009). How knowledge about the defendant's previous convictions influences judgments of guilt. In M. E. Oswald, S. Bieneck & J. Hupfeld-Heinemann (Eds.), *Social Psychology of Punishment of Crime* (pp. 357-377). Wiley-Blackwell. <https://psycnet.apa.org/record/2009-08430-019>
- Otto, A. M., Penrod, S. D., & Dexter, H. R. (1994). The biasing impact of pre-trial publicity on juror judgments. *Law and Human Behavior*, 18(4), 453-469. <https://doi.org/10.1007/BF01499050>
- Perugini, M., Gallucci, M., & Costantini, G. (2018). A practical primer to power

- analysis for simple experimental designs. *International Review of Social Psychology*, 31(1), article 20. <https://doi.org/10.5334/irsp.181>
- Pinker, S. (2007). *The stuff of thought: Language as a window into human nature*. Viking.
- Rhein, R. (2019). *Pretrial publicity and juror decision making: Effects of inadmissible evidence and coverage of its exclusion from trial* (Publication No. 227) [Undergraduate thesis, University of Dayton]. University of Dayton. https://ecommons.udayton.edu/uhp_theses/227
- Saussure, L. (2003). *Temps et pertinence. Eléments de pragmatique cognitive du temps* [Time and relevance. Elements of a cognitive pragmatic of time]. De Boeck Supérieur- Duculot. <https://doi.org/10.3917/dbu.sauss.2003.01>
- Schmittat, S. M. (2023). Prior conviction evidence: Harmful or irrelevant? A literature review. *Journal of Police and Criminal Psychology*, 38(1), 20-37. <https://doi.org/10.1007/s11896-022-09557-z>
- Sherrill, A. M., Eerland, A., Zwaan, R. A., & Magliano, J. P. (2015). Understanding how grammatical aspect influences legal judgment. *PLoS ONE*, 10(10), article e0141181. <https://doi.org/10.1371/journal.pone.0141181>
- Shibatani, M., & Pardeshi, P. (2008). The causative continuum. In M. Shibatani (Ed.), *The grammar of causation and interpersonal manipulation* (pp. 85-126). John Benjamin. <https://doi.org/10.1075/tsl.48>
- Shreves, W. B., Hart, W., Adams, J. M., Guadagno, R. E., & Eno, C. A. (2014). The complex interplay between semantics and grammar in impression formation. *Cognition*, 132(3), 455-460. doi.org/10.1016/j.cognition.2014.05.007
- Spohn, C., & Welch, S. (1987). The effect of prior record in sentencing research: An examination of the assumption that any measure is adequate. *Justice Quarterly*, 4(2), 287-302. <https://doi.org/10.1080/07418828700089331>
- Strömwall, L. A., Landström, S., & Alfredsson, H. (2014). Perpetrator characteristics and blame attributions in a stranger rape situation. *The European Journal of Psychology Applied to Legal Context*, 6(2), 63-67. <https://doi.org/10.1016/j.ejpal.2014.06.002>
- Studebaker, C. A., & Penrod, S. D. (2005). Pretrial publicity and its influence on juror decision making. In N. Brewer & K. D. Williams (Eds.), *Psychology and law: An empirical perspective* (pp. 254-275). Guilford Press. <https://psycnet.apa.org/record/2005-07316-008>
- Sue, S., Smith, R. E., & Gilbert, R. (1974). Biasing effects of pretrial publicity on judicial decisions. *Journal of Criminal Justice*, 2(2), 163-171. [https://doi.org/10.1016/0047-2352\(74\)90007-5](https://doi.org/10.1016/0047-2352(74)90007-5)
- Tan, D. A. L., (2019). Language and political psychology: Can grammar influence electability? *Journal of Language Studies*, 19(3), 1-21. <http://doi.org/10.17576/gema-2019-1903-01>
- Tillman, R., Langston, W., & Louwerse, M. (2013). Attribution of responsibility by Spanish and English speakers: How native language affects our social judgments. *Revista Signos*, 46(83), 408-422. <https://doi.org/10.4067/S0718-09342013000300006>

- Trope, Y., & Gaunt, R. (2003). Attribution and person perception. In M. A. Hogg & J. Cooper (Eds.), *The Sage Handbook of Social Psychology* (pp. 176-194). Sage Publications Inc. <https://doi.org/10.4135/9781848608221.n8>
- Truitt, T. P., & Zwaan, R. A. (1997). Verb aspect affects the generation of instrument inferences. *Paper presented at the 38th Annual Meeting of the Psychonomic Society*, Philadelphia, PA, USA.
- Vendler, Z. (1957). Verbs and times. *The Philosophical Review*, 66(2), 143-160. <https://doi.org/10.2307/2182371>
- Verhoeven, E. (2017). Scales or features in verb meaning? Verb classes as predictors of syntactic behavior. *Belgian Journal of Linguistics*, 31(1), 164-193. <https://doi.org/10.1075/bjl.00007.ver>
- Wissler, R. L., & Saks, M. J. (1985). On the inefficacy of limiting instructions: When jurors use prior conviction evidence to decide on guilt. *Law & Human Behavior*, 9(1), 37-48. <https://doi.org/10.1007/BF01044288>
- Wistrich, A. J., Guthrie, C., & Rachlinski, J. J. (2005). Can judges ignore inadmissible information? The difficulty of deliberately disregarding. *University of Pennsylvania Law Review*, 153, 1251-1345. https://scholarship.law.cornell.edu/lsrc_papers/20
- Young, L., & Waytz, A. (2013). Mind attribution is for morality. In S. Baron-Cohen, H. Tager-Flusberg, & M. V. Lombardo (Eds.). *Understanding other minds: Perspectives from developmental social neuroscience* (pp. 93-103). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199692972.003.0006>
- Zwaan, R. A., & Madden, C. J. (2004). Updating situation models. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 30(1), 283-288. <https://doi.org/10.1037/0278-7393.30.1.283>
- Zwaan, R. A., & Radvansky, G. A. (1998). Situation models in language comprehension and memory. *Psychological Bulletin*, 123(2), 162-185. <https://doi.org/10.1037/0033-2909.123.2.162>

Appendix A

Vignette content used in experiment 1

Sentence pieces used for experimental manipulations are bolded. Experimental variations are underlined. The translation in French is italicized at the end.

Four months ago to the day, John L. was looking in a campus trash can for a piece of paper he had inadvertently thrown away on which he had written an important phone number. While digging for the paper, he felt a sharp sting in the palm of his right hand. The object that caused the injury was a syringe used and discarded earlier by a drug addict. A few weeks after the incident, John L. decided to get tested. The test revealed an HIV infection he believed was caused by contact with the contaminated syringe left in the trash. John L. immediately decided to file a complaint against unknown. An official investigation was initiated and suspicion quickly turned to Mark B., **a drug-addicted and HIV positive person who *knew* (versus *did not know*) he was HIV positive at the moment of the events**. The investigation determined the following facts. That day, Mark B. was on the campus after an intravenous drug injection. He was near from a trash can, the one in which John L. had inadvertently thrown the phone number he needed. **Mark B. *put* (versus *was putting*) into the trash the syringe he had used for his drug injection. As he *placed* (versus *was placing*) the syringe into the trash, he saw people approaching**. Mark B. left the place / In French: *“une enquête officielle a été ouverte et les soupçons se sont rapidement portés sur Marc B., un toxicomane porteur du VIH qui connaissait (versus ne connaissait pas) sa séropositivité au VIH à ce moment là. L’enquête menée révéla les faits suivants. Ce jour-là, Marc B. était présent sur le campus après s’être fait une injection de drogue par voie intraveineuse. Il était près d’une poubelle, celle-là même dans laquelle John L. avait jeté par inadvertance le numéro de téléphone dont il avait besoin sur le moment. Marc B. mit (versus était en train de mettre) dans la poubelle la seringue qu’il avait utilisée pour son injection de drogue. Tandis qu’il plaça (versus était en train de placer) la seringue dans la poubelle, il vit quelqu’un s’approcher. Marc B. s’en alla”*.

Appendix B

Vignette content used in experiment 2

Sentence pieces used for experimental manipulations are bolded. Experimental variations are underlined. The translation in French is italicized at the end.

[...] An official investigation was initiated and suspicion quickly turned to Mark B., **a drug-addicted and HIV positive person who was *totally unknown to the police services and did not have any trouble with the law until now* (versus *already known to police services and had a criminal record*)**. The investigation determined

the following facts. That day, Mark B. was on the campus after an intravenous drug injection. He was near from a trash can, the one in which John L. had inadvertently thrown the phone number he needed. **Then, Mark B. deposited (versus was depositing) into the trash the syringe he had used for his drug injection. As he set (versus was setting) the syringe into the trash, he saw people approaching.** Mark B. left the place / In French: [...] *une enquête officielle a été ouverte et les soupçons se sont rapidement portés sur Marc B., un toxicomane porteur du VIH qui était totalement inconnu des services de police et qui n'avait eu aucun antécédent judiciaire jusqu'alors (versus qui était déjà connu des services de police et avait eu des antécédents judiciaires). L'enquête menée révéla les faits suivants. Ce jour là, Marc B. était présent sur le campus après s'être fait une injection de drogue par voie intraveineuse. Il était près d'une poubelle, celle-là même dans laquelle John L. avait jeté par inadvertence le numéro de téléphone dont il avait besoin sur le moment. Marc B. déposa (versus était en train de déposer) dans la poubelle la seringue qu'il avait utilisée pour son injection de drogue. Tandis qu'il posa (versus était en train de poser la seringue dans la poubelle, il vit quelqu'un s'approcher. Marc B. s'en alla".*

Appendix C

Vignette content used in experiment 3 for the high volitional involvement condition

Sentence pieces used for experimental manipulations are bolded. Experimental variations are underlined. The translation in French is italicized at the end.

[...] An official investigation was initiated and suspicion quickly turned to Mark B., a drug-addicted and HIV positive person. The investigation determined the following facts. That day, Mark B. was on the campus after a drug injection. He was near from a trash can, the one in which John L. had inadvertently thrown the phone number he needed. Then, **Mark B. concealed (versus was concealing) into the trash the syringe he had used for his drug injection. As he disguised (versus was disguising) the syringe into the trash,** he saw people approaching. Mark B. left the place / In French: *une enquête officielle a été ouverte et les soupçons se sont rapidement portés sur Marc B., un toxicomane porteur du VIH. L'enquête menée révéla les faits suivants. Ce jour là, Marc B. était présent sur le campus après s'être fait une injection de drogue par voie intraveineuse. Il était près d'une poubelle, celle-là même dans laquelle John L. avait jeté par inadvertence le numéro de téléphone dont il avait besoin sur le moment. Marc B. dissimula (versus était en train de dissimuler) dans la poubelle la seringue qu'il avait utilisée pour son injection de drogue. Tandis qu'il camoufla (versus était en train de camoufler) la seringue dans la poubelle, il vit quelqu'un s'approcher. Marc B. s'en alla.*