

Grammatical framing: does grammatical aspect influence emotions?

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ABSTRACT

Earlier studies suggest that grammatical aspect, a purely linguistic feature that expresses how events evolve over time, influences our representation of events in situation models (Magliano & Schleich, 2000; Madden & Zwaan, 2003) and that aspectual framing affects our impressions of others (Fausey & Matlock, 2011). If this effect transfers to decision making, aspectual framing can have profound consequences for the decisions we make every day, as well as for pivotal decisions in court and politics. As emotions guide us in decision-making processes (Damasio et al, 1996), the present study investigates the interaction between aspect and emotion. Progressive sentences are associated with incompleteness and said to mentally stimulate internal processes of events (Bergen & Wheeler, 2010). This study therefore hypothesizes that progressive descriptions of negative situations evoke enhanced negative emotional activity. A pilot study is conducted, in which American English speakers report their emotions after reading stories with perfective or progressive descriptions of moral violations. The influence of grammatical aspect on decision-making is tested via approach/avoidance questions. The results of the present study seem to refute the hypothesis. The results show no significant differences between the experienced emotions in progressive and perfective conditions. A significant difference in decision-making was not found either. Several factors are discussed that may have affected the results and thus influenced the testing of the validity of the hypothesis. By doing so, this thesis sheds light on the interaction between the linguistic coding of events and emotions, directly, and decision-making indirectly.

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0. Introduction

When we think about *meaning*, we are prone to think about lexical words. Obviously, we know that “hero” and “crook” are, roughly, antonyms. We also know that “wonderful” is better than “good” and “to devour” is a different way of describing food consumption than “to eat”. We can choose to use these differences in meaning when we describe events, in order to frame a message. *Framing* is the process of affecting an individual’s evaluation of a situation by promoting a specific interpretation (Chong and Druckman, 2007). Framing can occur through various media sources, and through language by the phrasing of a message.¹ What is often not realized outside the field of linguistics, is that not only lexical categories like nouns, adjectives and verbs are meaningful language items: seemingly meaningless pieces of morphology carry as much meaning as lexical words. Grammatical aspect is such an example. Imagine that a teacher asks two students if they have read a certain book. One student answers: “I read the book last summer”, the other student replies with “I was reading the book last summer”. Any speaker of English understands that the answers do not mean the same. The first answer implies that the student finished reading the book, whereas the second answer conveys the possibility that the student has not finished the book. However, all lexical words in these answers are the same. Thus, the seemingly meaningless morphemes *-ed* and *be +ing* must carry this bit of meaning. Indeed, these morphemes are markers of different categories of grammatical aspect. In linguistics, English verbs with *-ed* morphemes are called perfectives and English verbs with *be +ing* morphemes are called progressives (see §1.2).

Like lexical words, grammatical devices such as aspect can be consciously used to frame a message. During sentence processing, we construct mental models that incorporate representations of described events (e.g. Zwaan and Radvansky, 1998). These models are called ‘situation models’ and evolve constantly when new information is encountered. Grammar is argued to provide cues for the construction of these models. Magliano and Schleich (2000) and Madden and Zwaan (2003) found that grammatical aspect, a morphological device that expresses how events evolve over time (see §1.2), influences event representations. This way, aspect can facilitate a specific perspective on events.

A striking example of how aspect could affect language perception, is a study by Fausey and Matlock (2011), in which they argue that grammatical aspect can influence people’s evaluations of political candidates in elections. Participants read a text about a senate candidate that was up for re-election. The message described the candidate’s previous actions, including an affair and the acceptance of a bribe during his office time. Fausey and Matlock claim that participants who read descriptions of these actions in progressive aspect (*was having an affair*) were more confident that the candidate would not be re-elected than participants who had read the

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I am not promoting a strong version of Sapir-Whorfian linguistic relativity that claims that language determines thought and shapes our world-view and cognition. I am merely arguing that we can use or abuse language by *choosing* how we overtly code real-world events to advertise, suggest or promote an interpretation of reality, without the certainty that we succeed in our attempts and certainly without changing or determining the reality.

descriptions in perfective aspect (*had an affair*). This study by Fausey and Matlock thus claims that aspect, a purely linguistic device, can be used to attempt to influence people's impressions of others in crucial situations like elections.

If this effect is true, aspectual framing can have profound consequences for our decision making, in everyday life and in the court of law. In decision making, emotions are argued to play an important role (see Shiota & Kalat, 2012, for discussion). Damasio et al. (1996), for instance, propose that our mind estimates outcomes of the possible options and we use our emotional responses to these outcomes to guide us towards the best option. From an evolutionary perspective, emotions guide us in our actions to protect our physical and social interests and keep us alive (Shiota & Kalat, 2012). Thus, if aspectual framing interacts with our perception of events, aspect might be associated with different emotional responses. Consequently, our emotional response to an event could indirectly influence related decisions. For example, if grammatical aspect expresses the uncertainty of whether someone's bad actions have ended, possibly, more negative emotions are evoked.

The present study investigates if, and to what extent, there is an interaction between grammatical aspect and emotional reactions. My initial research question was the following: Do people's emotional reactions differ depending on whether the situations are described with progressive aspect or with perfective aspect? The main hypothesis of this study is the following:

General hypothesis: Grammatical aspect affects emotions directly and, consequently, decision making indirectly.

Considering the complexity of the aspectual realm (e.g., the interactions between different aspectual domains and the fact that aspect plays an important role for different modules of grammar (see Chapter 1 for a more detailed elaboration) as well as the time and resource limitations of the pilot study I undertook in my thesis, I narrowed this general hypothesis to the following one:

Hypothesis of this pilot study: Progressive descriptions of immoral actions are associated with more negative emotions than the description of the same event in perfective.

The rationale in choosing descriptions of immoral actions stems from the fact that previous studies in the literature (Haidt, 2003; Hutcherson & Gross, 2011) claim that descriptions of immoral actions elicit stronger emotional reactions than the descriptions of neutral or positive actions.

Based on the existing literature on the perception of aspect (§2.1) and emotions (§2.2), I predict that progressive aspect descriptions of negative actions are associated with enhanced negative emotional reactions. Furthermore, based on the generally accepted theory in psychology that emotions drive decision making (see §2.2), I predict that related decisions are indirectly affected, if the first hypothesis is borne out.

This thesis is organized as follows. Chapter 1 lays out the theoretical background of grammatical and lexical aspect. Chapter 2 provides an overview of previous studies on the effects of aspect on perception. The methodology of the pilot study is presented in chapter 3 and the results are described in chapter 4. In chapter 5, I discuss the results and provide suggestions for further research. The conclusion of this study is found in chapter 6.

1 Theory of Aspect

This chapter will provide an overview of the essential ideas and core notions pertaining to the aspectual realm, relevant for the present study.

1.1 Tense and aspect

Verbs provide temporal information about situations through *tense* and *aspect*. According to Comrie (1976), tense is a deictic notion that anchors the described situation to a time axis, by locating the described event either before (1a), simultaneous with (1b) or after (1c) the speech time (Reichenbach, 1947; de Swart, 2011):

- (1) a. Joe wrote a book about global warming.
b. Joe writes a book about global warming.
c. Joe will write a book about global warming.

Sentences (2a) and (2b) describe situations that both occurred before the speech time, but are different in their aspectual form:

- (2) a. Joe wrote a book about global warming last year.
b. Joe was writing a book about global warming last year.

Reichenbach distinguishes three temporal dimensions that we use when we express time in language: Speech Time, Reference Time, and Event Time². The Speech Time (S) is the moment the sentence is uttered. The Reference Time (R) is the time interval that the utterance refers to. The Event Time (E) is the interval in which the described event takes place. These notions of time can cohere in different relationships: In both (2c) and (2d), the book is completed before the speech time. However, the reference time coincides with the speech time in (2c=2a), whereas (2d) shows a perspective in which the reference time equals the event time:

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Different terminology is used in the literature to refer to Speech Time, Reference Time and Event Time. Demirdache & Uribe-Etxebarria (2014) prefer Utterance Time over Speech Time and use Assertion Time instead of Reference time. Klein (1994) uses Utterance Time, Topic Time and Situation Time, respectively.

- c. Joe wrote a book about global warming last year. (S=R, E)
 d. Joe has written a book about global warming. (S, R=E)

According to Demirdache & Uribe-Etxebarria (2014), *tense* relates Reference Time and Utterance Time, whereas *aspect* orders the Event Time relative to the Reference Time. The notion of aspect is twofold: we distinguish grammatical aspect (also called viewpoint aspect or outer aspect) from lexical aspect (also called Aktionsart, inner aspect or situation aspect). I will first focus on grammatical aspect (§1.2). Subsequently, lexical aspect (§1.3) and aspect in English (§1.4, §1.5) are discussed.

1.2 Grammatical aspect

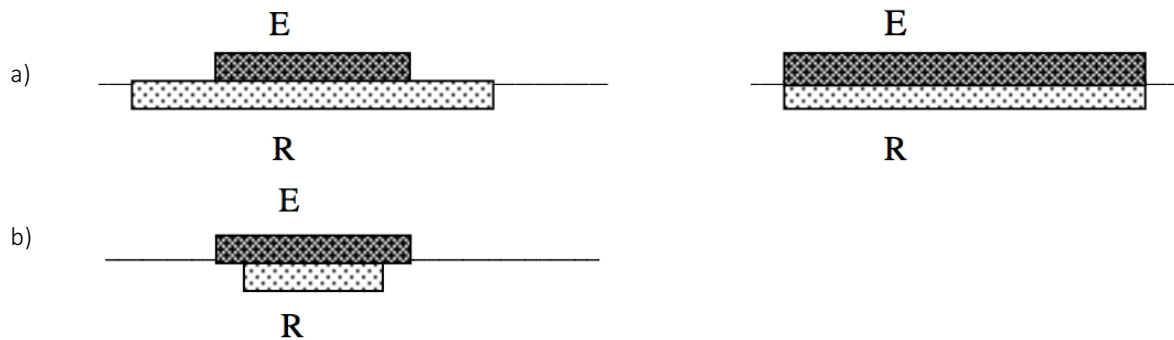
Grammatical aspect is concerned with the linguistic temporal representation of events and reflects “the speaker’s temporal perspective on an event” (van Dijk, 2010:6). We can clearly see the difference between the perspectives in (2) when we consider possible follow-up sentences. The examples in (3.a.1-4) show that (3a) entails completion of the event, since follow-up sentence that imply incompleteness (3.a.2 and 3.a.3) are not accepted. In (3b), however, follow-up sentences that imply completion (3.b.1) and incompleteness (3.b.2,3.b.3) are accepted:

- (3) a. Joe wrote a book about global warming last year.
1. He completed it in September.
 2. *He is still working on it.
 3. *He never finished it.
 4. Joe wrote a book \Rightarrow the book is finished.
- b. Joe was writing a book about global warming last year.
1. He completed it in September.
 2. He is still working on it.
 3. He never finished it.
 4. Joe was writing a book the book is finished.

Comrie (1976) argues that the simple past (as in 2a=3a) carries *perfective aspect* and provides an entire and external perspective on the situation, whereas *imperfective aspect*, that is carried by the progressive in (2b=3b), takes an internal perspective and shows the event as consisting of phases. In terms of time intervals, the basic assumption is that perfective and imperfective aspect have different containment relations. In perfective aspect, the Event time is contained in the Reference time. In other words, the event is completed by the time it is referred to. This way, perfective aspect has completion entailment, meaning that the event must have been completed by the time it is referred to (see Figure 1). In imperfective aspect on the other hand, the Event time “properly

contains" the Reference time (Bhatt and Pancheva, 2005). This suggests that the event is not necessarily completed by the time it is referred to. Imperfective aspect thus shows situations in an incomplete phase and leaves the outcome to the context or interpretation:

Figure 1
Containment relations between Event time (E) and Reference Time (R) for perfective aspect (a) and imperfective aspect (b). (Bhatt & Pancheva, 2005:2)



In (3a), for instance, the event of writing a book is presented as a completed event, so the sentence can't be followed by a sentence suggesting incompleteness. In (3b), the use of the *progressive* allows both completed and uncompleted interpretations of the event.

Although grammatical aspect does not relate events to the Utterance time, the sentences in (4, after de Swart, 2011) show that grammatical aspect influences the sentence's temporal structure:

- (4) a. When Bill came into the office, Sara left through the back door.
 b. When Bill came into the office, Sara was leaving through the back door.

The events in (4a) are perceived as occurring subsequently, while in contrast the events in (4b) are perceived as occurring simultaneously. One might interpret (4a) as if the first event causes the second event. This interpretation is not possible for (4b). Grammatical aspect thus influences the temporal contour of events.

Grammatical aspect is explicitly linguistically marked, usually by verbal inflections or auxiliaries. This way, grammatical aspect overtly carries meaning, just like lexical words carry meaning: in English, the *-ed* and *be+ing* morphemes signal the perceiver about the temporal information that the messenger wants to convey. For example, the student who "was reading the book" (see introduction), can use the progressive to convey that she never finished the reading, without explicitly saying it. The meaning that grammatical aspect carries, interacts with the inherent temporal characteristics of verbs. For instance, the student could not say that she "was loving" the book. These characteristics, known as lexical aspect, are discussed in the following section.

1.3 Lexical aspect

Lexical aspect deals with the inherent aspectual characteristics of verbs. In other words, verbs carry temporal information about the situations they describe. Lexical aspect is also referred to as Aktionsart, which means “kinds of action” in German (Comrie, 1976: 6). The sentences in (5) show verbs that are equal in tense and grammatical aspect, but still describe situations with different temporalities:

- (5) a. Mara loved to go to the park.
 b. Mara walked to the park.
 c. Mara reached the park.

These examples (5) show that the choice of the verb influences the situation’s relation to time. For instance, (5a) describes a situation that is stative and endured unchanged for a longer period. In contrast, the situations in (5b) and (5c) describe completed events, with (5b) as an event that took some time and (5c) as an instantaneous moment after some preparation. Vendler (1957) categorized different situation types based on lexical distinctions (6):

- (6) Situation types (Vendler, 1957)
- a. *State*, such as ‘to love’
 - b. *Activity*, such as ‘to run’
 - c. *accomplishment*, such as ‘to draw a circle’
 - d. *Achievement*, such as ‘to reach the top’.

Smith (1997) distinguishes a fifth type:

- e. *Semelfactive verbs*, such as ‘to knock’

The basic distinction is between “states” (6a) and “events” or “happenings” (6b-e). According to Vendler (1957), these situation types differ from one another based on three features: [static], [durative] and [telic]. A verb is ‘static’ when it describes a homogeneous state that extends in time without additional effort. Verbs that describe processes that last a while are ‘durative’. The ‘telic’ feature applies to events that progress towards a natural transition point, such as “baking a cake” or “drawing a circle”. The situation types are classified as follows (7, Vendler 1957; Smith, 1997):

(7)	Situations	Static	Durative	Telic
	State	[+]	[+]	n.a.
	Activity	[-]	[+]	[-]
	Accomplishment [-]		[+]	[+]
	Achievement	[-]	[-]	[+]
	Semelfactive	[-]	[-]	[-]

We can see that only ‘states’ take the static feature; all other situations are dynamic events. Activity verbs are durative events that have arbitrary endpoints. In contrast, Accomplishments are durative events until a natural transition point is reached and the event cannot continue. Achievements and Semelfactives are not durative, which means that these events occur instantaneously and cannot endure for a longer period. “To win a race” or “to sneeze”, for example, are events that happen in a single moment. Achievements are telic and can be reduced to a single point in time, namely the transition point. Smith (1991) argues that Semelfactives, such as knocking, sneezing, or coughing, are a separate situation type, because of the possible repetitive interpretation of the event, when presented in durative contexts (8c):

- (8) *to sneeze (Semelfactive)*
- a. Suddenly, he sneezed.
 - b. He sneezed (once).
 - c. He sneezed (for an hour/all night).

This example (8) suggests that not only verbs determine the temporality of the event: Verkuyl (1992) argues that “lexical aspect”, which he prefers to refer to as “situation aspect”, is more compositional than the term suggests: not only the verb’s lexical meaning, but its arguments as well determine lexical aspect, as shown in (9):

- (9) a. Mara walked.
b. Mara walked to the park.
c. Mara walked for hours.

The event in (9a) is an Activity ([-stative] [+durative] [-telic]). When the argument in (9b) is added, the event becomes [+telic] and is considered an Accomplishment: there is a clear transition point, namely when the park is reached. With the argument in (9c), however, the event doesn’t become telic, as this type of argument only specifies the durative characteristic. The influence of arguments on the situation’s telicity transfers to inference patterns (10):

- (10) a. Mara was walking \Rightarrow Mara walked.
b. Mara was walking to the park / \Rightarrow Mara walked to the park.
c. Mara was walking for hours \Rightarrow Mara walked for hours.

The above sentences show that the relation between the argument and the verb influence the inference pattern in progressive sentences: as ‘walking’ is a [+telic] event in (10b), the progressive reading does not infer the

completion of this event. The same accounts for the following examples, in which a shift occurs between mass nouns and count nouns (11, after De Swart, 2010):

- (11) a. Mara was eating an apple ⇒ Mara ate an apple.
b. Mara was eating apples ⇒ Mara ate apples
c. Mara was drinking wine ⇒ Mara drank wine

d. Mara was drinking a glass of wine ⇒ Mara drank a glass of wine.
e. Mara was drinking glasses of wine ⇒ Mara drank glasses of wine.

As the progressive in (11a) views the event in an ongoing stadium, the sentence does not infer that Mara finished the apple. In (11b), however, the activity of ‘eating apples’ is [-telic], so there is no defined ending point. At least, she must have consumed some apples for (11b) to be true (De Swart, 2010). Thus, not only the lexical characteristics of the verb determine the sentence’s lexical aspect, but the thematic relation between the verb and its arguments influences the aspectual character of a situation.

1.4 Aspect in English

It is important to note that aspect is realized differently across languages. Not only in the way aspectual categories are marked (with verbal inflections, auxiliaries, or otherwise), but also in the semantic operations of situation aspect, languages differ from each other. English, for example, does not have the binary perfective-imperfective distinction. Instead of the imperfective, English has the *Progressive*. The English progressive only carries a subpart of the characteristics of imperfective aspect (De Swart, 2011). In Slavic and Romance languages, the imperfective often carries a habitual interpretation (see De Swart, 2011, for discussion), that the English progressive does not have. The English progressive is constructed by an auxiliary and the suffix *-ing* on the main verb (AUX + V-*ing*). The English perfective is marked by the suffix *-ed* on the main verb (V-*ed*). The literature on aspect in English is inconsistent in addressing the English progressive form. Often, a simplified perfective-imperfective distinction is maintained. This terminology is problematic in a cross-linguistic perspective. Moreover, English has a perfect/non-perfect distinction (cf. 2c,d) that is not to be confused with the perfective/imperfective distinction. In the following sections, I will address the aspectual categories in English as “progressive” versus “perfective”.

1.5 Interaction between grammatical and lexical aspect in English

Grammatical aspect and lexical aspect are distinct notions that operate independently. However, when we consider the examples in (12), we encounter some interactions:

- (12) a. She knows the song.

- b. *She is knowing the song.
- c. She knew the song.
- d. *She was knowing the song.

As situations that are [+state] describe continuous situations (12a), we can't refer to a "sub-interval" of a State. Namely, a reference to any interval of a homogeneous state would be equivalent to any other interval. Therefore, verb phrases that express states are not easily presented in the progressive form (12b,d) without creating special meaning effects (eg. "I'm loving it"). Moreover, some events that are not inherently [+state], can adopt a stative meaning when they are in present simple (12e,f). Vendler (1957:151) calls these States "*Generic States*". Note that Generic States are not similarly homogeneous: Generic States express habits that are not necessarily acted out continuously:

- e. Do you smoke?
-Yes, I smoke, but not while I am eating.
- f. Lea writes books for a living.
-She never writes in the morning.
*Lea writes a book for a living.

A similar interaction between grammatical and lexical aspect is found in Achievements (12g). Achievements are instantaneous moments that are [-durative]. Logically, instantaneous moments do not have sub-intervals that can be addressed by the progressive. However, Achievements can be progressives in specific contexts. For example, the sentence in (12j) is not grammatically incorrect, but rather semantically different:

- g. The car hit the man.
- h. *The car was hitting the man.
- i. John reached the top of the mountain.
- j. ?? John was reaching the top of the mountain.

In contrast to (12i), the situation in (12j) does not infer that John completed his journey and reached the top of the mountain: in (12j), John was certainly close to reaching the top, but something might have caused John to stop and turn around. In this reading, the achievement of "reaching a top" is less instantaneous than the [-durative] characteristic suggests, as there was "time" for John to turn around. One might argue that the meaning of "reaching" in (12j) is closer to "approaching", than to the interpretation of "getting to the point". This would explain the more [+durative] character of (12j). A similar change in completion entailment occurs in Accomplishments (cf. 10b).

As argued, Semelfactives, that are also argued to be [-durative] (Smith, 1997), are perceived differently in durative contexts (cf. 8). Because of their possible iterative (i.e. expressing repetition) reading, Semelfactives can combine very well with progressives. As shown in (12l), the progressive can cause the durative, thus iterative, reading of the Semelfactive:

- k. The police knocked on the door.
- l. The police were knocking on the door.

The examples thus far illustrate merely a hint of how complex aspect is³. For reasons of clarity and comprehensibility, I will be focusing only on grammatical aspect, with respect to how this grammatical device could affect our emotions.

2 Prior research on the perception of aspect

The use of aspectual information in language perception is widely studied in psychology, communication and psycholinguistic studies. In the following, I present an overview of the implications of aspect on language perception that are most relevant to the work I present here.

2.1 The influence of aspect on our mental representation

During sentence processing, we construct situation models that represent events and their contexts (Zwaan and Radvansky, 1998). Aspect, both lexical and grammatical, provides information about the duration of events and their order of occurrence (Comrie, 1976; Smith, 1997). For example, in (13a=4a), the event of “Bill coming into the office” occurs *before* the event of Sara leaving. In (13b=4b), the events are presented as occurring simultaneously:

(13) a. When Bill came into the office, Sara left through the back door.

b. When Bill came into the office, Sara was leaving through the back door.

Inflectional morphemes of the progressive (*-ing*) and perfective (*-ed*) function as temporal cues that account for different structuration of elements in situation models. Madden and Zwaan (2003) discovered that participants were faster to respond to pictures that showed completed events after they had read perfective sentences than progressive sentences. Participants were also faster in reading a perfective sentence after they had seen a picture showing completion. As a contrasting effect for progressive sentences was not found, they argue that progressive sentences lead to event representations with varying stages of completion for different readers. Thus, they claim that aspectual cues are associated with differences in how we perceive the temporal discourse of events.

Magliano and Schleich (2000) claim that grammatical aspect provides important processing instructions. They reason that the limited working memory capacity constraints the situation model of a text. Therefore, only the information that is most relevant to the ongoing situation is activated and accessible. They suggest that events that are described by progressive aspect, are tagged as “ongoing” and are maintained active and accessible in

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For a more thorough discussion on the compositional semantics of aspect, I refer to the work of Ogihara (1990) and De Swart (2011).

working memory for a longer period than events with perfective descriptions, that focus on “endstates”. In other words, by manipulating aspect, certain information can be prioritized over other.

A study by Yap et al. (2009) supports the idea that differences in grammatical aspect lead to differences in perception, although they argue that lexical aspect interacts with this process. They found that perfective sentences are processed more quickly when they consider accomplishment verbs, such as ‘to draw a circle’ (6c), but progressive sentences are processed quicker when they describe activities, such as ‘to run’ (6b). These results suggest that aspectual asymmetries in language perception not only consider grammatical aspect, but presumably interact with inherent lexical properties.

Additionally, Bergen and Wheeler (2009) studied the effect of aspect on mental simulation. Mental simulation is the internal enactment of experiences during language processing (Barsalou, 2008). Theories on mental simulation suggest that we unconsciously use perceptual, affective and motor brain areas to extract meaning from utterances (Bergen & Wheeler, 2009). Bergen and Wheeler found that progressive descriptions of hand motions (e.g. *Kate is putting on/taking off her glasses*) lead to faster hand movements in the same direction, whereas perfective descriptions (*Kate put on/ took off her glasses*) do not lead to differences. These findings illustrate the differences in completion entailment: progressive descriptions supposedly simulate the ongoing movement, while perfective sentences reflect the motionless end states. Consequently, Bergen and Wheeler argue that aspect modulates how mental simulations are accomplished. They claim that “while progressive sentences drive understanders to mentally simulate the internal processes of described events, perfect sentences do not” (Bergen & Wheeler, 2010: 155). The present study investigates if grammatical aspect also affects the affective domain.

2.2 Emotions and decision-making

Emotions are appraised when a stimulus violates or satisfies one’s values (e.g. Frijda & Mesquita, 1994; Shiota & Kalat, 2012, Van Berkum, 2016). In the evolutionary function of emotions, negative valence is of greater importance in protecting our values than positive valence (Shiota & Kalat, 2012). For example, fear of dangerous animals and disgust of poisonous foods are essential to keep us alive. Therefore, value violations are more likely to evoke measurable emotional activity than value satisfactions. Presumably, when an event that violates our values is perceived as “ongoing”, it is evaluated as more harmful than an event that is perceived as “completed”. Since progressive aspect is associated with an ongoing perspective on events, it is hypothesized that people experience more negative emotions after perceiving progressive descriptions of events with negative valence, as opposed to perceiving the same event with perfective aspect. For instance, if a messenger uses progressive aspect to describe a senator candidate’s bad actions, such as “having an affair” (cf. Fausey & Matlock, 2011), the perceiver might process the affair as ongoing. Consequently, the progressive situation may be interpreted as more harmful to our interests and makes us experience more negative emotions, compared to perfective descriptions of the same event (“had an affair”).

If grammatical aspect influences our emotions, this is not without implications. Namely, if a grammatical feature like grammatical aspect interacts with affective cognitive domains, ideas of language processing as an

integrated cognitive process are supported. Moreover, if aspect influences our emotions, aspectual differences could affect our decision making. Emotions interact with our reasoning to determine what's good for us (Damasio, 1996). If grammatical aspect markers provide a focus that makes us experience more emotions, aspect could indirectly influence our decisions. In the above example, we are likely to reason negatively about that senator candidate that "was having an affair" and will probably not vote for him, if more negative emotions are evoked by progressive aspect descriptions.

It has long been thought that decision-making was a mere cognitive procedure, in which emotions could only negatively interfere (see Gutnik et al., 2006). Current theories, however, suggest that decision-making uses both an analytic system and an "experiential system" (Epstein, 1994 in Gutnik et al., 2006). The analytic system encloses the deliberate cognitive processes, whereas the experiential system uses emotion-related associations and experiences when making decisions. According to Gutnik and colleagues, cognitive factors, like former experiences and emotions, influence each other while making decisions. So, if linguistic coding influences one of these processes, the process of decision-making could be influenced consequently. The present study seeks to understand if and how grammatical aspect can influence emotions directly, and decision-making indirectly.

2.3 Emotions and morality

A great difficulty in measuring emotions, is the individual difference in when, which and to what extent emotions are appraised. Every individual reacts differently to the events in their environment (Shiota & Kalat, 2012). One domain in which emotions are argued to play an important role, is the domain of morality. According to Haidt (2003), we live in a "rich moral world" and we "readily develop negative feelings towards individuals with whom we have never interacted" when they violate our moral values. Therefore, if moral values are shared among community members, violations of these values should evoke negative emotions. So, following the above discussion on the ongoing character of progressive descriptions (§2.2), it is hypothesized that progressive descriptions of morally unacceptable actions interact with enhanced emotional activity, when compared to perfective descriptions. Consequently, this negative emotionality could influence people's attitudes towards the people involved in the moral violation. If progressive descriptions of social violations evoke more negative emotions, I hypothesize that people are more likely to avoid the agent of the moral violation.

2.4 Measuring emotions

Another difficulty in emotion studies, is how emotional activity can be measured. An often-used way to discover whether our emotions are affected by grammatical aspect, is by asking people to report their feelings about a stimulus. Self-reports can be a useful means to provide specific information about people's mental states on a large scale. Since this is the first study to investigate the possible interaction between emotion and grammatical aspect manipulations in a moral context, self-reports are a good method to gain insights in the type of emotions that is affected. However, if people were to describe their feelings in their own words, individual differences in

verbal ability would cause difficulties in comparing the results. To avoid this problem, the 20 emotion words of the Geneva Emotion Wheel (Scherer et al., 2013) are used as emotion labels.

3 Method

3.1 Participants

40 native English speakers from the United States filled out an online questionnaire that was distributed via Amazon Mechanical Turk (MTurk), an online tool for recruiting and paying participants. The experiment took on average 10,5 minutes to complete and participants were granted \$1,50 for participating. Data of 4 participants were excluded, based on extreme reading times (less than 0.05 seconds per word) or highly unrealistic answers (emotion ratings alternately 0 and 100). Of the 36 remaining participants, 52,8% was male. 22,2% was between 18 and 24 years old, 53,8% was between 25 and 34 years old and 25% percent was 35 years or older.

3.2 Materials

Participants read 4 short stories (approximately 100 words per story) in which protagonists (a male character for half of the stories) perform socially unaccepted actions in everyday situations. Each story had a version in which the main action was described in progressive aspect and one in which this action was described in perfective aspect. Except for this difference, the versions were identical (see Figure 2& Appendix A). Participants were randomly assigned to one of two lists of stories. These lists differed with respect to the order in which the stories appeared. Every participant read 4 different stories, 2 in the perfective and 2 in the progressive condition. Story conditions were randomly assigned across participants.

Figure 2

Example of the stories used in the experiment

Lately, Paul's department has been very busy. To reduce their workload, a new staff member has been hired to join the team. The new employee is a young, pretty girl who's just graduated from university. Last week, Paul ran into her while she was in the copy room all by herself. She was obviously struggling with the copier and Paul came closer to offer her some assistance. While he **caressed/was caressing** the girl's buttocks, supposedly accidentally, he asked her what the problem was. The girl got upset and immediately left the copy room. (92/93)

3.3 Procedure

The survey took on average 10,5 minutes to complete and was presented online. Participants could take the survey on their screen of preference and in whatever environment they were in. All participants reported to not have experienced much noise or distractions while taking the survey. After reading each story, participants were asked to rate the pleasantness of the story and the moral acceptability of the behavior in the story on a 7-point Likert-scale. Also, they reported how they felt by indicating how much they experienced each of 20 emotions, derived from the Geneva Emotion Wheel (Scherer et al., 2013). Lastly, participants were asked whether they would work

together with the story's protagonist on a 7-point Likert-scale ranging from extremely unlikely to extremely likely (see Appendix B). After the survey was completed, participants were asked to fill out their demographics.

4 Results

First of all, the order in which the stories were presented did not significantly influence emotion ratings in progressive condition ($t(34) = .019$; $p = .985$) or perfective condition ($t(34) = -.588$; $p = .580$). All further analyses are therefore performed on the results of both versions taken together.

For each story, rates on all 20 emotion words are combined in a mean number to compare the total rate of experienced emotion in the perfective and progressive condition. These rates are compared across participants, because each story was read in only one condition (Table 1). For all stories, mean emotion rates did not differ significantly between the perfective and progressive version (story 1: $t(34) = -.198$; $p = .422$, story 2: $t(34) = 1.166$; $p = .126$, story 3: $t(34) = -1.150$; $p = .129$ and story 4: $t(34) = 1.318$; $p = .098$)

Table 1
Means (and Standard Deviations) of emotion ratings per aspect condition (perfective/progressive) per story (N: number of participants).

Story	Aspect	
	Perfective (n=18)	Progressive (n=18)
Story 1	16.88 (10.5)	16.28 (7.2)
Story 2	25.83 (25.8)	34.94 (26.5)
	(n=17)	(n=19)
Story 3	17.55 (10.6)	13.68 (9.6)
Story 4	11.64 (9.8)	16.01 (10.1)

It was hypothesized that progressive descriptions would correlate with enhanced negative emotion ratings. To test this hypothesis, mean emotion rates per aspect condition per story have been further separated by valence in (Table 2). The hypothesis was not borne out. Overall, participants experienced more negative than positive emotions after reading all four stories (story 1: $F(1,34) = 58.359$, $p < .001$, story 2: $F(1,34) = 33.554$, $p < .001$, story 3: $F(1,34) = 26.566$, $p < .001$, and story 4: $F(1,34) = 57.790$, $p < .001$). However, no difference was found in negative emotion ratings between aspect conditions (story 1: $t(29.17) = .125$; $p = .451$, story 2: $t(34) = 1.293$; $p = .205/2 = .103$, story 3: $t(34) = -1.524$; $p = .069$, story 4: $t(34) = 1.694$; $p = .050$). For positive emotion ratings, there was no difference between aspect conditions either (story 1: $t(34) = -.753$; $p = .229$, story 2: $t(34) = .168$; $p = .434$, story 3: $t(34) = .355$; $p = .363$ and story 4: $t(34) = -.006$; $p = .498$).

Table 2
Means (and Standard Deviations) of positive and negative emotion ratings per aspect type per story (N = number of participants).

	Valence	
	Positive	Negative

Story	Perfective	Progressive	Perfective	Progressive
	(n=18)	(n=18)	(n=18)	(n=18)
1	7.21 (8.0)	5.37 (6.6)	26.55 (18.3)	27.19 (11.9)
2	5.56 (8.6)	5.96 (5.3)	18.66 (15.9)	26.22 (19.1)
	(n=17)	(n=19)	(n=17)	(n=19)
3	6.99 (10.1)	8.06 (7.8)	28.11 (17.6)	19.30 (17.03)
4	5.28 (6.5)	5.27 (7.4)	17.99 (15.0)	26.76 (16.0)

People have different standards in rating their emotional experience. Therefore, emotion rates for the different aspect conditions have been compared within participants (Table 3). A repeated measures ANOVA shows that participants overall experienced more negative emotions than positive emotions ($F(1,34) = 70.180, p < .001$). The amount of overall experienced emotion was not affected by aspect type ($F(1,34) = 1.735, p = .108$). Negative emotions seem to be experienced more intensely in the progressive condition, compared to the perfective condition, but the difference is not significant ($F(1,34) = 1.241, p = .131$). There were no gender differences in the valence ($F(1,34) = .039, p = .844$) or aspect results ($F(1,34) = 1.009, p = .322$).

Table 3
Means (and Standard Deviations) of emotion ratings per valence, compared between aspect conditions within participants (N: number of participants)

Valence	Aspect	
	Perfective (N=36)	Progressive (N=36)
Positive valence	6.24 (7.5)	6.20 (6.1)
Negative valence	22.67 (14.5)	24.77 (14.6)

An explorative analysis of 'Disgust' and 'Anger' was performed, as these emotions are expected to be experienced in cases of injustice and moral violations (Haidt, 2003; Hutcherson & Gross, 2011). A Repeated Measures ANOVA shows that for these emotions, there is a small main effect of aspect; emotion rates are higher for progressive descriptions ($F(1,35) = 3.689, p = .032$). There is no significant main effect of emotion type (anger vs. disgust ($F(1,35) = 1.260, p = .269$)).

Table 4
Means (and Standard Deviations) of emotion ratings for 'disgust' and 'anger' within participants, separated out in aspect type (N = number of participants).

Emotion	Aspect	
	Perfective (N=36)	Progressive (N=36)
Disgust	39.85 (29.6)	48.44 (29.6)
Anger	38.13 (24.3)	42.90 (28.0)

Moreover, rates of pleasantness and behavioral judgments are compared across aspect conditions (Table 5). Within participants, the rates of the stories' overall pleasantness in progressive condition did not significantly differ

from those of stories in perfective condition ($t(35) = .370$; $p = .714$). Participants judged the behavior in stories with progressive descriptions similarly inappropriate to the behavior in stories with perfective descriptions ($t(35) = -1.641$; $p = .110$).

Furthermore, it was hypothesized that progressive aspect descriptions of negative aspect would indirectly affect our decision making, if more negative emotions were evoked. This hypothesis is tested with approach/avoidance questions regarding the stories protagonist (Table 5). Logically, since emotions were not affected by aspect, people's decision making was not affected either: aspect type did not influence people's willingness to work with the story's protagonist ($t(35) = -.678$; $p = .502$).

Table 5

Means (and Standard Deviations) of overall pleasantness, behavior in the story and approach/avoidance of the story's protagonist, separated by aspect type (N: number of participants).

Question	Aspect	
	Perfective (N=36)	Progressive (N=36)
Overall pleasantness ¹	2.29 (.7)	2.24 (.8)
Behavior ²	1.71 (.7)	1.54 (.9)
Approach/avoidance ³	2.00 (.7)	1.86 (1.0)

1: answers ranged from 'Extremely unpleasant' (1) to 'Extremely pleasant' (7)

2: answers ranged from 'Extremely inappropriate' (1) to 'Extremely appropriate' (7)

3: answers ranged from 'Extremely unlikely' (1) to 'Extremely likely' (7)

To summarize, the above presented results do not support the hypotheses. In the experiments performed in this study, progressive aspect descriptions do not interact with people's emotional reactions. Only for anger and disgust, emotional intensity was reported higher in the progressive condition. However, the effect is small and cannot be generalized over people and situations. Moreover, decision-making was predicted to be affected indirectly through enhanced emotionality. Logically, no interaction between aspect and decision making was found, as emotion ratings were not affected.

In the following section, I will discuss several factors that are possibly responsible for these results and shed more light on the interaction between the linguistic coding of events and emotions, directly, and decision-making indirectly.

5 Discussion

Whenever we perceive texts of any kind, varying from everyday stories to history books and law suits, we are exposed to linguistically coded representations of events. The messenger of these utterances can have used linguistic tools to facilitate a specific perspective on the described events. One such linguistic tool is grammatical aspect, that is overtly coded in English by the seemingly meaningless morphological units *be+ -ing* for progressive aspect and *-ed* for perfective aspect. In the context of a growing body of studies on the effects of grammatical aspect on language perception (e.g. Becker et al., 2013; Fausey and Matlock, 2011; Madden & Zwaan, 2003; Magliano & Schleich, 2000) and decision making (e.g. Sherrill et al., 2015; Salomon et al., 2013), the present study sought to find out if grammatical aspect manipulations interact with emotional responses to social violations, and whether our decision-making is affected consequently.

It was hypothesized that progressive descriptions of immoral actions are associated with more negative emotions than perfective descriptions of those actions. For instance, when a message describes a senate candidate that “was having an affair” (cf. Fausey & Matlock, 2011), it can be construed that the affair is still ongoing, because the progressive carries the semantic entailment of incompleteness. Therefore, this situation can be perceived as more harmful to our values and hence evoke more negative emotions, compared to a description of a senator that “had an affair”. Moreover, since emotions drive our decision-making (e.g. Damasio, 1996; Shiota & Kalat, 2012), it was predicted that enhanced emotionality would affect decision-making. For the candidate in question, this would mean that a progressive description of his affair indirectly leads people to think of him as less eligible and eventually not vote for him. The present study therefore hypothesized that progressive aspect indirectly affects decision making via emotions.

In the present study, the predictions were borne out. As emotional reactions were not influenced by aspect in the present study, it coheres with the predictions that decision-making was not affected in this study either. The present chapter discusses factors that possibly influenced the results and which should be considered for further research.

Before discussing specific suggestions for further research, it is important to stress that (contra to some suggestions in the previous literature) the effect of aspect on emotions cannot be expected to be robust. Namely, grammatical aspect is an intricate linguistic device: it is intertwined with the categories of Tense and Lexical Aspect as well as Mood (see Chapter 1) and relevant to syntax, morphology, semantics and pragmatics. Grammatical aspect is also a subtle linguistic device: though it might be used to nudge the perceiver towards certain inferences about reality, it does not change the physical reality – thus, the world remains unaffected (see also §5.3 below). Finally, many other variables could affect emotions. Individuals vary in how, to what extent and why they experience certain emotions (see also §5.2 below).

Other recent studies also point to a more complex picture of less robust effects and multiple variables when it comes to the interaction between aspect and other cognitive domains. Sherrill et al. (2015), for instance, find no direct interaction between grammatical aspect and legal decision making, by failing to find that grammatical aspect influences perceived intentionality of murder actions. They argue, however, that grammatical

aspect affects the temporal dynamics of a situation, which may in turn influence other parts of the event's representation that align with legal judgments, and that this effect is highly context dependent. In the present study, decision-making was expected to be affected indirectly, because of affected emotionality.

5.1 Sample size of stimuli and participants

Bearing in mind the subtlety of the variable under examination here, it is plausible to hypothesize that a more significant effect could be teased out only with a bigger sample of stimuli and/or participants. Due to all the obvious reasons, this was not possible with this pilot study. However, the tendency found in the results of the study regarding anger- and disgust ratings suggest that further investigations regarding the effect of aspect on emotional activity in moral violations could be fruitful and bring positive results. Future studies need large sample sizes to detect a stable and reliable effect, both in number of participants as in number of stimuli.⁴⁴

5.2 Measurement tools

Possibly, the absence of the expected effect of aspect on emotions can be associated with the methodology used in the present study. The present study used self-reports to investigate the possible interaction between aspect and emotions. Self-reports are a useful method to gain insight in the types of emotions that are affected. However, self-reports have some limitations: the results are difficult to compare across participants, because individuals have different standards (Shiota & Kalat, 2012). Moreover, asking people how they feel, reveals that people must focus on their feelings. Not only could this influence peoples' answers, but emotional arousal does not necessarily lead to conscious feelings that one can report on (Shiota & Kalat, 2012). Therefore, future studies could further explore the interaction between aspect and emotions by using direct (physiological) measures.

It is generally accepted in emotion theory that the sympathetic nervous system (SNS) reacts to emotionally laden stimuli and consequently, physiological changes occur. Variations in physiological arousal can then be measured to index SNS activation in response to stimuli (Shiota & Kalat, 2012; Wagner et al., 2015). This way, direct emotional responses can be measured, even when the response is unconscious. Electromyographic (EMG) measurement, for example, can assess covert activity of facial muscles and can thus reveal that people are smiling or frowning, even when they do not feel that they are. A second possible physiological tool to measure emotional arousal, is through skin conductance responses (SCR's). When the SNS is activated, sweat glands are triggered to open and change the skin's ability to conduct electrical currents (see Wagner et al., 2015). Thus, if aspect interacts with emotions, a change in SCR's is expected. Skin conductance tests have been used in previous studies to test the relation between emotions and moral judgments (Hristova et al., 2014), emotionality in second language perception (Harris et al., 2006) and political attitudes (Wagner et al., 2015). Future studies could use skin conductance tests to provide more insight in the possible relation between aspect and emotions.

4

Sherrill et al. (2015) estimated that they needed at least 120 participants to detect a between-subjects effect of aspect on intentionality. When testing an effect on emotion in a similar way to this study, most likely, more participants are required.

Moreover, I would suggest that further studies use multiple measuring tools. Namely, though physiological arousal is considered an important component of an emotional response, measuring arousal is not the same thing as measuring emotion.

5.3 Linguistic coding

Moreover, it should not be forgotten that grammatical aspect is a linguistic device that messengers use consciously to convey a certain perspective on events. Similarly, perceivers use this grammatical device to abstract the meaning of the utterance. Since grammatical aspect carries meaning, it is important to consider the intrinsic semantic differences, such as the difference in completion entailment (§1.2). In psychological research on aspect, the effects of aspect are often abstracted to perceptual differences, such as differences in vividness and intentionality (cf. Hart & Albarracín, 2011). Hart and Albarracín reason that progressive aspect enhances the accessibility of “intention-related concepts”, which leads perceivers to attribute more intentionality to people and their actions. Sherrill et al. (2015), however, did not find such an intentionality effect: they argue that aspect affects person perception through temporal dynamics. Thus, the intrinsic meaning of aspectual categories should always be regarded in future studies.

Furthermore, studies on the perception of aspect should consider the interaction between lexical and grammatical aspect. Although grammatical aspect categories have their own temporal properties (e.g., incompleteness or “ongoing focus” for progressive aspect vs. completion or “endpoint focus” for perfective aspect), Yap et al. (2009) argue that interaction with different verb types (lexical aspect) gives rise to variations in sentence processing and aspectual interpretations. They claim that perfective sentences were processed more quickly and adequately with accomplishment verbs, whereas progressive sentences were processed quicker with activity verbs. These processing differences should be considered when investigating the effects of aspect on perception, as the mental representation and temporal interpretation of the events may be affected consequently.

5.4 Other variables

Lastly, it should not be forgotten that differences in language use do not change the reality. Therefore, other variables than grammatical aspect may influence people’s perception of described situations. Linguistic tools, like aspect, can be used to facilitate a certain perspective on a situation, with the intention to convey a viewpoint. However, it is not the *reality* that changes, but merely the linguistic coding that represents the situation. The perceiver does not solely rely on the linguistic information when comprehending the message. Van Berkum (2016) argues that language processing involves mental processes that consider both linguistic parsing, as well as interpreting the messenger’s communicative move. Hence, many parts of the message, such as gestures, intonation and even inferred intentions, could affect the perceiver’s affective state and their perception of the situation. Thus, the messenger can attempt to influence the perceiver’s perception of a situation to evoke a certain emotional response, but many other variables in the communicative process might intervene this attempt. When a messenger describes that a senator candidate “was having an affair” (cf. Fausey & Matlock, 2011), they might

intend to evoke negative emotions. However, the perceiver can have different morals and evaluate the situation less negative than intended. For instance, the perceiver might be having an affair themselves and have positive associations with the word “affair”. The materials in this study may have contained other lexical and non-lexical items that functioned as affective triggers and influenced the results. Future studies that investigate whether grammatical aspect interacts with affective reactions should attempt to control for all other variables of the message that could be affective triggers.

6 Conclusion

In conclusion, the present study investigated the interaction between grammatical aspect and emotions, directly, and the interaction between grammatical aspect and decision-making, indirectly. More specifically, this pilot study addressed whether progressive descriptions of immoral actions are associated with more negative emotions than perfective descriptions of the same events. It was hypothesized that progressive descriptions of immoral situations evoke more negative emotions, in comparison to perfective descriptions of these situations.

However, the results of this pilot study refute this hypothesis. In the experiments performed in this thesis, progressive descriptions of immoral situations did not evoke more negative emotions than did perfective descriptions. Moreover, decision-making was predicted to be affected through enhanced emotionality. Logically, no interaction between aspect and decision making was found, as emotion ratings were not affected. Only for anger and disgust, progressive descriptions correlated with more negative emotional activity, though this effect is small and cannot be generalized over people and situations. Nevertheless, this tendency suggests that further investigations regarding the effect of aspect on emotional activity in moral violations could be promising and bring positive results.

The present study contributes to the existing body of research on the perception of grammatical aspect by suggesting several factors that should be considered in future studies. Most importantly, it should be regarded that grammatical aspect markers are intrinsically meaningful: progressive and perfective descriptions of events convey different temporal dynamics and differ in their completion entailments. Moreover, grammatical aspect interacts with lexical aspect and tense. Future studies should consider these linguistic factors deliberately, as they influence the temporal information that is conveyed.

Furthermore, it is important to stress that grammatical aspect is a subtle linguistic device that does not affect the physical world: grammatical aspect is merely one meaningful factor in a complicated communicative move and many other variables than grammatical aspect could affect emotions during language processing. Thus, the expected effect is small and it is plausible to hypothesize that a more significant effect could be teased out only with a bigger sample size.

Finally, as emotional arousal does not necessarily lead to conscious feelings that one can report on, future studies could further explore the interaction between aspect and emotions by using physiological measures, like electromyographic measurement or skin conductance responses. However, though physiological arousal is

considered an important component of an emotional response, measuring arousal is not the same thing as measuring emotion. Therefore, multiple measuring tools are suggested.

In summary, this thesis has shed light on the interaction between the linguistic coding of events and emotions, directly, and decision-making indirectly. Even though a correlation between grammatical aspect and emotion is not found, the present study suggests that future studies regarding the effect of aspect on emotions could be promising. To ascertain what effect grammatical aspect has on our emotions and, consequently, on our decision making in everyday situations as well as in law and politics, more research is required.

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Appendix

A. Materials

Below, the stories used in the survey are presented. All four stories have a version in perfective (left) and in progressive (right). The manipulated verb is underlined. The word count of the stories is indicated between brackets. Participants assigned to List 1 were presented with the stories in the order shown below (1-4).

Participants assigned to List 2 were presented with the stories in the following order: 2, 1, 4, and 3.

Perfective condition (word count)	Progressive condition (word count)
1. Lately, Paul's department has been very busy. To reduce their workload, a new staff member has been hired to join the team. The new employee is a young, pretty girl who's just graduated from university. Last week, Paul ran into her while she was in the copy room all by herself. She was obviously struggling with the copier and Paul came closer to offer her some assistance. While he <u>caressed</u> the girl's buttocks, supposedly accidentally, he asked her what the problem was. The girl got upset and immediately left the copy room. (92)	1b. Lately, Paul's department has been very busy. To reduce their workload, a new staff member has been hired to join the team. The new employee is a young, pretty girl who's just graduated from university. Last week, Paul ran into her while she was in the copy room all by herself. She was obviously struggling with the copier and Paul came closer to offer her some assistance. While he <u>was caressing</u> the girl's buttocks, supposedly accidentally, he asked her what the problem was. The girl got upset and immediately left the copy room. (93)

<p>2. Megan was in the pub with her friends. She had the week off and her boyfriend was staying at his parents' house that week. She missed him but also was enjoying her freedom. When everyone decided to go home, Megan remained a while longer. She started talking to a handsome man at the bar who was obviously interested in her. They had a nice conversation and Megan was very attracted to him. Later that night, while Megan secretly <u>kissed</u> the handsome stranger, her boyfriend called. She ignored the call and put her phone away. (94)</p>	<p>2b. Megan was in the pub with her friends. She had the week off and her boyfriend was staying at his parents' house that week. She missed him but also was enjoying her freedom. When everyone decided to go home, Megan remained a while longer. She started talking to a handsome man at the bar who was obviously interested in her. They had a nice conversation and Megan was very attracted to him. Later that night, while Megan <u>was</u> secretly <u>kissing</u> the handsome stranger, her boyfriend called. She ignored the call and put her phone away. (95)</p>
<p>3. Dave was on his way to his mother's birthday. In the last two days, it had been raining nonstop and water had formed big puddles in the city streets. There weren't many cars or cyclists on the road, and certainly not many pedestrians on the street. Dave was heading for a giant puddle. When he saw an old man walking on the sidewalk, Dave accelerated to create the largest possible splash of water. He <u>laughed</u> hard when he saw that the old man got soaked to the bone. Before the man could get mad at him, Dave quickly drove on. (100)</p>	<p>3b. Dave was on his way to his mother's birthday. In the last two days, it had been raining nonstop and water had formed big puddles in the city streets. There weren't many cars or cyclists on the road, and certainly not many pedestrians on the street. Dace was heading for a giant puddle. When he saw an old man walking on the sidewalk, Dave accelerated to create the largest possible splash of water. He <u>was laughing</u> hard when he saw that the old man got soaked to the bone. Before the man could get mad at him, Dave quickly drove on. (101)</p>
<p>4. Jess works in the research department of a big company. She has been working at the company for almost a year, and her contract will terminate soon. Two months ago, Jess's boss told her that either she, or her colleague would be offered a permanent position. Jess knew that she was a good researcher, but she also knew that her colleague worked much faster. During their last project, Jess <u>messed</u> with her colleague's research data to improve her own chances. Jess' boss discovered her colleague's "mistakes" and is now considering offering Jess permanent employment. (94)</p>	<p>4b. Jess works in the research department of a big company. She has been working at the company for almost a year, and her contract will terminate soon. Two months ago, Jess's boss told her that either she, or her colleague would be offered a permanent position. Jess knew that she was a good researcher, but she also knew that her colleague worked much faster. During their last project, Jess <u>was messing</u> with her colleague's research data to improve her own chances. Jess' boss discovered her colleague's "mistakes" and is now considering offering Jess permanent employment. (95)</p>

B. Questionnaire

After each story, the following questions were presented:

Overall, I found this story to be:

- Extremely unpleasant (1)
- Moderately unpleasant (2)
- Slightly unpleasant (3)
- Neither pleasant nor unpleasant (4)
- Slightly pleasant (5)
- Moderately pleasant (6)
- Extremely pleasant (7)

The behavior in this story is:

- Extremely inappropriate (1)
- Moderately inappropriate (2)
- Slightly inappropriate (3)
- Neither appropriate nor inappropriate (4)
- Slightly appropriate (5)
- Moderately appropriate (6)
- Extremely appropriate (7)

After reading this story, I experience:

(participants could slide a bar from 0 to 100 to indicate how much emotion they experienced)

0 _____ 100 Interest

0 _____ 100 Sadness

0 _____ 100 Amusement

0 _____ 100 Guilt

0 _____ 100 Pride

0 _____ 100 Regret

0 _____ 100 Joy

0 _____ 100 Shame

0 _____ 100 Pleasure

0 _____ 100 Disappointment

0 _____ 100 Contentment

0 _____ 100 Fear

0 _____ 100 Love

0 _____ 100 Disgust

0 _____ 100 Admiration

0 _____ 100 Contempt

0 _____ 100 Relief

0 _____ 100 Hate

0 _____ 100 Compassion

0 _____ 100 Anger

Imagine you are in the position to select fellow group members for a new project you will be working on for a year.

How likely is it that you choose [name] on your team?

- Extremely unlikely (1)
- Moderately unlikely (2)
- Slightly unlikely (3)
- Neither likely nor unlikely (4)
- Slightly likely (5)
- Moderately likely (6)
- Extremely likely (7)