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SANTA CRUZ

**THE PERSUASIVE EFFECTS OF STYLISTIC VARIATION IN
THE RESTAURANT REVIEW DOMAIN**

A thesis submitted in partial satisfaction of the
requirements for the degree of

MASTER OF ARTS

in

LINGUISTICS

by

Dhyana M. Buckley

September 2018

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Abstract

The Persuasive Effects of Stylistic Variation in the Restaurant Review Domain

by

Dhyana M. Buckley

The effects of stylistic variation on the cognitive processing of a text has been a topic of debate within linguistics. We extend our understanding of how stylistic variation plays a role in modifying a reader's perception of a text into a new domain by looking at tense variation within restaurant reviews. Motivation for this stylistic variation is speculated to be driven by persuasive ability (i.e. to increase persuasive quality of a text). Several criteria have been identified to elicit narrative persuasion (emotionality, identification with the author, and transportation into a text), although there has not been a formal study to examine these factors in relation to the historical present. In this article we present two parallel studies designed to test how review sentences in past tense and historical present tense are perceived based on these criteria. We tested over 75 native English speakers of English asking them to judge either historical present or past tense negative restaurant review sentences based on four different criteria (persuasion, emotionality, identification, and transportation) using two different acceptability rating tasks (five-point scale). We find evidence of a relationship between the historical present and an increase in transportation and emotionality using a variety of statistical analysis techniques, including t-tests and regression analysis. We also find a relationship between past tense and identification. We interpret increased levels of emotionality and

transportation as an indication that the historical present has the ability to influence a

reader's cognitive processing of a text.

To my father,

Stephen N. Buckley,

my pillar of strength.

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Chapter 1

Introduction

The historical present tense has been characterized as a tense that describes events of the past as if they are occurring in real time. The application of this tense has been known to magnify the dramatic effect of the events of which it is used to describe (Anand & Toosarvandani, 2016; see also Donnell, 1965, Leech, 2014, Close, 1981, Wolfson, 1979). One of the goals of this paper is to expand our understanding of the practical application of the historical present. We intend to explore the extent of which the historical present alters a reader's perception of a text, and tease apart how and why the historical present tense can affect a reader's narrative processing. For the purposes of the present paper, we will be observing its use on a small scale. Specifically, we aim to explore its implementation in the restaurant review domain to gain insight into its greater effect on transportation, identification, emotionality, and persuasion.

Restaurant reviews have proved to be a valuable source of figurative and creative language patterns useful toward the advancement of linguistic, artificial intelli-

gence, natural language processing, and many other areas of research. An additional benefit from surveying a corpus of restaurant review sentences is that the classification of these review sentences is built in. Namely, they are already classified as positive, negative or neutral via a 5-star rating system by the restaurant reviewer, giving us an advantage in understanding the potential motivation for why a person utilizes specific patterns of language. Upon surveying a restaurant review corpus, the Yelp-Dataset Challenge corpus, we found that there is an asymmetrical distribution of the historical present tense among this review corpus.

Particularly, we found the historical present was only found in reviews classified as negative. This begs the question why a writer of reviews is more likely to use the historical present in a negative review setting rather than a positive. We suspect the underlying motivation is persuasion. In this paper we first identify several potential criteria that have been shown to elicit persuasion or involvement in general narrative discourse and aim to connect these criteria to the historical present. These criterion include emotionality (Wolfson, 1979), transportation (Green & Brock, 2000, Green, 2004), and identification (de Graaf, 2012, Burnkrant & Unnava, 1995, Escalas, 2007, Polkinghorne, 1991). One of our goals is to expand our understanding of the practical application of the historical present as there has been little research done on teasing apart how and why the historical present tense affect a reader's response to tense in the review domain. The goal of this paper is to see how readers' perception of a restaurant review sentence is affected based on change in tense.

We aim to explore how a difference in tense, the historical present and the

past tense, of otherwise the same review sentence can affect a reader's perception of such sentences on a number of criteria known to be associated with persuasion. The goal of this study is to identify possible criteria that have been shown to elicit persuasion and see, first, how change in tense interacts with each criteria and, second, how each criterion interacts with one another. The criteria we have identified as potential significant facilitators of persuasion are: level of perceived emotion, transportation, and identification.

We hypothesize that restaurant reviews exploit transportation and identification to increase persuasion, in two ways. The first is by utilizing self-referencing narratives, narratives referencing the "self" written from the first person perspective, which have been shown to elicit transportation and identification. We argue that the historical imposes high levels of drama into the text and negative reviews elicit transportation by using vivid imagery to describe episodic events. In addition, we postulate that restaurant reviews use the historical present in order to elicit transportation and identification by increasing the dramatic effect of the narrative, which has been argued only informally in previous studies.

We find validation for a number of predictions made in our hypothesis. Specifically, our hypothesis correctly predicts the effects between tense and emotionality, and tense and transportation. In contrast, our hypothesis fails in predicting the effect between tense and identification. We do not find a direct correlation between persuasion and tense. Additionally, we find interactions between identification and transportation, persuasion and emotionality, as well as persuasion and transportation.

We will first review the relevant literature that discusses the aforementioned criteria and their relation to persuasion and the historical present. We then outline the basic semantic structure of the historical present, comparing it to the semantics of the canonical present and past tense. Next, we discuss tense distribution within the restaurant review domain, then compare positive and negative reviews. Finally, we propose two experiments to test our hypothesis and discuss our results.

Chapter 2

Background

We first examine the literature concerned with transportation in the service of establishing a concrete definition of transportation. We then lay out various studies that have provided evidence that transportation has increased persuasive aspects of narrative texts. Second, we explore self-referencing and how personal relevance connects to transportation and persuasion within self-referencing narratives. Additionally, we establish a concrete definition of identification and discuss how narrative self-referencing invokes persuasion via identification. Third, we provide overviews of the semantics of both the canonical present and the historical present while differentiating the canonical present tense from the historical present tense. Fourth, we examine the distribution and behavior of each tense in the restaurant review domain. Lastly, we will discuss the purpose of positive and negative restaurant reviews and how their role connects to the asymmetrical distribution of tense, and persuasion.

2.1 Transportation

Transportation, as we define it, is a mental process where an individual encounters a text and is "transported" into a narrative world through vivid imagery, shared experience, and emotional resonance. At the end of the process the individual's beliefs can be affected (Green & Brock, 2000). This understanding of transportation is based on (Gerrig, 1993) description, which asserts that,

> Someone ("the traveler") is transported, by some means of transportation, as a result of performing certain actions. The traveler goes some distance from his or her world of origin, which makes some aspects of the world of origin inaccessible. The traveler returns to the world of origin, somewhat changed by the journey. (pp. 10-11)

This area has been been studied by a number of people, with the goal of unpacking the relationship between narrative transportation and persuasion. We will summarize the relevant literature in the following section.

2.1.1 Green & Brock, 2000

Several studies conducted on transportation forge a solid connection between transportation and persuasion, specifically Green and Brock's focal study on the role of transportation in the persuasiveness of narratives. Green & Brock (2000) argue that when reading fictional or non-fictional narratives, individuals may be transported into the narrative world, which is also considered a mechanism for narrative-based belief change. Before conducting a series of experiments to show this, they set out to establish a self-reported Transportation Scale, meant to encompass the major dimensions involved

in transportation. This scale includes emotional involvement in a narrative, cognitive attention to the story, feelings of suspense, lack of awareness of surroundings, and mental imagery. They developed this scale by running a series of preliminary tasks. One such task was to test the sensitivity of transportation to different stories. Participants were asked to read two texts and then answer a questionnaire. Participants read two narrative texts. One involved murder and violence ("Murder at the Mall"), to ensure the text would be received as shocking and moving [1]. The second task was an altered version of the text that replaced murder with bouts of giggles brought on by bubbles ("Bubbles at the Mall"). The questionnaire that participants completed after reading either text consisted of 11 general item questions asking about involvement in the narrative (e.g., "While I was reading the narrative, I could easily picture the events in it taking place" and "I could picture myself in the scene of the events described in the narrative" etc.). In addition to these general items, there were 4 items asking specific questions about imagining characters in the story relevant to the specific experiment. For example, experiments 1-3 asked character specific questions about "Murder at the Mall" (e.g., "While reading the narrative I had a vivid image of Katie"). Experiment 4 asked character specific questions about "Two Were Left" (e.g., "While reading the narrative I had a vivid image of the ice island"). From the development stage of the transportation scale they found readers reported significantly less transportation into "Bubbles in Mall" as compared to readers of "Murder at the Mall". This shows that transportation was sensitive to the quality and meaning of the text.

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[1]The narrative "Murder at the mall" was also used in experiments 1-3. A different text was used in experiment 4 ("Two were left"), to see if using a text with a happier ending affected transportation

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Alongside the transportation questionnaire, in order to examine how transportation correlates with persuasion, Green and Brock ask participants to rate a series of sentences in terms of believability after reading the story. The sentences deal with specific events raised in the story (e.g., "The likelihood of a stabbing death at an Ohio mall is once every week, 50 years, etc.") as well as general themes taken from the Belief in the Just World Scale (Rubin & Peplau, 1975) (e.g., "I've found that a person rarely deserves the reputation he has"), and character evaluation questions asking participants to rate the main characters on various scales (e.g., good-bad, pleasant-unpleasant etc.)[2].

Of the four experiments conducted by Green & Brock (2000), the first three experiments concluded that transportation is correlated with more in agreement with more statements that were implied by the story (i.e. story-consistent beliefs). We highlight the findings from experiments 1 and 2 as they prove especially relevant to our present research question. The goal of experiment 1 was to see to what extent transportation affects belief change. To accomplish this task participants were split into small groups and informed that the same narrative was either fiction (literary magazine) or non-fiction (newspaper), with the narrative formatted to reflect the source. The results of the questionnaire, discussed previously, found that participants who reported high values for the transportation scale questions also reported higher numbers for the story-consistent belief questions, when compared to participants who reported low scored in

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[2]Green Brock (2000) take other measures such as thought-listings, reality-source monitoring, source manipulation check, and recall test. We do not go into detail about these measurements as they are not specifically relevant to our research purposes.

response to the transportation scale questions. In other words, participants who reported high numbers for statements on the transportation scale were more likely to agree to statements such as "psychiatric patients should have their freedoms restricted" etc. It was also found that participants were equally transported into the narrative no matter what they thought the source was, establishing that the source of the narrative does not affect the degree of the level of transportation. In addition to this finding, participants who reported they were transported also evaluated the story's protagonist more positively.

Experiment 2 confirms the results of experiment 1, in addition to new findings. This experiment followed a 3 x 2 factorial design (instructions x source manipulation). There were three differing sets of instructions, one to elicit transportation (theater condition), one a baseline (narrative condition), and one to deter transportation (fourth-grade). Just as in experiment one, there were two presentations of the narrative, either the literary magazine (fiction) or newspaper article (non-fiction). The questionnaire was similar to that of experiment one with the addition of what they call the Pinocchio instructions task[3]. This task asked participants to go back to "Murder at the Mall" and circle false notes, something in the story that contradicts fact or does not make sense.

The relevant findings of this experiment reported, during the task asking participants to identify false notes in the narrative, there were fewer false notes found by participants who also reported high scores on the transportation scale questions. In

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[3]In addition to the Pinocchio instructions task there were some other new manipulation checks we exclude from our discussion as they are not important for our research purposes. This manipulations are: fact-fiction manipulation check, need for cognition, and instruction manipulation checks.

other words, highly transported participants appeared more accepting of the story, less likely to doubt, to question, or engage in the disbelieving processes. Transportation leaves readers of a text more likely to accept the story as true.

We use the results of these experiments as preliminary evidence that narratives in general have the capability to evoke transportation. From the discussion of the developmental phase of the transportation scale, we see that level of transportation can be manipulated by the dramatic level of the narrative. When a narrative is more dramatic, higher levels of transportation are reported. We also use the results of this study as evidence that transportation not only deters skepticism of the truth value of the narrative but also elicits belief change. We see that transported participants reported they were more in agreement with story-consistent beliefs. We see further evidence that transportation in a narrative is positively correlated with belief change in a later study conducted by Green (2004). In this study participants were asked to read a first-person narrative about a gay man who returns to his college fraternity reunion and then encounters homophobic behavior. Participants completed the transportation questionnaire used in Green & Brock (2000), as well as responded to a series of belief statements related to themes and assertions in the story (e.g., "people in fraternities are homophobic" and "people in fraternities do not accept homosexuality")[4].The results of the questionnaire showed that individuals who reported they were transported also

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[4]Participants also completed a modified version of the Perceived Plausibility Subscale of the Perceived Reality Scale (Elliott et al., 1983), a series of personal experience questions, and a Manipulation check for reading instructions (Green, 2004). We do not go into details about these questions as the results from this portion of the experiment are not relevant for the purposes of this paper as we are only concerned with transportation and its relationship to belief change.

reported higher levels of agreement to story-consistent belief statements. This provides further evidence that transportation and perceived emotionality could be important mechanisms that improve the quality of persuasive writing. We show how this relates to the restaurant review domain later.

2.1.2 Petty & Cacioppo, 1986

A number of papers discussing transportation and persuasion also reference dual-process models such as the elaboration likelihood model (ELM) and the heuristic-systematic model (HSM; Chaiken, 1980). Green & Brock (2000) argue that persuasion models, such as the ELM, are inherently different than the processes of transportation theory. Specifically, they argue that the ELM focuses on elaboration and how it requires critical attention to argument strength. They point out that this is contrary to the less analytic processes associated with transportation theory, which centers around story immersion. They make the argument that transportation elicits attitude change via mechanisms different than logical considerations. Although we do not necessarily disagree with these claims, we make the argument that there are characteristics of the elaboration likelihood model (ELM) that extend to transportation. The ELM points out several cues, deemed as peripheral cues, that affect the objective evaluation of an argument (Petty & Cacioppo, 1986). Burnkrant & Unnava (1989) reference a particularly relevant peripheral cue, personal relevance, as an important construct that can be manipulated to increase perceived relevance of a narrative. It is argued that people are more motivated to engage in narrative content when it is perceived as personally rele-

vant or of personal importance. This leads us into our next section on how an increase in self-referencing can lead to an increased levels of perceived personal relevance, which in turn, lead to increases in message processing, persuasion, and identification.

2.2   Self-referencing and Identification

As it was discussed in the previous section personal relevance plays a pivotal role in persuasion. Self-referencing has been established as a powerful mechanism that establishes the personal relevance of a text to the person reading it. In the literature, self-referencing is characterized as the processing of information by relating it to the self-structure (i.e. one's self or personal experiences) or aspects of it (Burnkrant & Unnava, 1995, Escalas, 2007; see also Polkinghorne, 1991 for a literary-theoretical discussion of self-referencing in autobiographical narratives).

To show this, self-referencing is manipulated by changing the perspective in which the stimuli text is written. There are several studies in the advertisement domain that have connected second-person ("You") self-referencing to increases in message processing and persuasion (Burnkrant & Unnava, 1989, Burnkrant & Unnava, 1995, Escalas, 2007). When asked to evaluate advertisement messages, it was found that when reading ad messages containing high self-referencing (i.e. messages addressing the consumer, "You may remember...") participants reported more positive attitudes toward the advertised product as compared to ad messages containing low self-referencing (i.e. third-person messages, "If a mistake is made...") (Burnkrant, 1995).

2.2.1 Escalas, 2007 - How transportation relates to emotionality and the self

The advertisement literature has also connected self-referencing and persuasion to transportation. A study conducted by Escalas (2007), examines how transportation elicits persuasion via self-referencing, specifically narrative self-referencing. They define narrative self-referencing as the referencing to oneself in the form of a story (i.e. an autobiographical memory). This is especially relevant to our research, as the historical present is also a form of narrative self-referencing as it usually appears in restaurant reviews. In this study the effects of transportation on persuasion are still observed through an advertisement lens. They hypothesize (1) that narrative self-referencing will lead to transportation and argument strength will not matter, and (2) narrative self-referencing will lead to lower levels of analytical processing. To test these hypotheses two experiments were conducted using variations of a fictitious ad for shoes. The first experiment asked participants to imagine themselves using the product, manipulating the level of self-referencing in the instructions in the ad. There were three versions of ad text, one that contained analytical self-referencing (e.g., "We'd like to introduce you to Westerly shoes, designed with you in mind"), one that contained narrative self-referencing ("Imagine yourself running through this park ... [with] Westerly running shoes on your feet"), and one that didn't contain self-referencing ("Introducing Westerly running shoes"). Additionally, there were two levels of argument strength, strong (advanced stability, lightweight) and weak (reinforced shoe-laces, water resistance), leav-

ing 6 total versions of the ad. Participants were asked to list their thoughts after seeing the ad (referred to as thought protocol). They then answered a series of Likert-scale questions, some of which included attitude toward the brand (e.g. likelihood to purchase shoes), participant transportation (e.g., "While thinking about the ad, I could easily picture the events in it taking place"), and emotion (they cite the Goodstein et al. (1990) 57-item feeling scale, from which they extract a subset of questions). The results of this experiment showed that participants who reported high levels of transportation were distracted from weak arguments in the narrative self-referencing condition, thus showing that narrative self-referencing persuades in a manner that results from narrative transportation. It was also found that narrative self-referencing evoked lower levels of analytical processing. Specifically, they found in the narrative self-referencing task participants listed fewer counterarguments during the thought protocol portion of the experiment.

This relates to our hypothesis in that restaurant reviews, specifically negative ones written in the historical present, contain narrative self-referencing language and therefore are used as a way to distract readers from thinking about a review analytically by instead tapping into their emotions. Although these studies provide evidence that self-relevance does play in important role in persuasion and transportation, the manner in which the "self" is referred to (i.e. the second person) does not match how it is referred to in the historical present (i.e. the first person, "I" and "we"). Although we include this as evidence that self-referencing, in general, contributes to the persuasive quality of a text, we must also provide evidence that first-person self-referencing evokes

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persuasion as well.

2.2.2 De Graaf et al., 2012

In research conducted by de Graaf et al. (2012) we see empirical evidence that first-person self-referencing does indeed evoke persuasion via identification. The overall goal of de Graaf et al. (2012) is to see if identification can be a mechanism of narrative persuasion. They define identification as, "an experience in which readers adopt the perspective of a character and see the narrative events through the character's eyes" (de Graaf et al., 2012; et. Busselle & Bilandzic, 2008, Cohen, 2001).

They conduct two experiments designed to test if readers of a story told from the perspective of a given character will identify more with that character than readers of the same story told from the perspective of another character. In other words, they hypothesize that readers of the same story told from different perspectives will be more likely to identify with the person whose perspective the story is told from. In addition to this hypothesis, they also investigate if a reader's post-test attitude aligns with the character of the story whose perspective the story is told from than it did originally. De Graaf et al. (2012) test if identification with characters will mediate the effect of the perspective manipulation on post test attitudes[5].

Their first experiment asked participants to read a story written about a job interview for a web designer position, where the applicant has a disability. The story

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[5]For our purposes, we discuss experiment one but focus on the method and results of experiment two as it uses a story in which the background and position of the two opposing characters and more similar.

was told from two different perspectives, (1) the perspective of the applicant and (2) the perspective of a member of the selection committee. The perspectivizing character was established with first-person pronoun, "I", so the events were described from their point of view. This includes their perceptions and thoughts in the narrative. There were three conditions for this experiment. In the first condition participants read the story told from the perspective of the applicant (eg. "That is a question I did not prepare for. After thinking about it shortly, I say: The creative part. I like making something completely new") where other characters are referred to in the third person (referred to as he or "the man"). A different group of participants read the story from the programmer's perspective (eg. "Again such a rehearsed answer. I try to ask more to get a more original answer"). Coincidentally, we see instances of the historical present in this experiment although that is not the focus of this study. Groups one and two completed a questionnaire after reading the story. Finally, the third condition was a control, asking participants to answer the questionnaire before reading the story so there was a baseline. The questionnaire asked varying types of questions including questions regarding perceived realism (eg. "It is possible the events in this story really happened"), narrative engagement (eg. "I had a vivid image of the events in the story", "When I was reading the story it was if I was there in my thoughts"), identification (eg. "During reading I imagined what it would be like to be in the position of the applicant/programmer"), and attitude towards story specific issues (eg. "I think an employer should be able to reject an applicant because he or she is disabled"), answering these questions on a seven-point Likert scale. Based on a principal components analysis,

results were grouped into five factors , (1) "Being in a narrative", (2) "Identification with Programmer", (3) "Emotion", (4) "Attentional Focus", and (5) "Identification with Applicant".

Experiments one and two are run very similarly. Experiment two is run as a follow-up to confirm the results of experiment one as there were concerns that the perspectives in the narrative used in experiment one were too polarized. Experiment two uses a new narrative written about two sisters whose mother has been in an irreversible coma for over a month. There are two versions of the story written from the perspectives of each of the sisters. The only difference between them is their opinion on what they think is best for their mother. The questionnaire asked similar questions to those in experiment one, replacing questions regarding topics such as disability in the workplace etc. with questions regarding topics such as euthanasia or nursing homes etc.

Overall, both experiments conclude that participants identified more strongly with the perspectivizing character than with the antagonizing character regardless of the opinion of the characters, and consequently, adapted their attitudes accordingly. We use this as empirical evidence in support of the persuasive characteristics of the first person application in narrative. Specifically, the first person evokes attitude change and persuasion by inducing identification with the perspectivizing character. We take this as concrete evidence that first-person self-referencing elicits identification with the perspectivizing character in a narrative which in turn leads to increased persuasion. We infer that this same finding can be extended to the implementation of the historical present in the restaurant review domain.

2.3 Canonical Present Tense vs. Historical Present Tense

In this section I review the formal semantics of two tenses. We begin with the canonical present tense, by defining the canonical present. We then establish an overview of the semantics of the canonical present tense. Next, we give an overview of the historical present tense.

2.3.1 The Canonical Present Tense

The canonical present is the "regular" use of the present tense, typically used to describe state-like events, including derived states (habituals). More specifically, the canonical present tense has two qualities. The first quality applies to the canonical present cross-linguistically, stating that the canonical present tense is used to describe eventualities that are simultaneous with the time of utterance.

1. (a) Harry is depressed.   [Stative]

   (b) Ron owns the book.   [Stative]

2. (a) Harry is sleeping.   [Progressive]

   (b) Ron is reading the book.   [Progressive]

We can assume from these sentences that the events described in these sentences are occurring simultaneous to the time of utterance. More specifically, Harry is indeed depressed at the time that (1a) is uttered. Along with this, we can assume that Ron is indeed reading a book at the time that (2b) is uttered. The second quality of the

canonical present we discuss is not cross-linguistic. As Dowty (1979) established, and Anand & Toosarvandani (2016) reiterates, in English the canonical present is only compatible with stative predicates, including derived ones (e.g. habits). This can also be observed with examples sentences in (1) and (2). Stative predicates such as "depressed" or "own" denote a usually ongoing "passive" state of being. We see specifically in example (1a) the predicate "depressed" is stative and therefore is felicitous in the canonical present. Example (1a) can be interpreted in two ways, (i) in a specific moment Harry is depressed (as a state), or (ii) Harry is a depressed person by nature (a habitual interpretation). Either semantic interpretation of the sentence is acceptable. We see the same is true for the predicate "own" in example (1b). To own something does not require action, as non-states often require (Lakoff, 1971).

Of course, we do want to talk about non-states in the present, and to do that, there are two options. First, as (2) shows, if we want to talk about a non-state that is currently in progress, we can use the progressive aspect to do so. Note that this aspect is mandatory if we wish to do so. In addition, if we are discussing a non-state that is current habit (something that occurs with rough regularity), we can use the simple present, as in (3a). Observe the following examples[6],

3. (a) Ron sleeps with the window open.   [habitual]

    (b) Ron is sleeping.   [progressive]

---

[6]Note that statives in the canonical present can be interpreted as habits as well, as in the following examples:

1. The bedroom is filthy.   [Stative]

    Meaning: the bedroom is in a state of filth [CP- stative]
    OR Meaning: the bedroom is filthy often [CP - habitual]

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We now compare predicates in the canonical present to the same predicates in the past tense. The past tense describes events that are contextually established to have taken place before the time of utterance. In contrast with the canonical present, we see that predicates that were not felicitous with a stative interpretation in the canonical present are indeed felicitous in the past tense. Observe (4),

4. (a) Ron slept.

   (b) Ron read a book.

   (c) Ron built a castle.

Informally, we see that canonical present and the past tense have differing time constraints. That is, the canonical present occurs in the "now" (simultaneous to the time of utterance), thus only allowing for stative predicates. In contrast to this, we see that the past tense occurs before "now" (before the time of utterance). Therefore, non-states are able to appear in the past tense without issue. As tense affects which predicates are able to appear felicitously, we are motivated to build a temporal predicate calculus to model this difference. We will first model these sentences without tense to establish the basic semantics of the canonical present. Observe the following canonical present sentence,

5. Harry is depressed.

We adopt the following basic model[7], first without tense, which the truth

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[7] For now our model of the world is comprised of only "D" and "I", where "D" is a universe of individuals and "I" is a function such that, (1) I is defined on all constants and predicates of the lexicon, (2) For any constant, c, $I(c) \in D$ And (3) For any n-place predicate, P, $I(P) \subseteq D^n$ (i.e., is a set of n-tuples, where each element is from D)

conditions of example (5) is relative to,

6. Model

$M = \langle D, I \rangle$

$D = \{\textbf{Harry}, \textbf{Ron}\}$

$I(h) = \textbf{Harry}, \;\; I(r) = \textbf{Ron}$

$I(depressed') = \{\textbf{Harry}\}, \;\;\; I(fall') = \{\textbf{Ron}\}$

Given this, the truth conditions for "Harry is depressed" is as follows,

$[[depressed'(h)]]^M = 1$ if and only if $I(h)$ is in $I(depressed')$. Therefore,

$[[depressed'(h)]]^M = 1$

Now we need to add time to our model. To do this, we add to our model a set

of intervals in time, T, ordered by a containment relation, $\subseteq$, and a precedence relation,

$\leq$. Here, I will assume that the intervals are defined over a set of basic *moments* in

time, modeled here as non-negative integers. We make the interpretation of predicates

sensitive to an interval in time, and hence I will take a predicate P and a interval t and

yield the set of individuals that meet P's requirements at t. See the model below,

7. New Model

$M = \langle D, I, \leq, \; T \; \rangle$

$D = \{\textbf{Harry}, \textbf{Ron}\}$

$T = $ a non-empty set of moments in time

$I(h) = \{\textbf{Harry}\}, \;\;\; I(r) = \{\textbf{Ron}\}$

$I(depressed') = \textbf{depressed}, \;\;\; I(fall') = \textbf{fall}$

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(a) **depressed**$(0) = \{$**Harry**$\}$

depressed$(1) = \{$**Harry**$\}$

depressed$(2) = \{$**Harry**$\}$

depressed$(3) = \{$**Harry**$\}$

depressed$(4) = \{$**Harry**$\}$

depressed$(5) = \{$**Harry**$\}$

(b) **fall**$(0) = \{$**Ron**$\}$

fall$(1) = \{$**Ron**$\}$

fall$(4) = \{$**Ron**$\}$

fall$(5) = \{$**Ron**$\}$

We adopt the atomic formula: $[[P(t, [x, y])]]^M = 1$ iff for every moment, m, in $[x, y]$ I(t) is in I(P)(m). Given this model, we can now derive the truth conditions of the following sentence model,

8. *depressed'*$(h, [0, 2])$

$[[depressed'(h, [0, 2])]]^M = 1$ iff for every moment, m, in $[0, 2]$,

I(h) is in I$(depressed')$(m).

Now that we have a way of modeling the flow of time, we can add tense to our system. For this, we need a notion of "now" that past and present will be sensitive to. We thus add a time of evaluation t to the interpretation function relative to which tenses are interpreted. There are many ways of treating tense. Here, I will assume a referential theory of tense, where tenses are temporal pronouns that denote intervals in

time relative to an assignment g, and where the meaning of the tense is a presupposition. That is, we will assume that tenses are variables of the form x_i, where g(i) will be an interval like those above (i.e., $[2,3]$ or $[0,10]$). We assume,

PRESENT TENSE: $[[x_i^{Pres}]]^{M,g,t}$ is defined only if g(i) $\in$ TIME(t)

PAST TENSE: $[[x_i^{Past}]]^{M,g,t}$ is defined only if g(i) is before TIME(t)

We can now account for the canonical present tense with our model[8]. We now evaluate (9),

9. (a) *depressed'(h, x_i^{Pres})*

    (b) *depressed'(h, x_i^{Past})*

The truth conditions of (10a) according to the model M, an assignment g such that g(i) = [1,3] are in (11), and t=[5]:

10. $[[depressed'(h,\mathrm{x}_i^{Past})\ ]]^{M,g,[1,5]}$

    for every moment, m, in g(i) *I(h)* is in I(*depressed'*)(m)

    And $[[x_i^{Past}]]^{M,g,t}$ is defined if and only if g(i) is before [5],

    Therefore, with respect to model M, $[[depressed'(h,\mathrm{x}_i^{Past})\ ]]^{M,g,[1,5]} = 1$

Interestingly, if we revisit the model in (7) and look at the predicate "fall", this is infelicitous in the canonical present in English (not in other languages). This is something true for non-states in general. If we interpret all of these non-states as a kind of state (i.e. as a habitual, or a progressive) this is fine. One natural way of handling

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[8] Our model of the world is now comprised of "D", "I", and "T"

this is to assume that the events in question are defined over a larger interval than the utterance now. To account for this we use the Utterance Time Width Constraint (UWC) discussed by Anand Toosarvandani (2016). They point out the constraint that utterances are conceived of as instantaneous. They formulate this constraint in the following way,

11. **Utterance Time Width Constraint** - $\text{Time(t)} < \varepsilon$, where ε is the minimum size for the event[9]

The Utterance Time Width Constraint imposes that $\text{Time}(u)$ is too narrow to contain an event denoted by a non-state predicate (i.e. an activity or accomplishment predicate etc.) Only stative predicates, which have the subinterval property[10], are able to describe an eventuality that is small enough to fit within $\text{Time}(u)$. We reiterate this notion, that non-states are incompatible with the canonical present unless they have a habitual interpretation, with the following examples,

12. #Ron builds a castle.   [accomplishment]

Meaning: Ron is building a castle.

13. #Sue coughs.   [achievement]

Meaning: Sue is coughing.

14. #Bill wins the race.   [semelfactive]

Meaning: Bill is winning the race.

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[9]$\text{Time}(t)$ is the context of utterance

[10]The subinterval property is one in which an interval, or subpart of a state, that is seemingly ongoing but small enough to fit within the utterance time width constraint can satisfy the eventuality description and therefore fit in $\text{Time}(u)$.

The notion that these already seemingly finite predicates are incompatible with the utterance width constraint leaves room for the interpretation that the utterance time is so finite that "punctual" events cannot be contained within it. In the next section we will discuss the historical present tense. We will discuss what the historical present is and how the Utterance Time Width Constraint cannot extend to the historical present.

2.3.2 The Historical Present Tense

As was alluded to at the end of the previous section, the historical present does not behave in the same way as the canonical present. The historical present must have an anchor in time which precedes the time the sentence is read. Upon reading such sentences, the reader implicitly knows that at a specific time the action began and ended before they read about it. The historical present and canonical present differ on the following two criteria: (1) the historical present is not ongoing at speech time and (2) the historical present is not restricted to states. First we will show that the historical present can accommodate non-stative predicates, contrary to the canonical present. We show this by embedding the infelicitous canonical present sentences into a story.

Context: Imagine Harry and Ron are friends. Harry is telling their mutual friend Pam what Ron did the day before while Ron is away,

15. **Harry to Pam:** So, we are at the beach yesterday. Ron builds a castle and the sand is getting everywhere. Then, Ron gets bored of building the castle. Ron

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reads a book. I think the castle is way more interesting but he is too tired to do anything. He even stops reading. Then, Ron sleeps!

We see in this narrative that these sentences containing non-stative predicates, such as "build", "read", and "sleep", are felicitous with a historical present interpretation in this context. We aim to account for this using the same technology as we used to account for the canonical present.

As we saw in the previous section the canonical present, pragmatically, requires a "now" interpretation of the sentence. As the moment becomes larger, the predicate becomes less felicitous in the canonical present. This requirement for the "now" is shifted with a historical present interpretation. We see this occur in the narrative. We assume in the narrative that the actions these sentences are describing are not ongoing at the time of utterance. If we consider the restriction in English for statives is about the size of the "now" interval with the utterance time, then we can explain how the historical present is not restricted to states. More specifically, if we shift the t parameter, denoting the time of assessment, to a time before the time of utterance, then the present will be defined relative to that time in the past. This leaves the Utterance Time Width constraint to no longer apply, allowing for larger predicates in the historical present.

We conclude that the historical present is eventive/episodic, as it only allows for non-states. It does not exhibit stativity. Stative Descriptions of the space with an episodic sentence occuring before, can be interpreted as historical present although still unlikely to be intended.

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2.3.3 The Historical Present in the Restaurant Review Domain

In the last section, we made the important distinction between the varying tenses as they are able to occur in some of the same contexts as the historical present. However, they maintain different semantic interpretations. We first begin with a series of examples of the historical present as they would appear in the restaurant review domain,

16. (a) They then **bring** my wife's food which is a chili bowl and it's frozen cold and has cold non melted cheese on top.

    (b) I **order** a fancy tasting menu, expecting the best the chef has to offer and he **sends** out friggin' mashed potatoes.

    (c) My bf and I **have** to stare her down while she **is** behind the counter talking to her coworker for about 10-15 min (we **time** it) for her to get us water.

    [Yelp-dataset challenge]

In these sentences it is clear an event, in the case of (16c) the staring down the waitress and timing her getting water has already occurred in the past but appears in what appears to be the "present tense". Given this, the reader still infers, without ambiguity, that the event is not actually happening simultaneously while reading it. Similarly, the reader also doesn't interpret it as something that occurs every time someone orders water from that particular waitress. The historical present does not exhibit the stativity constraint, that is, (16a), (16b), and (16c) cannot be interpreted as an ongoing habit (Anand & Toosarvandani, 2016).

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2.3.4 The Canonical Present Tense in the Restaurant Review Domain

We recognize that there are instances of the present tense in both positive and negative reviews. We have not seen the specific construction that only occurs in the negative domain, namely the historical present. Here are representative examples of the only type of present that occurs in the positive review domain, the canonical present,

17. (a) I highly **recommend** the ribs, their cooked texture bfis excellent and I honestly HAVE NOT had better ribs in town.

    (b) Their fries **are** wonderful to chow down on when YOU **ARE** feeling pretty happy, and their honey mustard **is** ridiculously good (not sure what kind they use, but I **need** that in my life!).

    (c) The red velvet donuts **are** wonderful and they **make** special donuts for different holidays that **are** also delicious. I've always eaten the donuts to go, so CAN NOT speak to the experience of having coffee in the shop, but I would totally recommend Lamars **is** a great place to pick up a 12 donuts for a meeting, the office, or a family breakfast. Brenda at La Mars **makes** the best donuts!

    (d) The staff **is** so friendly and I can tell they **are** hard workers.

    [Yelp-dataset challenge]

The first, and most important thing to note, is that unlike in the negative case, these are all statives. There are very few episodic eventives used in the positive reviews. Given this, we make the argument that the present tense can only be interpreted as a

habitual or stative description, and cannot have a historical present interpretation when it occurs in the positive review domain. The absence of eventives in the positive present state sentences is a sign that the historical present is not occurring in these cases.

Thus far, we have demonstrated there are studies that have shown there are qualities of the historical present that elicit persuasion via mechanisms such as transportation and identification. We have even seen the historical present used in these experiments that show this (de Graaf, 2012, Green, 2004), although there has not been a systematic study done to test this explicitly. Lastly, we will discuss how this construction connects to the restaurant review domain and hypothesize why it has only appeared in negative reviews.

2.3.5   Positive vs. Negative Reviews

We make two speculations about the goal of restaurant review construction. The first observation considers the motivation for writing a restaurant review. Specifically, there is a key difference in motivation that distinguishes a negative review from a positive review. Although negative and positive reviews are written to persuade a reader, negative reviews comment on specific significant events that culminate into a bad experiences (i.e. food arriving late, a waiter acting rude etc.) In contrast, positive reviews have a weaker motivation to persuade and instead provide a more general overall evaluation. We can see this with the following examples,

18. **Positive Review Sentences**

(a) Our server was on top of his game and made great recommendations.

(b) Absolutely perfect for a Saturday night meal with your girlfriends or buddies or family!

(c) The waitresses are very friendly and knowledgeable about their menu and can make great recommendations if you ask them.

19. **Negative Review Sentences**

(a) She offered to make me a new drink but I told her to forget it and bring me an iced tea.

(b) The waiter returned to say that the chef refused to make it with chicken because it would not taste right.

(c) I ask her to cancel my order (we have been sitting there for a good hour or more and the chef clearly had more important things to attend to).

[Yelp-dataset challenge]

More often than not, positive restaurant reviews are more likely to discuss general positive aspects of a restaurant (i.e. quality of food, quality of decor) and general qualities of the overall experience. We see first hand in example set (18) that positive review sentences compliment generalizations in comparison to the negative examples in set (19) which criticize specifically.

In conjunction with our earlier observation, we also posit that the bar for negative persuasion is much higher in comparison to persuading an audience of something

positive. As a result, writers are more inclined to use stylistic mechanisms to elicit persuasion in negative reviews. These mechanisms include but are not limited to: highly descriptive and emotionally charged language, and, the main focus of this paper, the historical present. As a result of this the tone of negative reviews are more dramatic than positive reviews.

Positive reviews do not require the writer to go to such lengths to persuade readers which, is an explanation as to why we do not see use of the historical present in the positive review domain. Instead, we have observed that positive reviews contain weaker descriptions of overall experiences. In addition to this we have observed that when positive sentences are converted to the historical present artificially, they sounds less natural. Observe the following,

20. (a) The waiter **gives** us extra breadsticks with our spaghetti, and we **are** so happy!

    (b) We **see** the bartender serving delicious drinks to her customers when we **walk** up to the bar, she **serves** us right away.

    (c) The waiter **brings** us soup that **is** perfectly silky smooth. We **ask** how long it will be before the main course comes out and he **says** 5 minutes. At this point we **are** in shock at how great the service is.

    [Buckley, 2018]

We make the claim that these constructions sound less natural as a result of a displaced dramatic tone, a dramatic tone often associated with the historical present

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(Anand & Toosarvandani, 2016, Wolfson, 1979, Wolfson, 1978). As we highlighted earlier, negative reviews have to convince more by giving proof that some dramatic event occurred. The occurrence of the historical present in the positive review domain is not natural as a result of the lack of drama in positive experiences. There is no need to be dramatic in these reviews.

In summary, we have determined which characteristics of the historical present have been shown in previous experiments to elicit persuasion. We have found ample preliminary evidence to suggest that the historical present is a mechanism of persuasive writing especially in the restaurant review domain. In our next section we devise an experiment to explicitly test this.

Chapter 3

Experiment

As was discussed in the background section, there are a number of studies in the communication science and advertising literature that have looked into the correlation between narrative and advertising texts and the following criteria: (1) emotionality, (2) transportation, (3) identification, and (4) persuasion. These experiments are conducted by showing an entire narrative text and then asking each participant to fill out an extensive questionnaire with questions designed to test all of these criterion. We have found reason to postulate that there may be a correlation between tense and the aforementioned criterion, as we found there was an asymmetrical distribution of tense in the restaurant review domain.

The goal of our experiment is to investigate if there is a correlation between tense, specifically the historical present and past tense, and the criteria listed above. We run two concurrent experiments with the same stimuli but test differing criteria. We use the four criterion from the literature. Our motivation to test the stimuli in

relation to statements of identification and transportation stems from the findings of de Graaf (2012). We ask participants to judge stimuli sentences based on a statement of identification with the author (e.g. "During reading, I imagined what it would be like to be in the position of the reviewer") and then based on a statement of transportation (e.g. "I had a vivid image of the events in the sentences").

We decided to test persuasion as it was found in Burnkrant & Unnava (1995) and Escalas (2007) that self-referencing language, language found in restaurant reviews, can enhance the persuasive capabilities of a text. We test emotionality as it has been included as a factor in a number of papers that also explore persuasion, transportation and/or reader identification (e.g. de Graaf, 2012 etc.). Emotionality has also been attributed to the historical present. In the literature these factors are not separated between subject, nor are their effects tested between tense.

3.1 Experiment Overview

We aim to investigate the correlation between tense and the individual criterion mentioned above, as well as the correlation between the individual criterion. We do not separate all four criterion into individual conditions for simplicity reasons, however, we also do not combine all criteria together for fear of participant bias. We therefore combine identification with transportation. We combine identification and transportation together as they are often put together in other experiments (de Graaf, 2012 etc.). Additionally, we did not want to test these criterion with the emotionality criteria, as

we wanted to keep the judgments on these points free of bias. We then pair our criteria of emotionality with our persuasion criteria[1]. In addition to splitting up the criteria, to guard against subject hypothesizing, we split the historical present tense and past tense stimuli between subjects.

3.2 Stimuli

The stimuli we use is previously extracted and classified by Oraby et al. (2017) from Yelp-Dataset Challenge. For the purposes of this experiment, we only use the "raw" sentences classified as "extremely negative" (sentences extracted from 1-2 star reviews) as stimuli[2]. From this subset of data, the target stimuli consists of 20 naturally occurring sentences and 20 generated sentences[3].

In addition to these target stimuli, we include 10 generated control sentences which were not found in the wild. These control sentences were designed to simulate events that are also described in negative reviews with the "negative" aspect removed (e.g. "We walk into the restaurant and the bartender is standing behind the bar"). In other words, these sentences are meant to be completely free of descriptive or emotion-

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[1]We combine these criteria as there were cost limitations to running more experiment permutations.

[2]Although we use only "extremely negative" classified review sentences we looked at both extremely positive and extremely negative sentences to find a pattern. In a future experiment we want to compare not just the effect of tense but the effect of positive and negative sentences in relation to the aforementioned criterion.

[3]We define "generated" as a sentence whose verb tense has been changed from its natural tense to a target tense but is otherwise minimally changed. We define "naturally occurring" sentences as sentences that were found in the wild in a restaurant review. We note here that we have both "generated and "naturally occurring" sentences as we intended on running an experiment comparing positive and negative review sentences along with tense. We did not have any naturally occurring historical present positive review sentences and therefore needed to convert past tense sentences found in positive reviews to the historical present. This also increased our pool of historical present sentences in the negative domain where we did find naturally occurring sentences.

Table 3.1: Stimuli Breakdown

Tense: Historical Present Criteria: Emotion & Persuasion	Tense: Historical Present Criteria: Identification & Transportation
20 Natural Sentences 20 Generated Sentences 10 Control Sentences	20 Natural Sentences 20 Generated Sentences 10 Control Sentences
Tense: Past Tense Criteria: Emotion & Persuasion	**Tense: Past Tense Criteria: Identification & Transportation**
20 Natural Sentences 20 Generated Sentences 10 Control Sentences	20 Natural Sentences 20 Generated Sentences 10 Control Sentences

ally charged language to prevent subject bias.

Table 3.2: Example Stimuli

Historical Present Tense	Past Tense
Natural: "My friend **questions** the waitress because the pizzas **are** burnt to a crisp."	Generated: "My friend **questioned** the waitress because the pizzas **were** burnt to a crisp."
Generated: "She **seems** bothered when we **ask** her for anything like a glass of water or more tea."	Natural: "She **seemed** bothered when we **asked** her for anything like a glass of water or more tea."
Control: "We **walk** into the restaurant and we **sit** down at a table."	Control: "We **walked** into the restaurant and we **sat** down at a table."

3.3 Demographic survey

Prior to the acceptability judgment task, participants were first asked a series of mandatory demographic questions (i.e. gender, which online review platforms they used, native language, etc.). Next, participants were presented a simulated practice slide in the same format as the acceptability judgment task with an example historical present tense review sentence that does not appear in the actual task. This slide also outlined each question they would be asked along with a practice review sentence. They

were instructed that they would be presented a set of review sentences one at a time. In addition, they were told they would be asked to judge each sentence on a scale of 1 to 5 based on two criterion, emotionality and persuasiveness. To avoid potential confusion we defined persuasiveness.

3.4   Participants - *general*

There were a total of 77 (N = 77) participants. No participant took more than one version of the experiment. All participants were found using MechanicalTurk.

3.5   Experiment Conditions

3.5.1   Emotion & Persuasion - Historical Present tense

There were 18 total responses for this condition (12 male and 6 female, age range 21-52 years of age)[4]. In addition, 83% of participants reported they used Yelp, 11% reported they used TripAdvisor, 28% reported that they used Urbanspoon and 61% reported that they used Google. Only 11% stated they did not use any review platforms. We indicate that all participants must be native English speakers in the directions slide. All 18 participants in this condition were self-reported native English speakers [5]. All information was self-reported. Through MechanicalTurk we specified

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[4]We originally had 20 responses for experiment 1, condition 1, however, two participant responses failed to meet the requirements of the control task.

[5]Experiment 1 initially did not have a location requirement instated via MTurk. This lead to there being two reported native Tamil speakers in Condition 1 and one reported native Tamil speaker in Condition 2. Due to this, we exclude their data and ran round two of experiment 1 with a location specification to only within the United States. This specification is also used in experiment 2.

that that for participants to be eligible to participate in the task they must have 1000 accepted HITs on MTurk prior to participation in this experiment. It was also required that each participant has an acceptance rate greater than 90% of total HITs completed.

3.5.2 Emotion & Persuasion - Past tense

There were 19 total participants (14 male and 5 female, age range 21-45 years)[6]. It was reported that 74% of participants used Yelp, 21% of participants used TripAdvisor, 32% of participants used Urbanspoon and 95% of participants used Google. Only 6% of the participant pool for the condition of this experiment did not use any review platforms. All 19 participants were self-reported native English speakers. All information was self-reported. Through MechanicalTurk we specified that for participants to be eligible to participate in the task they must have 1000 accepted HITs on MTurk prior to participation in this experiment. It was also required that each participant has an acceptance rate greater than 90% of total HITs completed.

3.5.3 Identification & Transportation - Historical Present tense

There were 20 total participants (14 male and 6 female, age range 23-57 years). It was found that 90% of participants reported that they used Yelp, 25% of participants reported that they used TripAdvisor, 20% of participants reported that they used Urbanspoon and 60% of participants reported that they used Google. Only 5% reported they did not use any review platforms of any kind. All 20 participants were self-reported

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[6]We originally had 20 responses for experiment 1, condition 2, however, one participant responses failed to meet the requirements of the control task.

native English speakers. Through MechanicalTurk we specified that for participants to be eligible to participate in the task they must have 1000 accepted HITs on MTurk prior to participation in this experiment. It was also required that each participant has an acceptance rate greater than 90% of total HITs completed. In addition, this task was restricted to participants located in the United States.

3.5.4 Identification & Transportation - Past tense

There were 20 total participants (12 male and 8 female, age range 23-55 years). It was found that 80% of the participants used Yelp, 20% of participants reported that they used TripAdvisor, 15% of the participants used Urbanspoon and 90% used Google. All participants reported that they used at least one or more review platforms. Through MechanicalTurk we specified that for participants to be eligible to participate in the task they must have 1000 accepted HITs on MTurk prior to participation in this experiment. It was also required that each participant has an acceptance rate greater than 90% of total HITs completed. In addition, this task was restricted to participants located in the United States.

3.5.5 Experimental Procedure

Each experiment was distributed using Amazon MechanicalTurk. Participants were given a two hour time limit to complete the task. Participants were first asked to fill out a short demographic survey (described previously). They were then presented with a warning slide to prevent MTurkers from participating in more than one condition

of the experiment to avoid bias. Following the warning slide, they were presented an instructions slide. The slide consisted of written instructions of how the acceptability judgment task was structured. It also contained an example sentence along with a visual presentation of the task including a labeled interactive scale, although no result was recorded from this slide[7].

Participants performed an acceptability judgment task. Each sentence appeared twice. In the emotionality/persuasion permutation of the experiment the emotionality judgment question was asked first, then the persuasion question[8]. In the identification/ transportation versions of the experiment, the identification judgment was asked first then the transportation judgment.

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[7]This example sentence was not used in the actual experiment but did match the tense of the experimental condition

[8]Persuasive in this context was defined as "persuading one to feel more strong, either negatively or positively, toward the described experience/establishment than before"

Chapter 4

Results & Discussion

In this section we will first discuss the results of experiment 1 and 2 in relation to general tense interaction with emotion, identification, transportation, and persuasion. We will then go on to discuss the significant relationships between criteria, namely the relationship between transportation and identification, as well as the relationship between persuasion & emotion, and persuasion & transportation.

The overall means of each tense are not sufficient in determining if there is an effect between each criteria and tense on their own, although they do allude to some of the effects we do find, in that there is a marginal difference between the past tense and historical present tense total mean scores for both identification and emotion. This difference doesn't appear terribly significant on the surface.

Table 4.1: Average Criteria Score

Tense	Avg. Score of Gen. Items	Avg. Score of Natural Items	Avg. Score of Total Target Items
Criteria	Emotion	Emotion	Emotion
Past (SD=1.22)	3.43	3.07	3.24
Hist. Present (SD=1.15)	3.37	3.66	3.51
Criteria	Persuasion	Persuasion	Persuasion
Past (SD=1.18)	3.26	3.08	3.17
Hist. Present (SD=1.21)	3.17	3.29	3.23
Criteria	Identification	Identification	Identification
Past (SD=1.08)	3.85	3.93	3.89
Hist. Present (SD=1.15)	3.65	3.57	3.61
Criteria	Transportation	Transportation	Transportation
Past (SD=1.05)	3.43	3.51	3.47
Hist. Present (SD=1.12)	3.64	3.59	3.62

4.1 Mean Score Difference

Our method of finding the tense interaction between each criterion individually was to look at the mean score difference of each target item for each criteria. We first constructed an average judgment score, per target item, for each condition. We then calculated the mean difference score between tenses for each criteria, per target item[1] We will first look at these interactions in the following order of criteria: (1) emotion, (2) identification, (3) transportation, and (4) persuasion. Figures 4.1-4.4 depict these relationships.

Figure 4.1. depicts the relationship between emotion scores and tense. We see

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[1]We use equation d = X - Y, where X equals the historical present tense mean score for a target item, Y equals the past tense mean score for a target item, and d equals the difference in mean score of a target item. Positive values represent a mean judgment in favor of the historical present and negative values represent a mean judgment in favor of the past tense target item. Each graph is the distribution of d for each criteria.
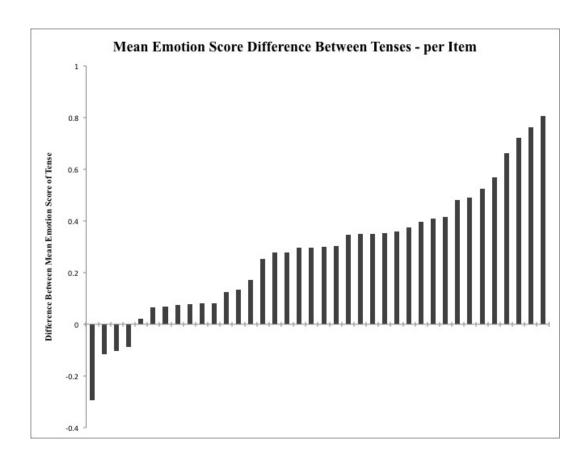
Figure 4.1: Mean Emotion Score Difference Between Tenses - per Item

in figure 3.1 that the mean score per target item is skewed heavily toward the historical present when judging the target item on emotion. Specifically, the historical present is ranked higher in emotion compared to the past tense. To confirm the significance of this apparent correlation, we conducted a paired t-test to determine the significance of the difference in transportation mean scores per item. The results of this t-test indicated that there was a significant difference between the historical present and past tense; $t(37)=6.93$ ($p < .001$). We interpret this figure and the results of this paired t-test as

supporting evidence that there is an effect between emotion scores and tense[2].
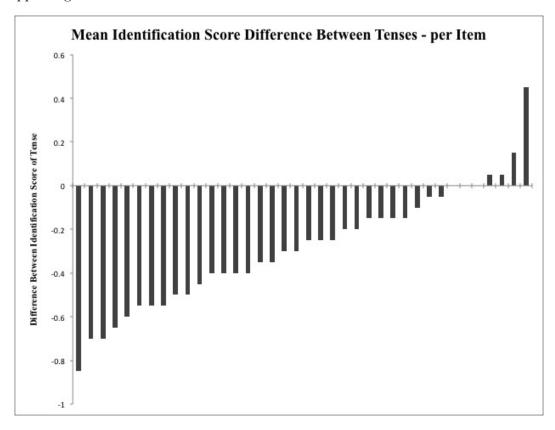

Figure 4.2: Mean Identification Score Difference Between Tenses - per Item

Figure 4.2 depicts the relationship between the criteria of identification and tense. We find that, somewhat surprisingly, there is an effect between past tense and identification. We see from that the distribution of the mean score differences are skewed heavily to the left. Namely, items in the past tense are ranked higher in identification than items in the historical present. To confirm the significance of this apparent correlation, we conducted a paired t-test to determine the significance of the difference in transportation mean scores per item. The results of this t-test indicated that there was

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[2]See appendix B for complete table of data

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a significant difference between the historical present and past tense; $t(37)=6.43$ ($p <$ .001). We interpret this figure and results of the paired t-test as evidence supporting that there is an interaction between identification and tense[3].
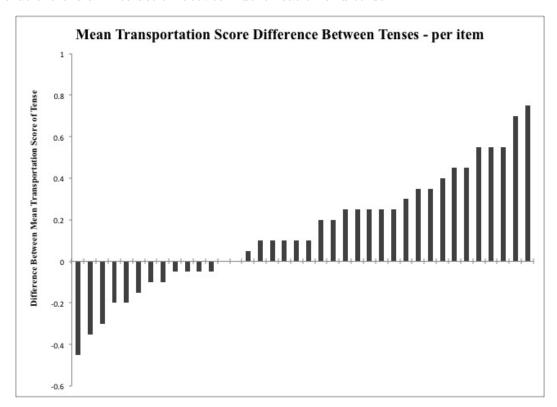

Figure 4.3: Mean Transportation Score Difference Between Tenses - per Item

Figure 4.3 depicts the relationship between the criteria of transportation and tense. We observe that the mean score per target item is skewed toward the historical present when judging the target item on transportation.

Although less striking as the previous figures, we still find roughly two thirds of the target items favor the historical present tense over the past tense.

[3]See appendix B for complete table of data

We conducted a paired t-test to determine the significance of the difference in transportation mean scores per item[4]. The results of this t-test indicated that there was a significant difference between the historical present and past tense; t(37)=3.14 (p = 0.003)[5].
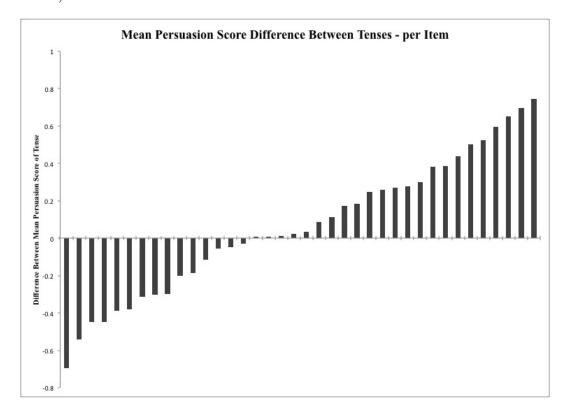

Figure 4.4: Mean Persuasion Score Difference Between Tenses - per Item

Figure 4.4 depicts the relationship (or lack thereof) between persuasion and tense. We see in this figure that the distribution of mean scores is even between the his-

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[4]We acknowledge that a paired t-test does not take into account random effects of the target items themselves nor does it take into account random effects of participants. That being said, we proceed with caution by taking the results of this paired t-test as evidence that there is an effect between transportation and tense.

[5]See appendix B for complete table of data

torical present tense and the past tense. There is no significant skew in either direction and the distribution of positive and negative score differences indicate tense does not explicitly affect persuasion scores. To confirm this we conducted a paired t-test to determine the significance of the difference in persuasion mean scores per item. The results of this t-test indicated that there was no significant difference between the historical present and past tense; $t(37)=1.06$ (p $= 0.295$)[6].

We take the results of this phase of the analysis as preliminary evidence that there are visible effects between tense and emotion, identification, and transportation. We will now look at the significant cross-criteria relationships we found in the data. We begin with the relationship between transportation and identification.

4.2   Transportation, Identification, and Tense

In this next section we will look at criterion relationships.

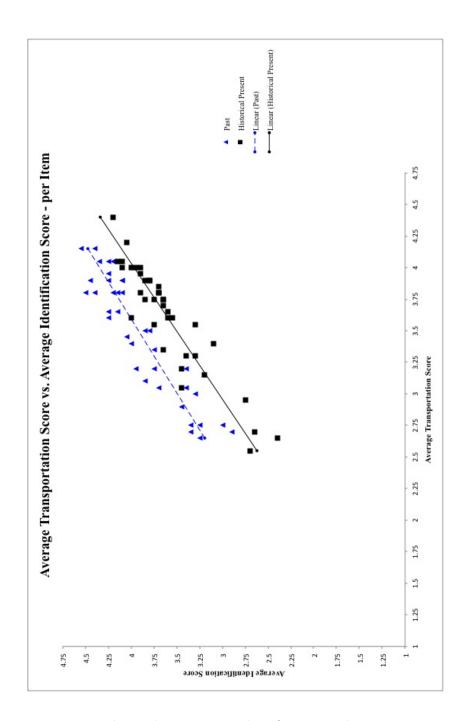
[6]See appendix B for complete table of data

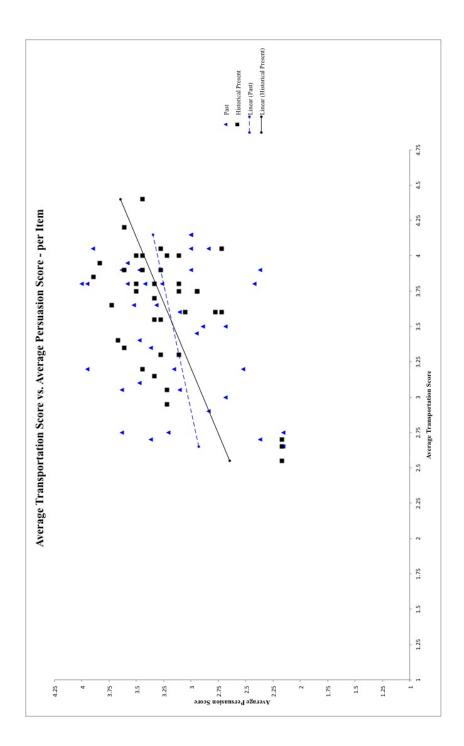Figure 4.5: Relationship Between Identification and Transportation

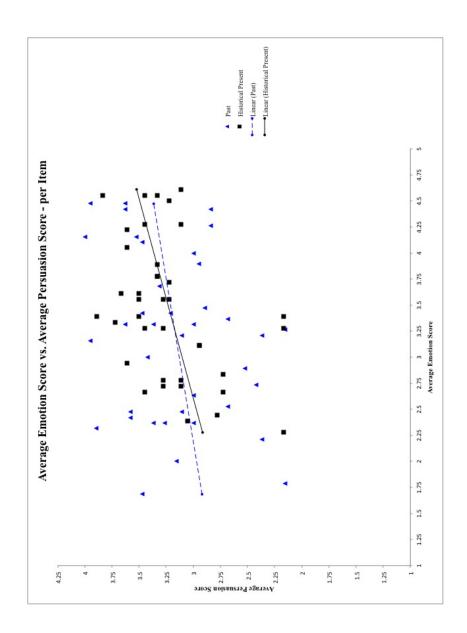Figure 4.6: Relationship Between Transportation and Persuasion

Figure 4.7: Relationship Between Emotion and Persuasion

Figure 4.5. illustrates a positive relationship between identification and transportation. Specifically, as transportation scores increase so do identification scores. Although, this positive relationship between these factors occurs for both tenses (Past $R^2 = .83$, Historical Present $R^2 = .86$), we also see the same effect between the historical present tense and identification reiterated, namely there is a negative effect between the identification and the historical present.

Figure 4.6 depicts the relationship between transportation and persuasion. Although we did not see an explicit effect between persuasion and tense, this figure illustrates there is a potential positive effect between transportation score and persuasion score. Specifically, we see that for many items as transportation scores, persuasion scores also increase. This effect is stronger for target items in the historical present. This relationship is best depicted by the linear trend lines in the figure, which show the rate at which the scores increase (Past $R^2 = .07$, Historical Present $R^2 = .31$). We do not interpret this figure as conclusive evidence that there is a correlation. We determine the significance of this effect via linear mixed effects modeling.

Figure 4.7 represents the interaction between emotion scores and persuasion scores. We see from this figure that there is a subtle positive interaction between emotion and persuasion scores. Particularly, we can observe a steeper increase in the historical present data (Past $R^2 = .07$, Historical Present $R^2 = .18$). We do not interpret this figure as conclusive evidence that there is a correlation. We determine the significance of this effect via linear mixed effects modeling.

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4.3 Persuasion & Transportation

In order to test our hypothesis that (1) transportation elicits persuasion further and (2) tense change can elicit persuasion, an ordinal logistic regression was performed to determine how tense affected persuasion scores. Models for persuasion were constructed using ratings of emotionality, transportation, and identification as fixed effects, as well as the Tense of the stimulus, with Subject and Item as random effects. Models were fit using the Ordinal package in R (Christensen, 2018). Because persuasion was rated by different subjects than those that rated transportation and identification, for these analyses, we used per-item mean Transportation and Identification ratings, MeanTransportation and MeanIdentification. The best model was of the form,

$$[[Persuasion.Score \sim Emotion.Score + AverageTransp + (1 \mid SubjId) +$$

$$(1 \mid ItemNum)]]$$

and the significant parameters of the model are in Table 4.2. From this, we found a significant relationship between persuasion and transportation (p =0.0238). The results of the best model can be seen in Table 4.2.

Table 4.2: Results of linear regression model - Exp. 1

	Estimate	Std. Error	z value	P-value
Emotion Score = 4	0.76497	0.25055	3.053	0.002265 **
Emotion Score = 5	1.40901	0.27855	5.058	4.23e-07 ***
Avg. Transportation.L	2.14613	0.61981	3.463	0.000535 ***

The results of the model above indicate that there is significant effect for items participants judged as a 4 (p <.005) and a 5 (p <.001) for emotionality. When items

are judged as a 4 or a 5 based on the emotionality scale (i.e very emotional), there is a increase in persuasion scores . A model with tense as an additional parameter did not appear to significantly improve performance. We will now look at interaction between identification and tense.

4.4   Identification and Tense Reiterated

In order to further test our hypothesis, an ordinal logistic regression was performed to determine how tense affected persuasion scores. Models for identification were constructed using ratings of transportation, emotion, and persuasion as fixed effects, as well as the Tense of the stimulus, with Subject and Item as random effects. Models were fit using the Ordinal package in R (Christensen, 2018). Because Identification was rated by different subjects than those that rated Emotion and persuasion, for these analyses, we used per-item mean Emotion and Persuasion ratings, MeanEmotion and MeanPersuasion. The best fit model was of the form,

$$[[\text{Ident.Score} \sim Trans.Score + seenTense + (1 \mid SubjId) + (1 \mid ItemNum)]]$$

and the significant parameters of the model are in Table 4.3. From this, we found a significant, and somewhat surprising, relationship between identification and tense (p=.006). Given the results of the mean difference distribution curve, it is not surprising but it is contrary to what our original hypothesis predicted. The results of the model can be found in Table 4.3.

The table first shows that there is a positive correlation between transporta-

Table 4.3: Results of linear regression model - Exp. 2

	Estimate	Std. Error	z value	P-value
Transportation Score = 2	2.9878	0.3507	8.52	<2e-16 ***
Transportation Score = 3	4.8683	0.3668	13.27	<2e-16 ***
Transportation Score = 4	6.5004	0.3807	17.08	<2e-16 ***
Transportation Score = 5	9.1436	0.4219	21.67	<2e-16 ***
Seen Tense - Hist. present	-1.2372	0.4340	-2.85	0.00437 **

tion and identification, specifically as transportation scores increase identification scores increase. The somewhat surprising results, contrary to our original hypothesis, is the negative effect tense has on identification (p <.05). Specifically, there is a negative interaction between identification scores and the historical present tense, namely that identification scores significantly decrease when items are in the historical present. We can see this relationship clearly from figures 4.2 and 4.5.

4.5   Discussion

We hypothesized that restaurant reviews exploit transportation and identification to increase persuasion, in two ways. The first was by utilizing self-referencing narratives, narratives referencing the self written from the first person perspective, which have been shown to elicit transportation and identification. We argued that the historical imposes high levels of drama into the text and negative reviews elicit transportation by using vivid imagery to describe episodic events. In addition, we postulated that

restaurant reviews use the historical present in order to elicit transportation and iden-

tification by increasing the dramatic effect of the narrative, which has been argued only

informally in previous studies. Our most significant finding was the most surprising,

namely there was a negative effect between the historical present and identification. We

predicted that level of identification with the reviewer would be facilitated by change

in tense. We expected to find that the historical present tense would facilitate identifi-

cation with the reviewer of the restaurant just as de Graaf (2012) had found increased

levels of identification with the perspective of the character from which the narrative was

told. Instead, we found that the past tense items had increased levels of identification.

The negative interaction between the historical present and identification can be in part

be explained by the findings of van Krieken (2017)[7]. They found that identification

was facilitated by viewpoint markers ("I", "you", "we" etc.) rather than tense. If tense

is not a factor that is able to influence identification, then relying solely on viewpoint

markers would explain why we do not see a positive effect between identification and

the historical present, as there was an even distribution of viewpoint markers between

the past and historical present tense items. In addition, although there were viewpoint

markers in our target items there were instances of "ambiguous perspective"[8]. It is

possible that from this effect when participants read the historical present in a review

context they adopted the point of view of the spectator rather than the the point of

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[7]We discovered this paper after conducting our experiment which is why we do not have it as part of the background section. We do find its results relevant to our research question and will include as background in future experiments.

[8]When the absence of a viewpoint marker of a two sentence narrative allows for the second sentence to be interpreted as originating from the narrators viewpoint or the spectators viewpoint (i.e. He sat on the bench. The car drove away.) "The car drove away" can be interpreted from the point of view of the narrator or from a spectator of the narrative.

view of the reviewer. The results of van Krieken (2017) do not lend an explanation to why the past tense items evoked higher levels of identification as they found tense did not affect identification for this we do not have an explanation. This explanation also lends an explanation as to why our results indicate there is a positive correlation between transportation and identification.

One effect we predicted is the positive effect between the historical present and emotionality. Our results support the hypothesis that restaurant reviewers use the historical present to increase the perceived level of emotion of the review, thus inducing transportation. The effect between the historical present and perceived emotion is not surprising, as the historical present has been known to be a literary tool that increases the dramatic tone of a narrative (Anand & Toosarvandani, 2016, Wolfson, 1978). What we find significant from our result is that in the restaurant review domain, a reader is able to perceive an increase in emotionality based upon the tense of the review sentence and with little context. This is a novel effect in the restaurant review domain literature. In addition to this, other studies that found a positive relationship between emotionality and transportation asked participants to read whole narratives. We have provided concrete evidence that there is a relationship between tense and conveyed emotion and that this effect can still be achieved in the restaurant review domain with less narrative context.

This leads us into our next significant effect between tense and transportation. We hypothesized that restaurant reviewers use the historical present to increase transportation. The general findings of our study support the findings of Green & Brock

(2000) that dramatic narratives, in this case reviews written in the historical present, are more likely to transport their readers. Our results go one step further than this in that we have found that our results demonstrate that transportation is in part facilitated by tense, which also increases the dramatic effect of a review. We see that the historical present plays a role in inducing both emotionality and transportation into the restaurant review domain. Our research lends an important linguistic lens to the growing transportation research, that tense has the ability to affect a reader's narrative processing.

Although we did not see an explicit effect between persuasion and the historical present tense, we posit that other criteria such as emotionality and transportation fall under the umbrella of persuasion. These findings are echoed by Green & Brock (2000) who found evidence that transportation and heightened emotion elicited persuasion. We can interpret the individual effects found between emotionality and tense as well as transportation and tense to be indirect indications of increased levels of persuasion. We suspect, from these findings, that persuasion is a subconscious mechanism. By asking participants about the persuasive aspects of the review sentences we were asking them to judge something operating on a cognitive system they are not aware of.

Chapter 5

Conclusion

There were several constraining factors when conducting this experiment. One improvement we would like make is to increase the number of target stimuli. As we were limited on time and finds we were only able to run a small number of participants per condition. Along the same line, there were several potential transportation and identification statements we could have chosen from the Transportation Scale questionnaire from Green & Brock (2000). It is possible that the phrasing of these statements were either not explicit enough or at the very least could have affected the results. We would also like to find a better way of asking about the persuasive nature of the sentences. Namely, rather than asking outright "How persuasive was the sentence?" we could adopt a Green (2004) approach asking participants to answer a questionnaire after the experiment to see if participants beliefs were more in line with an angry reviewers. We would like to explore how context and tense interact. As we saw there was an effect without too much context, we would like to see if these effects would change if

we increased the review excerpts to paragraphs or entire reviews.

Despite these modifications, we are still able to come to a number of conclusions that we can draw from the results of our experiments. We found that tense change alone can influence how emotional a reader perceives a restaurant review sentence. We also found that review sentences in the historical present are more transporting compared to their past tense counterparts. In addition, we found that these changes in perception do not rely on large quantities of context as these judgments were made on only one to two sentences. One surprising discovery was the positive effect we found between past tense and identification. We conclude from this that the relationship between tense and identification is more complicated than we originally thought and requires further study. We propose potential ways to test this later in this section. Although we did not find a positive correlation between the identification and the historical present, we can conclude that there is a positive correlation between a reader's identification with the reviewer scores and how transported the reader of the review is.

Overall, our research findings have successfully demonstrated a number of proposals made in our original hypothesis, namely, that tense does influence the narrative processing of restaurant reviews. The results of our experiments provide a solid foundation in understanding the pivotal factors that contribute to a reader's altered perception of a simple review. In turn, these findings lend a unique linguistic lens on how people process restaurant reviews based linguistic cues.

5.1 Future Directions

There are a number of experiments we would like to conduct to build off of these results. As we discussed previously we found that the relationship between tense and identification is more complicated than we originally thought requiring further study. There are number of ways in which to further examine identification in the restaurant review domain. A way in which we might do this is compare third-person narrative review sentences to first-person narrative review sentences. As we did not regulate exclusively for pronoun distribution in the present study, we foresee that is possible that first-person narrative would elicit higher levels of identification than third-person narratives in the restaurant review domain. In addition, we did not directly compare two sentences that differed in tense for this paper, as we suspected there could be a bias when directly comparing tense. Considering our findings, we reconsider this option as a viable way of testing tense interaction with identification. To formally test this, we would directly compare past tense sentences with their historical present counterparts as a means for testing tense interaction with identification.

One area we would like to explore is comparing positive restaurant review sentences to negative restaurant review sentences. As we saw an asymmetrical distribution of the historical present between positive and negative reviews, we would like to run a similar experiment comparing positive review sentences with their negative review sentence counterparts. In doing so we would also like to run an acceptability judgment task to test the naturalness of generated positive historical present sentences as we did

not find any naturally occurring in the wild. We would expect to find a significant effect between identification and the class of review (i.e. positive nature or negative nature of the review).

Appendix A

Stimuli

Table A.1: Control Stimuli Breakdown

Item Num.	Past	Hist. Present
46	The food was served on plates and the drinks in cups.	The food is served on plates and the drinks in cups.
47	We walked into the restaurant and we sat down at a table.	We walk into the restaurant and we sit down at a table.
48	The bartender was standing behind the bar when we walked into the dining room.	The bartender is standing behind the bar when we walk into the dining room.
49	We looked at the menu while we waited for our server to come for our drink order.	We look at the menu while we wait for our server to come for our drink order.
50	They cleaned our table while we waited to get our menus and order our drinks.	They clean our table while we wait to get our menus and order our drinks.
51	We looked at the dessert selection on the menu after we finished our meal.	We look at the dessert selection on the menu after we finish our meal.
52	My wife and I ordered coffee after dinner while our kids decided on the dessert they wanted.	My wife and I order coffee after dinner while our kids decide on the dessert they want.
53	The hostess sat us at a table and gave us menus.	The hostess sits us at a table and gives us menus.
54	We ordered bread for the table and drinks.	We order bread for the table and drinks.
55	We went to the restaurant for dinner at night.	We go to the restaurant for dinner at night.

Table A.2: Target Stimuli - Gen. Past & Nat. Hist. Present

Item Num.	Generated Past	Natural Hist. Present
8	We ordered the croque Madame and a bltc and a French onion soup and they were tasteless.	We order the croque Madame and a bltc and a French onion soup and they are tasteless
9	When we saw them they were just walking back and forth.	When we see them they are just walking back and forth.
10	For the first time in my 54 years, I sent a dinner back.	For the first time in my 54 years, I send a dinner back.
11	Really, we sent 2 things back, sent everything else back half eaten and a restaurant THAT WAS open 6 weeks DID NOT send a manager over AT LEAST.	Really, we send 2 things back, send everything else back half eaten and a restaurant THAT IS open 6 weeks DOES NOT send a manager over AT LEAST.
12	So nicely i told her how to make it and she took the old container balled it up really meanly and tossed it hardly into the trash.	So nicely i tell her how to make it and she takes the old container balls it up really meanly and tosses it hardly into the trash.
13	So the new waitress took our order without introducing herself and with the shittiest whatever attitude and just walked away while I was still talking to her.	So the new waitress takes our order without introducing herself and with the shittiest whatever attitude and just walks away while I am still talking to her.
14	So I told him that IT WAS our first time there, IT WAS my birthday and I WAS not impressed at all.	So I tell him that IT IS our first time there! IT IS my birthday and SO FAR I AM not impressed at all.
15	Before he had another chance to run off, I politely told him WE WOULD like to get our order in.	Before he has another chance to run off, I politely tell him WE WOULD like to get our order in.
16	She told me that her GM told her not to serve us at all for taking the table and how we ruined their night and they were not able to make their tips.	She tells me that her GM told her not to serve us at all for taking the table and how we ruined their night and they are not able to make their tips.
17	the Roasted Garlic Tomato Bisque was strangely thick and grainy, we ate it with a fork, I swear it doubles as pizza sauce, it was terrible	the Roasted Garlic Tomato Bisque is strangely thick and grainy, we eat it with a fork! I swear it doubles as pizza sauce, it is terrible
18	Either they DID NOT give us credit towards our Dine-Rewards program or they messed up our order EVERY SINGLE TIME.	Either they DO NOT give us credit towards our Dine-Rewards program or they mess up our order EVERY SINGLE TIME.
19	I told the cashier that the ladies attitude needed to be brought up to the manager and she turned and said I did not give you an attitude (with an attitude btw) and Im shocked.	I tell the cashier that the ladies attitude needs to be brought up to the manager and she turns and says I did not give you an attitude (with an attitude btw) and Im shocked.
20	When our waiter finally arrived he asked us what else did you WANT rudely?	When our waiter finally arrives he asks us what else did you WANT rudely?
21	My friend questioned the waitress because the pizzas were burnt to a crisp.	My friend questions the waitress because the pizzas are burnt to a crisp.
22	25 minutes passed before he brought out the appetizer.	25 minutes pass before he brings out the appetizer.
23	Another 10 minutes went by, he brought our drinks, and stated, I have no idea when your food will be ready.	Another 10 minutes goes by, he brings our drinks, and states, I have no idea when your food will be ready.
24	Then before she swiped my card I asked to add avocado she rolled her eyes than started pushing buttons on her register all mad.	Then before she swipes my card I ask to add avocado she rolls her eyes than starts pushing buttons on her register all mad.
25	The chicken parmesan was chronically undercooked, to the point that it tasted like rubber.	The chicken parmesan is chronically undercooked, to the point that it tastes like rubber.

Table A.3: Target Stimuli - Nat. Past & Gen. Hist. Present

Item Num	Natural Past	Generated Hist. Present
26	When we were getting seated it really bothered me that she DID NOT ask if we wanted to eat at the bar or not, she just automatically sat us there.	When we are getting seated it really bothers me that she DOES NOT ask if we want to eat at the bar or not, she just automatically sits us there.
27	All I wanted to do was leave this property.	All I want to do is leave this property.
28	The server went to ask and rudely informed us that yes they could.	The server goes to ask and rudely informs us that yes they can.
29	What killed me was when I went to check on our position in the line around 8:30.	What kills me is when I go to check on our position in the line around 8:30.
30	The server never came back, my drink was left empty, and we eventually had to get up and call him over to bring us the bill.	The server never comes back, my drink is left empty, and we eventually have to get up and call him over to bring us the bill.
31	They made my steak 3 times and they still COULD NOT get it right .. On top of waiting 45 mins for my food.	They make my steak 3 times and they still CAN NOT get it right .. On top of waiting 45 mins for my food.
32	When we arrived the hostess sat us right behind the booth that the waiters use to ring up their orders, when there were plenty of other booths to choose from.	When we arrive the hostess sits us right behind the booth that the waiters use to ring up their orders, when there are plenty of other booths to choose from.
33	She seemed bothered when we asked her for anything like a glass of water or more tea.	She seems bothered when we ask her for anything like a glass of water or more tea.
34	Another customer asked her to put the patriots Chiefs playoff game on and she shook her head and rolled her eyes as he walked away.	Another customer asks her to put the patriots Chiefs playoff game on and she shakes her head and rolls her eyes As he walk away.
35	We asked the server who brought them to us to please take ours back and for hot ones instead.	We ask the server who brought them to us to please take ours back and for hot ones instead.
36	My wife ate her whole meal and I still did not receive my dinner.	My wife eats her whole meal and I still do not receive my dinner.
37	When she brought our drinks over she just slammed it on the table and DID NOT even give us any straws.	When she brings our drinks over she just slams it on the table and DOES NOT even give us any straws.
38	Because I asked for the beef after we had ordered, they brought it out on a plate and it was already precooked, so after adding to the hotpot it became overcooked.	Because I ask for the beef after we have ordered, they bring it out on a plate and it is already precooked, so after adding to the hotpot it becomes overcooked.
39	I repeatedly had to ask another server for our drinks and then finally they brought them to us.	I repeatedly have to ask another server for our drinks and then finally they bring them to us.
40	I burned my tongue, And coughed a lung, Until the flame was fought.	I burn my tongue, And cough a lung, Until the flame is fought.
41	The manager did absolutely NOTHING to stop this gentleman from threatening me and just stayed quiet.	The manager does absolutely NOTHING to stop this gentleman from threatening me and just stays quiet.
42	So we were eating spicy food without any waters for a good 10 minutes.	So we are eating spicy food without any waters for a good 10 minutes.
43	I ordered a pizza to go, and I found a short brown hair in my pizza once I took a couple bites.	I order a pizza to go, and I find a short brown hair in my pizza once I take a couple bites.
44	My bf and I had to stare her down while she was behind the counter taking to her coworker for about 10-15 min (we timed it) for her to get us water.	My bf and I have to stare her down while she is behind the counter talking to her coworker for about 10-15 min (we time it) for her to get us water.
45	He was making sandwiches for the employees and was annoyed I had to order 2 sandwiches for myself and interrupted him.	He is making sandwiches for the employees and is annoyed I have to order 2 sandwiches for myself and interrupt him.

Appendix B

Data

Table B.1: Emotion Score Averages

Item Number	Avg. Emotion Score - Hist. Present	Avg. Emotion Score - Past Tense	Score Difference
8	2.39	2.37	0.02
9	2.28	1.80	0.49
10	3.33	3.42	-0.09
11	4.56	4.47	0.08
12	3.78	3.37	0.41
13	4.28	4.11	0.17
14	4.61	4.26	0.35
15	3.89	3.47	0.42
16	3.61	3.32	0.30
17	3.39	3.32	0.07
18	4.56	4.42	0.14
19	4.06	4.16	-0.10
20	4.28	4.00	0.28
21	2.72	2.37	0.36
22	2.44	1.68	0.76
23	2.67	2.37	0.30
24	3.61	3.32	0.30
25	3.56	3.16	0.40
26	3.78	3.90	-0.12
27	3.72	3.42	0.30
28	3.56	3.21	0.35
29	3.39	3.26	0.13
30	2.94	2.42	0.52
31	4.22	4.16	0.06
32	2.78	2.21	0.57
33	3.11	2.63	0.48
34	3.11	2.74	0.37
35	2.78	2.53	0.25
36	3.28	2.47	0.80
37	4.50	4.42	0.08
38	2.72	2.00	0.72
39	3.28	3.00	0.28
40	3.28	3.21	0.07
41	4.56	4.47	0.08
42	2.83	2.47	0.36
43	2.67	2.32	0.35
44	3.39	3.68	-0.29
45	3.56	2.90	0.66

Table B.2: Identification Score Averages

Item Number	Avg. Identification Score - Hist. Present	Avg. Identification Score - Past Tense	Score Difference
8	3.60	3.75	-0.15
9	2.40	3.25	-0.85
10	3.60	3.85	-0.25
11	3.45	3.00	0.45
12	3.30	3.30	0
13	4.10	4.25	-0.15
14	3.30	3.45	-0.15
15	3.90	3.85	0.05
16	3.10	3.35	-0.25
17	3.70	4.10	-0.40
18	3.20	3.70	-0.50
19	3.80	4.15	-0.35
20	3.70	4.10	-0.40
21	4.10	4.55	-0.45
22	4.00	4.00	0
23	3.55	4.15	-0.60
24	3.70	4.40	-0.70
25	3.75	4.10	-0.35
26	3.65	4.05	-0.40
27	2.75	3.25	-0.50
28	3.40	3.40	0
29	2.70	3.35	-0.65
30	4.05	4.25	-0.20
31	3.65	4.20	-0.55
32	3.90	4.45	-0.55
33	3.85	4.25	-0.40
34	3.65	3.70	-0.05
35	3.75	3.80	-0.05
36	3.85	4.40	-0.55
37	4.00	4.20	-0.20
38	3.65	3.95	-0.30
39	3.80	4.50	-0.70
40	2.65	2.90	-0.25
41	3.90	3.75	0.15
42	4.15	4.25	-0.10
43	4.20	4.35	-0.15
44	3.95	4.25	-0.30
45	3.45	3.40	0.05

Table B.3: Transportation Score Averages

Item Number	Avg. Transportation Score - Hist. Present	Avg. Transportation Score - Past Tense	Score Difference
8	3.60	3.35	0.25
9	2.65	2.65	0.00
10	3.65	3.10	0.55
11	3.20	2.75	0.45
12	3.55	3.00	0.55
13	4.00	3.90	0.10
14	3.30	2.90	0.40
15	3.80	3.50	0.30
16	3.40	2.70	0.70
17	3.85	3.90	-0.05
18	3.15	3.05	0.10
19	3.90	3.65	0.25
20	3.80	3.90	-0.10
21	4.05	4.15	-0.10
22	3.60	3.40	0.20
23	3.60	3.80	-0.20
24	3.80	4.15	-0.35
25	3.75	3.80	-0.05
26	3.70	3.45	0.25
27	2.95	2.75	0.20
28	3.30	3.05	0.25
29	2.55	2.75	-0.20
30	4.20	3.95	0.25
31	3.35	3.80	-0.45
32	4.00	3.90	0.10
33	3.75	4.05	-0.30
34	3.75	3.80	-0.05
35	3.55	3.50	0.05
36	3.90	3.80	0.10
37	4.00	4.05	-0.05
38	3.75	3.20	0.55
39	3.90	3.80	0.10
40	2.70	2.70	0.00
41	3.95	3.20	0.75
42	4.05	3.60	0.45
43	4.40	4.05	0.35
44	4.00	3.65	0.35
45	3.05	3.20	-0.15

Table B.4: Persuasion Score Averages

Item Number	Avg. Persuasion Score - Hist. Present	Avg. Persuasion Score - Past Tense	Score Difference
8	3.06	3.37	-0.31
9	2.17	2.16	0.01
10	3.72	3.47	0.25
11	3.44	3.63	-0.19
12	3.33	2.68	0.65
13	3.44	3.47	-0.03
14	3.11	2.84	0.27
15	3.33	2.89	0.44
16	3.67	3.37	0.30
17	3.89	3.63	0.26
18	3.33	3.63	-0.30
19	3.61	3.53	0.08
20	3.11	3.00	0.11
21	3.28	3.00	0.28
22	2.78	3.47	-0.69
23	2.72	3.26	-0.54
24	3.50	3.00	0.50
25	3.50	3.95	-0.45
26	3.33	2.95	0.38
27	3.22	3.21	0.01
28	3.28	3.11	0.17
29	2.17	2.16	0.01
30	3.61	3.58	0.03
31	3.61	4.00	-0.39
32	3.11	2.37	0.74
33	2.94	3.00	-0.06
34	2.94	2.42	0.52
35	3.28	2.68	0.60
36	3.28	3.58	-0.30
37	3.22	2.84	0.38
38	3.11	3.16	-0.05
39	3.44	3.42	0.02
40	2.17	2.37	-0.20
41	3.83	3.95	-0.12
42	2.72	3.11	-0.39
43	3.44	3.9	-0.46
44	3.50	3.32	0.18
45	3.22	2.53	0.69

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