Conjugation and Contagion: Effects of verb form on judgments of positive and negative

contagion

by

Heather C. Hennrick

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Advisor: Dr. Susan Gelman

Abstract

This project investigated the relationship between language and a child's concept of contamination. Specifically, we investigated whether or not the preterit or imperfect verb forms had a particular effect in establishing an item's value when in contact with a positive or a negative famous individual (e.g., "Harry Potter wore these glasses" [imperfect] vs. "Harry Potter used to wear these glasses" [preterit]). Participants (32 children between the ages of 2.5 and 5.5, 16 of which spoke English as a first language and 16 of which spoke Spanish as a first language) were tested. Children were asked which of two objects (e.g., which pair of glasses) they would rather have. I predicted that the object described with the more permanent verb (imperfect) would be selected when associated with a positive individual, and that the object described with the less permanent (preterit) verb would be selected when associated with a negative contagion, but that this preference would be more pronounced for Spanish speaking children than English speaking children. Data provide preliminary support for these hypotheses.

Keywords: preterit, imperfect, contagion, authenticity

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This study examines how children evaluate objects based on their associations with famous individuals. Prior work suggests that both children and adults place higher value on objects owned by famous individuals who are prestigious or beloved (e.g., the ruby slippers worn by Judy Garland in The Wizard of Oz). However, until now, relatively little work has examined the valence of the character (positive versus negative) or the role of language (specifically, verbal conjugation) in the formation of these evaluations. The present study addresses this gap in children who speak either Spanish (which marks a clear distinction between temporary vs. permanent states by means of distinct verb forms) or English (which does not mark such a distinction so clearly). The following sections of the introduction will explicate each of three relevant topics: authenticity, contagion, and effects of language on thought. A brief history, contributing works, and deeper definition of each concept are provided in the following sections to communicate the formation of the current study, as well as demonstrate its importance to the field.

Authenticity

The research addressing conceptualization of Authenticity encompasses a broad range of theories. According to Jones (2009), "Authenticity can be defined as the quality of being authentic, truthful, or genuine" (p. 134). This definition allows for much room in interpretation and thus there exists a pervading dichotomy in how authenticity is conceptualized. While the materialist approach argues that authenticity is inherent in the object, the constructivists see it as a cultural construct (Jones, 2009). Materialists approach authenticity as an objectively measurable quality engrained in the very substance of the object itself (Jones, 2009). For

example, a materialist would say that a diamond is authentic because its very substance is intrinsically true and valuable. The Constructionists, on the other hand, would see the diamond as not valuable without a cultural context; the diamond is not intrinsically authentic or valuable until it is placed in a capitalistic cultural context where it acquires the quality of authenticity for its economic utility. Authenticity "is a quality that is culturally constructed and varies according to who is observing an object and in what context" (Jones, 2009, p. 135).

Neither the materialists nor the constructionists offer a single definition that satisfies the whole of authenticity. The history of authenticity through the ages is relevant then to understand its current conceptualization. In the Middle Ages, authenticity was a quality granted by the authority or through demonstration of supernatural powers (Lowenthal, 1995). Then in the seventeenth and eighteenth centuries, "authenticity came to mean something genuine as opposed to false or forged" (Jones, 2009, p. 135). Finally, in the modern era, authenticity became infused with notions of scientific reasoning (Jones, 2009). "The materialist approach thus epitomizes modernist notions of authenticity engaging with the very fabric of the object, establishing its origin and nature, looking beyond the surface to see what it 'truly is'" (Jones, 2009, p. 136).

Such definitions, while illuminating for economic categorization, do little to explain the way in which people personally experience authenticity (Jones, 2009). The experiential side of authenticity is a topic that is more culturally relevant and it follows that the constructionist approach could be very informative to such questions. The ways in which a given individual will interact and evaluate an object are largely determined by the individual's culture. However, an individual's emotive engagements with an authentic object are more difficult to analyze (Jones, 2009). Broader cultural generalizations cannot always account for the individual's history and experience with a particular object.

Just as the individual's affect and emotive desire contribute to their evaluation of an object's authenticity, so too does a particular object have an individualized history, outside of its origin. "The authenticity of a thing is the essence of all that is transmissible from its beginning, ranging from its substantive duration to the history which it has experienced" (Benjamin, 1969, p. 221). Much like a person, an object too may be endowed with experiential qualities that make it more authentic to its owner.

Even after an object leaves one's possession, it retains the history of its past. Objects "are imbued with the intrinsic and ineffable qualities of previous owners" (Jones, 2009, p. 137). An individual's evaluation of an object's authenticity, then, is dependent on both an adequate label—one that describes the qualities of past owners—and said label's ability to convey the object's historical path—as in the particularities of its involvement with past owners. Gelman and Frazier (2007) define an authentic object's historical path as "the continuity of an object over time, so that past encounters affect how an object is viewed later in time" (p. 82). An object's subjective authenticity depends on a historical path and a label that is able to convey it.

Gelman and Frazier (2007) define authentic objects as "those that participated directly in a significant past experience" (p. 83) such as contact with a famous individual, historical event, etc. This past experience is pronounced in an object's provenance—the date and origin of the object (Gelman & Frazier, 2007). Therefore, what is known about an object is derived (on a surface level) from the provenance; this begs the question of whether or not the linguistic quality of the stated provenance changes one's understanding of the object. After all, "the only substantial distinction between objects exhibited in the museum and objects for sale in the gift shop is provenance" (Gelman & Frazier, 2007, p. 83). Therefore the diction of the provenance holds bearing over one's understanding of a particular object's authenticity.

Moreover, the specific wording of a given provenance is part of the experience a person has with an object, particularly when it is a novel object. The use of certain words, positive or negative attributes and the permanence implied (or not) by a particular verb, has an effect on a participant's initial experience with that object. The moment of contact, along with the individual's acquisition of the object's provenance, would comprise the basis for authentic evaluation. Although the object is novel, it acquires authenticity through this moment of contact; "authenticity may reside in the viewer's engagement with the object rather than being intrinsic to the object" (Gelman & Frazier, 2007, p. 84). The duration of the engagement then, could play a significant role in our authentic understanding (e.g. an object that a person holds for a minute may be less authentic than an object that a person holds for an hour)—both in physical contact duration between person and object, as well as the duration of the object's involvement in past events as described in the provenance and historical path (e.g., an object that the President held for the entirety of a famous speech may be much more authentic than an object that the President touched only for an instant).

The formation of an authentic evaluation is multifaceted and very complex. Although its conceptual understanding is mature and highly complex, "authenticity is a concept that young children readily grasp without direct instruction" (Gelman & Frazier, 2007, p.88). There are, however, certain conceptual challenges inherent in young children's reasoning. Children have a difficult time in their understanding of historical time. "Historical or 'deep' time concerns periods that existed before a person's remembered past" (Gelman & Frazier, 2007, p. 85). Regardless, Friedman argues that children do "appear to have an expanding capacity to understand time both in the sense of scale (days to weeks to months to years) and the sense of

personal connection (from self, to immediate others, to the community, to the nation and eventually, the world" (as cited in Gelman & Frazier, 2007, p. 85).

Another difficulty that children encounter in their authentic evaluations is the understanding of ultimate origins (Gelman & Frazier, 2007). "The notion of ultimate origins, or the 'very first' instance of something" (Gelman & Frazier, 2007, p. 85) develops from a mixture of spontaneous generation and creationist explanations (around the ages of five to seven years), to evolutionary explanations (emerging in early adolescence) (Gelman & Frazier, 2007). Owing to the fact that an appreciation for ultimate origins is not fully conceptualized until adolescence, it is less important to a child's evaluation for authenticity than an object's history or provenance (Gelman & Frazier, 2007). Thus the description of an object, in order to be maximally understood, must take into account that certain details, such as the ultimate origin, are irrelevant to younger children who do not yet have the capacity to appreciate them.

Thirdly children at times have great difficulty understanding the role of history when naming artifacts (Gelman & Frazier, 2007). Gutheil, Bloom, Valderrama & Freedman (2004) conducted a series of experiments to investigate how an object's named identity changed when it underwent a radical change in its appearance; i.e. a paper cup was presented to a participant, then it was cut up, crushed, etc., and then presented again. Whereas most adults report that an object remained a member of its original kind, preschoolers consistently focused on the current state of the object and reported that its identity was not preserved across the alteration (Gutheil et al., 2004). At least in this context, children derive an object's identity based on current visual properties and not on an original identity. Therefore, it is important to provide descriptions for objects that correspond with said objects' present state and/or appearance, lest the child become distracted by what they perceive to be false. Therefore, a truly effective item description must

include the object's history, and said history should not contradict the object's current appearance.

It is worth noting, that the tense of the question in the aforementioned experiment may certainly affect the identity through the alteration ("what is this object?" as opposed to "what was this object?"). If the experimenter were to ask, "what is this object?" (referring to a cut-up and crushed paper cup), it would be reasonable to say that it is trash, paper scraps, or [still] a paper cup—crushed and cut up, it retains its original identity. On the other hand, if the experimenter were to ask, "what was this object?" the only logical response would be to say that it was a paper cup. In the actual experiment, Gutheil et al. (2004) always asked the participants about the object's identity using the present tense; the exact wording was "What are these things?" However, it is easy to see that the tense of the prompting question may impact the respondent's evaluation.

Another study conducted by Frazier and Gelman (2009) examined the role of authenticity in deciding what belongs in a museum. The experiment used 112 children, with a control group (119) of college students. The participants were shown pictures of authentic and non-authentic objects and asked which they thought belonged in a museum. Results showed that children and adults are able to correctly identify the authentic items as those appropriate for a museum. Furthermore, the results conclude that an object's desirability is separate from its authentic nature (Frazier & Gelman, 2009). Thus, even at the preschool age, children are able to recognize how the history of an object, a non-visible property, makes an object more special, warranting its exhibition in a museum.

Another experiment performed by Hood and Bloom (2008) also found that non-visible properties largely affect children's evaluations. Using a "conjurer's illusion," experimenters

feigned replication of 1) an attachment object belonging to the child, and in a separate study, 2) a

personal object belonging to Queen Elizabeth II (Hood & Bloom, 2008). In both studies,

children showed a preference for the object with either a personal attachment history, or a

famous association (Hood & Bloom, 2008). However, if the object was a copy of an object

belonging to the neutral experimenter, children often preferred the copy. This indicates that

between groups, those with attachment belongings and those without attachment belongings,

there were no overall differences in preference for a copy versus non-copy object; it was the

relationship between the person (whether it was the self, or a famous individual) and the object

that made an object more desirable (Hood & Bloom, 2008). This may suggest that children do

not believe that the essence infused by the contagion, can be duplicated synthetically (through

the duplicating machine in the "conjurer's illusion") (Hood & Bloom, 2008). Therefore,

contagion is in itself an authentic quality and affects a child's evaluation of the object at a non-

visible level.

The particular difficulties that children share in their conceptualization of authenticity

assert an importance for context. "Authenticity must be examined in particular respects: with

respect to objects that children know or experience directly, and with cues that are explicitly

provided" (Gelman & Frazier, 2007, p. 88). The language used to provide context, then, may

prove essential to the formation of one's authentic understanding.

While children do have difficulty with some aspects of authenticity, they too seem to

readily grasp others. Gelman and Frazier (2007) suggest that children excel in comprehending

three major conceptual underpinnings to authenticity:

"(a) That the origins and personal history of an animal or object helps determine

what it is and how it behaves (origins and historical path), (b) that things can

retain identity despite outward changes in appearance (the appearance-reality

distinction), and (c) that items have special significance if they interact with a

significant person or participate in significant events (positive contagion)" (p. 88).

Just as it is essential to recognize the problems in authentic understanding, it is important to

understand areas in which young children excel. It is necessary to create a context for an object

that adequately conveys (when necessary) its chronological identity, its ultimate origin, the

continuity of its identity, and clearly categorizes it in the realm of reality or illusion.

Contagion

As noted earlier, an object's origins are extremely important in the assessment of its

authenticity, specifically in terms of contagion. "Positive contagion is the belief that a person

can acquire positive qualities from interacting with a beloved or respected individual, or with an

object that such an individual has owned or touched" (Gelman & Frazier, 2007, p. 92).

Therefore, an object becomes "contaminated" with the qualities of a specific individual.

Nemeroff and Rozin explain the law of contagion: "the law of contagion holds that physical

contact between the source and the target results in the transfer of some effect or quality

(essence) from the source to the target" (as cited in Gelman & Frazier, 2007, 92).

This law applies to both positive and negative characters. Transference of positive

essence seems relatable to many typical experiences of youth; children have a strong affinity for

items that belong[ed] to their parents or siblings. Likewise, transference of negative essence too

is familiar when considering transference of germs and dirt. For example, Siegal and Share

found that children are sensitive to negative contagion as early as three years old (as cited in

Gelman & Frazier, 2007). "Siegal and Share (1990) found that preschool children discriminate

contaminated from safe substances, even when the appearance is misleading" (as cited in

Gelman & Frazier, 2007, p. 92). This part of their study utilized very concrete modes of

contamination—mold on bread.

In a different part of the same study by Siegal and Share (1990), the contamination was

indirect, i.e. "a drink in which a cockroach had been dipped" (as cited in Gelman & Frazier,

2007). The avoidance of this indirectly contaminated object did not appear until the participants

were a little older (Gelman & Frazier, 2007). Overall, "research on young children suggests that

an understanding of negative contagion is found even among preschoolers" and that the concept

of positive contagion is applied spontaneously in everyday interactions (Gelman & Frazier, 2007,

p. 93).

Is the effect of positive contagion greater when the interaction between source and target

is longer (e.g. the longer a jersey is worn by a famous athlete, the more positive it becomes)?

Similarly, is an object more negative after a prolonged interaction with a negative contagion, as

opposed to a brief interaction (e.g. a sweater only touched by a murderer is less negative than

one worn extensively by that same murderer)? Gelman and Frazier (2007) suggest that "more

detailed studies [are] needed to determine if authenticity is determined by subtle perceptual

features of the object or by prior historical path" (p.93). One such subtle perceptual feature may

be rooted in the linguistic quality of the provenance, such as the tense of the question or even the

conjugate of choice. For example, an item may be perceived as more positive if the description

of it uses the present tense instead of the past tense: "President Obama is wearing this tie" versus

"President Obama wore this tie." In the aforementioned example, a participant being asked

which tie is more authentic may choose the tie attached to its positive contagion in the present

tense—the same tense in which the participant is being asked to evaluate it.

Newman, Diesendruck, and Bloom (2011) conducted research specifically investigating value and contagion. This research was done in response to the large profits made by sellers of celebrity items. "These items generated large prices because of where they had been and whom they had come into contact with, not their tangible properties or functional utility" (Newman et al., 2011, p.1). For example, a tape measure from the Kennedy household sold for $48,875 (Newman et al., 2011). The market for celebrity items does not discriminate; there is a demand for both positively regarded figures as well as items that once belonged to hated individuals (Newman et al., 2011). This seems strange in that these individuals would have contaminated the neutral object with their negative essences.

Newman et al. offer three different explanations for why celebrity possessions are sold at such high prices. Firstly, they suggest that celebrity possessions are highly valued for their associative ties (Newman et al., 2011). The objects were touched by famous individuals and serve to remind us of those people (Newman et al., 2011). The object creates a tie between the buyer and the celebrity; the tie can, in the least, make the buyer feel closer to the celebrity. This explanation is problematic in that it "predicts objects belonging to individuals who are explicitly disliked [will] carry no value at all" (Newman et al., 2011, p. 2) unless the buyer is an admirer of the negative celebrity (in which case it would be a positive celebrity in that individual's opinion).

A second explanation for the high value of celebrity items is their market value (Newman et al., 2011). Because there is a considerably large amount of people interested in buying celebrity possessions, it can be said that the demand is high. The availability of celebrity possessions available on the market is much smaller than its demand. Therefore it follows that the market value, by law of supply and demand, is high and remains high. "Celebrity possessions are often one of a kind, which by definition makes them a scarce commodity"

(Newman et al., 2011, p. 2). Celebrity possessions are an investment; "it is certainly possible that people purchase these items based on the assumption that their market value will continue to increase" (Newman et al., 2011, p. 2). These items are a market investment as well as a form of social mobility—we want what others want.

The third explanation that Newman et al. (2011) offer is that the objects are so highly valued for they carry with them the very essence of the celebrity. "Contagion is commonly thought of as a form of magical thinking in which people believe that a person's immaterial qualities or essence can be transferred to an object through physical contact" (Newman et al., 2011, p. 3). Newman et al. (2011) further argue that these beliefs apply to inanimate objects, especially those that came into physical contact with their celebrity owners.

Contagion explains the high valuation of celebrity possessions for both positive and negative features. Argo, Dahl, and Morales (2006, 2008) conducted a number of studies about contagion beliefs in the consumer market. In both studies, Argo et al. found that a consumer was more likely to pay for and would intend to purchase an item if it came into physical contact with an attractive sales figure of the opposite sex; if, however, the item came into contact with an unattractive stranger, the consumer was much less likely to purchase that item. Such results support the notion that both positive and negative attributes are transmitted through the process of contagion (Newman et al., 2011).

Newman et al. (2011) conducted a series of their own studies to investigate, specifically, the degree to which contagion beliefs account for the high monetary value placed on celebrity objects. They did this in three different experiments. In the first experiment, Newman et al. (2011) were interested in the subjective desire for celebrity possessions and corresponding non-celebrity possessions. The results showed that "participants reported wanting to have marginally

more contact with the celebrity and the celebrity object than with the non-celebrity" (Newman et al., 2011, p. 5). This experiment was conducted using both positive and negative celebrities. When the objects belonged to a negative celebrity, the participants preferred the non-celebrity object (Newman et al., 2011). This experiment also revealed that there was a significant effect of fame, and a significant interaction between fame and valence (Newman et al., 2011). Fame—how well known a celebrity is perceived to be—plays an important role in one's evaluation of celebrity possession.

The second experiment by Newman et al. (2011) examined contagion potential—"the degree of physical contact between the celebrity and the object" (p. 3). They also examined the effect of market demand on the value of the celebrity possession—"the potential to resell the item to others" (Newman et al., 2011, p. 3). Firstly, the participants provided a baseline value for their willingness to buy an item that belonged to a celebrity (positive or negative). Secondly, they manipulated the contagion potential and/or market demand for that item. As was hypothesized, they found that increasing the contagion potential for those items that belonged to positive celebrity figures increased the participants' intentions to purchase (Newman et al., 2011). The opposite was true for items belonging to negative celebrities; if the contagion potential was decreased, the participant's intentions to purchase were greater (Newman et al., 2011). Manipulations of market value had the same effect to both positive and negative celebrity possessions. Highlighting the market demand increased intention to purchase and decreasing market demand decreased intention to purchase (Newman et al., 2011).

Contagion, then, heavily influences one's desire to purchase and thus interact with and own an object previously belonging to a celebrity. This effect was reversed for negative celebrity objects. Physical contact mediated the degree of sensitivity to contagion. A significant two-way

interaction revealed that participants' sensitivity to positive contagion was mediated by the contact, affecting the purchase intentions (Newman et al., 2011). Contagion is moderated (largely) by the degree of physical contact between the owner and the item.

The last study by Newman et al. (2011) "examined the effects of activating the concept of contagion via subtle priming manipulation" (p.9). The mechanism for priming was a scenario in which the contagion was depicted as contagious (high contagion) or not contagious—isolated (low contagion). Participants were far more responsive to the contagion when it was "contagious" than when it had an isolated effect (Newman et al., 2011). Therefore, the effect of a contagion on an item can be manipulated in a number of ways: through the amount of physical contact and through priming mechanisms that expand the reach of the contagion itself.

Lastly, Frazier, Gelman, Wilson, and Hood (2009) examined adults' evaluation of authentic objects in two different cultural settings. They were also interested in whether or not an individual's personal attachment history (e.g. their experience with having an attachment object as a child, such as a blanket) predicted their authentic evaluations. Between populations of adults in the USA and adults in the UK, they expected to see preference for authentic objects over non-authentic objects, with no cultural differences in this preference for authenticity. Furthermore, they predicted that individuals who had an attachment object would place higher value on the authentic objects than individuals who did not have history with an attachment object (Frazier et al., 2009). They tested these hypotheses with a questionnaire, and the results supported their supposition. The participants indeed valued the authentic objects more highly, across cultures, and those who had an attachment object valued the authentic items relatively higher (Frazier et al., 2009). One of the most important findings supported by this study was that the preference for authentic items was not merely a function of rational economy; the authentic

items also received higher scores on desire to be owned and touched (Frazier et al., 2009). This study is one example of cross-cultural authentic evaluations that provide evidence for a broad endorsement of positive contagion (Frazier et al., 2009).

Language and Thought

There are a number of studies that examine the effects produced by different languages on thought. One such study conducted by Boroditsky, Fuhrman, and McCormick (2010) examined the way in which language differences lead to different concepts of time. Boroditsky et al. (2010) cite a number of studies that found that "people in different cultures or groups have been shown to differ in whether they think of time as stationary or moving, as limited or open-ended, as horizontal or vertical, as oriented from left-to-right, front-to-back, east-to-west, and so on" (p.1). Their particular study investigated the temporal conceptualizations in a Mandarin speaking population and an English speaking population.

Across languages, they found that English and Mandarin speakers both use horizontal spatial terms to talk about time; however, Mandarin speakers also use vertical terminology (Boroditsky et al., 2010). For example, "in English, we can look *forward* to the good times *ahead*, or think *back* to travails past and be glad they are *behind* us" (Boroditsky et al., 2010, p. 1). The conceptualization of time is represented in the language used to speak about it; or perhaps, the conceptualization of time is formed from the language used to speak about it.

Boroditsky et al. (2010) study concluded, "speakers of different languages automatically activate different culturally-specific spatial representations when reasoning about time" (p. 4). This conclusion may extend to other such concepts as authenticity and contagion—an issue we address in the current study.

In another cross-linguistic study conducted by Heyman and Diesendruck (2002),

bilingual evaluations of the verb "to be" across the Spanish and English languages were studied.

The authors were interested in "(a) whether the *ser/estar* distinction is relevant to reasoning

about the stability of human characteristic and (b) whether beliefs about the stability of

psychological characteristics relate to differences in the use of *ser* and *estar* to describe and

explain social events" (Heyman & Diesendruck, 2002, p. 407). In other words, their study

examined whether it was the language that influenced participants' evaluations or if their

evaluations determined word choice. Heyman and Diesendruck (2002) focused their research on

whether the language describing a behavior would contribute to the child's beliefs about the

stability of that behavior. Participants of this study were bilingual children between the ages of

six and ten years old. The participants were interviewed individually in one of four conditions

examining 1) inference, 2) memory (examining whether children have a constant preference for

one verb form over the other, and which verb form children would select when translating a text

from English into Spanish), 3) story generation to evaluate spontaneous production of *ser* or

estar, and 4) the belief task which measured the "children's beliefs about the stability of

behaviors associated with psychological characteristics and to allow for subsequent analysis of

the relation between stability beliefs and children's spontaneous use of *ser* and *estar*" (Heyman

& Diesendruck, 2002, p. 410).

The results showed that the linguistic distinction (*ser* versus *estar*) had an effect on

children's beliefs about the stability of psychological characteristics (Heyman & Diesendruck,

2002). The memory condition of the experiment also indicated that "for the purposes of

inferring the stability of psychological characteristics, children treated the *to be* form as

equivalent to the *ser* form" (Heyman & Diesendruck, 2002, p. 412). This was evident in the

children's consistent preference for the *ser* form when explaining human behavior (Heyman &

Diesendruck, 2002); therefore, the behaviors were interpreted as having stability across time, a

certain level of permanence, and this was reflected in the verb choice. The verb was selected as

a result of the child's evaluation of the stimuli. "These results again suggest that children

appeared to have used the *ser* form when describing psychological characteristics, which is

consistent with an essentialist bias" (Heyman & Diesendruck, 2002, p. 413).

One of the most important conclusions of this study, particularly for the purposes of the

present investigation, is that "language is a reliable measure of children's beliefs only to the

extent that it is rich and flexible enough to allow the beliefs of interest to be clearly expressed"

(Heyman & Diesendruck, 2002, p. 415). In other words, language is not at all an entirely reliable

measure of children's beliefs for language is limited (particularly between languages, where one

word does not have a precise translation, etc.) and simultaneously reflects the beliefs that it plays

a role in creating. Heyman and Diesendruck (2002) provide a prime example of this limitation in

language:

> "Although English speakers can convey the information that is conveyed by the *ser* and
>
> *estar* forms by making explicit reference to stability (e.g., by noting that someone is 'a
>
> shy kind of person' or is 'shy at the moment'), distinction is not obligatory in English,
>
> and it cannot be made as easily as in Spanish" (p. 416).

The Present Study

The limitations inherent in the expressiveness of each language, as exemplified by

Heyman and Diesendruck, (2002) are particularly pertinent to the present study. My focus is on

the distinction between imperfect and preterit verbs in Spanish, as compared to English. Use of

the imperfect verbal conjugation in Spanish necessarily implies that there was repeated

interaction between the actor and the object; this is not a quality necessarily conveyed by the

same verbal conjugation in the English language. The imperfect verb, as defined by the Oxford

Dictionaries (n.d.), denotes "a past action in progress but not completed at the time in question."

This element of "action in progress" is de-emphasized in the English language; in Spanish, the

imperfect (or the "imperfecto") necessarily communicates that the action is ongoing, meaning

that the actor and the acted upon were repeatedly in contact. The preterit verb, as defined by the

Oxford Dictionaries (n.d.), is "a simple past tense or form." It more simply communicates an

action in the past. This use of the preterit (or the "preterito") in the Spanish language, functions

similarly. However, it more clearly emphasizes a single action in the past, for it contrasts with

the use of the imperfect. Selection of the verb form in Spanish is more than a matter of

preference, but of specificity necessitated by correct use of the language. For example, the

Spanish language communicates more information than the English language; "yo andaba por

esa calle" (I used to walk down that street) necessarily indicates that the speaker repeatedly

walked down that street; "yo andé por esa calle: (I walked down that street) necessarily indicates

that the speaker walked down that street once—in only one instance. In English, the use of the

imperfect verb communicates approximately the same amount of information as the statement

made using the preterit verb, though typically the preterit is associated with a dated experience,

one isolated as a past event that no longer occurs. Thus, the use of verb form may play a

significant role in determining the authentic value of an object as well as the degree to which it is

contaminated by a positive or negative contagion.

  The imperfect verb form and the preterit verb form are examined in both Spanish and

English in the present study to determine whether or not verb form will affect children's

judgments. The objective is to investigate the relationship between language and a child's

analysis of contamination, with specific focus on the impact that verb form has in establishing

the degree to which an item becomes contaminated when in contact with a positive or negative

contagion. It is expected that the more permanent (imperfect) verb should be selected or

preferred when associated with a positive contagion, and the less permanent (preterit) verb to be

selected or preferred when associated with a negative contagion. Furthermore, it is expected that

this preference will be more pronounced in the population of Spanish speaking children than

with the English speaking children, for the Spanish language itself emphasizes the timeliness of

the contact in the verb form.

The project will have a number of broader impacts. (1) The research will provide

information on the differing ways in which verbal conjugations impact the evaluation of stimuli

in the environment, thus providing a perceptual comparison between the two most widely used

languages in the United States (English and Spanish). (2) The research will also generate new

information on the ways in which contagions are transferred and expressed in the language; both

positive and negative contagions will be used in the research to generate information about how

these variables impact a child's understanding of value as it relates to authenticity. (3) This

research has the potential to generate information that will aid teachers' understanding of

linguistic differences' effect on description and evaluation in bilingual settings. (4) Finally, the

work will benefit society at large, by providing scientists, educators, and parents with a better

understanding of children's early cognitive processes and the effects of language on such

processes.

Methods

Participants

Pretest. A total of forty children between the ages of 2.63 and 5.37 years old, participated individually in a character identification and knowledge check. These participants were from two different populations; one group consisted of 16 English-speaking children and the other consisted of 24 Spanish-speaking children. The English-speaking children (11 males and 5 females; age range = 2.63 to 5.37 years, mean age = 3.93 years old) attended a small preschool in Ann Arbor, Michigan. Their parents had indicated that their first language was English and thus they were tested in English. The Spanish-speaking children (9 males and 15 females; age range = 2.94 to 4.84 years, mean age = 4.01 years old) attended a preschool housed by a private, Catholic elementary school in Detroit, Michigan. This school was located in an area of Detroit known as Mexicantown and is home to a large concentration of Latino immigrants. Their parents had indicated that their first language was Spanish and thus they were tested in Spanish.

Main experiment. Thirty-four children participated in the main experiment. One group was tested in English (after verification from their parents that English was their first language); this group consisted primarily of children from the Ann Arbor preschool although one participant was from the preschool in Detroit. The group tested in English consisted of 11 males and 5 females; their ages ranged from 2.99 to 5.55 years, with a mean age of 4.13 years old. The other group was tested in Spanish (after verification from their parents that Spanish was their first language); all of these participants were from the preschool in Detroit. The group tested in Spanish consisted of 5 males and 11 females; their ages ranged from 3.19 to 5.04 years, with a mean age of 4.16 years old.

The participants in the main experiment were selected from those that demonstrated a superior knowledge of the characters presented in the pretest. Three new English participants were added in the main experiment as a result of those pre-selected being absent on test day.

Two participants total were dropped from the main experiment, one from each language's population. The English-speaking participant was dropped after a teacher at the school informed the researcher that said participant was recently diagnosed as Autistic; the experimental population was restricted to normally developing children and therefore that child had to be dropped. In the Spanish-speaking population, one child was dropped after his pretest revealed very minimal knowledge of the characters as well as having been noted for low effort and poor language abilities.

Materials

      Pretest. Item materials for the main study were selected on the basis of a pretest, which is described here. Participants were individually tested concerning their previous knowledge of certain positive and negative characters from books, television, and the movies. This testing was done to ensure that the characters previously identified as positive were, in fact, interpreted and known as positive characters. Similarly, this test validated which characters were truly perceived as being negative.

The following negative characters were pretested: Darth Vadar, Dracula, Scar, Wicked Witch of the West, Wile E. Coyote, Jafar, Tazmanian Devil, Ursula, Captain Hook, Frankenstein. The following positive characters were presented: Harry Potter, Buzz Lightyear, Dora the Explorer, Mickey Mouse, Kung Fu Panda, Speedy Gonzalez, Zoro, Lisa Simpson, SpongeBob SquarePants.

After a brief introduction from the researcher, the children were informed that their

parents were allowing them to participate and they were asked for their assent. Then the

characters' pictures were presented to the children, one at a time. The order of presentation

(combining the positive and negative characters) was randomized for each participant to control

for any order effect.

The children were asked a series of questions with each character picture: 1) Do you

know this character? Can you tell me his/her name? 2) What do you know about him/her? What

can you tell me about him/her? 3) Is he/she nice or mean? After the child was given an

opportunity to respond to these questions with their own knowledge, the researcher would affirm

their correct response, providing the character's name and a short description of who they are

(e.g., "Mickey Mouse is a Disney character. He has a girlfriend named Minnie Mouse and a dog,

named Pluto."). If the child incorrectly identified the character or was unable to identify them at

all, they were asked, "Is he/she nice or mean?" Often further prompting was necessary (e.g.

"What do you think? Is he/she nice or mean?") because the children did not have existing

knowledge of the character. However, they were able to form an opinion based on the

appearance of the characters in the pictures; each picture was selected to emphasize characters'

goodness or badness. Then the researcher would praise their attempt and then provide the

correct identification with short description. At the end of the character presentations, the

researcher would conclude by asking the child 1) can you tell me some characters you know that

are nice? and 2) can you tell me some characters you know that are mean?

Items that participants in both samples were most accurate in judging as nice or mean

were selected for the main experiment (see Table 1); several characters were dropped from the

nice and mean categories for low scores of previous knowledge and correct negative or positive

associations. The positive characters selected for use in the main experiment were correctly

identified as positive characters 65% or more of the time. The negative characters selected for

use in the main experiment were correctly identified as negative characters 75% or more of the

time. Thus the final selection consisted of six positive and six negative characters.

      Main experiment. The main experiment was presented as a picture book. There were

12 pages in the book. Each page had only one character. There were a total of 12 characters; 6

were positive characters (Kung Fu Panda, Dora the Explorer, Mickey Mouse, Lisa Simpson,

SpongeBob SquarePants, and Buzz Lightyear) and 6 were negative characters (Ursula, Captain

Hook, Wicked Witch of the West, Scar, Dracula, and Tazmanian Devil). The first six pages

were either all positive or all negative characters. Participants were randomly assigned to a

presentation of positive characters first or negative characters first. This was done to control for

an order effect. Furthermore, the order of the labels was randomized as well as the order of the

neutral pictures presented on either side of the character.

Procedure

      After a brief introduction and the child's assent, the researcher explained that on each

page of the book, the child would see a character that they may know from books, television, or

the movies. They would also see two objects presented with each character. The child was

instructed that they should select one of those two items to keep for themselves. The main

experiment was conducted in English with the English-speaking participants and Spanish with

the Spanish-speaking participants.

      For each page, the children were first asked the same set of questions as the pretest: 1)

Do you know this character? Can you tell me his/her name? 2) What do you know about

him/her? What can you tell me about him/her? 3) Is he/she nice or mean? After the child was

given an opportunity to respond to these questions with their own knowledge, the researcher

would affirm their correct response, providing the character's name and a short description of

who they are (e.g., "Mickey Mouse is a Disney character. He has a girlfriend named Minnie

Mouse and a dog, named Pluto."), and a statement of their positivity or negativity ("He/She is

very nice and good." or "He/She is very mean and bad."). If the child incorrectly identified the

character or was unable to identify them at all, the researcher would praise their attempt and then

provide the correct identification with short description and qualifier.

Then the children's attention was directed to the neutral objects, located on either side of

the character (in the center of the page). The researcher then told them that "These are his/her

[objects]. Which one would you rather have?" The researcher then read one label per neutral

object. The labels were identical except they differed on one dimension: the verb form used for

each neutral object was either the preterit or the imperfect form. For example, SpongeBob

SquarePants was presented with two cell phones. One cell phone had the description of

"SpongeBob used this cell phone to call Patrick" (preterit) and the other had the description of

"SpongeBob used to use this cell phone to call Patrick" (imperfect). Each label was read twice

while the researcher pointed to the corresponding neutral object. After this was done, the child

could then respond. If further prompting were needed, they were again asked, "Which one

would you rather have?" The children then pointed to their selection. After their choice was

made, the researcher asked, "Can you tell me why?" This entire process was repeated for every

page.

Results

Selection of the neutral object with the imperfect description was scored as one point,

while selection of the object with the preterit description was scored as zero points. Each

participant was tested in two blocks, positive and negative characters, providing two different scores, each ranging from 0-6. Thus, if the hypothesis were fully supported, the score for the negative character block would be zero, and the score for the positive character block would be six.

I conducted a 2 (item valence: positive, negative) x 2 (language: English, Spanish) x 2 (block order: positive-first, negative-first) ANOVA. Item valence was a within-subjects variable, and language and block order were between-subjects variables. Results indicated no significant effects or interactions. However, there was a trend toward a language x block order interaction, $F(1,28) = 3.26$, $p = .082$. When the positive block was first, Spanish speakers tended to have higher scores than English speakers (Ms = 3.37 and 2.75, respectively), whereas when the negative block was first, Spanish speakers tended to have lower scores than Spanish speakers (Ms = 2.69 and 3.31, respectively). Given that block order appears to be affecting participants' choices, I decided to follow up by examining responses on the first block of trials only, as these would be uncontaminated by prior questions. (In contrast, responses on the second block of trials might reflect a difficulty "switching" from one perspective to another.)

In an independent samples t-test examining responses to the first block of trials only, Spanish-speaking participants selected the imperfect description more for the positive characters (M=3.50) than the negative characters (M=2.62), $t(14) = 2.08$, $p = .056$. In contrast, the English-speaking participants showed no significant effect when examining the first block data (Ms = 3.00 for positive characters, 3.12 for negative characters), $t(14) = 0.18$, $p = .859$. The trend of the Spanish-speaking participants' first block preference for the imperfect description paired with positive characters and not negative characters, suggests that, at least in the Spanish language, the verb form indeed affects a child's evaluation of contagion.

Discussion

The aim of this study was to better understand the role of language in a child's evaluation of a contaminated item. Two dimensions of contagion were examined, positive and negative, and two language populations participated, English and Spanish. The experiment was designed to investigate the influence of a particular verbal conjugate, specifically the preterit and imperfect conjugations within the past tense, in establishing the length of contact between a neutral object and a positive or negative individual. The expectation was that the imperfect conjugate, which implies repeated contact, would be selected for when used in the description of a positive contagion, whereas the preterit conjugate, which implies a single past instance of contact, would be selected for when used in the description of a negative contagion.

Analysis of the data revealed an order effect; whichever contagion was presented in the first block, positive or negative, influenced the children's selection in the second block. This order effect was seen in the Spanish-speaking population, where presentation of the positive contagion in the first block established a preference for the imperfect that carried into the second block. The effect of order on the participants' selection has certain implications. Perhaps the order effect results from a child's inability to change their state of mind; it is possible that once a contagion is introduced, a child has a difficult time fixating on a new one, especially one that sharply contrasts the first as in the presentation of a negative contagion after a positive one. This deserves further investigation and should be a point of interest for future research.

When considering the order effect on the data, analysis of the first block only was required. This data revealed a distinct trend—one approximating statistical significance. An independent samples t-test revealed that the Spanish-speaking participants' differential preference for the imperfect description with the positive characters over negative characters,

was nearly significant. The English population had no such significant effect. However, the near significance of the Spanish-speaking participants' first block preference for the imperfect description paired with positive characters and not negative characters, suggests that, at least in the Spanish language, the verb form may indeed affect a child's evaluation of contagion.

The results of this study have many important implications. The Spanish-speaking participants demonstrated a distinct preference for the imperfect verb when paired with a positive character. This would indeed suggest that the Spanish language is sensitive to the information conveyed in the verbal conjugate. Thus, a child's evaluation of an object is influenced by both contagion, and the verb used to convey the degree to which a neutral object has been contaminated by said contagion—at least in the Spanish language.

Conversely, there was no such effect seen in the English-speaking population. They did not use the verbal distinction in their selection of the preferred contaminated object. From the data, it is reasonable to infer that either 1) the English-language does not necessarily communicate the temporal information that the Spanish language does or 2) the English-speaking participants were not as sensitive to the different information conveyed in the conjugate. Very evidently, the different language groups utilize the verb form differentially. Furthermore, some languages (as demonstrated in Spanish) do use the verb form to convey and interpret information.

Limitations

There were certain limitations to this study. There were only sixteen participants per language condition. The experiment's original design included 16 participants to provide data for both the negative and positive contagion block. However, once the order effect was revealed and the second block data dropped, there were only eight participants per language to provide

responses to the positive or negative contagions. Furthermore, the two language populations were located in different cities, making if very challenging to collect data in such a limited amount of time. Future studies will need to account for this by having a larger population. Especially considering how close the Spanish-speaking participants of the current study came to statistical significance it is more than reasonable to suggest that a larger population would yield statistically significant results.

Another possible limitation to the current study is the differing socioeconomic statuses between the two populations. However, it was not considered a limitation because the participants were not being tested on information differentially taught in the curriculum; they were being tested on an implicit preference, a cultural distinction if anything. While a higher socioeconomic status would more thoroughly expose children to the characters that were used as contagions, the pre-testing eliminated participants whose knowledge of the characters was substantially lower than the average set by the majority.

Lastly, it will be important for future studies to have participants with a more diverse age range. It is possible that the participants of the current study were too young and had not fully developed the language skills necessary to process the subtle linguistic difference between the two descriptions. There may be developmental challenges that dissipate with age. It would be interesting to see how adults would perform on in such an experiment. A wide age range of participants would reveal if the participants' performance depended on developmental changes that correspond to age.

Future Directions

This study has implications for studies of authenticity, as well as studies of contagion. Particular attention must be paid to the wording, specifically the verbal conjugate, which

describes authentic objects, as well as communicates the degree of contamination via contagion.

Though this study only examined the imperfect and preterit tenses (both of which are in the past

tense), future studies should expand to investigate other conjugates in the present and future

tenses.

Furthermore, it will be of great interest to investigate whether this linguistic distinction is

unique to the Spanish language or exhibited in other languages. Future studies should seek to

discern if other languages are more similar to English or Spanish in their use of a particular

verbal conjugate. The results of the current study certainly suggest that subtle choice of wording

does have an effect on how children think.

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Author Note

Table 1

Pretest results for positive valence characters

Character (Positive Valence)	English-speaking Participants			Spanish-speaking Participants		
	Previous Knowledge	Correct ID	Nice	Previous Knowledge	Correct ID	Nice
Kung Fu Panda	0.69	0.13	0.75	0.79	0.38	0.71
Dora the Explorer	1.00	0.94	0.94	0.88	0.83	0.76
Mickey Mouse	1.00	1.00	0.94	0.96	0.71	0.77
Harry Potter	0.31	0.13	0.75	0.58	0.08	0.62
Spongebob Squarepants	0.88	0.88	0.94	0.88	0.71	0.81
Buzz Lightyear	0.94	0.94	0.94	0.79	0.38	0.71
Speedy Gonzalez	0.19	0.06	1.00	0.71	0.04	0.65
Zoro	0.13	0.00	0.31	0.50	0.00	0.20
Lisa Simpson	0.06	0.00	0.94	0.67	0.08	0.74

Table 2

Pretest results for negative valence characters

Character (Negative Valence)	English-speaking Participants			Spanish-speaking Participants		
	Previous Knowledge	Correct ID	Mean	Previous Knowledge	Correct ID	Mean
Darth Vadar	0.50	0.31	0.75	0.50	0.00	0.86
Captain Hook	0.75	0.69	1.00	0.54	0.13	0.95
Wicked Witch of the West	0.63	0.63	0.81	0.71	0.29	0.82
Frankenstein	0.31	0.19	0.69	0.46	0.04	0.90
Dracula	0.19	0.19	1.00	0.58	0.04	0.95
Jafar	0.13	0.00	0.75	0.58	0.04	0.94
Wile E. Coyote	0.13	0.00	0.56	0.63	0.04	0.75
Tazmanian Devil	0.31	0.00	0.94	0.63	0.00	0.95
Ursula	0.50	0.13	0.81	0.54	0.08	0.76
Scar	0.75	0.19	0.94	0.58	0.04	0.90

Table 3

Main Experiment mean selection for the description using the imperfect verbal conjugate (out of 6) with standard deviations in parenthesis

		Item Valence	
		Positive	Negative
English Speaking Population	Positive Presentation First	3.00 (1.41)	2.50 (1.77)
	Negative Presentation First	3.50 (1.77)	3.13 (1.36)
Spanish Speaking Population	Positive Presentation First	3.50 (0.93)	3.25 (1.04)
	Negative Presentation First	2.75 (0.46)	2.62 (0.74)