The lexical-semantic interface: A case for linguistic relativity in bipartite gendered languages
Abstract

In this paper, I explore the lexical-semantic interface between grammatical gender, an element that exists in the linguistic representation of certain languages such as French, Italian, and German, and biological sex, a physical property of animate beings that enters the cognitive systems as a function of the conceptual representation. I employ the linguistic, conceptual, and lexical-semantic representational domains to formulate a specific conception of the Linguistic Relativity Hypothesis. To test this hypothesis, I describe the two genders of French, a prototypical bipartite gendered language, and show how these genders are distributed across three different categories of nominals—inanimate, regular animate, and epicene animate. I use these categories to evaluate a number of behavioral findings that support the existence of an effect of grammatical gender in shaping representation and processing at the lexical-semantic interface, leading to the conclusion that there are two additional sub-genders in French: one that is semantically uninterpretable and is isolated in the linguistic domain, and one that is semantically interpretable and is a function of the lexical-semantic interface.

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The relationship between thought and language has been a contentious area of research in the field of psycholinguistics. Since the Sapir-Whorf hypothesis emerged in the early to mid 20th century, the question of how language might constrain or limit non-linguistic cognitive function has held the attention of psychologists, linguists, philosophers, and the general public. The claims made in response to this question have been extreme both for and against an influence of language on thought. Some have argued that our linguistic knowledge defines or determines our cognitive categories. In his early work Tractatus Logico-Philosophicus, philosopher Ludwig Wittgenstein famously argued, “the limits of my language are the limits of my world.” On the opposite end, linguist Noam Chomsky and psychologist Steven Pinker have openly mocked the idea of studying the relationship between thought and language, favoring instead a modular model where the language faculty is innate and informationally encapsulated. Both of these sides have their evidence and pitfalls. In this paper, I hope to find a middle ground between the two.

In the first section I outline the core representational elements at play in discussions of thought and language. I use this to create a clear and testable version of the linguistic relativity hypothesis. In the second section, I take on a case study of the French grammatical gender paradigm. I choose gender in French for two reasons. First, French has clearly separated nominal categories, each of which allow for a distinct mapping between linguistic and conceptual knowledge, which can be used to experimentally test the linguistic relativity hypothesis. And second, because French can be treated as a prototypical bipartite gendered language (i.e. a language with two genders classes) due of its linguistic similarity to Spanish, Italian, and, if certain conditions are met, German, experimental results can be easily generalized cross-linguistically. In the third section, I turn to evaluating a variety of behavioral evidence that
supports my claims about linguistic relativity and nominal categories. This leads to the discussion in the final section, where I argue that languages such as French do not only have two genders, but also two sub-genders within those superordinate categories. I show that these can be applied to the nominal categories to account for the experimental evidence outlined in the previous section, and then discuss future directions for research to fill gaps in the literature.

**Representational Domains and Linguistic Relativity**

There are two elemental representational domains employed in discussions of the production and processing of human language: linguistic and conceptual (Boroditsky et al., 2003). The first domain, linguistic representation, constitutes our knowledge of how elements such as phonemes, morphemes, and words combine to produce phonologically, semantically, and grammatically viable utterances. At this level of representation, the configurational properties of language, or how linguistic primitives are glued together to derive a comprehensible structure, can be teased apart, abstracted, and analyzed in order to gain insights as to what sorts of sequences are allowable or unallowable in any given language.

The second domain, conceptual representation, is the set of elements that hold extra-linguistic information about experiences and events, as well as general knowledge about the world (Barsalou, 2009; Clark, 2003). This is often referred to as semantic information residing in our semantic memory, but I would like to move away from the term “semantic” when labeling this domain, as it has strong linguistic implications in that it commonly refers to the way linguistic elements *reference* or *combine* conceptual information rather than how these representations are *stored* or *accessed*. Furthermore, the term “semantic” takes on significance when we consider the relationship between the conceptual and linguistic representation.

The semantic properties of language serve as the link across the linguistic and conceptual domains. By this I mean our conceptual representations are matched with our linguistic
structures to allow us to refer to and reflect on both external and internal phenomena (Akman, 2009). Each language has a unique set of linguistic elements and way of combining these elements, therefore the mapping between the conceptual and linguistic domains will differ depending on what language is being employed (Jackendoff, 2002). This level is often considered an independent domain known as the lexical-semantic representation (Vigliocco et al, 2005). In the present analysis, I argue that the lexical-semantic domain is not an elemental representation (i.e. one that makes up the fundamental structure of cognitive representation), but rather an emergent representation (i.e. one that comes from the interface between the two levels—see Figure 1 below).

![Figure 1. Levels of Representation](image)

It is important to keep in mind that by making a neat theoretical split between the linguistic and conceptual domains, it is not the case that one must necessarily posit two modular subsystems of language in reality. On the contrary, the assertion here is that these two domains are intricately intertwined through the lexical-semantic interface, that information flows freely between them, and that activation or inhibition of an element in one domain can influence the activations and inhibitions of elements in the other. Conceiving of human cognition in this way—as a set of distributed, embedded, and extended connections between competing
perceptual and representational domains—can be used to formulate a precise form of the linguistic relativity hypothesis.

The gist of the hypothesis is simple: linguistic and conceptual representations interact in inseparable ways, and these interactions can differ from language to language depending on the formulation of the linguistic domain. This interaction space is referred to as an interface. The goal of this paper is to unpack a specific and widely studied interface—that of grammatical gender and biological sex. In order to properly explore this area, we must start by discovering and describing how grammatical gender patterns across different nominal categories in languages such as French with bipartite sex-based gender systems, then use these patterns to develop and evaluate hypotheses that compare French (and other linguistically related languages with grammatical gender) to languages such as English (which do not have a strong grammatical gender system) to lend support to explanations of how linguistic and conceptual knowledge interact.

**Gender and Nominal Categories**

Gender is a feature of a nominal that is not number, person, or case. One of the central concerns in the study of gender systems is how a particular gender is assigned to a given nominal. French has two broad grammatical gender classes traditionally labeled as “masculine" and “feminine". It is a strict requirement of French that all nominals are assigned one of these two genders. In general, distinct determiners mark grammatical gender (*le* for masculine and *la* for feminine when they are indefinite). When the referent of a nominal has the salient and relevant property of biological sex (i.e. one that is visible to the perceptual systems and relevant to the linguistic domain), then gender is assigned to that nominal according to the biological sex of the referent. This leads to nominals with a male referent being assigned masculine gender, and nominals with a female referent being assigned feminine gender. In other cases, gender is not
assigned on the basis of any conceptual property of referent, and thus it can be considered semantically arbitrary.

Both the masculine and feminine genders as broad types are assigned to nominals with inanimate and animate referents, but the patterns across these nominal classes are significantly different. Inanimate referents are, by definition, inherently sexless, thus the nominals that refer to them are assigned gender on a semantically arbitrary basis:

1. \textit{le jambon} (masculine) \hspace{1em} \textit{“the ham”}
2. \textit{la maison} (feminine) \hspace{1em} \textit{“the house”}

There is no clear conceptual reason why the word for “ham” in (1) should be masculine, whereas the word for house in (2) should be feminine. Thus, from a semantic point of view, one could argue that these genders have no denotation or meaning, and that they are solely a function of the linguistic representation and do not interact at the lexical-semantic interface. This is one of the hypotheses explored in the next section.

The nominals with animate referents are a more complicated case: because the vast majority of animate beings have a biological sex characteristic, these nominals have the potential to employ the conceptual assignment pattern that assigns a semantically meaningful masculine gender to nominals with male referents and feminine gender to those with female referents—but not all of them do. I call those animate nominals that are assigned gender according the biological sex of the referent “regular animate” nominals:

3. a. \textit{le chat} (masculine) \hspace{1em} \textit{“the (male) cat”}

   b. \textit{la chatte} (feminine) \hspace{1em} \textit{“the (female) cat”}

4. a. \textit{le mari} (masculine) \hspace{1em} \textit{“the husband”}

   b. \textit{la femme} (feminine) \hspace{1em} \textit{“the wife”}
In both (3) and (4), it is clear that the gender attached to the nominal is *not* semantically arbitrary. In (3), the same root word meaning “cat” used with a masculine gender denotes a male cat (3a), and with a feminine gender denotes a female cat (3b). In (4a), it is only possible to use the masculine gender for the French word for “husband,” and in (4b) only the feminine gender is grammatical with the French word for “wife.” Notice that both non-human and human referring nominals can be assigned gender through this system, and that it is quite pervasive across the language (Jones, 1996). With this nominal category, there are a few research questions to examine: what is the nature of the relationship between the linguistic element gender and the concept of biological sex? What role does the lexical-semantic interface play in this relationship? And how does this differ cross-linguistically?

Those animate referring nominals that do not use gender to denote the sex of the referent are called the epicene animate nominals: they use a single gender feature, whether masculine or feminine, regardless of the biological sex of the referent:

(5) *le papillon* (masculine) “the butterfly”
(6) *la souris* (feminine) “the mouse”
(7) *la personne* (feminine) “the person”

In all three of these cases, even if the speaker knows the sex of a particular referent, they are still unable to encode it within the linguistic element of gender. The word for “butterfly” in (5) only takes masculine, the word for “mouse” in (6) can only take feminine, and the word for “person” in (7) can only take feminine. Again, notice that these words span both human and non-human beings, and are even some of the most commonly used words in French (Jones, 1996). This category provides a unique opportunity to examine the relationship between linguistic and conceptual knowledge. The main research question with the epicene nominals is this: will there still be an influence on conceptual knowledge (e.g. a bias in speakers of French and similar
languages towards thinking that the referents of grammatically masculine nominals are male and grammatically feminine nominals are female) even though the epicene nominals have semantically arbitrary gender?

In the next section, I turn to evaluating the literature of behavioral evidence in light of my assertions that there are three nominal categories with distinct semantic properties. I show that in some of the past work on grammatical gender these category distinctions were not sharply made, but when they were, interesting conclusions could be drawn about the relationship between the linguistic and conceptual domains as mediated by the lexical-semantic interface. Although much of the literature consists of data from speakers of other Indo-European languages such as Italian and Spanish, and German, all of these languages employ gender to denote the sex of the referent and have the same nominal categories as French, thus their gender paradigms are similar enough that experimental results can be generalized cross-linguistically.

**Behavioral Evidence**

Cubelli et al. (2011) recognize three types of behavioral approaches to studying influences of grammatical gender on conceptual and/or lexical-semantic representations: semantic differential scales, where participants are asked to rate how male or female they think a being or object is (e.g. Ervin, 1962; Konishi, 1993, 1994); association tasks, where participants are asked to pair words or concepts with a property that corresponds to maleness or femaleness (e.g. Sera, Berge, and del Castiolo-Pintado, 1994; Boroditsky & Schmidt, 2000; Sera et al., 2002); and free classification tasks, where subjects see a pair of words or picture stimuli and are asked to determine if they are semantically related or unrelated, or participants see a triad of stimuli and are asked to determine which of the two are related or unrelated (Martinez & Shatz, 1996; Cubelli et al. 2005; Vigliocco et al., 2005). All three of these designs can tell us something about the relationship between linguistic and conceptual knowledge, but they all have the
potential to force participants to explicitly use linguistic representations to formulate a response, preventing the research from directly studying the relationship between linguistic and conceptual knowledge.

In their set of three experiments, Cubelli et al. (2011) respond to this issue by using a free association type task, where participants were shown a pair of pictures rather than words, then asked to judge if they were in the same or different conceptual category. There were four possible types of picture pairs: (1) gender congruent and conceptually related; for example “bed” and “stool,” which are both masculine in Italian, (2) gender incongruent and conceptually related; e.g. “bed,” which is masculine and “lamp,” which is feminine in Italian, (3) gender congruent and conceptually unrelated; such as “bed” and “binoculars” which are both masculine, and (4) gender incongruent and conceptually unrelated, such as “bed,” which again is masculine, and “raft”, which is feminine. In the first experiment they compared speakers of Italian with speakers of English (a common control language, as it lacks strict grammatical gender). They found that both English and Italian speakers were faster at confirming the conceptually related pairs compared to the unrelated pairs regardless of gender, but Italian speakers additionally showed an effect of gender: their responses were faster when gender was congruent versus incongruent regardless of conceptual relatedness. In experiment two, they used the same task and found converging evidence with speakers of Spanish. In their final experiment, Cubelli et al. examined Italian speakers with a task that prevented explicit lexical retrieval (i.e. the explicit retrieval of the linguistic representation). To accomplish this, participants completed the same main task from the first two experiments, but they created a secondary task that suppressed the articulatory activation of the words in the main task, where participants where asked to continuously repeat the non-sense word “blah, blah, blah…,”. They found that when lexical
access was prevented, the conceptual relatedness effect remained whereas the gender effect disappeared.

These results seem to show that linguistic relatedness in a pair of words leads to the stronger co-activation of the surface form of the words rather than the conceptual representation behind it, leading to a faster response regardless of conceptual relatedness. These data can be interpreted as evidence that the lexical-semantic representation, rather than conceptual representation itself, is being modified by gender, as an influence of gender at the conceptual level should have resulted in an interference effect of congruent gender with the conceptually unrelated pairs. In other words, if the conceptual representations were being modified directly, there should have been an interaction between category membership (i.e. conceptual relatedness) and gender in that gender incongruency should have facilitated the decision to correctly reject conceptually unrelated pairs and interfered with correctly affirming conceptually related pairs. Furthermore, in the third experiment where participants were prevented from activating lexical information but could still activate conceptual information, no effect of gender was observed, suggesting that access to lexical information plays a crucial role in facilitating the influence of gender in categorization tasks.

At first glance, these results may seem to jeopardize my assertions about the interaction between conceptual and linguistic representation, but this is not the case. There is still a clear effect of linguistic structure on behavioral patterns: Italian and Spanish speakers show an effect of gender due to the presence of gender in those languages, whereas English speakers do not due to the absence of that sort of linguistic representation. This shows a difference in the way conceptual representation is mapped onto language depending on whether or not speakers of a particular language have access to certain linguistic structures, supporting my formulation of the
linguistic relativity hypothesis where the lexical-semantic representation is altered depending on the availability (or unavailability) of certain linguistic elements.

Crucially, though, Cubelli et al. (2011) make no distinction among nominal categories. Gender is implicitly assumed to have the same semantic properties across all words, which could lead to a serious confounding influence. Because both inanimate objects and animate beings were mixed together in the analysis, we cannot be certain about if and how each category might have affected the results. The question remains: would their assertion that gender uniquely affects the lexical-semantic representation hold when we make a distinction between animate and inanimate nominals?

To answer this question, I examine the competing validity of two hypotheses regarding the effect of grammatical gender on meaning: (1) the “similarity and gender hypothesis,” which asserts that the effect of gender arises from a general learning mechanism that bootstraps aspects of meaning from linguistic information, and predicts this effect in any language with gender (i.e. French, Italian, and German) and any nominal category, because similarity in all cases the linguistic context (i.e. the phonological/orthographic form of gender) is identical regardless of the mapping of gender to sex; and (2) the “sex and gender hypothesis,” which posits the effect of gender results from an established association between gender and sex, and predicts that only languages with high concordance between sex and gender (e.g. French, Italian, and Spanish) will show the effect, whereas those with less consistency (e.g. German) will not, and within those languages with high concordance animate nominals will show a greater effect than inanimate nominals because of their relation to sex.

In their review of the various methodologies that have been employed to examine these hypotheses, Vigliocco et al. (2005) point out that the sex and gender hypothesis is the dominant of the two, but not all past studies have made the crucial distinction between nominals that
denote beings and artifacts. One pair of studies that did recognize this split is that of Sera, Berge, and del Castillo-Pintado (1994) and Sera et al. (2002). There are two goals in these studies pertinent to the present discussion: first, knowing there is some effect of gender, they sought to examine when gender influences the processing of conceptual information and when it does not; and second, they set out to explore if and how this influence differs across languages.

To complete these goals, they devised a set of experiments where speakers of French, Spanish, English, and German participated in a voice attribution task. In the task, participants were asked to imagine that they were making a movie where all sorts of things come to life. They were then shown a picture of a being or an object and were asked to assign either a male or female voice to that “character” in the film. Two major findings came out of their results. First, they found that French and Spanish speakers, but not German and English speakers showed an effect of gender. That is to say, French and Spanish speakers were likely to assign a female voice to stimuli denoted by grammatically feminine nominals or a male voice to stimuli denoted by grammatically masculine nominals, whereas English and German speakers assigned at chance. Second, in both French and Spanish speakers, there was a significantly greater effect of gender for nominals referring to natural kinds (such as “cat” or “mouse”) than artificial kinds (such as “table” or “house”).

Both of these results support the hypothesis that the association between sex and gender is responsible for effects of grammatical gender, but there is a potential issue with saying the conceptual representation was being influenced directly: participants were explicitly classifying stimuli according to male/female properties, so they may be exclusively using their knowledge of gender, a lexical-semantic construction, in a conscious manner to make their decisions. This explanation could still lead to an effect in Spanish and French, where there are only two genders
and each corresponds semi-regularly to a particular sex, whereas the null result in German is due to indeterminacy caused by the neuter gender.

Like Cubelli et al. (2011), in order to tease apart conceptual versus lexical-semantic representations, Vigliocco et al. attempted to move away from methods that might force participants to explicitly activate gender, but additionally made the animate-inanimate split a la Sera et al. (2002) to search for converging evidence for the sex and gender hypothesis. Their study included four experiments (in the interest of succinctness, only three are outlined here). In the first and third experiments, speakers of Italian, German, and English were shown triplets of words and asked to judge which of the two words were most similar in meaning. Words referring to inanimate objects versus animate beings were analyzed separately, and they only chose words for animate beings that could be expressed with either gender (i.e. regular animates) rather than those that could only be expressed with a single gender (i.e. epicene animates). Within Italian speakers, they found that meaning similarity judgments were affected by the grammatical gender of nominals with animate referents, but not those that refer to artifacts, whereas German and English speakers behaved nearly the same way and showed no effect of gender in either nominal category. The final experiment used the same basic paradigm as one and three, but rather than seeing triplets of words and deciding which of the two were semantically similar, Italian and English speakers judged triplets of pictures. Contrary to the task with words, in the task with pictures they found no effect of language and a marginally significant effect of gender.

Like the Sera et al. (2002) study, Vigliocco et al. (2005) found strong evidence for a difference in the way gender affects meaning in animate beings versus inanimate objects in that the effect is stronger for animate versus inanimate nominals. Furthermore, they found that gender seems to affect meaning in languages with a high concordance between sex and gender (e.g. Italian and Spanish), but those with low sex-gender associations (e.g. German) are similar to
languages that lack grammatical gender entirely (e.g. English). But, it is still not clear if the null effect in German was due to interference caused by the neuter gender, or if an experimental procedure that excludes the neuter gender would show different results. Despite this small doubt, support can be put behind the sex and gender hypothesis. In addition, they were able to disambiguate conceptual representation from lexical-semantic representation in their final experiment and show that effects diminished when lexical representations were not being explicitly accessed.

Recall that the overarching goal of the current digression was to evaluate the question arising from Cubelli et al. (2011): can we still posit that the lexical-semantic representation rather than the conceptual representation is the locus of the grammatical gender effect when we separate those nominals with interpretable versus uninterpretable gender? The data from Vigliocco et al. (2005) seem to support an affirmative answer, but there is another issue to take care of. In a 2011 study by Bender et al., they argue that there is still more than one way to interpret data from past studies. They claim that the design of many studies may set up participants to favor either a semantic or grammatical decision—even tasks explicitly designed to prevent meta-linguistic reflection on the part of the participant (Vigliocco, 2005; Cubelli et al, 2011) may not be as proficient at meeting that goal as they could be.

In their own set of experiments, Bender et al. (2011) contrasted two nominal categories, animate and inanimate, in a single language, German, by way of a primed lexical decision task. In experiment one, participants decided if a given target appearing on a screen was a word or a non-word. All words denoted inanimate objects, and all non-words were judged by German speakers in a pre-study test to be consistently assigned either masculine or feminine gender. To minimize the potential interference effect found in past studies, neuter words were excluded. Before each decision, the participant was primed with a third person singular possessive
pronoun, some of which only conveyed grammatical information (i.e. had no sex denotation like English “its”), some of which additionally conveyed sex information (i.e. have a sex denotation like English “his” or “her”). They found no difference in response time regardless of whether participants were primed with sex-denotative versus non-sex-denotative pronouns, and no difference between nominals denoting inanimate objects, which have semantic value unrelated to sex, and non-words, which have no semantic denotation whatsoever. This suggests that the gender of nouns that reference inanimate objects does not interact with the conceptual representation through the lexical-semantic interface.

In experiments two, three, and four, Bender et al. designed a decision task where participants were asked to identify the gender of the target. In this case, they compared nominals with inanimate versus animate referents. The grammatical primes were definite determiners (i.e. the equivalent of the English word “the”), whereas the semantic primes were either the German words for “man” or “woman,” the biological symbols denoting sex, or the pictograms commonly used for restrooms. The grammatical primes had an effect on both inanimate and animate nominals, whereas the semantic primes only had an effect on animate nominals. Again, this suggests that the nature of gender is different for nominals that denote a sex property of the referent (i.e. the animate nominals) versus those that do not (i.e. the inanimate nominals).

**Discussion**

Three major themes come out of this review: first, the methods used to examine the effect of gender on conceptual and lexical-semantic representations are diverse, and the choice of experimental paradigm has a large effect on the results obtained. Second, the differences between nominal categories cannot be ignored when studying the linguistic-conceptual interface. Lastly, in languages such as German, it is important to control for confounding influences in order to observe the effect of gender. From these themes a number of findings are confirmed: it
seems that the lexical-semantic interface, rather than the conceptual representation directly, is the locus of the grammatical gender effect. This supports my emergent conception of linguistic relativity and the sex and gender hypothesis.

Furthermore, I showed that the grammatical gender effect is significantly stronger in nominals referring to animate beings when compared to nominals referring to inanimate objects/artifacts. As I alluded to before, this gives empirical support to the distinction between two different gender assignment systems and two different sub-genders in French and similar languages. The first, semantic gender assignment (Corbett, 1991), is already familiar and can be broken down in French between nominals with a male referent, which take the masculine gender, and nominals with a female referent, which take the feminine gender. Because this gender denotes conceptual information and interacts with conceptual representations through the lexical-semantic interface, this is referred to this as the semantically *interpretable* sub-gender. These are exclusively assigned to the regular animate nominals.

The second system, formal gender assignment, assigns gender according to the phonomorphological properties of the surface form (see Tucker, Lambert & Rigault (1977), who created a set of phonomorphological rules that account for 84.5 of French gender assignment). In French, the formal system, like the semantic system, can assign both masculine and feminine gender. But, unlike the semantic system, there is no conceptual motivation behind which nominals are feminine and which are masculine—it is purely a function of the linguistic representation. I refer to this type of sub-gender as semantically *uninterpretable*. These sub-genders are assigned to both the inanimate nominals and the epicene animate nominals.

Both the masculine and feminine genders have the same phonomorphological realization on nominals, verbs, adjectives, and determiners regardless of whether they belong to the uninterpretable or interpretable sub-gender, but we can motivate their existence through the
experimental evidence. The interpretable sub-gender interacts with the conceptual domain by way of the lexical-semantic interface and leads to an effect of gender supporting the linguistic relativity hypothesis, whereas the uninterpretable sub-gender stays within the linguistic domain and does not seem to interact with the conceptual domain or produce an effect of gender.

There is nonetheless (at least) one major hole in the literature that still remains to be filled: taking into account the split within animate nominals between the regular and epicene forms. Because the main feature of the animate nominals is that they take an interpretable sub-gender, and the interpretable sub-gender sits in the lexical-semantic interface at the intersection of linguistic and conceptual knowledge, it is not surprising that the gender effect occurs with these nominals. They are defined by this effect. If, however, there were evidence of an effect of grammatical gender with the epicene nominals, which have uninterpretable gender, that could represent a direct effect of the linguistic domain on conceptual knowledge. This would serve to support a stronger version of the linguistic relativity hypothesis where not only the lexical-semantic domain is interacting with gender, but also the conceptual domain directly.

**Conclusion**

In the present paper I first presented a distinction between conceptual, linguistic, and lexical-semantic representation to formulate a precise version of the linguistic relativity hypothesis. I then asserted that the interaction between gender and sex could shed light on the interface between linguistic and conceptual knowledge by using the natural manipulation of the inanimate, regular animate, and epicene animate nominal categories. Through a literature review, I provided support for these assertions from a number of behavioral studies, and concluded that inanimate nominals take uninterpretable gender and do *not* show an effect of gender on conceptual nor lexical-semantic representations, and regular animate nominals take interpretable gender and *do* show an effect of gender in the lexical-semantic interface, but not the conceptual
domain. I concluded with a discussion of Corbett’s (1991) distinction between semantic and formal gender assignment, and the remaining possibility of a direct interaction between linguistic and conceptual knowledge with the epicene nominals.
References


Appendix A

Glossary

**Animate referent**: See “being”

**Artifact**: Equivalent to “object” and “inanimate referent.” A non-living thing with no possible sex denotation

**Being**: Equivalent to an “animate referent.” A living thing with a possible sex denotation

**Bipartite Gendered Language**: A language with two grammatical gender classes

**Conceptual Representation**: the set of elements that hold extra-linguistic information about experiences and events, as well as general knowledge about the world

**Epicene animate nominal**: A nominal that refers to a being and is assigned an uninterpretable sub-gender

**Grammatical gender**: a feature of a nominal, usual carrying some semantic denotation, that is not person, number, or case

**Inanimate nominal**: A nominal that refers to an object/artifact and is assigned an uninterpretable sub-gender

**Inanimate referent**: See “artifact”

**Interface**: an interaction space between two elemental representational domains

**Interpretable sub-gender**: a sub-type of a broader gender class that has a semantic denotation

**Lexical-Semantic interface**: the interaction space where the conceptual domain is mapped onto elements in the linguistic representation

**Linguistic Representation**: knowledge of how elements such as phonemes, morphemes, and words combine to produce phonologically, semantically, and grammatically viable utterances

**Object**: See “artifact”

**Regular animate nominal**: A nominal that refers to a being and is assigned an interpretable sub-gender

**Semantic Representation**: see “lexical-semantic” representation

**Uninterpretable sub-gender**: a sub-type of a broader gender class that does not have a semantic denotation