

# 言語理解におけるジェンダー表象研究の動向

## Issues of Gender Representation During Language Comprehension: A Review

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### ABSTRACT

近年認知心理学の分野において言語処理と知覚の関係を探る研究が盛んに行われてきている。多くのインド・ヨーロッパ語族でみられる文法的性は代名詞や職業/役割名の理解において読解者の認知表象に大いに影響を及ぼしていることがわかってきた。とりわけ文法的性の影響はステレオタイプや男性に有利な情報を活性化し、表象構築に影響を及ぼしている。これらの研究では文法的性が統語的なレベルの問題にとどまらず、意味理解にまで影響を及ぼすことを示唆している。また、情報の意図とは関係なく、読解者が男性優位な解釈や推論を生成するということが明らかにされてきている。本論文では文法的性における第一、第二言語理解においての理論及び実験的知見を報告すると同時に、今後の研究課題を提案する。

Recent research in psychology has given rise to concerns associated with the relationship between language and our perceptions of the world. Grammatical gender, a linguistic structure seen in most Indo-European languages has shown that its markings on pronouns and role names have substantial influences with regard to evoking stereotypical information and male bias on comprehender's mental representations. Research has suggested that comprehension processes of grammatical gender is not merely a syntactic notion, but has shown that readers oftentimes infer a male dominant inference regardless of what is intended within the text. The present article hence attempts to review the theoretical and empirical findings regarding gender representation in first and second language comprehension. It then goes on to deliberating possible implications of these findings on future research.

## 1. Introduction

For years, cognitive researchers have strongly debated the influence of language over cognition. With the postulation of the Sapir-Whorf hypothesis, the possibility of language governing our perception of reality became a well-contemplated issue. Though the initial interpretation is no longer literally accepted, a weaker version known as the linguistic relativity hypothesis, has given rise to a substantial debate of the potential ability for language to influence thought processes and cognitive processing. While it has undoubtedly been subject to scrutiny over the years, a great body of work including work associated with color perception (Berlin and Kay, 1969; Winawer, Witthoft, Frank, Wu, Wade, & Boroditsky, 2007; Gilbert, Regier, Kay, & Ivry, 2008; Athanasopoulos, Wiggett, Dering, Kuipers, & Thierry, 2009), categorization of objects and shapes (Cook, Bassetti, Kasai, Sasaki, & Takahashi, 2006) application of grammatical gender information (Gabriel & Gygax, 2008; Gygax & Gabriel, 2008; Gygax, Gabriel, Sarrasin, Oakhill & Garnham, 2008) and stereotypical information (Hoffman, Lau, & Johnson, 1986; Carreiras, Garnham, Oakhill & Cain, 1996; Oakhill, Garnham, & Reynolds, 2005; Cacciari & Padovani, 2006; Reynolds, Garnham, & Oakhill, 2005) have shown that the influence of language over thought processes cannot easily be dismissed.

In this sense, specific structures, characteristics and categorizations of the language being used to process certain information seems relevant for consideration as they may change or influence information processing itself. Yet all languages in some way possess characteristics in which sexual categorization is manifested whether it be through specific words or grammatical forms, as sex is a fundamental social categorization (Stahlberg, Braun, Irmen & Sczesny, 2007). Most Indo-European languages such as French and German are examples

of so-called gendered-languages which possess grammatical gender. All nouns are attributed to either a female, male or sometimes neuter genders that influence other linguistic structures such as the verb formation or its adjectives that correspond accordingly. On the other hand, non-gendered languages such as Japanese and English do not have gender embedded in their grammar per se, but manifest gender information through personal nouns (e.g. 姉 *ane* <older sister>, 男 *otoko* <man>) or pronouns (e.g. him, her). Interestingly in Japanese, some expressions and sentence endings are more frequently used by a certain sex, thus connoting the gender of the speaker.

As this notion of gender information in language is universal to all languages, it has been debated to a great extent as it may pose problems from a social psychological point of view. Social psychological studies have shown that such information may cause stereotypical perceptions of traditional gender roles to prevail or evoke unconfident emotions with regard to job applications stereotypical of a certain sex (Chatard, Guimond, & Martinot, 2005) reinforcing gender inequality among society. Stahlberg et al. (2007) point out that such linguistic structures do not necessarily denote simply a categorization, but can evoke evaluations and stereotypical beliefs of the speaker or whoever is being referred to, to be formed or become pronounced. As a result, they make way for constructing stereotypical beliefs about certain gender categorizations that may be favorable or unfavorable to a certain sex such as incompetence on behalf of women to function in a male-oriented occupation like a surgeon or firefighter. The present article hence aims to address this notion of the influence of gender information in language upon the construction of mental representations during comprehension and the impact of acquiring languages of different categorization in terms of gender information.

## 2. Recent Trends in Research in Processing Gender Information and Representation

Comprehending language is a process of constructing coherent *mental representations* also known as *mental models* from the information at hand, by combining explicit information and implicit information that are inferred by the comprehender. The most widely accepted models underlying the framework of mental representations consist of three levels: *surface structure*, *textbase* and the *situation model* (Kintsch & van Dijk, 1978; van Dijk & Kintsch, 1983). The surface structure represents the verbatim representation of the text including its lexical and syntactical structure. The following textbase refers to the semantic meaning of the text denoting the information that underlies the surface structure and is relatively consistent with the text itself, conserving information and its relations directly from the text. Finally, the situation model refers to the representation that the reader constructs by integrating textual information, contextual clues, as well as their wide array of world knowledge in order to maintain an understanding that has significant meaning. Textual gaps are filled by generating inferences to establish global coherence. If the reader succeeds in constructing a coherent situation model, then the situation model will likely be stored in long-term memory where it will be updated and added to the reader's knowledge.

Intuitively, the presence of grammatical gender seems relevant only in terms of surface structure (i.e. for syntactic agreement and correspondence), and not for higher levels of representation where semantics is seemingly more important in creating a representation of linguistic input. However constructing mental models means converging various information, and research has shown that grammatical gender was found to facilitate reading as it helped to anticipate or predict upcoming

information or text (Bentrovato, Devescovi, D'Amico, & Bates, 1999). Comprehenders of gender marked languages acquire and internalize knowledge of such grammatical structures to a point where these grammatical cues influence the understanding of information. Flaherty (2001) found that when asked to assign gender and male/female names to presented objects, Spanish children tended to attribute gender that matched grammatical gender. In her following experiment with animate and inanimate objects, children's judgments again, corresponded highly to the grammatical gender of the Spanish nouns. Notably, Flaherty (2001) reported a difference in tendency among younger and older children, where older children tended to rely heavily on grammatical gender, as the grammatical system was more readily available in terms of language internalization, yet younger children relied more on their own sex. This idea of internalizing a linguistic system will be further referred in the second language processing section.

Also interestingly, with English children, assignment of gender corresponded with gender stereotype due to the lack of grammatical gender in the language to influence their judgments. These results highlight the substantial impact of gender information on influencing perception and information processing, and suggest that these rules and classifications were not subjective during language comprehension.

The effects of grammatical gender extend further when taking into account plurality. In most languages, a singular pronoun such as *he* in English or *elle* <she> in French is highly specific in terms of gender. However when referring to a group of people, gender information becomes relatively abstract as seen in examples such as *they* in English. In gender-marked languages such as French, plurality can either be interpreted as gender specific or gender arbitrary. A group consisting solely of women is referred to as *elles* <they> and

a group consisting solely of men is referred to as *ils* <they>. However, a group of a mixture of sexes is also referred to as *ils*, the equivalent of the male-specific plural. Similarly, French role names in most cases have a masculine and feminine form denoting the sex, such as *le chanteur* <the male singer> and *la chanteuse* <the female singer> when referred to in the singular form. However in the plural form, *le chanteur* becomes *les chanteurs* denoting a possible group of male singers or a mixture of female and male singers whereas *les chanteuses* denotes only a female group of singers. It is therefore up to the comprehender to ascribe the sex that is being denoted by the plural form which could possibly have a generic interpretation (i.e. a mixture of both sexes) when coming across the plural forms of a pronoun or role name. In languages such as English, the plural form *they* is a default to refer to a group of people regardless of sex, and the form is detached from any singular form. However as seen in the aforementioned French example, the generic plural form resembles that of the specific interpretation of a male-specific group. From this aspect, it may well be possible to assume that comprehenders construct the male sex as a default in their representations when comprehending the plural *ils* as opposed to a possible generic interpretation.

In support of this notion, Gygax et al. (2008) found that when participants were asked to judge the sensibility of a sentence with either a *woman* or a *man* reference that followed a sentence with a gender-stereotypical role name such as *social worker/assistants sociaux* (stereotypically female), *politicians/politiciens* (stereotypically male) or *pedestrians/promeneurs* (neutral stereotype), German and French speakers' (i.e. comprehenders of gender marked languages) judgments were male biased regardless of the role name's stereotypicality, suggesting that information processing was being influenced by the gender marked nature of their language. On the other hand, English speakers (i.e.

comprehenders of non-gendered language) were highly influenced by the stereotype of the role name, as the language is not marked by gender and the plural form shows no resemblance of a male-specific form. These results suggested that the masculine marking of grammatical gender of the role names highly dominated comprehenders' representations in gender-marked languages, whereas English-speaking comprehenders showed that they were influenced by the stereotypicality of the role name since there was no influencing grammatical cue embedded in the language. In this perspective, the construction of mental representations relies heavily on even to the smallest details such as grammatical gender.

The results for English comprehenders reported by Gygax et al. (2008), suggest that stereotypical information is the primary source for activating gender information if grammatical gender is absent. Numerous studies converge on the position that the activation and influences of stereotypical information is robust. The first of these studies conducted by Banaji and Hardin (1996) found that when participants were asked to judge whether a presented pronoun *he* or *she* was masculine or feminine after seeing a prime that was semantically (e.g. *mother*) or stereotypically (e.g. *doctor*) gendered, participants reacted significantly faster to the task after being presented to either semantically or stereotypically gendered words than the non-gendered control words. Likewise, Oakhill et al. (2005) presented English comprehenders with an occupation name paired with a kinship term (e.g. *surgeon-brother* and *surgeon-sister*). When the gender stereotypicality matched the semantic gender of the kinship word, participants were found to react significantly faster when asked to judge whether the two terms could refer to the same person. The studies by Banaji & Hardin (1996) and Oakhill et al. (2005) both are indicative that comprehenders associate certain gender stereotypical information with regard to occupational role names, but also sustain the

information to be readily and immediately activated and integrated into their mental representations. Oakhill et al.'s study (2005) also added that despite being aware that the presented experimental items were highly stereotypically biased, participants still were not able to overcome the activation of their stereotypical information, emphasizing the strength and robustness of the influence.

### 3. Comprehending Grammatical Gender in the Second Language

Recent years have given rise to a great deal of interest in revealing the processing in the second language (L2), as these studies are representative of the majority of language speakers in the world. These studies suggest that despite the rapid increase in the number of bilinguals in the world, processing is extremely complex; comprehension of grammatical gender being no exception.

L2 comprehension oftentimes entails internalizing new rules and constructions that are not existent in the comprehender's first language (L1). L1 comprehenders of non-gendered languages have been found to make persistent errors when processing in a gendered L2, whereas comprehenders of gendered-languages have been found to manifest fewer problems when processing in a non-gendered L2 (Franceschina, 2001; Sabourin, Stowe, & de Haan, 2006). Yet these studies should not be misinterpreted in that acquiring a language without gender is easy for a comprehender of a gender-marked language. Studies have shown that even for speakers of gendered-languages, acquiring a new grammatical gender system is not easy regardless of the presence or absence of the gender system in one's L1. One reason is that the number of grammatical nodes in one language can differ from that of another. A second reason being that grammatical gender of a noun can differ across various languages. For example, German

nouns including inanimate and abstract concepts all belong to either a feminine, masculine or neuter categorization node. On the other hand, languages like French and Spanish only entail two categories, the feminine and masculine gender. Furthermore, many words can differ in gender such as in French and Spanish, the word denoting *sun* is a masculine word, whereas the *moon* is attributed a feminine gender. In German however, the gender of the two words is the exact opposite, where the *sun* has a feminine gender and the *moon*, the masculine gender.

Though these manifestations may appear to be trivial, it poses relatively important issues for the non-fluent language learner. Not only must comprehenders consciously be aware of the syntactic agreement, but also perceptions of the world may differ accordingly. Konishi (1993) points out that the masculine gendered *sun* in French and Spanish is associated with images such as power and courage whereas in German, the feminine gender evokes images of nurturing and warmth. These issues touch on the notion that even a noun that has an arbitrary grammatical gender in a language can possibly affect our perceptions of the world, as was seen in the generic interpretation of comprehenders in Gygax et al.'s study (2008).

Essential to the issue of the robust effects of grammatical gender is the notion of internalization of a linguistic system. As was noted earlier from Flaherty's (2001) study, older children relied much more on their knowledge of the grammatical gender when processing information as opposed to younger children who relied more on their sex. In L2 comprehension, comprehenders are faced with a situation where they must suppress their dominant and proficient L1, in order to activate their less-proficient L2. Linguistic systems in their target language may not be fully internalized and thus the L2 grammar may not be readily available for information processing. In such a situation, they may transfer linguistic elements and rules from their

dominant L1 to the non-proficient L2 which perhaps may account for the persistent errors that have been reported in past research. Salamoura & Williams (2007) found that in a translation task, Greek (L1) - German (L2) learners performed much faster when given words with the same gender in both languages. Moreover, when learners were presented with cognates (i.e. words that show a similar resemblance semantically and orthographically ) that matched the gender, they were observed to manifest fewer errors than when cognates' gender did not match. The semantic and orthographic overlap results in an effect known as the cognate facilitation effect in L2 reading where the word in one language will facilitate activation of the corresponding cognate in the other language regardless of which language is being used for processing. Salamoura & Williams (2007) interpreted these findings to be suggestive of a common gender system that is shared by both the L1 and L2.

The aforementioned findings suggest that despite the superior nature of grammatical gender to influence information processing and perception of reality, early stage language learners may not clearly have an internalized grammatical gender system to affect their information processing in the target language. Do language learners rely on their L1 to transfer specific rules and gender or is there a possible default that is attributed every time they come across a word whose gender is unknown to them? Numerous studies in linguistics have eluded the possibility of a default gender in which language learners assign to unknown words.

Morphologically, the masculine form has been considered the unmarked default whereas the feminine form has been the marked gender (Harris, 1991; McCarthy, 2007) due to the fact that the masculine forms can override the feminine form in terms of mixed sexes as we see in the plural form of *ils*. McCarthy (2007) in her study found that English-Spanish learners during production,

made gender agreement errors in which most were a substitution of the masculine default instead of the feminine form, a phenomenon she called the underspecification default. If the default that is reported here in English-Spanish learners is applicable in all second language learners, this may give rise to the possibility of a male dominant representation regardless of whether a string of information is referring to a mixture of sexes. It is also worth mentioning that the masculine default in this study was made by English speakers whose native language does not entail any form of grammatical gender. In other words, the effect of a masculine default was not a result of an L1 interference, but was made by the possible structure of their L2 or a possible male dominant representation that was already present in them.

This notion of a *default gender* is in a sense related to the masculine interpretation of the generic form of the plural *ils* as seen in Gygax et al.'s (2008) study. It is problematic because it is an example where the structure of the language and its usage can influence and modify mental representations regardless of whether the initial message was intended in a male biased way or not.

#### 4. Conclusion

Our understanding of gender representation is still relatively new, and there is much to be discovered. The significance of this line of research does not lie solely in the domain of psycholinguistics or cognitive psychology, but is highly relevant in other domains such as social psychology, linguistics, neuropsychology, and even areas such as economics, anthropology and law, because it poses questions as to what kinds of representations are created with regard to sex and gender roles when comprehending information and how we perceive our world. The area has been extensively debated within Europe where languages with grammatical gender are

central, and where women's roles and social standing has been considered as a primary issue of concern. Yet we should take note that these issues should also be considered in countries where non-gendered languages exist, as there is always an influence between languages.

Unfortunately, studies in L2 comprehension with regard to grammatical gender are scarce, and have concentrated primarily on single-word tasks. Studies associated with textual and sentential processing that we find in L1 processing are insufficient. As a result, we still do not have a clear vision as to the type of information that is activated (i.e. stereotypical or grammatical in nature), the order in which certain types of information are activated or whether these processes are automatic or a bi-product of elaborative and integrative processing. Future research should therefore explore these topics in relation to the interaction and influences of the two competing languages that may differ in proficiency and fluency levels within the comprehender, and the specific effects that certain languages have upon our mental representations.

## References

- Athanasopoulos, P., Wiggett, A., Dering, B., Kuipers, Jan-Rouke, & Thierry, G. (2009). The Whorfian mind-Electrophysiological evidence that language shapes perception. *Communicative & Integrative Biology*, 2(4): 332-334.
- Banaji, M.R., & Hardin C.D. (1996). Automatic stereotyping. *Psychological Science*, 7, 136-141.
- Bentrovato, S., Devcovici, A., D'Amico, S., & Bates, E. (1999). Effect of Grammatical Gender and Semantic Context on Lexical Access in Italian. *Journal of Psycholinguistic Research*, 28(6), 677-693.
- Cacciari, C., & Padovani, R., (2006). Further evidence of gender stereotype priming in language: Semantic facilitation and inhibition in Italian role nouns. *Applied Psycholinguistics*, 28, 277-293.
- Carreiras, M., Garnham, A., Oakhill, J., & Cain, K. (1996). The Use of Stereotypical Gender Information in Constructing a Mental Model: Evidence from English and Spanish. *The Quarterly Journal of Experimental Psychology*, 49A(3), 639-663.
- Chatard, A., Guimond, S., & Martinot, D. (2005). La féminisation grammaticale des professions et l'auto-efficacité des élèves: une remise en cause de l'universalisme masculin? *Année Psychologique*, 105, 249-272.
- Cook, V., Bassetti, B., Kasai, C., Sasaki, M., & Takahashi, J. (2006). Do bilinguals have different concepts? The case of shape and material in Japanese L2 users of English. *International Journal of Bilingualism*, 10(2), 137-152.
- Curt Hoffman, Lau, I., & Johnson, D. R. (1956). The Linguistic Relativity of Person Cognition: An English-Chinese Comparison. *Journal of Personality and Social Psychology*, 51(6), 1097-1105.
- Van Assche, E., Duyck, W., Hartsuiker, R.J., & Diependaele, K. (2009). Does Bilingualism Change Native-Language Reading? Cognate Effects in a Sentence Context. *Psychological Science*, 20, 923-927.
- Flaherty, M. (2001). How a Language Gender System Creeps into Perception. *Journal of Cross-Cultural Psychology*, 32(1), 18-31.
- Franceschina, F. (2001). Against an L2 morphological deficit as an explanation for the differences between native and non-native grammars. In Foster-Cohen, S. and Nizogorodcew, A. (eds.). *EUROSLA Yearbook*, v.1. John Benjamins, pp. 14-58.
- Gabriel, U., & Gygax, P. (2008). Can societal language amendments change gender representation? The case of Norway. *Scandinavian Journal of Psychology*, 49(5), 451-457.
- Gygax, P., & Gabriel, U. (2008). Can a Group of Musicians be Composed of Women? Generic Interpretation of French Masculine Role Names in the Absence and Presence of Feminine Forms. *Swiss Journal of Psychology*, 67(3), 143-151.
- Gygax, P., Gabriel, U., Sarrasin, O., Oakhill, J., & Garnham, A. (2008). Generically intended, but specifically interpreted: When beauticians, musicians, and mechanics are all men. *Language and Cognitive Processes*, 23(3), 464-485.
- Harris, J.W. (1991). The exponence of gender in Spanish. *Linguistic Inquiry*, 22(1), 27-62.
- Kintsch, W. & Van Dijk, T.A. (1978). Toward a model of text comprehension and production. *Psychological Review*, 85(5), 363-394.
- Konishi, T. (1993). The semantics of grammatical gender: A cross-cultural study. *Journal of Psycholinguistic Research*, 22(5), 519-534.
- McCarthy, C. (2007). *Morphological variability in second language Spanish*. Unpublished doctoral dissertation, McGill University, Montreal.
- Oakhill, J., Garnham, A., & Reynolds, D. (2005). Immediate activation of stereotypical gender information.

*Memory & Cognition*, 33(6), 972-983.

- Reynolds, D.J., Garnham, A., & Oakhill, J. (2006). Evidence of immediate activation of gender information from a social role name. *The Quarterly Journal of Experimental Psychology*, 59(5), 886-903.
- Sabourin, L., Stowe, L.A., & de Haan, G.J. (2003). Transfer effects in learning a second language grammatical gender system. *Second Language Research*, 22(1), 1-29.
- Salamoura, A., & Williams, J.N. (2007). The representation of grammatical gender in the bilingual lexicon: Evidence from Greek and German. *Bilingualism: Language and Cognition*, 10(3), 257-275.
- Stahlberg, D., Braun, F., Irmen, L., & Sczesny, S. (2007). Representation of the sexes in language. In K. Fiedler (Ed.), *Social communication. A volume in the series Frontiers of Social Psychology* (pp.163-187). (Series Editors: A.W. Kruglanski & J.P. Forgas). New York: Psychology Press.
- Van Dijk, T. A., & Kintsch, W. (1983). *Strategies of discourse comprehension*. New York: Academic Press.