

GRAMMATICAL GENDER AND ATTRIBUTES EVALUATION

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‘‘The individual’s whole experience is built upon the plan of his language’’ –

Henri Delacroix (1937, as cited by Flesch, 1951, p. 46).

ABSTRACT

The above saying of Delacroix is true at least to some extent, as it appears in light of the *Linguistic Relativity Hypothesis* (LRH). The basic idea of LHR, in the works of the anthropologist Edward Sapir and his student Benjamin L. Whorf, is ‘‘...the proposal that diverse languages influence the thought of those who speak them’’ (Lucy, 1992, p. 1), meaning, different languages offer different points of view of the world. The corpus of studies examining this hypothesis in dozens of languages relates to a wide variety of notions such as the concept of time flow, the ways of perceiving color or space, and more recently – the phenomenon of grammatical gender. This paper describes an experiment conducted with Hebrew and Arabic speaking participants, with a view to examine the manifestation of linguistic relativity effects in evaluating synonymous nouns which do not share the same grammatical gender category. The experiment showed that nouns whose grammatical gender is 'male' were seen as stronger, heavier and more masculine than their 'female' synonyms by Hebrew speakers, and as heavier and more masculine in the eyes of Arabic speakers.

KEYWORDS: Linguistic Relativity Hypothesis, Grammatical Gender, Synonyms, Attribute Evaluation

INTRODUCTION

Linguistic Relativity

Benjamin Lee Whorf, a student of Edward Sapir (Kay & Kempton, 1984) was one of the main researchers who acknowledged, and studied empirically, the ways our thought processes are affected by the language we speak (Kess, 1992; Gumperz & Levinson, 1996). Through his work of testing and comparing Native American languages with English (following Sapir's line of thought and study), he constructed the Linguistic Relativity Hypothesis (LRH) (Tohidian, 2009). He argued that a language generates unique biases in its speakers' cognition that bring about tendencies of experiencing the environment in a different way, compared with speakers of other languages (Hoosain, 1986)

But this hypothesis had to go a long way before being acknowledged as a decent and reliable one. The reason for this was mostly because Whorf had first presented a rigid and absolute approach – The linguistic determinism – the assumption that the language people speak determines the way they think about the world (Clark, 1996), which was viewed as a radical hypothesis, compared to the linguistic relativity hypothesis. Some theoreticians refer to these hypotheses as 'the strong hypothesis' and 'the weak hypothesis' (Tohidian, 2009). Currently, there is little or no support for the linguistic determinism hypothesis (Kousta, Vinson and Vigliocco, 2008).

However, this paper deals with the 'weak hypothesis', not the heavily criticized Linguistic **Determinism** hypothesis. The linguistic **Relativity** hypothesis, which has gathered comprehensive support (Kousta, Vinson and Vigliocco, 2008; Tohidian, 2008) maintains that language has some effects on thinking, but it surely does not fully determine the way humans think. Today we may say that it is proven that speakers of different languages may tend to focus on different aspects of experiences (Gennari, Sloman, Malt & Fitch, 2002; Tohidian, 2009).

Studies in the field dealt with effects of language in many areas – the perception and categorization of physical objects (Carroll & Casagrande, 1958) or of colors (Davies, Sowden, Jerrett, Jerrett & Corbett, 1998), judgments regarding moral and family affairs (Taylor & Yavalanavanua, 1997), and even domains such as the conception of time (Boroditsky, 2001) and spatial cognition (Majid, Bowerman, Kita, Haun & Levinson, 2004).

In addition, another approach has recently emerged (Tohidian, 2009) – the Cognitive Approach. This recent approach suggests that different languages challenge different aspects of cognition, while facilitating other aspects, thus, creating the diversity found among speakers of various languages (Hunt & Agnoly, 1991).

In a broader sense, concerned with the Cognitive Sciences, Evans and Levinson (2009) have recently published an article supporting the language diversity approach (and the interpretation of it), a relatively new approach, based on Whorf's main ideas about the relativity of language (Lucy, 1992). Evans and Levinson (2009) discussed the diversity found among languages in various levels (morphology or semantics, for example), in contradiction with Chomsky's Universal Grammar Theory.

There is another distinction between approaches within the LRH – one view argues that language effects nonlinguistic cognitions, or processes, which do not relate to the use of language, while the other view maintains that language has an impact on representations and other linguistic processes of cognition (Kousta, Vinson & Vigiliocco, 2008). The current study can be assigned to the latter approach, as it regards the issue of grammatical gender.

Grammatical Gender

Grammatical Gender is one of the subjects studied by researches supporting the linguistic relativity theory – alongside other subjects mentioned above.

Lera Boroditsky of Stanford University is one of the leading researchers in the field through her studies concerning, among other topics, the phenomenon of grammatical gender. In one of her studies, Spanish speakers and German speakers were asked to describe various objects (by assigning to them adjectives and qualities), whose grammatical gender is not the same in the two languages. For example, 'key' is masculine in German but feminine in Spanish. The research gathered interesting evidence – the German speaking subjects found 'key' as 'hard, useful, metal, serrated', while the Spanish speaking subjects tended to see the key in terms such as 'shiny', 'intricate', 'golden' and 'lovely' (Boroditsky, Schmidt and Phillips, 2003).

One interesting, but very reasonable, finding is that the effect of grammatical gender is not as clear and significant in languages that contain more than two grammatical gender categories, like German, which in addition to the 'ordinary' Masculine/Feminine distinction, has also a *Neuter* category (Kousta, Vinson, & Vigliocco, 2008). A possible explanation for this finding is that subjects, required to assign grammatical gender category to a stimulus (as in Sera, Elieff, Forbes, Burch, Rodriguez & Dubois, 2002 – assigning a male or female voice to a pictured object), would find it hard to provide a clear distinction between the categories because of the unique gender system in their language (Vigliocco, Vinson, Paganelli & Dworzynski, 2005). For example, *Mädchen* (a young lady – in German), is *neuter* and not *feminine* (which would seem absurd to most speakers of 'regular' languages having two grammatical gender categories).

There are various pieces of evidence to the effect of grammatical gender in the two languages in which our study was conducted – Hebrew and Arabic – and we mention two of them here. First, the finding that Arab children tend to categorize the words 'perfume' and 'necklace' (whose grammatical gender in Arabic is masculine) as masculine to a higher extent than English-speaking children do. The latter, not having grammatical gender system for inanimate objects in their

language, might turn to the obvious feminine features of these nouns, as found by Clarke, Losoff, McCracken and Still (1981, quoted in Flaherty, 2001).

Second, evidence of the effect of the phenomenon of grammatical gender in Hebrew is found in Guiora, Beit-Hallahmi, Fried, and Yoder (1982, quoted in Flaherty, 2001). Their study showed that Hebrew-speaking children recognize themselves as males or females at an early age, compared with English or Finnish-speaking children. Probably this is due to the prominent grammatical gender category found Hebrew, which does not exist in Finnish and English (Flaherty, 2001).

Still, more than a few languages contain grammatical gender system (mostly a masculine/feminine one) and many languages contain words with identical meaning (synonyms). In Hebrew and Arabic there are synonyms having opposite grammatical genders – one is masculine, while the other is feminine.

The Present Study

The present study examines the manifestation of grammatical gender effects regarding inanimate objects with two opposite gender synonyms - one masculine, one feminine.

This study has a fresh perspective, because, as mentioned above, experiments concerning masculine/feminine comparisons were in fact conducted in the past, even for the same item (Boroditsky, Schmidt and Phillips, 2003), but the comparisons were ‘between’ languages and not ‘within’ languages, as in the present study.

In the experiment reported here, Israeli Arabic speaking secondary school students and Hebrew speaking undergraduate students were asked to evaluate various qualities of synonymous words of different gender category. For example, a pair of such synonymous words – a ‘test items pair’ – in Hebrew is the pair of words for ‘moon’ - ‘Le-Va-Na’ (female) and ‘Ya-Re-Ach’ (male). An example of a test items pair in Arabic is the pair of words for ‘Socks’ – ‘kel-sat’ (female) and ‘gwa-reb’ (male).

Evaluation of attributes (descriptive qualities) as characterizing the test items were assessed on appropriate scales in order to test the hypothesis that grammatical gender can affect the way an object is perceived, when it is presented once as masculine and once as feminine.

We hypothesized that nouns whose grammatical gender is masculine, would be rated as more ‘masculine’, than their feminine equivalents (e.g., the masculine ‘Do-Ron’ [a gift] would be rated higher on the scale, than its feminine synonym ‘Ma-Ta-Na’). More interesting, on the other two scales of evaluation, ‘Light-Heavy’ and ‘Weak-Strong’, we expected male items to be rated as heavier and stronger than their female equivalents, in both languages.

METHOD

Participants: The Arabic speaking participants were students of the 10th to 12th grades, in two high schools located in the north of Israel and serving the Arab sector of the Israeli population. The Hebrew speaking respondents were first year undergraduate students of psychology at the University of Haifa.

Material: The first page of the questionnaire contained instructions of how to fill the next two pages of the questionnaire, rating each item on each of three 1-7 Likert scales for the three different attributes (Strength [Weak-Strong], Weight [Light-Heavy] and Gender [Feminine-Masculine]). The two poles of every scale represented opposites, for instance, Weak [1] up to Strong [7]). Each of the two pages consisted of both ‘male’ and ‘female’ test items (whose

synonyms appeared on the other page), in order to prevent a ‘cumulative bias’ (by presenting at first only items of one gender and then items of the opposite gender).

The last page of the questionnaire contained demographic data (‘Place of birth’ [‘Year of immigration’, in case the respondent was not born in Israel], ‘Mother tongue’ and ‘Gender’).

Procedure: the research assistants (students from the University of Haifa's department of psychology) handed the questionnaires to the Arabic-speaking students. Respondents had ten minutes to complete the procedure – and then the questionnaires were handed in and the assistants continued to another class. Hebrew speaking subjects filled out the questionnaires during class meetings of an introduction course at the university.

RESULTS

In order to test the three hypotheses, three t-tests were conducted for each of the two studied languages. The mean score of items for one gender on a certain scale (one of the three) was compared to the mean score of items of the opposite gender, on the same scale. Thus, grammatical-gender male items were compared to the grammatical-gender female items, on each of the three scales.

As for the data taken from the Arabic speaking sample, first, regarding the Weak/Strong scale, the male test items ($M=4.69$, $Sd=.79$) were found to be rated as weaker than their female synonyms ($M=4.79$, $Sd=.85$), [$t(537)=2.98$, $p<.01$], in the opposite direction of our hypothesis. However, on the Light/Heavy scale, male test items ($M=4.28$, $Sd=.78$) were found to be rated as heavier than their female synonyms ($M=4.09$, $Sd=.78$), [$t(537)=6.15$, $p<.001$], as expected. Also, not surprisingly, on the feminine/masculine scale – the male test items ($M=4.28$, $Sd=.72$) were found to be rated as more masculine than their female synonyms ($M=4.11$, $Sd=.73$), [$t(537)=4.33$, $p<.001$]. The findings are shown in table #1.

**Table 1: General Findings: Arabic-Speaking Respondents
(Means, Standard Deviations, t-Values and Degrees of Freedom)**

	M	Sd	T	df
Weak / Strong** (Male)	4.69	0.79	2.98	537
Weak / Strong (Female)	4.79	0.85		
Light / Heavy (Male)***	4.28	0.78	6.15	537
Light / Heavy (Female)	4.09	0.78		
Feminine / Masculine (Male)***	4.28	0.72	4.33	537
Feminine / Masculine (Female)	4.11	0.73		

* $p<.05$, ** $p<.01$, *** $p<.001$

Regarding the data from the Hebrew speaking sample, on the Weak/Strong scale, male test items ($M=5.61$, $Sd=.68$) were found to be rated as significantly stronger than their female synonyms ($M=5.37$, $Sd=.69$), [$t(161)=4.82$, $p<.001$]. On the Light/Heavy scale, male test items ($M=4.02$, $Sd=.78$), were found to be rated significantly heavier than their female synonyms ($M=3.78$, $Sd=.85$), [$t(161)=4.33$, $p<.001$]. And on the Feminine/Masculine scale, the male test items ($M=3.73$, $Sd=.57$) were found to be rated as significantly more masculine than their female synonym ($M=3.62$, $Sd=.55$), [$t(161)=2.50$, $p<.05$]. These findings are presented in table #2.

**Table 2: General Findings: Hebrew-Speaking Respondents
(Means, Standard Deviations, t-Values and Degrees of freedom)**

	M	Sd	T	df
Weak / Strong*** (Male)	5.61	0.68	4.82	161
Weak / Strong (Female)	5.37	0.69		
Light / Heavy (Male)***	4.02	0.86	2.5	161
Light / Heavy (Female)	3.78	0.85		
Feminine / Masculine (Male)*	3.73	0.57	4.33	161
Feminine /Masculine (Female)	3.62	0.55		

* p<.05, ** p<.01, ***p. <.001

DISCUSSIONS

In this study, in line with previous findings in the field of psycholinguistics, our hypothesis was that there are differences in evaluations of attributes used to describe certain words, as a function grammatical-gender. We tested this hypothesis in samples of Hebrew and Arabic speakers.

As for the Arabic speaking sample – the pattern of results differed somewhat from what was expected. As mentioned above, only two of the three differences were found to be significant in the predicted direction (female items were evaluated as stronger than the male items, contrary to our hypothesis). All other findings in both Arabic and Hebrew were significant and in the expected direction (in both languages male test items were evaluated as heavier and more masculine, and in Hebrew also stronger, than the female test items).

Overall, we might say that according to the present research, there are indeed differences in the evaluated attributes of synonyms not sharing the same grammatical gender category.

Our explanation of the findings of this study, the assumption on which it rested to begin with, is that 'masculinity' is intuitively associated with higher levels of strength and heaviness in comparison with 'femininity'. It may even be the case that, without noticing it, words from the male grammatical category are used more often than those of the female category in 'manly' contexts (involving, e.g. stereotypic images of aggression, toughness or dominance). Thus there might be a priming effect here, activating associations among attributes which seem to be closely related to each other.

Future lines of research may integrate our findings with those of the Spanish-German study of Boroditsky, Schmidt and Phillips (2003). Speakers of a given language would be asked to assign (rather than to evaluate, as in the present study) adjectives to synonyms belonging to different grammatical gender categories.

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