



GRAMMATICAL GENDER & LINGUISTIC RELATIVITY: DOES THE GRAMMATICAL GENDER NATIVE ARABIC SPEAKERS ASSIGN NEUTRAL NOUNS AFFECT HOW THEY PERCEIVE THEM?

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Abstract:

While some Native Arabic speakers assign a certain grammatical gender to neutral nouns based on whether they perceive them to be either a male/masculine or female/feminine like, others assign them a grammatical gender arbitrarily. This research aims to find out 1. whether there is a tendency among Native Arabic speakers to assign neutral nouns male grammatical gender as a result of the Arabic language's tendency to assign neutral nouns male grammatical gender. It also aims to find out 2. what rationale the Native Arabic speakers have for their grammatical gender assignment of neutral nouns despite the Arabic language's grammatical gender assignment to nouns being arbitrary, in addition to 3. whether or not the participants would assign nouns they find feminine-like a female grammatical gender and nouns that they perceive as masculine-like a male grammatical gender, or would just assign a grammatical gender arbitrarily. This paper's findings showed that the majority of participants of both genders (i.e., males and females) tended to assign male grammatical gender to most of the neutral nouns, as 10 nouns out of 14 were assigned a male grammatical gender by the majority of both male and female participants. The participants stated that they did not perceive the nouns they assigned a male grammatical gender masculine-like but rather assigned them a male grammatical gender either arbitrarily or by default as the Arabic language tends to assign male grammatical gender to neutral nouns, whereas the majority stated that they assigned certain neutral nouns such as my knife and Falafel a female grammatical gender not because they perceived them as feminine-like, but rather because this is what they heard/acquired from those surrounding them. Therefore, the grammatical gender assignment of nouns was not semantic but rather morphological and syntactic and was done by the addition of affixation either to the noun itself or to its adjective.

Keywords: grammatical gender, linguistic relativity

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1. Introduction

1.1 Languages & Their Similarities & Differences

According to the latest edition of Ethnologue: Languages of the world (2022) there are 7.151 living (i.e., spoken) languages in the world. One of the major, if not the major use of languages is communication. According to Boroditsky *et al.* (2003) “*people communicate with each other using a variety of languages which differ from one another in numerous ways.*” Though languages share similar aspects, (i.e., morphological, semantic, syntactic, phonological, and phonotactic rules), yet, they differ in many as well. One of the major differences in languages can be seen in terms of their representation of aspects of reality in many domains (space, time, number systems, color, and classification of objects & substances at a lexical & grammatical level & gender).

1.2 Language & Thought

For centuries it has been argued whether there is a relationship between thought & language due to differences languages have in terms of the representation of aspects of reality in many areas where speakers of different languages must think differently as they view & experience the world in different ways. Many German scholars were concerned with the idea of the existence of a relationship between language & thought (Lucy, 1992). One of these scholars is the German Philosopher Wilhelm Von Humboldt who fostered the belief that speakers of different languages have varying views of the world (Almutrafi, 2015). However, Humboldt perceived this relationship differently as he viewed language as the thought of the community rather than the individual (Cited from Almutrafi, 2015). After the Linguistic Relativity LR or Sapir-Whorf theory which is related to the relationship of languages and how they shape different views of their speakers was introduced by the American anthropological linguist Edward Sapir (1884-1936) and one of his students, that being Benjamin Lee Whorf (1897-1941), hence the name. The main hypothesis contends that the idiosyncrasies of the language/s we speak influence/s the way we think about the world (Garvin, 1958). The theory was supported by many linguists such as (Boroditsky *et al.*, 2003; Sera *et al.*, 1994; Brown & Lenneberg, 1954; Lucy, 1997; Kay & Kempton, 1984). However, due to the strong claims it made, it was rejected by many other “Universalist” linguists such as (Pinker, 1994; Chen, 2007; Martinez & Shatz, 1996; January & Kako, 2007; Takano, 1989). This resulted in Whorf putting forward two hypotheses; a strong hypothesis and a weak hypothesis (Whorf, 1956). These two hypotheses were put forward in the summary of Brown (1976: 128) (Cited from Almutrafi, 2015), namely:

- 1) Structural differences between language systems will in general be paralleled by non-linguistic cognitive differences of an unspecified sort, in the native speakers of the language
- 2) The structure of anyone’s native language strongly influences or fully determines the worldview he will acquire as he learns the language.

Hence, the strong hypothesis (i.e., Linguistic determinism) suggests that our language determines how we see the world (shapes our thoughts & decisions) as linguistic categories limit one's cognitive as what Ludwig Wittgenstein *et al.* 1922 stated "*The limits of my language mean the limits of my world*". However, one can speak additional languages besides his/her mother language, therefore, one's point of view of the world, thoughts, knowledge, and decisions will likely become more diverse. Moreover, as a result of the extreme opposition that the strong hypothesis received from linguists including Whorf himself, in addition to (Boroditsky, 2001; Levinson, 2003), a weak hypothesis (i.e., Linguistic relativism) was put forward. It proposed that language (and its linguistic categories) influences how we see the world. And based on the division of the linguistic relativity hypothesis into the "strong" and "weak" versions, the weak version may not be easily rejected (Hakuta, 1986 p.77). Moreover, Slobin (1996) supported the weak hypothesis (i.e., thinking for speaking) stating that it might allow language to bias our attention toward the more linguistically describable aspects of what we perceive, but this does not mean that languages change the underlying conceptual structures. What Slobin (1996) argues is that language shapes the way individuals perceive reality and mediates their thinking, at least for the moment of speaking.

1.3 Different Thoughts Due to Languages' Different Lexical Characteristics in Various Domains

The question is, can subtle differences between languages make us think differently about the world? In order to answer such a broad question, we need to consider Whorf's argument regarding the ability of a language's lexical characteristics to restrict domain-general cognitive processes such as shapes, colors, numbers, time, or gendered cognition, which result in speakers of a language perceiving the world differently than the speakers of another.

In the case of shapes, when Navaho speakers talk about handling an object, they have to add a suffix (i.e., classifier) to the verb corresponding to the shape or some attributes of the object (Almutrafi, 2015). In research conducted by Carroll and Casagrande (1958) it was hypothesized that this obligatory use of shape classifiers might make the speakers of the Navaho language group objects' pictures based on shape more than size or color. The researchers presented children participants with a pair of objects that varied in size and form e.g., *yellow rope* and *blue stick*, then asked: To which of the two objects should they place a *blue rope*? The findings were in line with their hypothesis as indeed, Navaho-dominant Navaho children were more likely (70%) to group objects according to shape.

When it comes to colors, Russian has two different degrees of the color/word blue, "*Goluboj*" (i.e., light blue) & "*Siniy*" (i.e., dark blue), whereas in English both colors are referred to as "blue". This case was investigated by Winawer *et al.* (2007) who intended to figure out whether or not this linguistic difference would lead to differences in color discrimination. The researchers used blue stimuli which spanned the *sinny/goluboy* border as they presented English & Russian participants with blue color squares

positioned in a triangle (a square on the top with two at the bottom) where one of the bottom squares was of matching blue degree to that of the top square. Participants were asked to pick out the matching square from the top row. Surprisingly, findings showed that Russian speakers were faster to discriminate between two colors when they fell into two different linguistic categories in their language. In the findings it was also stated that though the different degrees of the color blue are something both languages' speakers are aware of, the speakers of a language that has two distinctive terms for the same color were faster to recognize it for the language made them cognitively faster to pick it up, suggesting that when it comes to simple perceptual colors tasks, language does indeed affect cognitive process.

When it comes to numbers, looking at the Mundurucu & Pirahã in Amazonia, both of their languages are numberless. In the case of a numberless language such as the Pirahã, Gordon (2004) examined the mathematical abilities of the Pirahã speakers' counting system (i.e., one-two-many counting system; where the word "many" is used instead of numerical numbers to refer to any number greater than 3). The researcher found that indeed, the innumerate counting system the Pirahã use limited their speakers' performance when operating numerical tasks in which numbers greater than 3 were involved.

When it comes to time, Hopi (i.e., an American Indian language spoken in Arizona) is a language in which plurals only apply to physical objects but not to periods of time. Whorf (1956, p.138) studied the Hopi language and found that the language's speakers express the passage of time differently than the speakers of Average Standard European ASE languages (i.e., English, French & German), as in Western Languages, one might say, "*They worked on it for five days*" representing each individual day, whereas in Hopi language they would instead say "*I finished working on it the fifth day*", as they express the period of time as a whole.

When it comes to gender, a language such as English is a neutral language as it frequently refers to inanimate objects with the pronoun "it" and has no grammatical gender, except for the third-person singular pronouns "he" & "she" (Beit-Hallahmi et al., 1974; Almutrafi, 2015). Other languages such as Hungarian, Finnish & Estonian are considered neutral languages as well. Moreover, there are two-gendered languages (nouns are either marked as/assigned a feminine or a masculine pronoun) such as Arabic, Spanish & French. In addition, there are three-gendered languages (assign feminine, masculine & neuter pronouns to nouns) such as German and Russian. Not to mention Zande language which is a four-gendered language (masculine, feminine, animal, and neuter indicated by class I, II, III, IV) (Corbett, 1991).

However, the non-existence of certain terms for certain objects, time, notions, and feelings in a certain language does not necessarily mean the inability of that language speaker to conceive their image, idea, or even concept. This was supported by Whorf himself when he investigated the "Eskimo" languages (i.e., Yupik and Inupiat). These languages have multiple words for the English word *snow*. This however by no means indicates that English speakers cannot distinguish the difference between these words

(Cited from Almutrafi, 2015). However, having different terms which slightly or largely differentiate between two notions in a language, results in that language speakers being faster to recognize the difference. This was seen in the findings of Winawer *et al.* (2007) where Russians were faster to detect the change of degrees in the color blue, due to their language distinguishing between the color's subtle degree change. Yet, several research such as that of (Winawer *et al.*, 2007; Brown & Lenneberg, 1954; Ervin, 1962) suggests that though cognitive universals exist among humans [and their languages], there may be remarkable differences in these languages which due to differences in cognition among their speakers may result as well.

The above-mentioned research not only provides empirical evidence supporting Sapir-Whorf's theory, but is also in line with what Dawood, *et al.* (2020) stated in which *"language-specific terminology may affect behavioral performance through shaping the mental representation of entities such as objects, numbers, and colors."* In addition, Almutrafi (2015) stated that the *"effect of language on thought varies between different domains."* And *"it seems that if linguistic categorizations have a clear relation to meaning the effect of language on thought might be stronger and if there is no direct relation between them the effect could be limited and transitory [e.g., grammatical gender]."*

1.4 Arabic & Grammatical Gender

The meaning of term "gender" in this research refers to grammatical gender in language. That is "classes of nouns within a language which are reflected in the behavior of associated word" (Hockett, 1958, p.231). And as Almutrafi (2015) noted, *"in some languages, biological and grammatical gender are closely related, and in some others, they are completely unrelated."* But in general, gender assignment, particularly in animate nouns, is largely arbitrary and independent of the reference conceptual properties (Hockett, 1958).

Note that the terms male/masculine grammatical gender will be used interchangeably in this research, and the terms female/feminine grammatical gender will be used interchangeably in his research as well.

Now, the question is, could the way we grammatically categorize nouns influence the way we think of them? For example, do Germans and Arabs think that the sun is masculine-like while the moon is feminine-like because of the grammatical category they are assigned in the language?

The answer is, it depends. For example, in Arabic, a beautiful women's face would be compared to that of the moon, for both are perceived as feminine. This is in terms of characteristic attributes. But does that necessarily mean that speakers of Arabic believe that the moon is feminine in the sense that it has a vagina, uterus, and womb in its physical body? The answer is absolutely not. And this draws the distinction in Arabic between what is perceived as feminine (i.e., having what that culture considers feminine characteristics), separate from what is biologically feminine (i.e., genetically female). What is interesting, however, is that Arabic does indeed mark all female mammals that *"give life: either by giving birth or laying eggs"* with female grammatical gender.

Note that in Arabic, which is a two-gender system almost all nouns are either (marked) feminine or default/unmarked) masculine gender (Alkoholani, 2016) (cited in Dawood *et al.*, 2020).

The above-mentioned examples show that the grammatical category we assign to animate or inanimate nouns are either 1. decides the characteristics that we will attribute to or are 2. based on the characteristics they have, and thus affect the grammatical gender we assign. This shows that people depend on categories introduced in a language in order to partition reality at the moment of speaking, reading, writing and listening (Slobin, 1996). This is especially for Arabic speakers as the process of thinking for speaking differs among languages, English speakers do not need to think about the grammatical gender agreement between the verb and the subject when planning to use a verb, yet, in many languages with grammatical genders conjugations with the verbs, such as Arabic, the speakers need to construct and conjugate the verb or noun in a sentence to agree with the object in terms of gender (Almutrafi, 2015). For this, knowing the grammatical gender of a noun is crucial in order to construct a grammatically accurate sentence in Arabic. This gender categorization of nouns in Arabic makes it easier for the speaker and the audience to recognize which is feminine and which is masculine.

However, because feminine nouns tend to be longer than masculine nouns, for they are derived from them, the pronunciation of masculine nouns is perceived to be easier than feminine ones. According to the Markedness Differential Hypothesis, structures that are simple or common in language are assumed to be unmarked, whereas those which are complex and less common are assumed to be marked (Archibald, 1998). This was further explained by Gass and Selinker (2001, p.160) stating that *"If we consider words denoting professions, avocations, or societal roles, we see that male terms are the basic ones (e.g., actor, poet, host, hero), whereas the female counterparts have suffixes added on to the male term (actress, poetess, hostess, heroin). The male term is taken to be the basic one (unmarked) and the female term is the marked derivative."* This is not only in English but in Arabic as well where female nouns in Arabic not only tend to be longer due to the addition of the suffix "ah" (i.e., Tā Marbuta), but that such assignment of either a feminine or masculine grammatical gender in Arabic is semantically arbitrary. This is seen in an example provided by Almutrafi (2015) in that there are two words in Arabic as the equivalent of the English word "widow", where one is masculine "Shobbak", while the other is feminine "Nafethah".

This paper's findings will answer the question of whether native Arabic participants' assignment of grammatical gender to Arabic neutral nouns is morphologically and syntactically or semantically motivated.

1.5 Research Questions

- 1) Is there a tendency among Native Arabic speakers to assign neutral nouns male grammatical gender?
- 2) Does Native Arabs' perception of nouns as either feminine-like or masculine-like affect the way they grammatically categorize these objects in?

1.6 Hypotheses

There are three hypotheses, namely:

H1: A high tendency to categorize neutral nouns male grammatical gender will be found among Native speakers of the Arabic language, as a result of the Arabic language's tendency to assign male grammatical genders to neutral nouns/objects.

H2: There will be a tendency among Arabic speakers to assign a male grammatical gender to neutral nouns they perceive as masculine-like and a tendency to assign female grammatical gender to nouns they perceive as feminine-like.

H3: A tendency within the participants to provide a rationale behind their grammatical gender assignments to nouns will be found, despite the Arabic language assigning grammatical gender to nouns being arbitrary.

1.7 The Aim of This Research

This paper aims to investigate 1. whether there is a tendency among Native Arabic speakers to assign neutral nouns male grammatical gender as a result of the Arabic language's tendency to assign neutral nouns male grammatical gender, 2. what rationale the Native Arabic speakers have for their grammatical gender assignment of neutral nouns despite the Arabic language's grammatical gender assignment to nouns being arbitrary, & 3. whether or not the participants would assign nouns they find feminine-like a female grammatical gender and nouns that they perceive as masculine-like a male grammatical gender, or would just assign a grammatical gender arbitrarily.

2. Literature Review

Much empirical evidence has been provided to support the Linguistic Relativity hypothesis of the influence language has on the way we perceive the world, especially regarding the way different language speakers grammatically categorize items in.

Research by Dawood *et al.* (2020) examined the potential effects of the Arabic grammatical gender GG system on object categorization using online VAT (i.e., voice attribution task). In their research, they demonstrated GG effects on object categorization in native Arabic speakers, in addition to corroborating previous findings of linguistic relativity studies on Indo-European languages. The findings showed a tendency within Arabic & English speakers to associate male voices with both natural and artificial objects regardless of the GG in Arabic, which resulted in inconsistency with the natural-feminine/artificial-masculine. The researchers also found a tendency within native Arabic & English speakers to assign male attributions to objects that have no associative stereotypical gender "neutral".

The findings of a thesis by Almutrafi (2015) which investigated the grammatical gender in the categorization of objects by assigning participants (bilingual & monolingual Arabic & English speakers) 2 tasks (a categorization & a similarity rating task), were in line with the findings of (Pavlidou & Alvanoudi, 2014) in which English and Arabic speakers assigned a man's voice to artificial items that were grammatically masculine

more often than to artificial items that were grammatically feminine. These findings suggest a non-arbitrary relationship between grammatical gender and conceptually masculine items and show that both languages' speakers were sensitive to feminine-natural & masculine-artificial distinction in their VAT, which confirmed the researcher's second hypothesis in that both Arabic and English speakers will follow the feminine/natural & masculine/artificial distinction in VAT when assigning voices to inanimate objects, proving that both grammatical gender and conceptual category influenced the decisions of Arabic and English monolingual speakers.

Furthermore, research by Pavlidou and Alvanoudi (2014) investigated possible factors affecting peoples' assignment of grammatical genders to objects. One of these factors was whether the language itself would affect the results of GG and item categorization. The participants were speakers of modern Greek, a three-gendered language, that being modern Greek, who were asked to assign either a male or female sex to objects/animals/persons according to the grammatical gender of the noun denoting those items. One of their findings was in line with the findings of Almutrafi (2015) in which they found a tendency among participants to associate natural objects with the female GG and to frequently associate artifacts with the male GG.

A previous study by Sera *et al.* (2002) supports the above-mentioned findings of Finely (2003) in which the cognitive influence of grammatical gender varies depending on the properties of a gender system in a language. Sera *et al.* (2002) compared the grammatical gender categorization tendency by conducting a series of comparative studies of sex attribution in Spanish, French, German & English), where the speakers of these 4 languages were asked to assign either a female or a male voice to different items (e.g., artificial natural objects, animals, humans). This resulted in Spanish & French speakers making grammatically consistent gender assignments, whereas (5-9-year-olds) German speakers did not. On the other hand, English speakers tended to classify natural objects as "female" and artificial objects as "male", which is in line with the findings of (Almutrafi, 2015; Pavlidou & Alvanoudi, 2014).

3. Data Collection Methodology & Procedures

3.1 Methodology

The research followed a mixed research method, where the qualitative method was used to collect, describe and analyze data, whereas the quantitative data method was used in providing statistical data (graphs) and percentages for the data collected.

3.2 Procedures

Participants were asked to talk about 14 nouns, each for a minute. The participants performed the verbal task individually to ensure that they do not become conformists and provide similar answers to that of their peers despite having different answers. The task requirements were stated to the participants verbally and in English only. Despite that, they were asked to describe the nouns in Arabic, using their Bahraini dialect. The

participants were not told anything regarding the research purpose and the assignment of grammatical gender to nouns either directly or indirectly before or during the test. It was only after each participant finished their test that they were asked about the rationale of their grammatical gender assignment. Following the advice of Almutrafi (2015) in which *“using purely linguistic stimulate the study the effects of language mission might be argued only measure participants knowledge of grammatical gender of the languages rather than its effects on the recognition.”* Therefore, the tool used for data collection in this research is Natural Speech Recording NSR which will eliminate the participants' awareness of the research/task purpose and therefore will 1. Minimize to a large extent the possibility that the participants would consciously use their knowledge of grammatical gender assignment to perform the task, 2. Ensure that the participants will not try to answer with what is generally perceived as right, 3. Ensure that the participants will subconsciously rather than consciously assign a certain grammatical gender to nouns when answering the task, which will prove whether the Arabic language's tendency to grammatically assign male grammatical gender to neutral nouns does indeed make Native Arabic speakers more prone toward assigning male grammatical gender to neutral nouns.

Note: All of the participants consented that the researcher records their natural speech test.

3.3 Sample

Participants in this research were 50 DELL students (i.e., students of the Department of English Language & Literature), at the University of Bahrain. All of the participants are Native Arabic speakers, who speak the Bahraini/Bahrani dialect. 25 of the participants were females, and 25 were males. Participants aged from 18 to 26 years old and ranged from students in their first academic year to students in their seventh academic year in university.

4. Findings

Note that in the participants' column 1. G stands for the participant's gender and the letter following it, that being either F or M, indicates the participant's gender. 2. A stands for the participants' age, and the number following it indicates the participant's age. 3. Y stands for the participant's academic year in university (i.e., 1st, 2nd, 3rd, 4th, 5th, 6th, and 7th) indicated by the number following it. As for the numbers each participant is assigned, they refer to the order which the participants' natural speech was recorded in. In addition, the headings of the horizontal row are the words the participants were recorded speaking of.

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Table 1: Findings of Natural Speech Transcribed Data

Participants	My finger اصبعي	My shoulder ج/كتفي	My tummy بطني	My legs رجالي/رجولي	My head راسي	My teeth أسناني	Falafel الفلافل	Balaleet البلاليت	My olive زيتوني/زيتوناتي	My knife سكيني/سجيني/سجيني	My cup كوبي/كوبتي	My slipper نعالي/نعالتني	The road طريقي	Nail clipper مقراضني/مقراضني
1 GF A20 Y2	صبعي صغير	كتفي يعورني	بطني يعورني	رجالي يعوروني	راسي يعورني	أسناني تعورني	الفلافل لذيذة	البلاليت لذيذة	زيتوناتي حامضين	سجيني حادة	كوبي عميق	نعالي جديدة	طريقي زحمة	مقراضني حاد
2 GF A18Y1	صبعي طويل	جتفي تألمني	بطني يعورني	رجولي تعورني	راسي يألمني	أسناني تألمني	الفلافل حلو	البلاليت مالح	زيتوناتي خضران	سجيني حادة	كوبي غالي	نعالي قصيرة	طريقي طويل	مقراضني سنين
3 GM A19Y 2	صبعتي طويلة	كتفي يعورني شوي	بطني يعورني	رجالي يعوروني	راسي يعورني	أسناني تألمني	الفلافل مدھنة	البلاليت مالحة وساعات تكون حلو	زيتوناتي مدورين	سجيني طويلة وحديدية	كوبي لطيف	نعالي مقحلف	طريقي قريب	مقراضني حجمه كبير
4 GF A25Y7	صبعي معوج	كتفي قصير	بطني تعورني	رجولي تألمني	راسي يعورني	أسناني تعورني	الفلافل حلو	البلاليت عادي	زيتوناتي لذيذين	سجيني حادة	كوبي حليو	نعالي ضاح	طريقي زحمة	مقراضني ما أدري وينه
5 GF A22 Y3	صبعي مكسور	كتفي عادي	بطني يعورني	رجالي يعوروني	راسي يعورني	أسناني يعوروني	الفلافل ماصخ	البلاليت حلو	زيتوني معفن	سجيني رصاصية وحديدية	كوبي حليو	نعالي حليو	طريقي مكسر ووعر	مقراضني رصاصي وحديدية
6 GF A21Y3	صبعي قصير	كتفي مرتخي	بطني يعورني	رجولي تألمني	راسي يصدع	أسناني تعورني	الفلافل مدھن ومالح	البلاليت ماصخ وماله داعي	زيتوني مالح ولذيذ	سكيني سنين	كوبي عميق	نعالي طويل	طريقي زحمة	مقراضني حديد
7 GF A21Y5	صبعي حلو	كتفي قصير ومو متساوي	بطني يألمني	رجولي تألمني	راسي يألمني	أسناني تألمني	الفلافل مدورة	البلاليت حلو	زيتوني حامض	سجيني حادة	كوبي جميل	نعالي جديدة	طريقي زحام	مقراضني مصدية
8 GF A23Y5	صبعتي حليوة	كتفي يحتاج مساج	بطني يعورني	رجولي تعورني	راسي يعورني	أسناني تعورني	الفلافل حلو	البلاليت حلو بس مو واو	زيتوني حامض	سجيني حادة	كوبي عادي ومو مميز	نعالي جميل	طريقي بعيد عن	مقراضني مكسور
9 GF A26Y3	صبعتي قصيرة	كتفي عريض	بطني يوجعني	رجولي توجعني	راسي يوجعني	أسناني توجعني	الفلافل لذيذة	البلاليت لذيذ	زيتوني صغار	سجيني طويلة	كوبي حليو	نعالي حليو	طريقي زحمة	مقراضني ملونة وكبوت
10 GF A21Y4	صبعتي طويلة ونظيفة	كتفي يعورني من	بطني يعورني	رجولي تألمني	راسي يعورني	أسناني تعورني	الفلافل خضرة	البلاليت لذيذ	زيتوني حامض	سجيني سودة وحادة	كوبي غريب ومميز	نعالي ار صغير	طريقي قريب من	مقراضني حليوة
11 GF A22Y4	صبعي قصير	جتفي قصير	بطني يعورني	رجولي تعورني	راسي يألمني	أسناني يعورني	الفلافل مالحة	البلاليت لذيذة	زيتوني لذيذ	سجيني حادة	كوبي مكسور	نعالي ملون	طريقي سهل لأن	مقراضني حديد
12 GF A21Y4	صبعتي سودة	كتفي حجمه عادي	بطني يعورني	رجولي تعورني	راسي يألمني	أسناني تعورني	الفلافل حلو	البلاليت حلو	زيتوني حامض	سكيني سنين	كوبي صغير ونظيف	نعالي ضايح	طريقي مزدهم	مقراضني حديدية وسنيئة

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13 GF A20Y4	صبعي عادي	كتفي قصير	بطني تألمني	رجولي تتكسر من	راسي يعورني	أسناني يعوروني	الفلافل مالح وأخضر	البلايط حلو	زيتوني أخضر	سجيني حادة	كوبي المفضل غالي	نعالي جديد	طريقي طويل	مقراضي كبير
14 GF A20Y3	صبعي غريب	كتفي يعورني شوي	بطني يعورني	رجولي تعورني	راسي يألمني	أسناني يعوروني	الفلافل حلو	البلايط يعتبر فطور حقي وأحبه مالح	زيتوني أسود	سجيني حادة	كوبي غالي	نعالي جديدة وملغثة	طريقي ياخذ وقت	مقراضي حديد
15 GF A20Y3	صبعي قصير	كتفي متشنج	بطني يعورني	رجالي يعورني	راسي تعورني	أسناني يعوروني	الفلافل حلوة	البلايط مالح	زيتوني صغير	سجيني سنية	كوبي ملونة وعليها صورتي	نعالي مقطع من الطرف	طريقي طويل	مقراضي سنين
16 GF A22Y4	صبعي طويلة ومصبوغة	كتفي يعورني	بطني يعورني	رجولي تألمني	راسي يعورني	أسناني يألمني	الفلافل أكلة مقلية	البلايط حلو ومالح في نفس الوقت	زيتوني حامض	سجيني حادة	كوبي صغيرة	نعالي حلو	طريقي سيد وش طوله	مقراضي في شنتي وتعدل أظفري
17 GF A21 Y3	صبعي قصير	كتفي قصير	بطني يعورني	رجولي تألمني	راسي تعورني	أسناني يألمني	الفلافل حار ومالح	البلايط حلو	زيتوني صغير	سجيني حديد	كوبي حليو	نعالي مميزة	طريقي خنقة وزحمة	مقراضي حديد
18 GM A20Y3	صبعي غريبة	كتفي تعبان	بطني تعورني	رجولي تألمني	راسي يعورني	أسناني يعوروني	الفلافل أكلة مصرية	البلايط لذيد	زيتوني لذيد	سجيني وصخة	كوبي جديد	نعالي جديد	طريقي شطول	مقراضي رخيصة
19 GM A24Y4	صبعي حليوة	كتفي عريض	بطني يعورني	رجالي يألمني	راسي يعورني	أسناني يألمني	الفلافل حلوة	البلايط طعمه عادي	زيتوني حامض	سجيني حادة	كوبي مخشوش	نعالي مقاسه كبير	طريقي طويل	مقراضي ما أدري وينها بس هي حادة
20 GF A21Y4	صبعي قصيرة	كتفي صغير	بطني يألمني	رجالي يعورني	راسي تألمني	أسناني تألمني	الفلافل مصرية ونسمة طعمية وتكون مقلية	البلايط لذيدة ويا البيض	زيتوناتي خضران	سكيني سنين	كوبي مال جهال	نعالي جديد	طريقي زحمة كل يوم	مقراضي سنينة
21 GM A22Y5	صبعي مكسورة	كتفي حجمه عادي	بطني يألمني	رجالي يعورني	راسي يعورني	أسناني يعوروني	الفلافل مقلي بزيت وطعمه مالح	البلايط حلوة	زيتوني كبير	سجيني حادة	كوبي غالي	نعالي شكله حليو	طريقي مزدحم	مقراضي حليو وحاد
22 GF A21Y3	صبعي قصير	كتفي حجمه غريب ومو متساوي	بطني يعورني	رجالي يعورني	راسي يعورني	أسناني يعوروني	الفلافل لذيدة	البلايط لذيد	زيتوني حامض	سجيني حادة	كوبي جميل	نعالي جديدة	طريقي يجيب عوار راس	مقراضي مكسور
23 GM A18Y1	صبعي مشعر	كتفي يعورني	بطني يعورني	رجالي يعورني	راسي تعورني	أسناني يعوروني	الفلافل أحسن أكلة	البلايط أكلة بحرينية	زيتوني لذيد	سجيني نظيفة	كوبي جديد	نعالي ملعون خيره	طريقي زحام	مقراضي مصدبة

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24 GF A20Y4	صبعتي قصيرة	كتفي يألمني	بطني يعورني	رجولي تألمني	راسي يعورني	أسناني تألمني	الفلافل دوائر طعمها مالح	البلايط حلو	زيتوني مالح	سجيني حادة	كوبي صمود يطيح وما ينكسر	نعالي صغير	طريقي طويل	مقراضي كبير ورصاصي
25 GM A21Y4	صبعي صغير	كتفي عريض	بطني يأذيني	رجولي تألمني	راسي يعورني	أسناني يعورني	الفلافل أخضر ومدور	البلايط لذيق وهو حار ويا بيض	زيتوني لذيق	سجيني حديد	كوبي كأنه مصباح علي بابا	نعالتي جديدة	طريقي قريب	مقراضي حديدة ومصنوعة من حديد
26 GF A20Y3	صبعتي عادية	كتفي يعورني	بطني يعورني	رجالي يألموني	راسي يألمني	أسناني يألموني	الفلافل مالحة	البلايط لذيق	زيتوني مالح	سجيني سنية	كوبي مكسور	نعالي عالي	طريقي زحمة	مقراضي سنية
27 GF A18Y1	صبعي معوج	كتفي صغير	بطني يعورني	رجولي تعورني	راسي يألمني	أسناني تعورني	الفلافل لذيق	البلايط لذيق	زيتوناتي خضران وسودان	سجيني حادة ومصنوعة من ستيل	كوبي صغير	نعالي جديد	طريقي جريب من	مقراضي حديد
28 GM A22Y4	صبعتي تعورني	كتفي معضل	بطني يعورني	رجولي تنكسر لما	راسي تألمني	أسناني تعورني	الفلافل لذيق	البلايط بعد لذيق	زيتوني حامض	سجيني حادة	كوبي زجاجية	نعالي كبير	طريقي زحمة	مقراضي حاد
29 GM A23Y5	صبعتي قصيرة	كتفي قصير نفسى	بطني يعورني	رجولي تعورني	راسي يعورني	أسناني يعورني	الفلافل أخضر ومدور	البلايط حلوة الصبح	زيتوني مالح	سجيني كبيرة	كوبي شفاف	نعالي كبير	طريقي زحمة	مقراضي يقص عدل
30 GM A21Y3	صبعي طويل	كتفي يعورني	بطني يعورني	رجالي يبدون يعورني	راسي يعورني	أسناني يعورني	الفلافل مالح	البلايط لذيق	زيتوني حجمه كبير	سجيني حادة	كوبي انباق	نعالي عادي	طريقي زحمة	مقراضي حاد
31 GM A19Y3	صبعي طويل	كتفي تعبان	بطني يعورني	رجولي تألمني	راسي مصدع	أسناني يألموني	الفلافل مقلية وكلها دهون	البلايط لذيق	زيتوني كبار	سكيني طويل وحاد	كوبي عليه صورتى	نعالي كبير	طريقي زحمة	مقراضي حاد
32 GF A21Y4	صبعيت متين	كتفي يألمني	بطني يعورني	رجولي تألمني	راسي يألمني	أسناني تألمني	الفلافل لذيق	البلايط مالحة	زيتوني مشكل	سجيني حادة	كوبي كان هدية وشكله حلو	نعالي ماركة	طريقي زحام	مقراضي حادة
33 GM A21Y4	صبعي طويل	كتفي عريض	بطني يعورني	رجالي يعورني	راسي يعورني	أسناني يعورني	الفلافل لذيق	البلايط مالها داعي	زيتوني حامض	سكيني سنين	كوبي مكسور	نعالتي انباقت	طريقي بعيد	مقراضي سنين
34 GM A20Y3	صبعتي حلوة	كتفي يعورني	بطني يألمني	رجولي تألمني	راسي يعورني	أسناني تألمني	الفلافل حلوة	البلايط مالح	زيتوناتي كبار	سجيني كبيرة	كوبي حليو	نعالي	طريقي طويل	مقراضي حاد
35 GM A20Y3	صبعتي ملونة ونظيفة	كتفي عريض	بطني يعورني	رجولي تعورني	راسي يألمني	أسناني يعورني	الفلافل حلو	البلايط كله شكر	زيتوني طعمه غريب	سجيني حادة	كوبي المفضل مختلف عن باقي أكوابي	نعالي صغير	طريقي زحمة	مقراضي كبيرة وحادة
36 GM A21Y4	صبعتي عادية	كتفي تعبان	بطني يألمني	رجولي تألمني	راسي يألمني	أسناني يألموني	الفلافل حلوة ولذيق	البلايط لذيق جدا	زيتوني لذيق ومنوع	سكيني حديد	كوبي عادي	نعالي حلو	طريقي زحمة	مقراضي حديد

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37 GM A22Y3	صبعتي طويلة	كتفي يعاني	بطني يعورني	رجولي تألمني	راسي يعورني	أسناتي يعورني	الفلافل مقلية	البلايط عادي	زيتوني لذيد	سجيني مبيوقة من	كوبي جديد	نعالي ضايعة	طريقي قصير وقريب	مقراضتي جديدة ومو مستخدمة
38 GM A23 Y2	صبعتي متينة	كتفي يألمني	بطني يعورني	رجايي يألموني	راسي يعورني	أسناتي يعورني	الفلافل مدهن ومالح	البلايط حلو	زيتوني حامض	سكيني حاد وطويل	كوبي مجكتم	نعالي نادرا ألبسه	طريقي طويل	مقراضتي سنين
39 GM A19Y2	صبعتي قصيرة	كتفي يعورني	بطني يعورني	رجايي يألموني	راسي يعورني	أسناتي تعورني	الفلافل حلوة	البلايط لذيد	زيتوني لذيد	سجيني حديد	كوبي مال الجاي صغير	نعالي مريح	طريقي زحام	مقراضتي حديدية
40 GM A20Y4	صبعتي مدور	كتفي قصير	بطني يألمني	رجوي تألمني	راسي يألمني	أسناتي يألموني	الفلافل مو زين	البلايط حلو	زيتوني حامض	سجيني حادة	كوبي الوحيد لونه ابيض	نعالي حلو	طريقي طويل	مقراضتي انكسر
41 GM A21Y4	صبعتي غريب	كتفي عريض	بطني يعورني	رجولي تعورني	راسي يعورني	أسناتي تعورني	الفلافل حلوة	البلايط حلو	زيتوني ماصح	سكيني حديد	كوبي جديد بس انكسر	نعالي كبير	طريقي بعيد وغربال	مقراضتي انباق من زمان
42 GM A19Y3	صبعتي تعورني	كتفي تعبان	بطني يعورني	رجولي تعورني	راسي يعورني	أسناتي تعورني	الفلافل حار ومالح	البلايط مالح	زيتوني كبير	سكيني خطير لأنه حاد	كوبي زجاج	نعالي صغير عليي	طريقي طويل	مقراضتي رصاصية وحديدية
43 GM A19Y3	صبعتي متين	كتفي طويل	بطني يعورني	رجايي يعورني	راسي يعورني	أسناتي يعورني	الفلافل مقلي	البلايط مالح	زيتونات صغار	سجيني سنية	كوبي عادي	نعالي أبيض	طريقي كله مطبات	مقراضتي سنين
44 GM A20Y3	صبعتي طويلة وغريبة	كتفي يعورني	بطني يعورني	رجايي يعورني	راسي يألمني	أسناتي يعورني	الفلافل مالحة	البلايط ماصخة	زيتوني صغير	سجيني حادة	كوبي ملونة	نعالي رخيص	طريقي زحمة	مقراضتي حادة
45 GM A22Y4	صبعتي طويلة	كتفي عريض	بطني يألمني	رجولي تألمني	راسي يعورني	أسناتي تألمني	الفلافل لذيدة وهي صاخنة	البلايط حلوة	زيتوني حامض	سجيني سنية	كوبي كبير	نعالي عالي وجلد	طريقي عسر وطويل	مقراضتي سنية
46 GM A20 Y2	صبعتي تعورني	كتفي تعورني	بطني تون	رجولي تألمني	راسي تعورني	أسناتي تعورني	الفلافل مدورة	البلايط حلوة	زيتونات لذيدين	سجيني حادة	كوبي جديدة	نعالي جديدة	طريقي زحمة	مقراضتي حلوة متلي
47 GM A20 Y2	صبعتي طويلة	كتفي عريض	بطني يعورني	رجايي يعورني	راسي تعورني	أسناتي يعورني	الفلافل حلوة	البلايط حلوة	زيتوني كبير ومشكل	سكيني حاد	كوبي شوي ضخم كأنه صحن	نعالي حلو	طريقي زحمة	مقراضتي ضايح
48 GF A19 Y1	صبعتي حلوة	كتفي مضروب	بطني تألمني	رجايي تألمني	راسي يعورني	أسناتي يألموني	الفلافل مدهن	البلايط لذيد	زيتوني حامض	سجيني كبيرة	كوبي جديد	نعالي جديد	طريقي سهلة	مقراضتي أسود وحداد
49 GF	صبعتي قصير	كتفي يألمني	بطني يعورني	رجايي يعورني	راسي يعورني	أسناتي يعورني	الفلافل كله دهن وملح	البلايط مالح بس لذيد	زيتوني ملون	سجيني وصخة ويبيها تنظيف	كوبي كبير	نعالي مقطع	طريقي زحمة	مقراضتي حاد

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A22 Y3														
50 GF A23 Y4	صبي مختلف	كتفي يعورني	بطني تعورني	رجائلي يعوروني	راسي تعورني	أسناني يعوروني	الفلافل مالح	البلايط مالح	زيتوناتي كبار وسودان	سجيني كبيرة	كوبي ما في منه الإحبة وحدة	نعالي جديد	طريقي بعيد	مقراض صغير

Note that in the 2 below-attached tables the numbers in the participants' column are disorganized as they were originally ordered according to the order in which the participants were tested/recorded (see Table 1), then female participants' data were separated from male participants' data which caused this disorganization in their order. The headings of the horizontal row are the words the participants were recorded speaking of and the F/M letters refer to whether the participants assigned the word a female or male grammatical gender.

Natural speech analyzed data (2 tables):

Table 2: (Only includes female participants' data "illustrated in Figure 1")

Participants	My finger اصبعي	My shoulder ج/كتفي	My tummy بطني	My legs رجائلي/رجولي	My head راسي	My teeth أسناني	Falafel الفلافل	Balaleet البلايط	My olive زيتوني/زيتوناتي	My knife سجيني/سجيني	My cup كوبي/كوبي	My slipper نعالي/نعالي	The road طريقي	Nail clipper مقراض/مقراضني
1 GF A20 Y2	M	M	M	M	M	F	F	F	F	F	M	F	F	M
2 GF A18Y1	M	F	M	F	M	F	M	M	F	F	M	F	M	M
4 GF A25Y7	M	M	F	F	M	F	F	M	F	F	M	M	F	M
5 GF A22 Y3	M	M	M	M	M	M	M	F	M	F	M	M	M	M
6 GF A21Y3	M	M	M	F	M	F	M	M	M	M	M	M	F	M
7	M	M	M	F	M	F	F	F	M	F	M	F	M	F

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GF A21Y5														
8 GF A23Y5	F	M	M	F	M	F	F	M	M	F	M	M	M	M
9 GF A26Y3	F	M	M	F	M	F	F	M	M	F	M	M	F	F
10 GF A21Y4	F	M	M	F	M	F	F	M	M	F	M	M	M	F
11 GF A22Y4	M	F	M	F	M	M	F	F	M	F	M	M	M	M
12 GF A21Y4	F	M	M	F	M	F	F	F	M	M	M	M	M	F
13 GF A20Y4	M	M	F	F	M	M	M	M	M	F	M	M	M	M
14 GF A20Y3	M	M	M	F	M	M	M	M	M	F	M	F	M	M
15 GF A20Y3	M	M	M	M	F	M	F	M	M	F	F	M	M	M
16 GF A22Y4	F	M	M	F	M	M	F	M	M	F	F	M	M	F
17 GF A21 Y3	M	M	M	F	F	M	M	M	M	F	M	F	F	M
20 GF A21Y4	F	M	M	M	F	F	F	F	F	M	M	M	F	F
22 GF A21Y3	M	M	M	M	M	M	F	M	M	F	M	F	M	M
24	F	M	M	F	M	F	M	M	M	F	M	M	M	F

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GF A20Y4														
26 GF A20Y3	F	M	M	M	M	M	F	M	M	F	M	M	F	F
27 GF A18Y1	M	M	M	F	M	F	F	F	F	F	M	M	M	M
32 GF A21Y4	M	M	M	F	M	F	F	F	M	F	M	M	M	F
48 GF A19 Y1	F	M	F	M	M	M	M	M	M	F	M	M	F	M
49 GF A22 Y3	M	M	M	M	M	M	M	M	M	F	M	M	F	M
50 GF A23 Y4	M	M	F	M	F	M	M	M	F	F	M	M	M	M

Table 3: (Only includes male participants' data "illustrated in Figure 2")

Participants	My finger اصبعي	My shoulder ج/كتفي	My tummy بطني	My legs رجالي/رجولي	My head راسي	My teeth أسناني	Falafel الفلافل	Balaleet البلاليت	My olive زيتوني/زيتوناتي	My knife سجيني/سجيني	My cup كوبي/كوبتي	My slipper نعالي/نعالتي	The road طريقي	Nail clipper مقراضني/مقراضتي
3 GM A19Y 2	F	M	M	M	M	F	F	F	F	F	M	M	M	M
18 GM A20Y3	F	M	F	F	M	M	F	M	M	F	M	M	M	F
19 GM A24Y4	F	M	M	M	M	M	F	M	M	F	M	M	M	F
21	F	M	M	M	M	M	M	F	M	F	M	M	M	M

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 NATIVE ARABIC SPEAKERS ASSIGN NEUTRAL NOUNS AFFECT HOW THEY PERCEIVE THEM?

GM A22Y5														
23 GM A18Y1	M	M	M	M	F	M	F	F	M	F	M	M	M	F
25 GM A21Y4	M	M	M	F	M	M	M	M	M	F	M	F	M	F
28 GM A22Y4	F	M	M	F	M	F	F	F	M	F	F	M	F	M
29 GM A23Y5	F	F	M	F	M	M	M	F	M	F	M	M	F	M
30 GM A21Y3	M	M	M	M	M	M	M	M	M	F	M	M	F	M
31 GM A19Y3	M	M	M	F	M	M	F	F	M	M	M	M	F	M
33 GM A21Y4	M	M	M	M	M	M	F	F	M	M	M	F	M	M
34 GM A20Y3	F	M	M	F	M	F	F	M	F	F	M	M	M	M
35 GM A20Y3	F	M	M	F	M	M	M	M	M	F	M	M	F	F
36 GM A21Y4	F	M	M	F	M	M	F	M	M	M	M	M	F	M
37 GM A22Y3	F	M	M	F	M	M	F	M	M	F	M	F	M	F
38 GM A23 Y2	F	M	M	M	M	M	M	M	M	M	M	M	M	M
39	F	M	M	M	M	F	F	M	M	F	F	M	M	F

Zainab Abdulaziz Abdulla AlSabbagh
 GRAMMATICAL GENDER & LINGUISTIC RELATIVITY: DOES THE GRAMMATICAL GENDER
 NATIVE ARABIC SPEAKERS ASSIGN NEUTRAL NOUNS AFFECT HOW THEY PERCEIVE THEM?

GM A19Y2														
40 GM A20Y4	M	M	M	F	M	M	M	M	M	F	M	M	M	M
41 GM A21Y4	M	M	M	F	M	F	F	F	M	M	M	M	M	M
42 GM A19Y3	F	M	M	F	M	F	M	M	M	M	M	M	M	F
43 GM A19Y3	M	M	M	M	M	M	M	M	F	F	M	M	M	M
44 GM A20Y3	F	M	M	M	M	M	F	M	M	F	F	M	F	F
45 GM A22Y4	F	M	M	F	M	F	F	F	M	F	M	M	M	F
46 GM A20 Y2	F	F	F	F	F	F	F	F	F	F	F	F	F	F
47 GM A20 Y2	F	M	M	M	F	M	F	F	M	M	M	M	F	M

The findings of the 3 above-attached tables are presented in the 2 graphs attached below. The first graph represents male participants' grammatical gender attribution to nouns, and the second graph represents female participants' grammatical gender attribution to nouns. (See Tables 2 & 3).

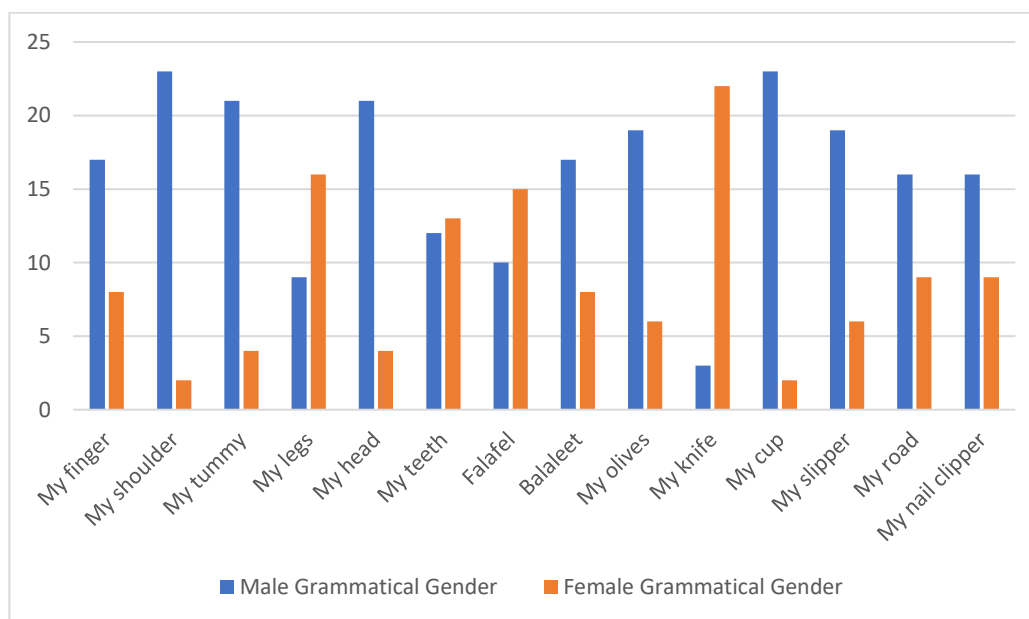


Figure 1: Female participants' grammatical gender attribution to nouns (see Table 2)

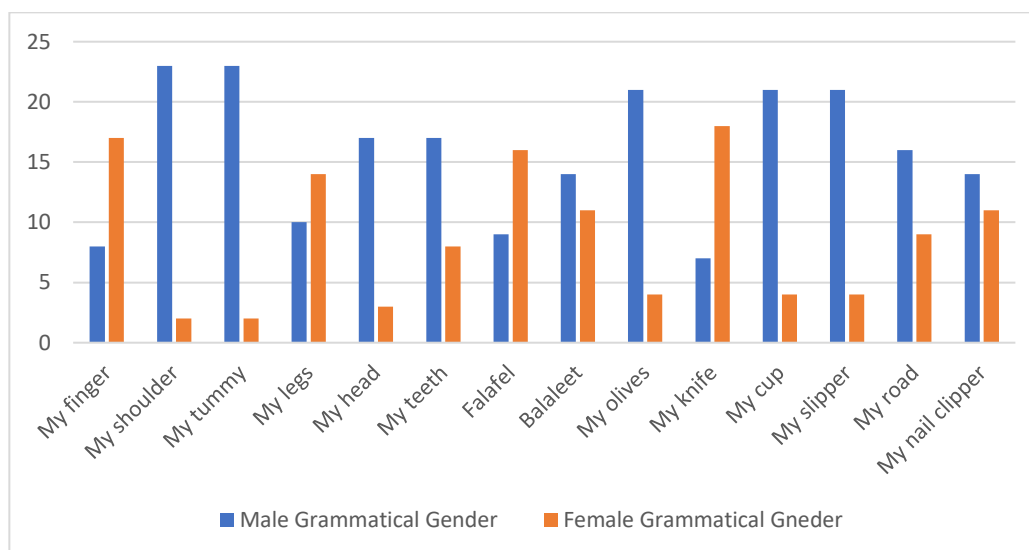


Figure 2: Male participants' grammatical gender attribution to nouns (see Table 3)

Looking at the 2 above-attached graphs, in the case of the 1st word “my finger”, the majority of males (68%) assigned it a female grammatical gender, while the majority of females (68%) assigned it a male grammatical gender.

In the case of the 2nd word “my shoulder” the majority of both males (92%) and females (92%) assigned it a male grammatical gender.

In the case of the 3rd word “my tummy”, the majority of both males (92%) and females (84%) assigned it a male grammatical gender.

In the case of the 4th word “my legs” the majority of males (56%) and females (64%) assigned it a female grammatical gender. Yet, the males female grammatical gender

assignment was relatively close to the male grammatical gender assignment of the same word.

In the case of the 5th word “my head” the majority of males (68%) and females (84%) assigned it a male grammatical gender.

In the case of the 6th word “my teeth” the majority of males (68%) assigned it a male grammatical gender, while the majority of females (52%) assigned it a female grammatical gender. Yet, the females female grammatical gender assignment was relatively close to the male grammatical gender assignment of the same word.

In the case of the 7th word “falafel” the majority of both males (64%) and females (60%) assigned it a female grammatical gender, whereas the majority of both males (56%) and females (68%) assigned the 8th word “Balaleet” a male grammatical gender.

In the case of the 9th word “my olives” the majority of both males (84%) and females (76%) assigned it a male grammatical gender, whereas the majority of both males (72%) and females (88%) assigned the 10th word “my knife” a female grammatical gender.

The majority of females (see graph 1) assigned a male grammatical gender to the 11th word “my cup” (92%), the 12th word “my slipper” (76%), the 13th word “my road” (64%), and the 14th word “my nail clipper” (64%). Whereas, the majority of males (see graph 2) assigned a male grammatical gender to the 11th word “my cup” (84%), the 12th word “my slipper” (84%), the 13th word “my road” (64%), and the 14th word “my nail clipper” (56%).

It is worth noting that in the 6th word “my teeth” the majority of participants assigned is a grammatical gender consistent with theirs, as the majority of male participants assigned it a male grammatical gender, whereas the majority of female participants assigned it a female grammatical gender. What is interesting is that in the word “my finger” the opposite occurred as the majority of the participants assigned it a grammatical gender inconsistent with their own gender. The majority of both participating groups assigned a female grammatical gender to the words “my legs”, “Falafel”, and “my knife”.

Other than that, and besides the 4 words (my finger, my legs, Falafel, and my knife) which the majority of male participants assigned a female grammatical gender, the majority of male participants assigned all other 10 words (i.e., my shoulder, my tummy, my head, my teeth, Balaleet, my olives, my cup, my slipper, my road, my nail clipper) a male grammatical gender.

In addition, the majority of female participants assigned the 4 words (my legs, my teeth, Falafel, and my knife) female grammatical gender, and assigned all the other 10 words (i.e., my finger, my shoulder, my tummy, my head, Balaleet, my olives, my cup, my slipper, my road, my nail clipper) male grammatical gender.

All in all, the majority of participants of both genders (i.e., males and females) tended to assign most of the Arabic neutral nouns (10 out of 14) a male grammatical gender. This is in line with Dawood et al. (2020) who also found a tendency among both

Arabic & English Native speakers to assign male attributions to objects that have no associative stereotypical gender “neutral”. A few of the Native participants said that

they assigned the neutral nouns a grammatical gender arbitrarily, whereas the majority of the participants of both genders said that assigned the majority of words a male grammatical gender due to the Arabic language's tendency to assign male grammatical gender to neutral words. The participants were also consistent with their grammatical gender attribution to the nouns as for example when they assigned a noun a male grammatical gender, they continued assigning a male grammatical gender to the noun during their whole speech (and vice versa in the case of female grammatical gender).

4. Discussion

H1: The first hypothesis was proven to be true, as indeed the majority of participants of both genders (i.e., males and females) tended to assign most (10 out of 14) of the Arabic neutral nouns a male grammatical gender, which all the participants said was 1. arbitrary which is the opposite of the findings of Almutrafi, 2015 where a non-arbitrary relationship between grammatical gender and conceptually masculine nouns/items was found, or 2. As Native speakers of Arabic, they did it by default due to the Arabic language's tendency to assign a male grammatical gender to neutral nouns, which Pavlidou and Alvanoudi (2014) considered as a factor that affects the grammatical gender assignment of the speakers of a language. The findings were in line with the view of Boroditsky *et al.* (2003) in that the speakers of gendered languages begin to assign male and female properties to neutral objects as a result of acquiring the gender systems of their languages.

H2: The second hypothesis was proven to be wrong, as the majority of participants did not tend to perceive the neutral nouns as masculine or feminine-like, where they mainly assigned them a male grammatical gender solely on the basis that the Arabic language tends to assign neutral nouns a male grammatical gender as well. This is in line with what Almutrafi (2015) stated in which that "*it seems that if linguistic categorizations have a clear relation to meaning the effect of language on thought might be stronger and if there is no direct relation between them the effect could be limited and transitory (e.g., Grammatical Gender GG).*" And in this research participants' case, the relation between thought and linguistic gender categorization proved to be weak for the GG assignment was either arbitrary or by default.

H3: The third hypothesis was proven to be true. And though a few participants stated that they assigned the nouns a GG arbitrarily, the majority of the Native participants had a rationale behind their GG assignment and stated that they did it (assigned the majority of the neutral nouns a male grammatical gender) by default due to the Arabic language tendency to assign a male grammatical gender to neutral nouns, which is in line with the view of Boroditsky *et al.* (2003) in that the speakers of gendered languages begin to assign male and female properties to neutral objects as a result of acquiring the gender systems of their languages.

5. Conclusion

This research aimed to investigate whether the GG Native Arabic speakers assign to nouns affects the way they perceive them and whether Native Arabic speakers would tend to assign a male GG to neutral nouns as a result of the Arabic language's tendency to assign male GG to neutral nouns. This was done by recording the natural speech of 50 Native Arabic speakers when asked to talk about 14 neutral nouns. While other researchers such as (Almutrafi, 2015; Pavlidou & Alvanoudi, 2014) concluded in their research that the majority of their participants assigned a male GG to artificial items and female GG to natural items, and that the participants perceived the noun/item as a male-like if it was assigned a male GG, and perceived female items/nouns as female-like when it was assigned a female GG. This paper's findings however show that the participants did not perceive the nouns they assigned male GG to be male-like, or the nouns they assigned a female GG to be female-like, and did not assign a female GG to a noun because it is natural or assigns a male GG because a noun/item is artificial. The only reason the participants assigned a female GG to neutral nouns was that this is what they heard/acquired from their surroundings, while the only 2 reasons they assigned a neutral noun a male GG was either arbitrarily or by default as the Arabic language tend to assign a male GG to neutral nouns. Furthermore, these findings were in line with the view of Boroditsky *et al.* (2003) in that the speakers of gendered languages begin to assign male and female properties to neutral objects as a result of acquiring the gender systems of their languages. Furthermore, the male GG was the unmarked form, whereas the female GG was the marked (i.e., derived) one, which was marked by the addition of affixation which is the most common strategy for marking nouns' genders (Chelliah *et al.*, 2011). The use of affixation by this research participants to mark a noun with female GG was not because of its semantic properties, but rather to produce sentences that are morphologically and syntactically acceptable. Moreover, while a few nouns such as the *مقراضى*, *نعالى*, *سجيني* were marked with a female GG by the addition of the affix *ت* as in *مقراضتي*, *نعالتي*, *سجيني*, or the addition of the suffix *اتي* as in to the plural unmarked noun *زيتوني* becoming *زيتوناتي*. The majority of participants however, tended to frequently add affixation to mark a noun's adjective rather than the noun itself. This was seen in the use of the prefix *ت* as in *تعورني*, *تألمني* or the suffix *ة* as *طويلة*, *مدورة*, *متينة*, *ماركة*, *حلوة*.

All in all, the Whorf-Sapir theory effects proved to be weak within this research participants' cognitive process and speech and hence not present in the findings. This suggests that indeed the theory's effects might not only be limited to certain [gendered] languages such as Spanish, Arabic and German, but also limited to certain morphemic and syntactic structures, as in previous research conducted by (Dawood *et al.*, 2020; Almutrafi, 2015; Pavlidou & Alvanoudi, 2014) the participants perceived the nouns as female or male-like because the nouns they were given were either given a male or a female GG from the start. However, this research participants were given neutral nouns that they could have assigned any grammatical gender, and whatever GG they would have assigned would not have caused a conflict syntactically, morphologically, or even

cognitively, which resulted in showing weak to no effect on the participants' cognitive perception. Therefore, the effect of grammatical gender and language on cognition is only limited to nouns that are pre-gendered, not neutral nouns. Hence, the theory of LR is weak in the case of neutral nouns, as they do not evoke any ideas in the mind of the speakers of a gendered language.

7. Limitations & Delimitations

7.1 Limitations

1. This sample consisted of 50 participants, considered relatively small, especially for making a strong claim regarding language and thoughts. Therefore, the results cannot be generalized.
2. The number of object/noun words the participants were tested in was limited to 14 neutral noun words, as it was quite difficult to find neutral words that people are in conflict with regarding their GG assignment in Arabic.
3. Only native Arabic speakers speaking the Bahraini dialect were tested, which limited the analysis in that the possibility for a comparison of native Arabs' perceptions and GG assignment of nouns as either grammatically feminine or masculine with the perceptions and GG assignment of other Native language/s speakers (e.g., English, German, Spanish) or other Arabic dialects speakers (Saudi, Lebanese, Kuwaiti) made making comparisons inapplicable.
4. The sample consisted of adults (aged 18-26) only. Where kids were not included in the sample. This might have even further limited the analysis where no comparison was made between adults' and kids' different perceptions and therefore different categorizations of neutral nouns - if there are any.

7.2 Delimitation

- 1) Only Bahraini Native Arabs were chosen as participants.
- 2) The participants are only students (of both genders) enrolled in the DELL at the University of Bahrain.
- 3) The participants were students aged (18 to 26) only.
- 4) The participants were not be told anything regarding grammatical gender and its role in the assignment of nouns as either grammatically masculine or feminine until they finished the test, which ensured that the participants did not consciously use GG as a tool to perform the test.
- 5) The participants were individually tested to eliminate the possibility of the participants becoming conformists, where they were unable to hear other participants' answers which if hearing might have led them to alter their answers, and by that making them similar to that of their peers, even when they have another opinion/answer.

Conflict of Interest Statement

The author declares no conflicts of interest.

About the Author

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Appendix

Natural Speech Recording Material:

The grammatically neutral words/nouns that the participants were recorded using in their natural speech are the following:

Body parts:

- 1) My finger اصبعي
- 2) My shoulder ج/كتفي
- 3) My tummy بطني
- 4) My legs رجائلي/رجولي
- 5) My head راسي
- 6) My teeth أسناتي

Food:

- 1) Falafel الفلافل
- 2) Balaleet البلاليط
- 3) My olives زيتوني/زيتونات

General nouns:

- 1) My knife سجينتي/سجيني
- 2) My cup كوبي/كوبتي
- 3) My slipper نعالي/نعالتني
- 4) My road طريقي
- 5) My nail clipper مقراضي/مقراضتي

The Natural speech recording requirements that were verbally asked of the participants are as follows:

Talk in your Bahraini/Bahrani Arabic dialect, for a minute, about each of the following:

- 1) Describe a finger of yours.
- 2) Tell me, how does your shoulder feel or look like?
- 3) When does your tummy hurt you?
- 4) When do your legs start hurting you?
- 5) Tell me when does your head start hurting you?
- 6) When do your teeth hurt you?
- 7) May you describe Falafel for me?
- 8) May you describe Balaleet for me?
- 9) Imagine that you have olives, how would you describe your olives?
- 10) Describe a knife of yours for a blind person.
- 11) Describe a favorite cup of yours.
- 12) Describe a slipper of yours.

- 13) Describe your daily road to the university.
- 14) Describe a nail clipper of yours.

After each participant provided their verbal answers, they were asked why they attributed certain nouns masculine grammatical gender, and why they attributed other nouns feminine grammatical gender. (Providing an answer was optional).

- 1) Why did you consider this noun/object grammatically feminine?
- 2) Why did you consider this noun/object grammatically masculine?

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