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THE MORPHOLOGY OF GENDER IN HEBREW AND ARABIC NUMERALS

1. Introduction

The idea to start researching numerals in Semitic came to my mind as an impulsive reaction to a comment by Don Ringe on the advantages of having linguists who are trained in quantitative methods do work in historical linguistics. Subsequent to that, I spent part of my summer vacation in Israel in 2002 interviewing native speakers of Israeli Hebrew (IH) in order to examine what I believe to be a change in progress in the morphosyntax of Hebrew gender agreement in numeral phrases. This study is yet to be completed, and the current paper will not draw directly from the data collected thus far, but will rather provide some broader theoretical background to the issue of gender polarity in numeral phrases and the observed change in progress, namely neutralization of gender marking is certain numeral-related contexts.[1]

As my main focus of interest is the Israeli Hebrew numeral system, this paper will also deal primarily with Hebrew. Yet Hebrew appears to be undergoing a change that is now complete in other Semitic languages. One such language, Arabic, offers us a good source of comparison, especially since we have a vast body of well-documented varieties of the language. These include Classical Arabic (CA)[2] representing an older, more conservative system, closely resembling that of prescriptive Hebrew, and many regional vernaculars, in which gender marking in numerals is virtually non-existent, as is the case with a growing number of speakers of IH. Arabic will thus be given some attention in this study as well.

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[1] I wish to thank Shlomo Izre'el of Tel Aviv University for his assistance during the summer of 2002, which included helpful discussions and the lending of recording equipment, and the Program in Jewish Studies at the University of Pennsylvania for partially funding my stay in Israel during that summer through the Goldfein Research Award.

[2] "Classical Arabic" refers here to all canonical written and/or formal varieties of Arabic, whether Medieval or contemporary (cf. Haeri 1997). It does not, however, include written attestations of regional dialects or ethnolects (e.g., Cypriot Arabic, Christian Arabic, Judeo-Arabic).

2. Background

2.1 Hebrew and Classical Arabic

The facts about Hebrew are not always straightforward. Neither is the description of Hebrew (and more generally, Semitic) numeral morphology. Note the following two quotes from two different works by Glinert[3]:

(1) "The numerals for 1 to 10 agree for gender with their noun. But unlike adjectives, the *feminine* is the basic form of the numeral, whereas the *masculine* adds *–a* (for 3 to 10) together with other adjustments." (Glinert 1994:16).

(2) "Masculine and feminine cardinal numerals usually go with masculine and feminine nouns, respectively. These nouns may be explicit or just implied:

bikʃu xamiʃa tikim ve-hevénu ʃiʃa.
asked-3PL 5-M bags(M) and brought-1PL 6-M
'They asked for 5 bags and we brought 6.'

However, some numerals have just one form for both genders. Moreover, casual (and above all, substandard) usage sometimes simply employs the feminine for 'two' to 'ten', particularly for 'two'; for '11' to '19' this practice is especially widespread:"

racíti ʃéʃ-esre banim ve-ʃéʃ-esre banot.
wanted-1sg 16-F boys and 16-F girls
'I wanted 16 boys and 16 girls.'

Feminines also serve as 'neutrals', to denote a number in the abstract[.]" (Glinert 1989:80-81).

The quote in (1) is from a concise textbook for learners of Hebrew. (2) is from a comprehensive grammar. This may account for the lack of acknowledgement of variation in the former versus the latter. The interesting theme in both descriptions has to do with the seemingly-masculine numerals being considered masculine and the numerals with the typical feminine suffix being considered masculine. Meir (2002:2ff) also calls the short forms "feminine" and the long, suffixed forms "masculine". Other researchers disagree.

[3] Where the original text has Hebrew characters, transcribed forms are given in their lieu. Where a transcription appears in the original, I often modified it to a unified system (e.g., "sh" is changed to "ʃ"; "H" to "x"). In Hebrew examples, final stress is unmarked. Penultimate stress (and others, if applicable) is denoted by an acute accent. Also, morpheme-for-morpheme glosses were often added if they were missing in the original, and translations were corrected or modified when needed.

Hetzron (1967:180) mentions the "incongruence of Semitic numerals. Numerals with a feminine ending are used with masculine nouns, and *vice versa*, numerals which seem masculine are used with feminine nouns." A similar view is supported by Gesenius (1910), Bloch (1971:53), Halle (1994:193, the "Gender Switch rule", see below). Ravid (1995:84) provides a hybrid description, whereby "a masculine noun requires a masculine numeral […] while a feminine noun necessitates a feminine numeral. […] Gender marking on Hebrew numerals is an exact mirror-image of general agreement."

Whichever way we decide to label the numeral's gender – numeral X with suffix Y and noun X or numeral Y with noun X – the facts remain the same. In languages like (prescriptive, conservative) Hebrew[4] and CA, numeral X agrees with following noun Y by having the inverse morphological form as is typical of nouns of noun Y's gender. Tables 1 and 2 below show the cardinal numerals 3-10 – for which this generalization is true[5] – in IH and CA, respectively. The forms given below are assumed to be followed by indefinite plural nouns.

Table 1: Israeli Hebrew cardinal numerals

Number	For feminine nouns	For masculine nouns
3	ʃalоʃ	ʃloʃa
4	árba~arbá	arba(ʔ)a
5	xameʃ	xamiʃa
6	ʃeʃ	ʃiʃa
7	ʃéva	ʃiv(ʔ)a
8	ʃmóne~ʃmoné	ʃmona
9	té(y)ʃa	tiʃ(ʔ)a
10	éser	asara

[4] For ease of reading, unless otherwise noted, "Israeli Hebrew" will refer to those varieties thereof which maintain the gender distinction in numerals. A discussion of gender neutralization will follow.

[5] In Hebrew, the number '2' also participates in this "mirror-image" concord, but in a less transparent way, which will be briefly discussed below.

Table 2: Classical Arabic cardinal numerals[6]

Number	For feminine nouns	For masculine nouns
3	θala:θ	θala:θa
4	ʔarbaʕ	ʔarbaʕa
5	xams	xamsa
6	sitt	sitta
7	sabʕ	sabʕa
8	θama:ni(n)	θama:niya
9	tisʕ	tisʕa
10	ʕaʃr	ʕaʃara

The numerals for '1' in both languages are adjectival. Unlike the numerals for '3' and up, they follow the noun and agree with the "regular" gender suffixes: *-a* or *-t* for feminine and ∅ for masculine:

(3) Hebrew: exad '1-M' axat '1-F'

(4) Arabic: waːħid '1-M' waːħida '1-F'

Arabic '2' is irrelevant to this discussion, as it is not productive in numeral-noun phrases. CA, as well as many dialects, has productive dual suffixes:

(5) muʕallim-∅-u-n muʕallim-∅-aːni
teacher M NOM INDEF teacher M NOM-DU

(6) muʕallim-at-u-n muʕallim-at-aːni
teacher F NOM INDEF teacher F NOM-DU

In Hebrew, ʃte(y) and ʃne(y) are '2-F' and '2-M', respectively. They precede the noun and agree in gender with it:

(7) ʃtey imahot 'two mothers' ʃney axim 'two brothers'

[6] Case suffixes omitted.

As we will see later on, even though gender agreement "makes sense" for this numeral (the infix *-t-* is related to the *–t* component of the feminine suffix), gender neutralization pertains to it as well.

2.2 Arabic dialects

We now turn to spoken Arabic vernaculars. According to Bloch (1971:53), the CA numeral system "has left a trace only in a few dialects." Omani Arabic is mentioned as one such dialect; Kuwaiti as another, in which gender neutralization had already more common than gender distinction in 1967[7]. Table 3 shows two forms for each numeral from 3 to 10, but as we shall see, it is not gender that distinguishes then from one another.

Table 3: Damascene Arabic cardinal numerals (Based on Cowell 1964:170)

Number	Short Form	Long Form
3	tla:t	tla:te
4	ʔarbaʕ	ʔarbʕa
5	xams	xamse
6	sətt	sətte
7	sab(ᵊ)ʕ	sabʕa
8	tmənn	tma:ny(e)
9	təs(ᵊ)ʕ	təsʕa
10	ʕaʃ(ᵊ)r	ʕaʃara

In other nominal categories (nouns, adjectives) in Syrian Arabic and other related (e.g., Lebanese, Palestinian, Jordanian) dialects, the suffix *–e* is the equivalent of *–a* in CA and Hebrew as the feminine morpheme, with *–a* as an allomorph following pharyngeal, laryngeal, uvular and "emphatic" (velarized/pharyngealized) obstruents:

(8) ħuku:m-e 'government' (F)

(9) dʔi:ʔ-a 'minute' (F)

[7] I asked KH, a Penn undergraduate student who is a native speaker of Kuwaiti Arabic, to translate the sentences *I saw 5 boys* and *I saw 5 girls* into his native dialect. In both cases he used *xams* for '5'. When asked whether he was aware of speakers who distinguish between two forms of numerals by gender, his answer was negative.

This follows the rule in (10):

(10) (suffixal) a→e / [+back] _

Note that for the purpose of this rule, [+back] includes the uvular stop /q/, the uvular fricatives [x] and [ɣ][8] and consonants with secondary "back" articulation: /tˠ/, /dˠ/, /sˠ/. This same rule applies in numeral endings for the long forms, explaining the a/e alternation in the right-hand column of Table 3.

How, then, do the long and short forms function, given that grammatical gender does not play a role in their distribution? While the terminology is far from uniform, researchers agree (cf. Cowell 1964, Bloch 1971, Bolozky & Haydar 1986, Levin 1994) that the long form – also named by some "absolute" – is the form that occurs in non-quantifying contexts, or in isolation (e.g., when counting out loud or when providing a one-word response to a question whose answer is a number). Conversely, the short forms are the prenominal, or quantifying ones. Bolozky & Haydar (1986:23) point out that even though vernacular IH and vernacular Arabic use different forms for the isolated use – in Hebrew one counts *axat, shtaim,* ***ʃaloʃ, aʁba, xameʃ***; in Lebanese Arabic *weːħed, tneːn,* ***tleːte, arbʕa, xamse*** – the prenominal form, which is neutralized for gender for all speakers of Lebanese Arabic, and for a growing number of IH speakers, "is always the unsuffixed form." This neutralization has been a topic of inquiry for such authors as Ravid (1995) and Meir (2002), but has been mentioned in earlier works, including as early as Hetzron (1967:180).

[8] There is no phonemic distinction between uvular and velar fricatives in Arabic, and velar allophones are often reported (e.g., Shahin 1995:9). The convention to use the "gamma" symbol for the voiced uvular fricative rather than the more phonetically accurate ʁ may have to do with Arabic having an /r/ phoneme, which is distinct from the uvular fricative, and at least in Western eyes, ʁ is mnemonically associated with /r/. Also, some transcriptions use a g-based symbol for our ɣ, such as ġ or the digraph gh.

3. Theoretical considerations

Halle (1994) analyzes Hebrew and Russian noun phrases within the framework of Distributed Morphology (DM). As Halle himself points out (p. 178), "The fundamental conceptions of [DM] are in their essence quite traditional." While couched within generative grammar, this kind of theoretical work is still in dialogue with some of the other works cited above, which themselves are theory-independent or are more diachronically oriented. Halle's account is "traditional" in more ways than one. "Hebrew" is presented in his analysis as a monolithic entity. It is not made clear what variety of Hebrew is being dealt with, yet there are hints for it being concerned with either a very old or a very formal variety. For one, the examples are transcribed in a manner that includes sounds no longer in the phonemic inventory of mainstream IH (e.g., "9" for /ʕ/, "H" for /ħ/). They also have occasional instances of the vowel "E" in places where Biblical Hebrew (but also strictly prescriptive contemporary varieties, e.g., that of some radio newscasters) has a *schwa mobile*.

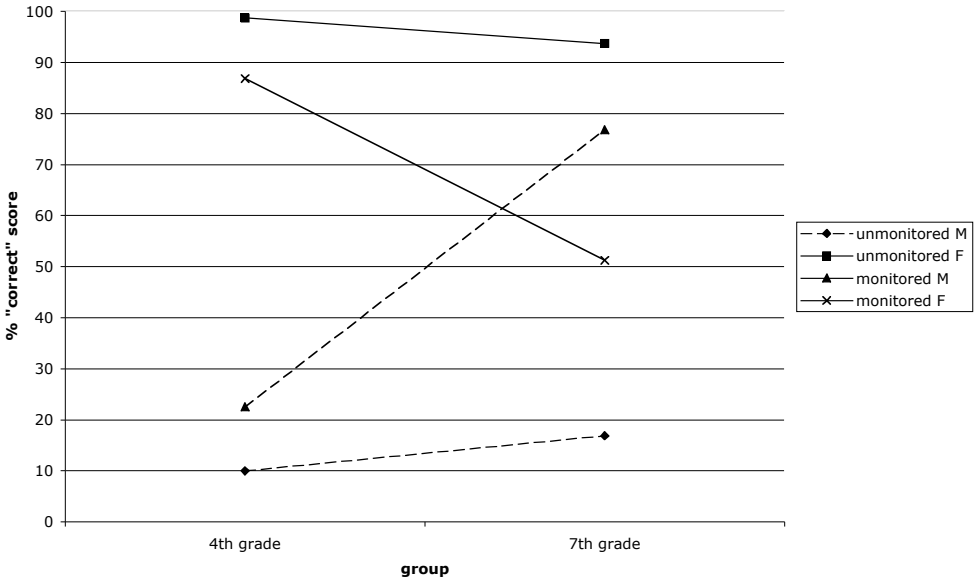
Halle's insight into the synchronic state of affairs at a particular point in time for Hebrew allows us to absorb some of the historical hypotheses regarding the development of the current system of gender "polarity" in Semitic, surveyed in Hetzron (1967:180ff) and add to them an additional historical stage, viz., that of gender neutralization in contemporary IH. There is really very little that we know about gender neutralization in the IH numeral system apart from the widespread intuition that something is changing. Ravid (1995:90) cites Sharvit (1995), who wrote about some loss of gender distinction in numerals in Mishnaic Hebrew (1-6 centuries, CE). I have not had a chance to review Sharvit's work, but I doubt that would prove relevant to the current situation in IH. For one, the written attestations of Mishnaic Hebrew were often written by native speakers of Aramaic (which was the lingua franca in Palestine at the time), and its morphology and syntax were heavily influenced by those of Aramaic. Secondly, it seems as if IH had actually reached stability in maintaining the distinction, at least among some social strata.

4

. Empirical studies

The data I collected in the summer of 2002 in and around Tel Aviv, consisting of recordings of Short Sociolinguistic Events[9], yielded some interesting results for the older generation of speakers. Of the 16 speakers interviewed in this phase of the study, 9 were between the ages of 63 and 69, all of whom used numerals conservatively, with all gender distinctions intact. Despite common belief in Israel that using the prescribed gender-specific numerals is indicative of "good" education, these speakers ranged from high school graduates to a full professor of mathematics. One of the interesting attributes they had in common was that they were all first-generation speakers of IH, whose parents had immigrated to Palestine and had to acquire IH later in life. Conversely, Ravid (1995) studied 20 fourth graders and 20 seventh graders, all native speakers of IH. We do not have any information about their parents' linguistic background, but it is same to assume that at least some of these children are second or third generation native speakers.

Figure 1: Mean % of "correct" scores by noun gender



[9] A Short Sociolinguistic Event (SSE) is a technique developed by Sharon Ash for brief, semi-spontaneous encounters with informants. They are longer and more elaborate than Rapid and Anonymous Surveys, yet shorter and more focused than the classic sociolinguistic interview. My SSEs were an adaptation of the design used by Ash and her colleagues in the Mid-Atalntic Project of the Atlas of North American English.

Figure 1[10] charts the results of two tests. One was "unmonitored", whereby the subjects were given a non-linguistic task involving numbers in a mathematical context. The second was "monitored", in that the subjects were told they were being tested on the "correct" form of the numerals. In the unmonitored task, the subjects scored very high for numerals preceding feminine nouns and very low for numerals preceding masculine nouns. In other words, they were using the short forms of the numerals across the board, irrespective of the gender of the quantified noun. The results for the monitored task are a bit puzzling at first blush, but they can probably be interpreted to mean that when put on the spot and reminded that there was a choice of forms, the children became aware of the mere existence of the long form of the numerals and just used it much more frequently, and markedly so for the older children. This type of hypercorrection is not uncommon, probably even among adults. The fact that prescriptively correct usage of numerals with masculine nouns comes at the expense of prescriptively correct usage of numerals with feminine nouns seems to support Ravid's (1995:95) assertion that "[f]or the youngest speakers of Hebrew […] there are no longer gender distinctions in numerals.

5. Trying to make sense of it all

For the pre-changed stage of IH, Halle (1994:184-195) proposes the Gender Switch rule. The main function of this rule is to assure gender agreement in cases of irregularities. By "irregularities" are meant cases where a noun has "a number suffix that is normally assigned to nouns of the opposite gender" (p. 187). The Gender Switch Rule only operates on nouns, leaving adjectives untouched. In this way, adjectives are assigned gender based on the inherent gender of the nouns to which they refer, not to the surface form, which in case of these irregularities may have triggered an adjective of the opposite gender.

[10] Adapted from Table 6, Ravid 1995:90.

The Gender Switch Rule, as proposed by Halle, is as follows:

(11) [Fem] → [- Fem] a. in env. [X,__] + [-Pl]
where X= *érec, … layl, ir, …*

b. in env. [Y,__] + [+Pl]
where Y= *nahar, ʃan, … layl, ir, …*

The rule in (11) operates after the regular Vocabulary entries for gender and number have been assigned according to the following rules for Vocabulary insertion:

(12) /ot/ [+Pl] in env. [+Fem] + __
a(t) … in env. [+Fem] + __
/im/ [+Pl]
zero … <elsewhere>

In the case of nouns having been assigned irregular gender suffixes, the rule has to specify those cases explicitly, as shown in (11), where X and Y include a list of all the cases in the language that have to undergo this type of Gender Switch. Halle's proposal includes an extension to the Gender Switch Rule, which is intended to cover the much more regular suffix switch when it comes to numerals, as illustrated in **Error! Reference source not found.**:

(13) a′. in env. [[Z,__]+[+Pl]] +[-Fem]
where Z= '3', '4', …

For the varieties of Hebrew in which this extension to the rule applies, the regularity of the rule seems somewhat lost in that the list in Z is given the same status as the lists of irregular nouns (X and Y), which are part of the original rule. Having to list all the numerals from 3 to 10 as individual environments for application of the rule seems problematic, especially since the rule in fact applies in many more cases. First, there are all the cases where there are larger numerals – tens, hundreds, thousands, etc. – preceding the digits numeral. Whether or not this fact is relevant for Hebrew is questionable, as in this language the digits are always adjacent to the noun, even when they are part of a greater number:

(14) a. xamiʃa maxʃevim 'five computers' (M)

b. xameʃ mitot ‘five beds’ (F)

(14) a. ʃva meot ʃiʃim vexamiʃa maxʃevim ‘765 computers’

b. aʁbaa milyaʁd alpaim vexameʃ mitot ‘4,000,002,005 beds’

But for Classical Arabic, where numbers containing tens and digits occur in a ‘digits-and-tens’ order, as in (15)[11], the rule in its current formulation is even more problematic.

(15) a. xamsat(un) waʔarbaʕ(u)ːna kitaːb(an) ’45 books’ (M)

b. miʔat(un) waxams(un) waʕiʃr(u)ːna ʕulbat(an) ‘125 boxes’ (F)

6. A complication often ignored

Also problematic are the numerals 11-19, which have often been deemed too complex to take into account in the study of numerals. Hetzron (1967:191-192) actually deals with these teen numerals in some detail, offering an interesting and, I believe, reasonable explanation of their historical development. It is clear that while the teens are more complex in their internal structure, they are in essence part of the same system. Since teen numerals mark gender on both the digit and the ten, there is some ambiguity as tho which component agrees with which and in what manner.

(16) a. xameʃ∅ esʁe xanuyot ‘15 stores’ (F)

b. xamiʃa asaʁ∅ ʃiʁim ‘15 songs’ (M)

In phrases like (16), does the *–a* suffix of *xamiʃa* ‘5’ agree under the Gender Switch Rule with the apparently-masculine element *asaʁ∅* ‘teen’, which in turn agrees (without Gender Switch) with the inherent gender (M) of *ʃiʁ* ‘song’? Or alternately, does *xamiʃa* agree with the masculine gender of *ʃiʁ* and if so, where does *asaʁ∅* get its gender assignment from?

[11] Case and definiteness morphemes are indicated in brackets.

The question of the numerals 11-19 may in fact be much less marginal than some studies lead us to believe. Not having done a proper quantitative analysis of my Tel Aviv data, I hesitate to say anything conclusive, but there is some indication that these numerals may in fact be the first to change. The only cases where any of my 60+ year old informants deviated from the prescribed norm for numerals were for some of the numbers in the teens. If this proves to be significant, we may be witnessing a change in progress that is occurring in quite an interesting way: first an older group of speakers partially changes one subsystem with a related subsystem remaining intact; then their younger counterparts complete the change of the partially changes subsystem and begin changing the related subsystem as well. This would not be surprising, for as Ravid (1995:83) notes, the numeral system in IH is one which reflects vagueness and opacity. Meir (2002) couches her analysis within a theory of markedness. In both their analyses, this system is understood to be prone to change for its original rules are not in line with most of the rest of the grammar of the language. If one wishes to put forward an even more fine-grained hierarchy of "vagueness", "opacity" or "markedness", it would look schematically like this:

(17) **numerals 11-19 » numerals 3-10 » plurals & adjectives » the rest of the grammar**

Yet for now, this observation should still be taken as no more than a hypothesis in need of corroboration by means of empirical evidence.

7. Reconciling old and new

We may now address the applicability of Halle's analysis to the new state of IH, as reported by Ravid (1995) with respect to the younger speakers, who no longer use gender markings on numerals in any meaningful way. As is the case in accounting for linguistic variation in general, here too there is some tension between the desire to formulate rules in a succinct fashion, which would be consistent with current theory, and the need to account for the inherent variable nature of language. Fortunately, We have evidence of a population, viz., the elementary and middle schoolers, for whom the change is practically complete, and variation is only marginal. I will try then to sketch an outline

of their system, following the framework put forth by Halle in his analysis of the older forms.

As noted earlier, Halle's account for Gender Switch in numerals is incorporated into his broader analysis of the same process in nouns. Moreover, it is portrayed as part of the same system that governs the way in which irregular nouns mark gender. This includes singular nouns, whose morphological gender morpheme in the singular is the inverse of their inherent gender (e.g, *eʁec-∅* 'land' [F], but pl. *aʁac-ot*); nouns, whose singular gender morpheme is consistent with their inherent gender, but whose plural is marked with an inverse gender morpheme (e.g., *ʃan-a* 'year' [F], pl. *ʃan-im*; *kiʁ* 'wall' [M], pl. *kiʁ-ot*); and nouns, for which both the singular and plural gender morphemes are inconsistent with their inherent gender (e.g., *layl-a* 'night' [M], pl. *lel-ot*; *iʁ* 'city', pl. *aʁ-im*).

Even for these irregular nouns, adjectives conform to inherent gender. *tov-a* good-F', then will always refer to an inherently feminine noun in the singular, *tov-im* to an inherently masculine noun in the plural[12], etc. This is illustrated in (18) (adapted from Halle 1994:187).

(18)	Sg	Pl	
F	ʃan-á tov-á	ʃan-ím tov-ót	'good year', '"Happy new year!"'
	éʁec-∅ tov-a	áʁac-ot tov-ot	'good country'
	iʁ-∅ tov-a	aʁ-im tov-ot	
M	nahaʁ-∅ tov-∅	nehaʁ-ot tov-im	'good river'
	layl-A tov-∅	lel-ot tov-im	'good night'

Yet today's IH has some reversals of these irregularities. For instance, consider the example in (19).

(19) Sg. ʃan-á tov-à, Pl. ʃan-ót tov-òt 'greeting (card) for Rosh Hashana'

[12] By "inherently masculine nouns in the plural" we also mean plural forms including a group of masculine and feminine nouns, e.g., *yelad-im ve-yeladot gdol-im* 'big boys and girls' (cf. Meir 2002:7). A famous "urban legend" in Israel as I was growing up was that the Hebrew Language Academy had ruled that coordinate NPs with more feminine constituents than masculine ones should be followed by a feminine adjective. In fact, the Academy's ruling has always been that one masculine constituent is enough to render the entire phrase masculine. This is also common practice among native speakers.

This is a case of semantic differentiation, which is also indicated subtly with a differentiation in stress (between one primary stress for each word, as in the first example in (18) and primary stress on the first constituent and secondary stress on the second as in (19)). But similar levelings of gender marking are also prevalent among very young children in non-frozen expressions (cf. Ravid 1995:81), and, I would add, in the Hebrew of many immigrant speakers. The latter, non-native speakers of the language at hand, are usually excluded from such studies. However, given the substantiality of these non-native speakers of IH within the greater IH speech community, their input need not be discarded, as argued by Izre'el et al (2001:180-181 and elsewhere), who have intentionally decided to sample various groups of immigrants for the Corpus of Spoken Israeli Hebrew.

Phrases like (19) may be resolved under Halle's system, if we treated *ʃan-á tov-à* as a single noun rather than as the noun *ʃan-a* + adjective *tov* agreeing with it in gender. But this cannot be said of a "childish" utterance such as *iʁ tov* or *nehaʁ-ot tovot* (cf. (18) above). This kind of imperfect learning probably need not be generalized under the rules for gender assignment as well, because, as Ravid (1995:81) stresses, "[b]y their early school years […] agreement no longer poses a problem to children, and they have mastered all irregular noun inflection except for the most opaque cases."

Recall, however, that for Ravid, numeral agreement is one of the most opaque rules in the grammar of IH. But what older children (and by now, many adults too) do with numerals is not to reassign gender more transparently, in a fashion resembling plural or adjective agreement. Rather, they eliminate the gender category altogether, as is evident from the "unmonitored" figures in Figure 1 above. Lack of gender agreement is not very typical of Semitic languages, including IH, but it is not a new phenomenon. Meir (2002:5) reminds us that non-numerical prenominal quantifiers (e.g., *haʁbe* 'many', *kol* 'all') have no gender marking. 1st person pronouns and verbs (singular and plural) in Semitic have historically been neuter. So have 3rd person plural nouns in the suffix conjugation. In IH and in many urban Eastern Arabic dialects, 2nd and 3rd person plural pronouns and verbs in both prefix and suffix conjugation now lack gender distinctions.

8. A new(?) proposal[13]

If we adopt the notion that not every element in Hebrew needs to be morphologically marked (and/or in agreement) for gender, we may need to modify the entire gender dichotomy from **masculine** vs. **feminine** to something else. Since those elements in the language that do not have morphological gender are not always masculine (e.g., *ani* 'I', *axlu* 'they ate', *ʃéva* 'seven'; even *tov-im* 'good-PL' when the modified NP is a coordinate NP including constituents of both masculine and feminine nature), perhaps IH has a **default** "gender", which happens to include all masculine elements and then some, and a second "gender", which may be labeled **feminine**, but probably need not be.

Note that Halle deliberately left the adjectives untouched in his Gender Switch Rule. This is because "the gender of an adjective is determined in all cases by the underlying gender of the noun that the adjective qualifies" (Halle 1994:188). If we maintain the assumption that IH – in the phase where Ravid's preadolescent subjects are – has no way in which to agree in gender, all we have to do is eliminate the extension to the Gender Switch Rule for numerals, and add a stipulation for numerals, as well as other quantifiers and perhaps other categories of the grammar, that they are always in the <elsewhere> environment listed in the Vocabulary list in (12). In fact, even under the old Hebrew system, the one to which Halle's analysis pertains, only the ∅ and *a(t)* options play a role when it comes to numerals. The "masculine" plural of a noun is in fact a separate numeral in and of its own (e.g., *aʁba* '4', *aʁbaim* '40') and the "feminine" plural (e.g., **aʁbaot*) is ungrammatical. So narrowing the options down to just one, ∅, should not be more of a problem then just having two or three options out of the four viable for this grammatical category.

[13] In fact, I owe the relabeling of the historically "masculine" as "default" to Shlomo Izre'el (p.c.). I do not know whether such a proposal has ever been included in any published works.

9. Other evidence of variation

Variation in gender marking (among adults) is not limited to numerals. The following examples are rampant in everyday IH speech:

(20) `come-t amus-a ~ cómet-∅ amus-∅` 'crowded intersection'

(21) `garb-áim levan-ot ~ garbáim levan-im` 'white socks'

(22) `gérev-∅` levan-a `~ gérev-∅ lavan-∅` 'white sock'

(23) `mixnas-áim aruk-ot ~ mixnasáim aruk-im` 'long pants'

(24) *But always* `mixnas-∅ ʃaxor-∅` '(a) black (pair of) pant(s)',
i.e., *`[mixnas-∅ ʃxor-a]`

The examples in (20)-(24) are of various other types of gender vagueness, all of which ought to be studied empirically before we incorporate them into our broader theoretical account. (20) is a case of reanalysis of a radical *t* as a feminine suffix. The others have to do with the interpretation of all relic dual forms by some speakers as being inherently feminine, in analogy with most dual body parts, which are feminine (e.g., *yad*, 'hand', *régel* 'foot, leg', *ózen* 'ear', *áin* 'eye'). In some cases, as in *gérev*, this extends to the singular as well. In others, like *mixnas*, is does not.

10. Conclusion

Various issues have come up with respect to gender marking on nouns and gender agreement between nouns and other elements in the grammar. The numeral system was taken here as an interesting point of departure, mostly because it has always been one of the more complex elements of Semitic, even stirring some controversy among scholars throughout the years. It also carries social value in Israeli society, perhaps more than any other linguistic variable. To me, it is clear that more empirical work must be done, in order for us to fine-tune our theoretical understanding of this system and its intricacies, both diachronic and synchronic. In fact, there seems to be just the right amount of previous research tackling this feature of Hebrew from various linguistic angles

(historical and comparative linguistics, developmental psycholinguistics, synchronic-descriptive linguistics and theoretical morphology) to set the stage for stratified corpus-based and sociolinguistic studies of this variable and the change that the language is undergoing with respect to it.

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