

On the (changing?) status of the mass/count distinction in Hebrew: Evidence from acquisition*

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1. Background

1.1 The mass/count distinction in adult language

In a great number of languages around the world, nouns may be categorized as either mass or count. Being one or the other, they show different syntactic and semantic properties crosslinguistically. Following Chierchia (1998), it is assumed that Hebrew (and English) mass nouns have the syntactic properties listed in (1):

- (1) (i) no plural morphology
- (ii) no numerals
- (iii) need classifier/measure phrases to be quantized

The first property, namely, that mass nouns cannot be pluralized, is illustrated in (2). For comparison, I also provide examples with count nouns, which **can** be pluralized.

- (2) a. **bigudim zolim yoter bakaic.*
clothing-plm cheap-plm more in-the-summer
'Clothings are cheaper in the summer.'
- b. *bgadim zolim yoter bakaic.*
clothes-plm cheap-plm more in-the-summer
'Clothes are cheaper in the summer.'

The second property, namely, that mass nouns cannot be counted directly (as opposed to count nouns) is exemplified in (3):

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- (3) a. **kaniti shalosh han'alot.*
 bought-1sg three-f footwear
 *'I bought three footwear.'
- b. *kaniti shalosh na'alaim.*
 bought-1sg three-f shoes
 'I bought three shoes.'

Finally, in order to count mass nouns (the third property), they must occur with a classifier, whereas count nouns cannot occur with classifiers as shown in (4):

- (4) a. *yesh li shalosh ma'araxot levush.*
 there-is to-me three sets clothing
 'I have three sets of clothing.'
- b. **yesh li shalosh ma'araxot xultsa/xultsot.*
 there-is to-me three sets shirt/shirts
 *'I have three sets of shirt(s).'

This set of distributional data (exemplified in (2)-(4) for Hebrew works very similarly in English, as can be seen from the translation tier in each example. Crucially for this study, though, the Hebrew (morpho)syntactic mechanisms grammaticalizing the mass/count distinction constitutes merely a small subset of the abundance of such mechanisms in English. This issue will be addressed further in the discussion of the Hebrew child data in section 5.

Semantically (or conceptually), the distinction can be seen in terms of two criteria: cumulativity and divisivity. As first observed by Quine (1960), mass nouns refer cumulatively: if we combine two items that are referred to by a mass noun, the result can still be referred to by the same mass noun. For example, if we take two quantities of rice and put them together, what we get is still *rice*. This is not the case for count nouns: if we take two cats and put them together, the result could never be referred to as *cat*. The second criterion, divisivity of reference (a term first introduced by Cheng 1973), is in a sense the mirror image of the first criterion, cumulativity. According to this criterion, mass nouns are divisive: if something is referred to by a mass noun, parts of that thing may also be referred to by the same mass noun. So, for example, any part of a quantity of rice is also referred to as *rice*. Conversely, parts of a cat could never be referred to as *cat*. This has led researchers to suggest that the mass/count distinction can be accounted for in terms of individuation (e.g. Quine,

1960; Bloom, 1994; Gordon, 1985). So while count nouns quantify over individuals, mass nouns do not.

These criteria, however, do not seem to provide the correct predictions. The first criterion, cumulativity, fails to distinguish between mass nouns and plural count nouns, as both types are interpreted as cumulative (see e.g. Pelletier, 1979; Gillon, 1996). As for the second criterion, divisivity, numerous count nouns, such as *string*, *rope*, *cake*, are certainly divisive. For example, if one was to take a piece of rope and divide it into two, each part of rope can still be referred to as *rope*. A further problem for this approach is found in mass nouns such as *furniture*, *footwear*, *silverware*, that clearly refer to a group of individual objects. This failure has led to the suggestion by Gillon (1996), who uses individuation as a criterion but claims that it is not the case that mass nouns refer to non-individuals, but rather that mass nouns are *unspecified* with respect to individuation. That is, according to Gillon (1996), count nouns indeed refer to individuals while the reference of mass nouns is determined by world knowledge.

Thus, according to this proposal, while both *furniture* and *milk* are linguistically categorized as mass nouns, our world knowledge distinguishes between them in terms of individuation, since we know from experience that *furniture* refers to distinguishable, individual items while *water* does not. Chierchia (1998) expands on this in his claim that in fact all mass nouns refer to individuals and the only difference between count and mass nouns is in the plurality value of each noun type. Chierchia assumes (following Link, 1983 and Landman, 1989) that the domain of discourse contains both singular and plural entities and claims that count nouns refer to singular entities, or *atoms*, while mass nouns refer to *sets of atoms*. In other words, the difference between mass and count nouns is not in the real world, nor is it a difference in syntactic categories. Rather, the difference lies in the lexical denotation of each noun type in the sense that "mass nouns come out of the lexicon with plurality already built in" (p. 53). The tenets of this proposal are also assumed by Rothstein (2007).

Although the proposals of Gillon (1996) and Chierchia (1998) seem to solve the problems posited by so-called "object-mass nouns" such as *furniture*, they fail to account for flexible nouns such as *string*. Barner & Snedeker (2005) experimentally show that it is the linguistic context (mass or noun syntax), rather than world knowledge, which determines speakers' judgments. Based on the results of their study, Barner & Snedeker (2005) propose an account of the mass/count distinction, according to which, the distinction lies in the individuation entailments of each noun phrase. This is captured by the postulation of a grammatical feature, [+ *individual*], which licenses individuation. This feature is available either structurally, through count noun syntax (such as articles, plural morphology, etc.) or lexically, as in nouns like *furniture*, which are lexically retrieved with this

feature as part of their denotation. According to this view, regular mass noun phrases fail to individuate since the [+ *individual*] feature is unavailable to them both lexically and syntactically. This analysis views the mass/count distinction as a grammatical phenomenon, particularly, driven by syntax (with the exception of object-mass nouns such as *furniture*, whose individuation feature is specified in the lexicon).

Based on the results of their study, Barner & Snedeker (2005) propose an account of the mass/count distinction, according to which, the distinction lies in the individuation entailments of each noun phrase. This is captured by the postulation of a grammatical feature, [+ *individual*], which licenses individuation. This feature is available either structurally, through count noun syntax (such as articles, plural morphology, etc.) or lexically, as in nouns like *furniture*, which are lexically retrieved with this feature as part of their denotation. According to this view, regular mass noun phrases fail to individuate since the + *individual* feature is unavailable to them both lexically and syntactically.

Having briefly discussed the theoretical background for the mass/count distinction, let us now look at some of the key studies investigating the acquisition of the distinction.

1.2 The acquisition of the mass/count distinction

Over the past three decades, it has been shown that, at least for English, young typically developing children acquire the mass/count distinction relatively early and without particular difficulty. This has been argued by, for example, Gordon (1985; 1988), who found that English speaking 2-3 year olds obey pluralization restrictions, applying the plural morpheme only to count nouns. Also for English, Gathercole, Cramer, Somerville & Jansen op de Haar (1995) have shown that when presented with unfamiliar objects accompanied by novel names, 3- and 4- year olds extended the use of the novel noun to a new item of the same shape (but of different material) if the object was named using count syntax (*a blicket*→*blickets*). If the item presented was introduced by using mass syntax, these children could extend the noun to a new item of the same substance (but of a different shape), i.e. *some blicket*→*blicket*. Similar results were reported for by Soja and colleagues (Soja, 1992; Soja, Carey & Spelke, 1991; 1992) for English acquiring children aged 2;0-2;6.

More recently, and most relevant for the present investigation is the work of David Barner and his colleagues, and in particular, Barner & Snedeker (2005), which is adapted for Hebrew and replicated in the current investigation. Recall from section 1.1 that the distinguishing property between mass and count nouns is individuation, i.e. whether the noun refers to individual entities or not. According to Barner & Snedeker (2005), following Quine (1960), quantification in natural language is both the result of individuation and it is evidence for individuation. Thus, the authors

argue, “More apples' means 'more individual things', whereas 'more butter' means more homogeneous stuff.” With this idea in mind and using a variant of Gathercole's (1985) quantity judgment task, Barner & Snedeker set out to assess children's knowledge of the mass/count distinction in English.

The first experiment tested the interpretation of object-mass nouns such as *furniture*, as compared to substance mass terms such as *toothpaste* and count nouns such as *shoes*. The participant was presented with pictures of two characters and asked to judge which one of the characters *has more*. Importantly, one character was presented as having more individual items of the relevant noun, while the other character had more in terms of overall volume. So, for example, in the experimental item that tested *furniture*, one character had three little chairs and three little tables whereas the other character was shown to have one large table and one large chair. Note that the sum of the two large objects always comprised more in terms of overall material than the sum of the six small items of the same kind. An illustration is presented in (5) below:

(5) Illustration of experimental items, experiment I (from Barner & Snedeker, 2005)



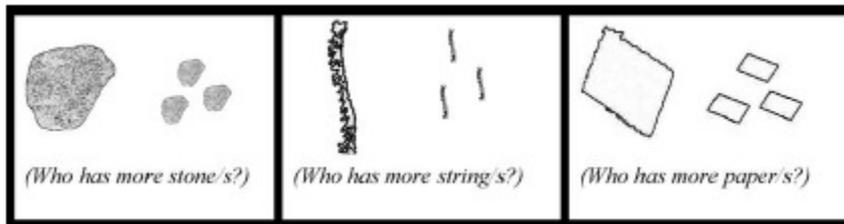
A group of twelve monolingual English speaking children (age 4;0-4;6, mean=4;3) and 16 monolingual adults was tested. The data revealed that in the count noun and the object-mass conditions, adults almost always based their judgments on number (93.8% and 97.9% respectively). Conversely, in the substance mass condition, number-based judgments were never made. Child results revealed adultlike behavior on the count and object-mass items, with number-based judgments at 97.9% and 91.7%, respectively. In the substance mass condition, the children based their judgments on number 39.6% of the time.¹

A second experiment tested quantity interpretations of flexible nouns such as *string(s)* and *stone(s)*. This type of nouns can appear either in count or mass syntax. As in the first experiment, two characters were presented as having certain quantities of the relevant nouns. Unlike the first

¹ Clearly, when compared to the adult data, the children tend to base their judgment on number even in the substance mass condition at a much higher. It is interesting to note that the authors only address the fact that there is a significant difference between the rates of number-based judgments in the count and objects mass conditions on the one hand and the substance mass condition on the other; they do not comment on the relatively high rate of number-based judgments in the substance mass condition.

experiment, in the second experiment, one character was shown to have one large item and the other character had three little items of the same kind, as can be seen in the illustration below:

(6) Illustration of experimental items, experiment II (from Barner & Snedeker, 2005)



The experimental items were manipulated in terms of their mass/count syntax between participants such that each participant was presented with either all the items in the count syntax version of the flexible noun (i.e., *stones*, *strings*, *papers*) or the mass version (i.e., *stone*, *string*, *paper*). Just as with the first experiment, a group of twelve monolingual English speaking children (age 4;0-4;5, mean=4;2) and 16 monolingual adults was tested.²

Results show that the adults almost always based their judgments on number when the flexible noun appeared in count syntax (97%) but hardly ever if the noun was used in mass syntax (3%). The distinction was also apparent in the child data, with number-based judgments at 95% for flexible nouns appearing in count syntax and 25% for these nouns appearing in mass syntax.³

In sum, these experiments, as well as earlier experiments (e.g. Gordon, 1985; 1988; Gathercole et al, 1995; Soja, 1992; Soja, Carey & Spelke, 1991; 1992) have shown that 3-4 year olds are aware of the mass/count distinction and they are able to understand and manipulate the relevant syntactic mechanisms involved in the distinction, at least in English.

2. Hypothesis and predictions

Recall from section 1.1 above that following Chierchia (1998), it is assumed that mass nouns—but not count nouns—in Hebrew (as in English), have the following distributional properties, repeated below:

- (7) (i) no plural morphology
- (ii) no numerals
- (iii) need classifier/measure phrases to be quantized

² It is not clear whether these are the same participants as ones in the first experiment.

³ Again, the authors do not address the issue of the high rate of number-based judgments in the flexible mass condition; they mere point to the fact that there is a clear distinction between performance on these two conditions.

Following Barner & Snedeker (2005) for English, I assume that in adult Hebrew, count nouns, such as *efronot* ('pencils'), quantify over individuals, while mass nouns, such as *kemax* ('flour') do not.

This is formulated below:

Hypothesis 1 count nouns, such as *efronot* ('pencils'), quantify over individuals, while mass nouns, such as *kemax* ('flour') do not

I further hypothesize that flexible nouns, such as *niyar(ot)* ('paper(s)'), quantify over individuals when they appear in count syntax (i.e. *niyarot*- 'papers'), but not when they appear in mass syntax (i.e. *niyar*- 'paper'). This is presented as hypothesis 2 below.

Hypothesis 2 flexible nouns, such as *niyar(ot)* ('paper(s)'), quantify over individuals when they appear in count syntax (i.e. *niyarot*- 'papers'), but not when they appear in mass syntax (i.e. *niyar*- 'paper')

Finally, as can be seen below, I hypothesize that so called 'object-mass' nouns, such as *do'ar* ('mail'), quantify over individuals.

Hypothesis 3 so-called 'object-mass' nouns, such as *do'ar* ('mail'), quantify over individuals

The prediction that follows from the hypotheses for adult Hebrew is hence the following:

Prediction 1 when asked *lemi yesh yoter X?* ('who has more X?'), Hebrew speaking adults will base their judgments on number only if the stimuli contain a count noun, a flexible-count noun or an object-mass nouns; otherwise, they will base their judgments on quantity, rather than number of items

Following from the hypotheses for adult Hebrew and the findings by Barner & Snedeker (2005) for child English, I predict that when asked *lemi yesh yoter X?* ('who has more X?'), Hebrew speaking children age 4 and up will base their judgments on number if the stimuli contain a count noun, a flexible-count noun or an object-mass noun; otherwise, Hebrew speaking children older than 4 will base their judgments on quantity, rather than number of items. This is formulated in prediction 2 below.

Prediction 1 In a quantity judgment task, Hebrew speaking children will behave similarly to the English speaking children in Barner & Snedeker's study, i.e. already at age 4, they will base their judgments on number if the stimuli contain a count noun, a flexible-

count noun or an object-mass noun. They will base their judgments on quantity if the stimuli contain a mass noun or a flexible mass noun.

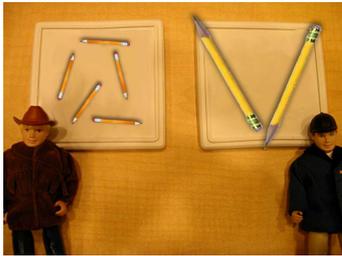
3. Methodology

3.1 Design and procedure

Using Barner & Snedeker's (2005) Quantity Judgment Task, I examined five different noun types, using five experimental conditions: count nouns (e.g. *efronot* 'pencils'), substance-mass nouns (e.g. *kemax* 'flour'), flexible-count nouns (e.g. *niyarot* 'papers'), flexible-mass nouns (e.g. *niyar* 'paper'), and object-mass nouns (e.g. *do'ar* 'mail'). There were four items per condition and 12 filler items, all randomly ordered. As illustrated in (8), for each item, participants were presented with two characters, one with two large objects and the other with five small objects of the same kind. The fewer items always consisted of more overall volume. The verbal stimulus, *lemi yesh yoter X?* ('who has more X?'), was the same across items and items were all randomly arranged.

(8) Example items from each condition

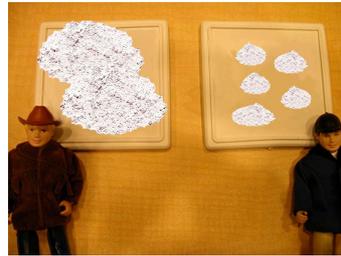
a. **Count**



Stimulus: *lemi yesh yoter efronot?*
to-who there-is more pencils
'Who has more pencils?'

Expected target: *lakowboy.*
to-the-cowboy
'The cowboy.'

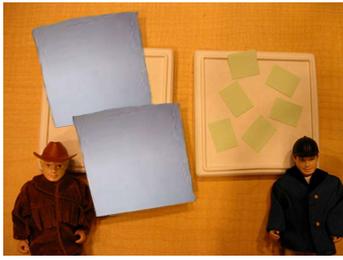
b. **Substance-mass**



Stimulus: *lemi yesh yoter kemax?*
to-who there-is more flour
'Who has more flour?'

Expected target: *lakauboi.*
to-the- cowboy
'The cowboy.'

c. **Flexible-count**



Stimulus: *lemi yesh yoter niyarot?*

to-who there-is more papers

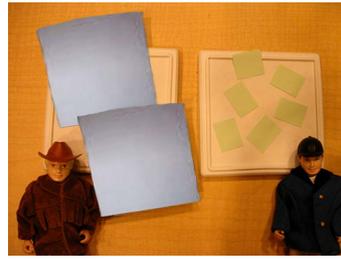
'Who has more papers?'

Expected target: *lasayas*.

to-the-horseman

'The horseman.'

d. **Flexible-mass**



Stimulus: *lemi yesh yoter niyar?*

to-who there-is more paper

'Who has more paper?'

Expected target: *lakowboy*.

to-the- cowboy

'The cowboy.'

d. **Object-mass**



Stimulus: *lemi yesh yoter do'ar?*

to-who there-is more mail

'Who has more mail?'

Expected target: *lasayas*.

to-the- horseman

'The horseman.'

It is important to note that, as can be seen from the examples above, in the two flexible conditions (the flexible-count and the flexible-mass) the visual stimulus remains constant while the verbal stimulus, i.e. count and mass syntax, is manipulated.

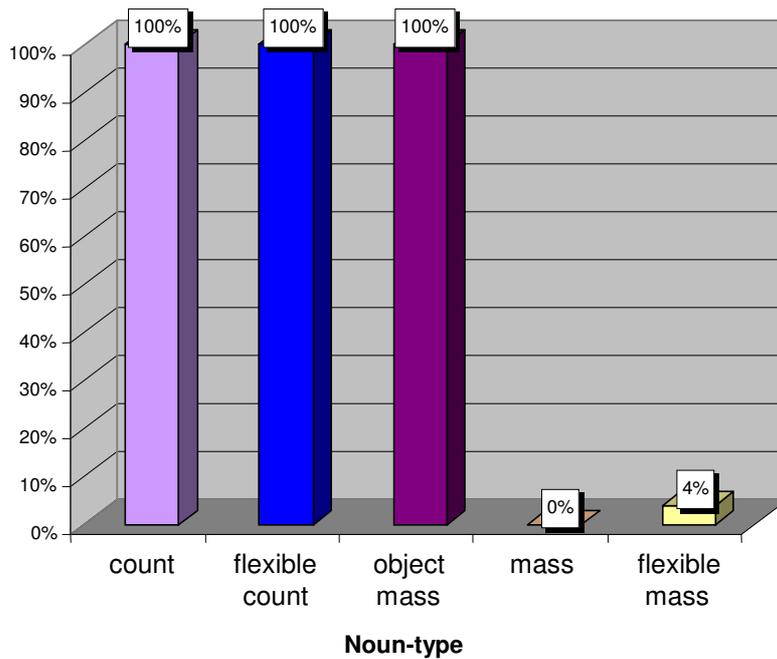
3.2 Participants

Forty four typically developing monolingual Hebrew-speaking children aged 4;0-17;11 participated in this study as well as a control group of six Hebrew speaking adults. The children were divided into the following age groups: 4;0-6;1 (N=9), 7;9-9;10 (N=4), 10;2-12;0 (N=11), 13;6-14;6 (N=10), 17;0-17;11 (N=10). Participants were recruited from two kibbutzim and one city and the geographic area covered the north and the south of Israel. The adult controls were all from the same kibbutz as the majority of the children. All participants were tested individually by the author.

4. Results and discussion

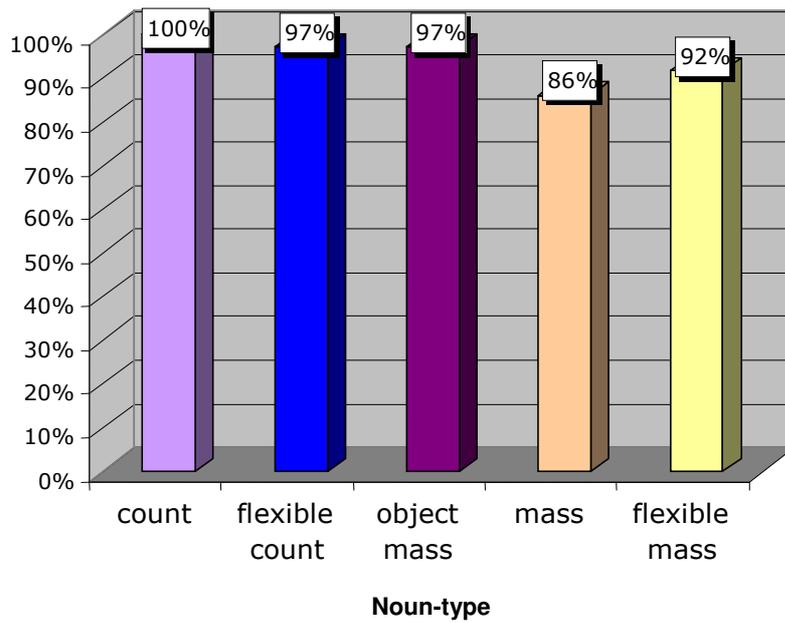
The data were coded such that responses based on individuation, i.e. judging the character with the larger number of items as having 'more', were given a score of 1. The opposite response, i.e. judging the character with the more overall volume as having 'more', was given a score of 0. The results are presented in figure 1 below:

Figure 1: % of judgments based on number (Adults)



As predicted, adult Hebrew speakers always based their judgments on number of individual items in the two count conditions and in the object-mass condition (at 100% for all three conditions). Conversely, they almost never based their judgments on number in the two mass conditions (0% for the substance-mass condition and 4% for the flexible-mass condition). Since the data are so clear-cut, and no between-subject variability was observed (namely, all the participants showed exactly the same data), significance tests were unnecessary in this case. Now that the behavioral pattern for adult Hebrew is established, we can examine the child data. The results of the youngest age group, the 4;1-6;1 year olds, are presented in figure 2 below:

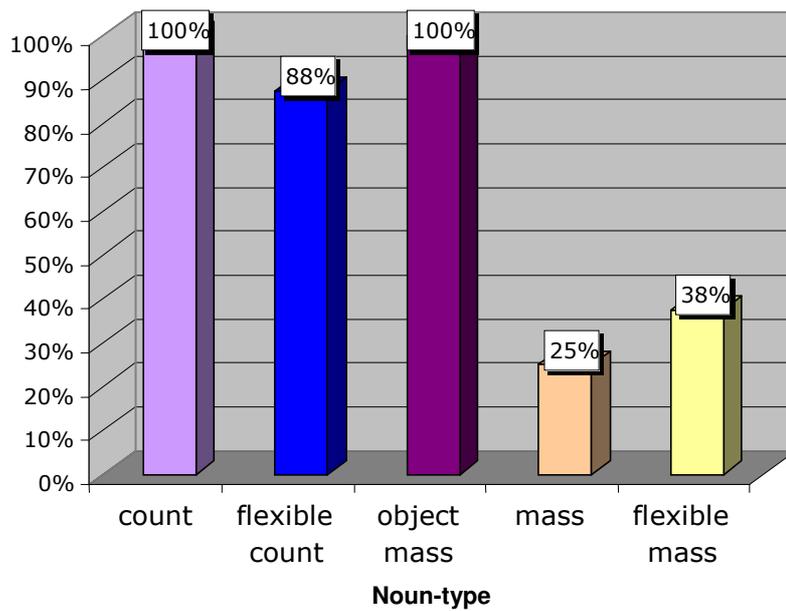
Figure 2: % of judgments based on number (Age 4;1-6;1)



What can be seen in the graph above is that the children in this group almost always based their judgments on number in all conditions, constantly choosing the character with the larger number of items as having "more", regardless of the noun type in the stimuli.

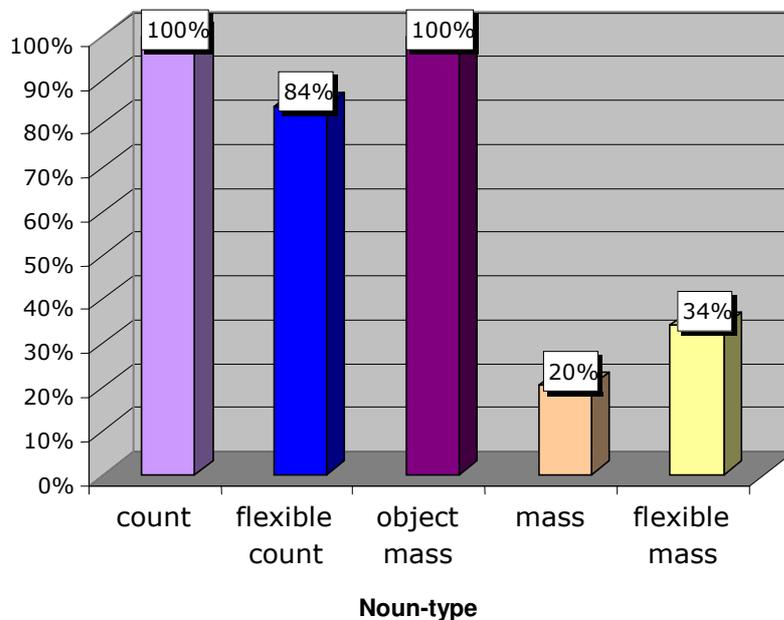
Sensitivity to noun type starts to emerge with the 7;9-9;10 year olds, who show a distinction between the two count conditions and the object-mass on the one hand and the two mass conditions on the other, basing their judgments on number much more frequently in the two count and object-mass conditions (100% and 88% respectively) than in the two mass conditions (25% in the mass condition and 38% in the flexible mass condition). These results are presented in figure 3 below:

Figure 3: % of judgments based on number (Age 7;9-9;10)



Similar results were obtained for the next age group, aged 10;2-12;0, with a slight decrease—compared to the younger age group—of number-based judgments in the two mass conditions (20% and 34%), resulting in a sharper contrast between the two count and object-mass conditions on the one hand and the two mass conditions on the other. This can be seen in figure 4:

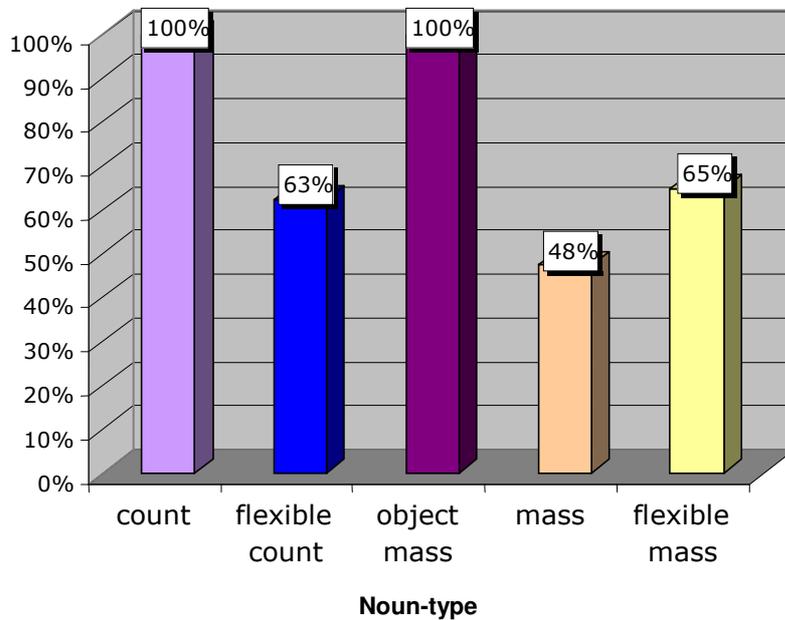
Figure 4: % of judgments based on number (Age 10;2-12;0)



Surprisingly, the near-adultlike distinction found for the two previous age groups becomes drastically less sharp for the group of young teenagers (age 13;6-14;6), with 48% and 65% number

based judgments in the mass and flexible mass conditions respectively, alongside an unexpectedly low rate of number based judgments in the flexible count condition (63%). Figure 5 presents these results.

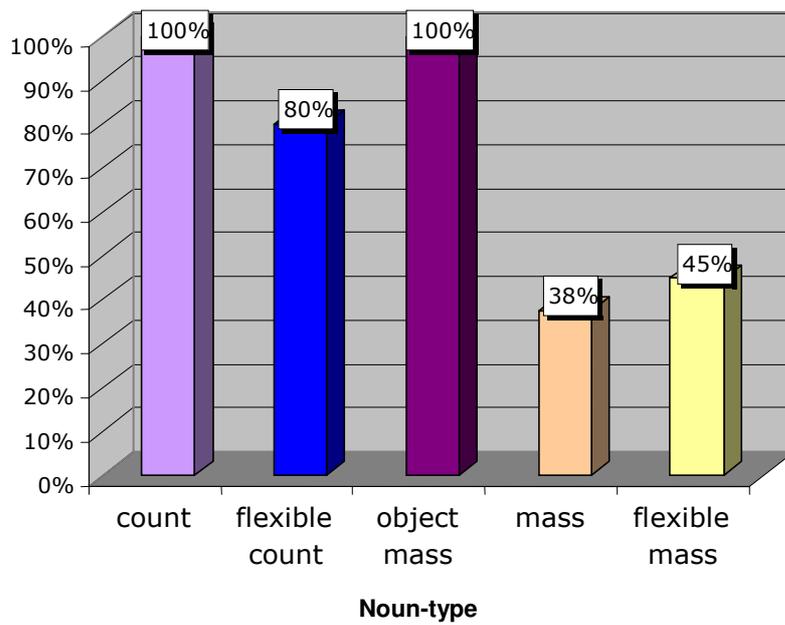
Figure 5: % of judgments based on number (Age 13;6-14;6)



Finally, results become slightly more adultlike again for the last age group, the 17;0-17;11 year olds; however, even these considerably old children clearly do not yet show convergence.

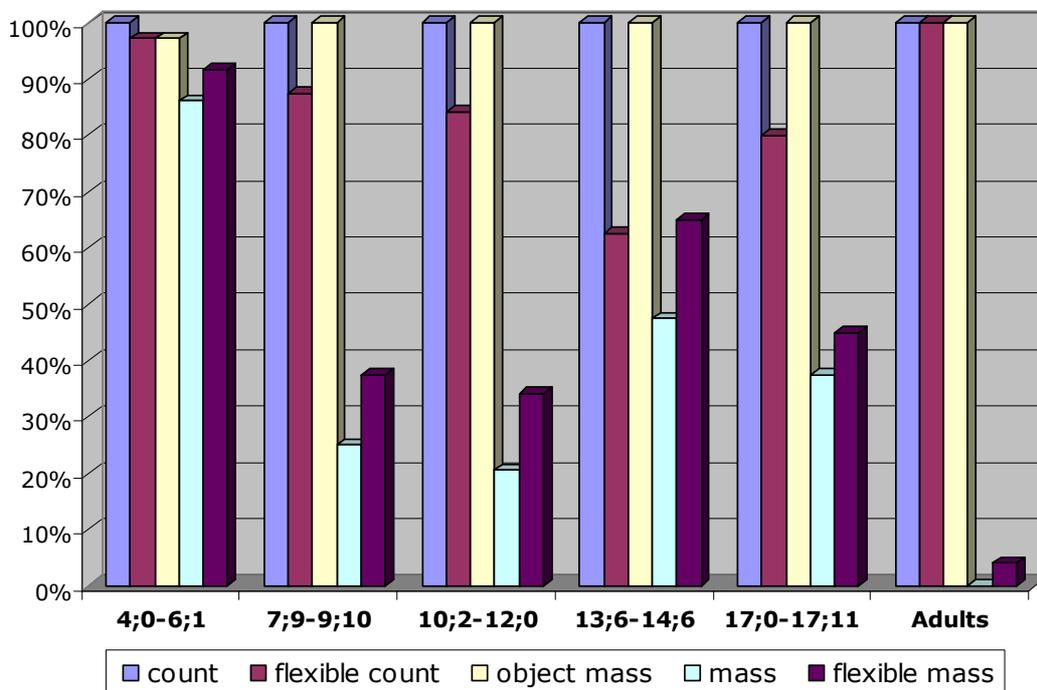
Performance in the count and the object-mass conditions is adultlike with 100% of the judgments based on number. As in the previous age group, here, too, number-based judgments are surprisingly low (75%) in the object-mass condition. Number based judgments in the mass condition is at 38% and in the flexible mass condition, behavior is around chance, with 45% number based judgments. These data are presented in figure 6 below.

Figure 6: % of judgments based on number (Age 17;0-17;11)



In order to make it easier to compare the results of the four groups, a summary is presented in the graph below.

Figure 7: % of judgments based on number (by age group)



As can be seen from the graph above, all of the child groups are adultlike in the count and the object-mass conditions, with number-based judgments at 100%. Conversely, none of the other

conditions, namely, the mass and the two flexible conditions, elicit adultlike performance from these children.

To sum up, I found that the mass/count distinction in Hebrew does not seem to emerge before the age of 6;1, as the children under the age of 6;1 tested here almost always based their judgments on number, regardless of noun-type. The ability to distinguish between mass and count nouns was demonstrated, to some extent, by children between ages 7;9-12;0, only to become less adultlike again for the 13;6-14;6 year olds. Finally, the oldest children (aged 17;0-17;11) did demonstrate development towards convergence, as compared to the younger teenagers, with a considerable decrease of number based judgments on the two mass conditions.

5. Discussion

5.1 Accounting for the data

At a first glance, a possible account for these data may be to suggest that these young Hebrew speakers have a general tendency to base their judgment of quantity on number, regardless of the noun type. However, given the results in the flexible-count condition, where judgments are predicted to be exclusively based on number, and adult data corroborate this prediction, this explanation cannot be the full story. In particular, in four out five of the child groups, a relatively large proportion of judgments in the flexible-count condition are **not** based on number. Moreover, in the conditions that require volume-based judgments, a substantial percentage of judgments are based on volume, not exclusively on number. This indicates that it is not necessarily the case that the children tested here systematically base their judgments on number, regardless of noun-type. Instead, I would like to propose that the acquisition data reflect a process of language change by which the status of the mass/count distinction in Hebrew is changing, i.e. what once was an important linguistic distinction is becoming increasingly less important, which makes the acquisition process so difficult.

This relative (and growing) insignificance is indicated primarily by the scarcity of different syntactic structures encoding the semantic mass/count distinction, as opposed to the abundance of these structures in languages such as English. English morphosyntax marks the mass/count distinction by a variety of structures, including pluralization; indefinite articles; modification by *much/little/less* (for mass nouns) vs. *many/few/fewer* (for count nouns); modification by *each, every* (only available for count nouns). In contrast, the only prominent structure distinguishing mass/count in Hebrew is pluralization. This is summarized in the table below:

Table 1: Encoding of the mass/count distinction (English vs. Hebrew)

Structure/Language	ENGLISH	HEBREW
Indefinite article	✓	-
Modification (<i>much/little/less</i> vs. <i>many/few/fewer</i> ; <i>each, every</i> only with count nouns)	✓	-
Pluralization	✓	✓

Thus, in English, the distinction is quite ubiquitous, both in terms of the variety of different syntactic structures encoding it, as well as in terms of the prevalence and the centrality of those structures in the language. Probably the most prominent structure is the indefinite article, which is obligatorily used with count nouns, while being ungrammatical with mass nouns. Other structures in English include: modification by *much/a little/less*, which is only grammatical for mass nouns, versus modification by *many/few/fewer*, which is restricted to count nouns, and modification by *each/every*, which is only available for count nouns. This is in sharp contrast to what Hebrew offers. None of these structures distinguishes between mass and count nouns in Hebrew, as illustrated in (9)-(12) below, where the (a) and (b) sentences exemplify mass and count nouns respectively.

Firstly and most importantly, the indefinite article is phonetically null in Hebrew and does therefore not distinguish between mass and count nouns, as illustrated by the example in (9):

- (9) a. *orit oxelet orez* .
 Orit eat-sgf rice
 'Orit is eating rice.'
- b. *orit oxelet Ø tapuax*.
 Orit eat-sgf (an) apple
 'Orit is eating an apple.'

Moreover, the Hebrew counterpart of both *much* and *many* is *harbe*, which modifies both count and mass nouns, as in the example below:

- (10) a. *lo nish'ar harbe orez ba'aron*.
 no left-3pl muchrice in-the-cupboard
 'There isn't much rice left in the cupboard.'
- b. *lo nish'aru harbe tapuaxim basal*.
 no left-3pl manyapples in-the-basket
 'There aren't many apples left in the basket.'

The same applies for *a little* and *few*, which in Hebrew are both expressed by *ktsat*:

- (11) a. *toxal ktsat orez!*
eat-2sgmfut a-little rice
'Eat a little rice!'
- b. *toxal ktsat tapuaxim!*
eat-2sgmfut few apples
'Eat a few apples!'

Finally, *paxot* is the Hebrew equivalent of both *less* and *fewer*:

- (12) a. *ata tsarix le'exol paxot orez beyom.*
you-sgm need-sgm eat-inf less rice in-day
'You should eat less rice every day.'
- b. *ata tsarix le'exol paxot tapuxim beyom.*
you-sgm need-sgm eat-inf less apples in-day
'You should eat fewer apples every day.'

As the examples above demonstrate, the only prevalent, widespread, syntactic mechanism distinguishing mass from count nouns in Hebrew is pluralization.

Furthermore, Hebrew nouns appear to be relatively flexible in terms of mass/count categorization and it has become increasingly common, particularly in recent years, to see mass nouns used in count syntax and vice versa, for example *lexamim* 'breads', *rexavim* 'vehicles', *kamut anashim/hazmanot/kisa'ot* 'amount of people/orders/chairs'.

Support for the suggestion that the mass/count distinction is not very central in Modern Hebrew, comes from the fact that the child results on the classical mass and count nouns are almost always more adultlike than on the flexible nouns. Crucially, the flexible conditions test only the **linguistic** mass/count distinction, whereas in the classical mass/noun conditions, the linguistic distinction may be facilitated by the conceptual substance/object distinction. Thus, in the absence of any non-linguistic cues, Hebrew speaking children often fail to correctly associate the right syntactic structure with the particular mass/count semantics. Further support for this account comes from English acquisition data, which reveal precisely the converse dissociation, with young children (mean age 4;3) performing more adultlike on flexible nouns than on classical mass/count NPs (cf. Barner & Snedeker, 2005).

In sum, based on data from this study, I propose that the importance of the linguistic mass/count distinction in English facilitates its acquisition in the English speaking children. In contrast, it is the (growing) unimportance of the Hebrew mass/count distinction, as demonstrated by the relative paucity of triggers and/or cues in the Hebrew input which makes the acquisition of the mass/count distinction more laborious, causing Hebrew acquiring children to lag far behind their English acquiring peers.

References

- Barner, D. & Snedeker, J. (2005). Quantity judgments and individuation: Evidence that mass nouns count. *Cognition*, 97, 41-66.
- Bloom, P. (1994). Semantic competence as an explanation for some transitions in language development. In Y. Levy (ed.), *Other children, other languages: Theoretical issues in language development*. pp. 41-75. Hillsdale, NJ: Erlbaum.
- Cheng, C.Y. (1973). Response to Moravcsik. In J. Hintikka, J. Moravcsik, & P. Suppes (eds.), *Approaches to Natural Language*. pp. 286–288. Dordrecht: Reidel.
- Chierchia, G. (1998). Plurality of mass nouns and the notion of ‘semantic parameter’. *Events and Grammar*, 70, 53–103.
- Gathercole, V. (1985). More and more and more about more. *Journal of Experimental Child Psychology*, 40, 73–104.
- Gathercole, V.C.M., Cramer, L.J., Somerville, S.C., & Jansen op de Haar, M. (1995). Ontological categories and function: Acquisition of new names. *Cognitive Development*, 10, 225-252.
- Gillon, B. (1996). The lexical semantics of English count and mass nouns. Proceedings of the ACL-SIGLEX Workshop on the Breadth and Depth of Semantic Lexicons, Santa Cruz, USA, 51–61.
- Gordon, P. (1985) Evaluating the semantic categories hypothesis: The case of the mass/count distinction. *Cognition*, 20, 209–242.
- Gordon, P. (1988). Mass/count category acquisition: Distributional distinctions in children’s speech. *Journal of Child Language*, 15, 109-128.
- Landman, F. (1989) Groups I. *Linguistics and Philosophy*, 12, 559-605.
- Link, G. (1983). The logical analysis of plurals and mass terms: A lattice-theoretical approach. In R. Bäuerle, C. Schwarze, & A. Stechow (eds.), *Meaning, use, and interpretation of language*. pp. 302–323. Berlin: de Gruyter.
- Pelletier, J. (ed.) (1979). *Mass terms: Philosophical problems*. Dordrecht: Reidel.
- Quine, W.V.O. (1960). *Word and Object*. Cambridge, MA: MIT Press.
- Rothstein, S. (2007). Counting and the Mass Count distinction. Manuscript Bar-Ilan University.
- Soja, N. N., Carey, S., & Spelke, E. S. (1992). Perception, ontology, and word meaning. *Cognition*, 45, 101-107.
- Soja, N., Carey, S., & Spelke, E. S. (1991). Ontological categories guide young children's inductions of word meaning: Object terms and substance terms. *Cognition*, 38, 179-211.
- Soja, N.N. (1992). Inferences about the meanings of nouns: The relationship between perception and syntax. *Cognitive Development*, 7, 29–45.