Does *most* mean 'more than half'?
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1. *Most* and *more than half*

Linguists have analyzed the lexical meaning of *most* as 'more than half', assuming that the semantics of *most* is only lower-bounded, just like that of *more than half*: Both expressions cannot denote anything less than 50% plus something (51% for short). Crucially, this means that they are not upper-bounded, and can therefore denote 'all'. Researchers do not, however, assume that *most* actually gets interpreted as 'all' in the default case. Rather, they assume that an upper bound is imposed extralinguistically. The Neo-Griceans in particular have proposed that a scalar Generalized Conversational implicature 'not all' is generated by default, creating a conveyed meaning of 'more than half but not all' (see Horn 1972, 1989, Levinson 2000).[1] In Ariel 2004 I argue at length against such a view. I cite examples from natural conversations in English, where the generation of a 'not all' implicature seems highly unmotivated, since it would defeat the speaker's purpose in using a *most* utterance. I further argue that the cases where the implicature is not generated constitute the majority of the uses of *most*.

If we maintain the received lower-bound-only semantic analysis, and at the same time accept my conclusion that a default 'not all' implicature is not usually generated, neither the semantics nor the pragmatics of *most* can account for the upper bound placed on it. Fred Landman (2000: Chapter 7, p.c.), however, proposes that an upper bound is in effect imposed in the default case because statistically, the chances are simply very slim that precisely a 100% value will be selected by addressees.[2] Such an analysis can then preserve the received semantic meaning view, without having to rely on a default scalar implicature, which I claim is not in fact generated in discourse. Under such a view we expect no difference between *most* and *more than half*. Both mean 'more than half', and should equally (though rarely) denote 100%.

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[1] Most claims in the literature pertain to *some*, rather than to *most*, but the assumption is that *most* too is only lower bounded semantically, and upper bounded pragmatically.

[2] I thank Fred Landman for raising pertinent challenges, to which this paper is in part a response.

I would like to argue that *most* and *more than half* are semantically distinct. Only the latter means 'more than half'. It is its lexical meaning, and not merely a low probability, that blocks the 100% interpretation for *most*. In order to support a distinction between *most* and *more than half*, I examined speakers' interpretations of these two expressions in a questionnaire. I presented subjects with two types of questions. The first included sentences containing Hebrew *rov* 'most' or *yoter mexaci/lemaala mimaxacit* 'more than half', for the most part followed by multiple choice questions as to potential values which can be assigned to *most* or to *more than half*.[3] I started with a pilot study, followed by the main study, and the results below combine the results from both studies whenever the questions remained unchanged. One group (32 students of the Hebrew Department of Tel Aviv University, all native speakers of Hebrew) were asked about *most*, and another (19 different students of the Hebrew Department at Tel Aviv University, all native speakers of Hebrew) were asked about *more than half*.[4] To tap their array of intuitions, participants were explicitly asked to select all possible answers, including answers that were highly unlikely (e.g., (3)b, c, (4)a, below for *most*). In a second, smaller set of questions, I asked subjects to determine the interpretation of a discourse anaphoric pronoun. The antecedent was *most*, *more than half*, or some number (in order to compare between *most* and numbers). Subjects were then asked to select only one answer (e.g., (8), (9) below).

We should bear in mind, however, that native speakers' intuitions do not distinguish semantic from pragmatic meanings. Rather, speakers' judgments can only attest to conveyed meanings directly. Hence, not every difference we find between the interpretation of *most* and *more than half* can automatically be attributed to their semantics. The difference may only be pragmatic, since identical semantic meanings can give rise to different pragmatic interpretations, due to the Maxim of Manner. In order to distinguish between pragmatic and semantic differences I have created situations in which subjects were encouraged to select as the conveyed meaning of *most* and *more than half* meanings which are pragmatically dispreferred, although semantically possible.

All in all, I will argue that *most* and *more than half* share a lower semantic bound (51%) and an extralinguistic tendency of avoiding extremely high values. They differ pragmatically in that *more than half* tends to receive lower majority interpretations, whereas *most* tends to receive larger majority interpretations. Most importantly, they differ regarding the upper bound. *More than half* is not, but *most* is, semantically upper bounded.

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[3] Based on a large corpus of conversational English data and many Hebrew examples I collected I feel quite confident that there is no difference between the Hebrew examples tested for and their English counterparts (where *most* is the appropriate translation). But of course, such questionnaires should be administered to speakers of English and other languages as well.

[4] None of the students has taken a Linguistics Department course in semantics (where they would have been taught the received view that *most*, just like *more than half*, is only lower bounded lexically).

2. Pragmatic differences between *most* and *more than half*

Consider the following:

(1) **Most** of the ladies and **more than half** of the gentlemen wore evening clothes (Sinclair Lewis, *It can't happen here*, McCawley's example 14.1.5, p. 427).

As McCawley 1981: 427 explains, this quote "strongly suggests that a greater proportion of ladies than of gentlemen were dressed in evening clothes". It seems that *more than half*, just because it takes the half point as a reference point, is normally interpreted as above, but still close to 50%. This is why it is taken as a lower majority than *most*. *Most*, on the other hand, tends to denote a significant (though not an overwhelming) majority, which is quite natural, given its etymology. A noncategorical skewing in the acceptance rates of higher values for *most* and lower values *more than half* should then be seen as evidence for a pragmatic distinction between the two expressions.

To test for this pragmatic tendency in my questionnaire, subjects had to select **all** values that the speaker could have in mind when using *most/more than half*. (2) and (3) are two such test examples:[5]

(2) He lived **most/more than half** of his life in Israel.
Which of the cases could the speaker have in mind?
a. 60% of his life b. 75% of his life c. 48% of his life
d. 90% of his life e. none of the above.

(3) **Most/more than half** of the cars in this shop are defective.
How many cars could the speaker mean?
a. 31% of the cars b. 51% of the cars c. 99% of the cars
d. 85% of the cars e. none of the above.

The results obtained in the study confirm the pragmatic difference between *most* and *more than half* noted by McCawley. Table (1) presents the acceptance rates for the lower values: 51%, 60% and 75%:

Table 1. Acceptance of 51-75% values for *most* and *more than half*

Value	*Most*	*More than half*
51%	47/64=73.4%	35/38=92.1%
60%	21/32=65.6%	19/19=100%
75%	30/40=75%	25/26=96.15%
51+60%+75%	98/136=72.1%	79/83=95.2%

[5] Note that each group only saw one of the quantifiers. Also, boldface was not used in the questionnaire.

Whereas there is no significant difference between *most* and *more than half* for the total range of 51-99%, there is for 51-75%:[6] There were over 30% more confirmations for these values for *more than half* than for *most*.[7]

When we look at 80% and 85%, the acceptance rate for *more than half* remains very high. But the acceptance rate for *most* rises, so there is no difference between the two expressions (there are only 1.04 more positive responses (proportionately) for *more than half* than for *most*):[8]

Table 2. Acceptance of 80%, 85% values for *most* and *more than half*

Value	***Most***	***More than half***
80%	29/32=90.6%	18/19=94.7%
85%	23/24=95.8%	12/12=100%
80%+85%	52/56=92.9%	30/31=96.8%

Once we examine rates of acceptance for very high values, it is *most* which receives a higher acceptance rate. Overall, there are (proportionately) 1.39 more confirmations for *most* than for *more than half* in this range:

Table 3. Acceptance of 90, 99% values for *most* and *more than half*

Value	***Most***	***More than half***
90%	27/32=84.4%	10/19=52.6%
99%	48/64=75%	22/38=57.9%
90%+ 99%	75/96=78.1%	32/57=56.1%

Note, however, that acceptance rates decrease for both expressions for these extremely high percentages, where *virtually all* would have been appropriate. This is especially true for *more than half* and for 99% for *most*. The differences between *most* and *more than half* show up at small and at very large majorities: Subjects consistently preferred to interpret higher percentages for *most* and lower percentages for *more than half*. It seems that *more than half* has a wider range of high acceptance than *most*: It receives extremely high rates of acceptance for 51%-85% (109/114, 95.6%). It then drops rather sharply for the very high values, 90%, 99% (56.1%). *Most*, on the other hand, peaks mostly at 80%, 85% (92.9%). It is almost equally low for the low range and for the extremely high range of 99% (72.1% vs. 75% respectively).

All in all, the questionnaire results confirm that *more than half* is associated with relatively lower majorities than *most* is. Since none of the differences between *most* and *more than half* is close to absolute, it is reasonable to attribute the differences to different pragmatic associations attached to the two expressions:

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[6] I thank Gila Batori for the statistical analyses in this paper.

[7] Note that values were repeated in 1-3 questions, and were therefore responded to by different numbers of subjects. Hence the use of proportionate numbers everywhere.

[8] Due to the small number of different questions posed for the same value, it is impossible to perform statistical analyses of variance on many of the values.

More than half emphasizes the relevance of the half point, whereas *most* emphasizes the significance of the majority involved. In section 3 I show that another difference between *most* and *more than half* is categorical, and therefore constitutes a semantic difference.

3. Determining the semantic boundaries on *most* and *more than half*

Let us now examine the semantic boundaries on *most* and *more than half*, and see whether they are identical (namely, lower bounded only). Specifically, regarding the upper bound, I will argue that it is pragmatic for *more than half*, but semantic for *most*.

We first ascertain the semantic lower bound on *most* and *more than half*. Expectations here were that subjects would absolutely avoid any value lower than 51% for either expression. Findings demonstrate that the lower bound on *most* and *more than half* is adhered to, but not quite as absolutely. A very low percentage of responses confirmed values lower than 51% (0%, 15%, 20%, 28%, 30%, 31%, 40%, 46%, 48% or 49%, 50%, all potential answers) for both expressions. Surprisingly, however, the ban against interpreting *most* as lower bounded is weaker than that on *more than half*: 6% of the responses below 51% were accepted for *most* (22/368), as opposed to half that rate for *more than half* (6/214, 2.8%, a statistically significant difference). Nonetheless, an overwhelming majority of the responses rejected values lower than 51% for both *most* (94%) and *more than half* (97.2%).

To see that the lower bound is indeed an absolute boundary (in as much as there are absolute boundaries on linguistic meanings in natural language) we can compare the acceptance rates for the minimally different 49%, 50% and 51%:

Table 4. Acceptance of values 49%, 50%, 51% for *most* and *more than half*

Value	*Most*	*More than half*
49%	3/32=9.4%	1/19=5.3%
50%	7/64=10.9%	3/38=7.9%
51%	47/64=73.4%	35/38=92.1%

There is an increase in acceptance for 50% over 49%, but it is relatively mild (1.17 times more for *most*, 1.5 times more for *more than half*). The increase for 51% over 50%, on the other hand, is dramatic: 6.7 times more for *most*, 11.7 times more for *more than half*. No such gaps were observed between the higher values discussed in section 2, which were more than minimally different from each other (e.g., between 85% and 80%, where the gap in favor of the higher rate is 1.06 for both *most* and *more than half*). In sum, while statistically, the ban against values lower than 51% is not total, I suggest that it counts as linguistically categorical.

We now move on to the upper bound. According to Landman, subjects should be equally reluctant to select 100% for *most* and for *more than half*. In the light of the pragmatic tendency to associate *most* with higher values, higher rates of 100%

acceptance are expected for *most* than for *more than half*. My expectations, however, were that although subjects would be quite reluctant to accept 100% as an answer for *more than half* due to the pragmatic tendency observed above, some subjects might select it for some questions, because it is after all a legitimate semantic interpretation. For *most*, I expected that subjects would categorically reject 100% , i.e., at the same (almost) absolute rate that they rejected 50%. Recall that subjects were encouraged to circle as many responses as they could, even if there was only a remote chance that the speaker thought they were possible. In order to encourage subjects to select extensions which are claimed to be semantically possible, despite a dispreferred pragmatic status (e.g., 51%, 99% and possibly 100% for *most*), I presented subjects with sentences such as (4) (with 100%), where the other candidate answers are semantically ruled out:

(4) **Most/more than half** of the students in the class were born in 1970.
How many students could the speaker mean?
a. 100% of the students b. 20% of the students c. 50% of the students
d. 49% of the students e. None of the above.

I made sure that 51%, 99% and 100% all occurred as answers in two types of cases: Where the other candidates were plausible (e.g., (3)), or semantically impossible (as in (4)). The idea was that although subjects were instructed to choose a maximal number of answers, regardless of how plausible they were, they might still be reluctant to choose a dispreferred option when a more plausible one was available. They might, however, be driven to select the dispreferred option once their other choices were either semantically inappropriate or 'none of the above'. This indeed was the case for 51% for *most*, for example: 21/32 (65.6%) accepted 51% when other semantic options were available, 26/32 (81.25%) accepted 51% when no other semantically appropriate choice was available.

A similar attempt to induce subjects to accept a 100% value for *most* was not as successful, however. It seems that despite the fact that *most* is associated with higher values, it simply cannot denote 100%, and despite the fact that more *than half* is pragmatically associated with lower values than *most*, it can denote the highest value, 100%. Even when I tried to encourage subjects to select 100% as a possible denotation for *most/more than half* (as in (4)), where, moreover, students in the same grade could conceivably have all been born in the same year, only a handful of the subjects tested on *most* chose the 100% option (3/32, 9.4%). In fact, there was an equal number of 49% responses here, and even more 50% responses (5/32, 15.6%). At least some subjects view the upper bound (99%) as more rigid than the lower bound (51%). Most subjects, however, opted for the "none of the above" answer (26/32, 81.25%), equally avoiding the violation of either boundary.

Now, if this is also the case for *more than half*, we could perhaps try to explain the findings by reference to some very strong pragmatic tendency. But this is not the case. Whereas 11/19 (57.9%) students tested on the *more than half*

parallel example also chose "none of the above", 8/19 (42.1%) did select 100% as a possibility here (4.5 times more than *most*). When in another test sentence (*Most/more than half of high school students drink alcohol*) the 100% answer was presented alongside a more pragmatically suitable candidate answer (80%), only 2/32 (6.25%) accepted the 100% answer for *most* (with an equal number of responses confirming 50% here), but still, 7/19 (36.8%) agreed that *more than half* could denote 100% (5.9 times more accepting 100% for *more than half*).

Table (5) presents the acceptance rates for 99%, 100% and 50% for *most* and for *more than half* in the above two questions.

Table 5. Rates of acceptance for 99%, 100% for *most* and *more than half*

Value	***Most***	***More than half***
99%	51/64=79.7%	22/38=57.9%
100%	5/64=7.8%	15/38=39.5%
50%	7/64=10.9%	3/38=7.9%

While the acceptance rate for 100% is significantly lower than for 99% for *more than half* (a 1.5 times reduction), the difference for *most* is far more dramatic. There are more than 10 responses confirming 99% per one confirming 100% here. In fact, this gap is even larger than the gap (of 6.7) between 51% and 50% for *most*, which we have taken above as linguistically categorical. Note also that acceptance rates for 100% are actually 1.4 times lower than for 50% for *most*. In contrast, for *more than half* 100% is accepted 5 times more than 50%.

Finally, in another attempt to encourage subjects to allow for very high values for both expressions, I asked about *rov acum/harbe lemaala mixeci* 'an **overwhelming** majority'/'**a lot** more than half' (*of the students passed the test*). In addition, as options I only listed extremely high percentages: 97%, 98%, 99% and 100% ('none of the above' was not an option here), thus forcing subjects to suppress their pragmatic preferences to avoid extremely high percentages for both expressions.[9] Table (6) presents the results:

Table 6. High percentages as options for *most* and *more than half*

	100%	**99%**	**98%**	**97%**
Most	1/32=3.1%	29/32=90.6%	29/32=90.6%	31/32=96.9%
More than half	6/18=33.3%	15/18=83.3%	15/18=83.3%	18/18=100%

First, note that indeed, subjects were now willing to select the very high values of 97%-99% for both expressions. They still manifest a mild decrease in their acceptance of higher percentages for both *most* and *more than half* (as we saw above, both expressions showed a decrease for extremely high values). Thus, 98% and 99% are selected less often than 97% for both expressions. Now, the decrease for 100% over 99% is quite significant for *more than half* (2.5 times less for

[9] I thank John Du Bois for suggesting to me this set of answers.

100% than for 99%), but this gap is by far smaller than the one for *most*: 29 times less confirmations for 100% for *most*. Whereas there are 1.09 more confirmations for 99% for *most* than for *more than half* in this question, results are switched around, and dramatically so for 100%. Here there are 11.6 times more confirmations for *more than half* than for *most*.

All in all, subjects did prefer to view both *most* and *more than half* as upper bounded. However, this tendency is significantly stronger for *most*. A comparison between the positive answers for all three 99% vs. 100% questions is instructive:

Table 7. 99%, 100% in all 3 questions

	100%	**99%**
Most	6/96=6.25%	80/96=83.3%
More than half	21/56=37.5%	37/56=66.1%

In conformity with the pragmatic tendency noted in section 2, the percentage of answers confirming 99% for *most* is higher than that for *more than half* (1.25 times more). But preferences are reversed for 100%. For *most* the drop is virtually absolute: There are 13.3 times more confirmations for 99% than for 100%. The drop is much milder for *more than half* (by 1.75). While subjects avoided the association of *more than half* with 100% in close to two thirds of all the relevant questions (62.5%), more than a third of the answers (37.5%) shows it as a legitimate interpretation of *more than half* (and *a lot more than half*) (6 times more than for *most* and *an overwhelming majority*).

Now, can this clear statistical difference between *most* and *more than half* re the upper bound be accounted for pragmatically? I think not. Assuming, as we should, that *more than half* is oriented towards the half point, whereas *most* is pragmatically associated with a more significant majority, we cannot explain the results in section 3. Since in general, it is *most* that is pragmatically taken to denote a larger proportion than *more than half*, a tendency maintained up to the 99% level, we cannot apply the same pragmatic analysis to also explain the opposite finding, namely, the remarkably lower acceptance of the highest percentage, 100%, for *most*. According to the pragmatic difference noted in section 2, precisely the opposite would have been expected: Higher proportions should be expected for the quantifier usually reserved for larger majorities, namely *most*, rather than *more than half*. The conclusion must be that for *most*, 100% is categorically different from 99%.

In conclusion, the ban on viewing *most* as denoting 100% is absolute (93.75%). Recall that the ban against 50% satisfying *most* is slightly lower actually – 89.1%. I therefore suggest that the upper bound constraint is semantic for *most*. Refusing to view *more than half* as denoting 100% is only a strong pragmatic preference, applied in almost two thirds of the cases. I claim that the only way to account for the different rates of avoiding 100% options is by positing a semantic difference between *most* and *more than half*. Whereas *more than half* is not, *most* is, lexically upper bounded. We now turn to different

questionnaire results, which corroborate the same conclusion re the semantics of *most*. We here compare *most* with numbers.

4. An argument from discourse anaphora

Section 4 attempts to demonstrate that a test which has been used to decide between unilateral (lower bounded only) and bilateral (also upper bounded) meanings for numbers can also be adduced in support of a bilateral meaning for *most*. Kadmon (1987, 2001) proposed a discourse anaphora test in deciding whether the numbers are lexically only unilateral or bilateral. She provides the following example (Kadmon 2001: 72, ex. 14):

(5) **Eleven** kids walked into the room. **They** were making an awful lot of noise.

Kadmon argues that whereas *eleven* above is compatible with there being more than 11 kids who walked into the room (truth-conditionally, 'eleven' is equivalent to 'at least eleven'), *they* cannot refer to anything but 'exactly eleven'. All things being equal, the only unique antecedent that the pronoun can pick is the conveyed meaning 'exactly eleven kids', created by adding on a scalar implicature ('no more than 11 kids') to the lexical meaning of *eleven kids* 'a set of eleven kids'. If it is known that, say, 12 kids walked into the room, the discourse in (5) is infelicitous, because there is no unique referent that *they* can refer to (the scalar implicature cannot be generated in this case).[10] This is not the case for *at least eleven kids....*, which does constitute a unique antecedent for a following discourse anaphoric pronoun. Thus, *they* (6) refers to all the kids that walked into the room, regardless of whether there were 11 or 12 of them:

(6) **At least eleven** kids walked into the room. **They** were making an awful lot of noise.

Based on these observations, Nirit Kadmon (p.c.) and Fred Landman (p.c.) propose that if *most* is only lower-bounded, it should pattern with *at least n*, rather than with *n*. Thus, anaphora resolution for *most* should resemble the one in (6), and not in (5). For example, for (7), Landman predicts that *them* will refer to all the defective Hondas, should it be the case that all Hondas are defective:

(7) **Most** Hondas were defective. They took **them** out of the shop.

If so, examples (5) and (7) testify to a difference re upper bound between the numbers and the quantifier *most*. Since *they*, when coreferent with a number seems to refer to that number exactly, the semantic meaning of the numbers must be bilateral. Since *they*, when coreferent with *most*, seems to pick only a lower bounded referent, the semantic meaning of *most* must be unilateral.

[10] Unless a unique referent can pragmatically be created in some special way.

I would like to question some of these intuitions. The findings below testify that discourse anaphoric pronouns are not as restricted as Kadmon and Landman envision. Pronouns seem to rather easily select various pragmatically enriched interpretations as antecedents.[11] In the same questionnaire referred to above, I also asked the subjects to choose a referent for such anaphoric expressions. Here is an example:

(8) Ruti told me that **most** of the teachers are interested in changing the school principal in Karmiel. "**They** even signed a petition against him, which was sent to the Minister of Education", she added.

Question: It became apparent that **all** the school teachers are interested in changing the principal. Who are those that Ruti meant that "**They** even signed a petition against him, which was sent to the Minister of Education"?

Answers: A. Between 51% and 99% of the school teachers
Or: B. 100% of the school teachers Or: C. Impossible to know.

One subject (out of 24, 4.2%) said that *They* refers to 'all' (answer B), in line with Landman's prediction. 7/24 (29.2%) chose Answer C, which is what Kadmon predicts for the numbers. Crucially, two thirds of the subjects (16/24) chose 'most but not all' as the intended referent (Answer A). This is clearly contra Landman's claim. If *most* can denote 'all' and we know that 'all' is the case, the pronoun should have referred to 'all'. But it didn't in most cases.

Let us now make sure that the above results are similar enough to parallel results re the numbers. Indeed, the *most* results are quite similar to the results I obtained for the number *14* (asked about in two additional sets of questions, one per each group of subjects). Since the results from the two questions here are quite similar, I will combine their results. Here is one version of the question:

(9) Before she left to go home the substitute teacher reported to the school principal an insignificant disciplinary problem that she had. **14** of the 9th grade students left the classroom late for recess. **They** misbehaved and made a lot of noise, but she decided not to punish them.

Question: It was found out that **15** of the students left the classroom late. How many students, in your opinion, did the substitute teacher refer to when she said "They misbehaved and made a lot of noise"?

Answers: A. 15 Or: B. 14 Or: C. Impossible to know.

In conformity with Kadmon's predictions, 26/50 (52%) chose 'impossible to know' whether *they* refers to '14' or to '15' when the antecedent was *14* (Cf. 29.2% for *most* in Question (8)). However, 21/50 (42%) said that *they* refers to '14' (Cf. 66.7% 'most but not all' for *most*). Finally, only 3/50 (6%) said that *they*

[11] Kadmon concedes that there are pragmatic enrichments which change semantic meanings (accommodations), but finds them less than fully acceptable.

can refer to '15 students' (Cf. 4.2% 'all' for *most*). Interestingly, one subject (not counted above) chose '14' as the appropriate answer "in principle" and 'impossible to know' as the appropriate answer "in an actual situation".

The answers above demonstrate that subjects vary in their interpretations of a pronoun whose antecedent is either a number or the quantifier *most*. In both cases (especially for *most*) there was a clear preference for the (also) upper bounded value over the lower bounded meaning, even in the absence of a scalar implicature, but this was not absolutely so. Now, in the questions quoted so far (in (8) and (9)), the context I created encouraged the subjects to stick to the upper bound for the anaphoric expression, because the activity described in the sentence containing the anaphoric *they* could very well be true for only a subset of the entities for which the activity described in the antecedent sentence was true. (While all the teachers may be interested in changing the principal, not necessarily all signed the petition; while 15 students left class late, not necessarily all made a lot of noise.) In order to show that it is indeed context that determines the interpretation of discourse anaphors, I constructed another set of questions, where the context was biased towards interpreting the antecedent as only lower bounded, and towards viewing the two sets as identical. Here I expected the anaphoric pronoun to pick its referent from what I consider the pragmatically enriched 'at least' interpretation of the antecedent (*most* or number).

Indeed, this is precisely what happened for both the number (*61*) and for *most*. In the following, the 'at least 61/most' reading is strongly preferred as the contextually appropriate interpretation for *61/most*, and in addition, it is extremely likely that an identical set is intended in both sentences. Accordingly, subjects tended to choose an 'at least' reading for the anaphoric *they* here. Consider first the *most* question:[12]

(10) It is not necessary for all 120 Knesset members to be present for the Knesset to convene. The law requires that **most** Knesset members participate in the assembly discussion tomorrow. **They** will be asked to vote on a series of social laws.

Question: Who are the "they" who "will be asked to vote on a series of social laws"?

Answers: A. All the Knesset members who will participate in the assembly discussion tomorrow, that is, no less than 61 and up to 120 Knesset members, including 120 Knesset members.

Or: B. All the Knesset members who will participate in the assembly discussion tomorrow, that is, no less than 61 and no more than 119 Knesset members.

A minority (5/30, 16.7%) still insisted that the anaphoric *they* here only refers to an upper-bound 'most but not all' (answer B). Since this answer is pragmatically

[12] Knesset is the name of the Israeli parliament.

inappropriate in this case, it must be the semantics of *most* which accounts for this choice. But the great majority of the respondents chose answer A (25/30, 83.3%), assigning *they* an 'at least most' reading. Similar results were obtained when I asked about *61* (I substituted *61* for *most* in the above). In addition, Answer B was changed to:

(11) **Answer B**: All the Knesset members who will participate in the assembly discussion tomorrow, that is, no less and no more than 61 Knesset members.

In this case, an even lower proportion of subjects (2/19, 10.5%) chose an upper-bound 'exactly 61' (Answer B), which is pragmatically inappropriate. 17/19 (89.5%) chose what I consider to be the pragmatically enriched 'at least' interpretation for the pronoun (Answer A). A comparison between *most* and *61* as antecedents for *they* in (10) and its counterpart shows that they pattern quite similarly, the 'at least' reading being the preferred one in this case. The conclusion must be that the anaphora test does not automatically testify to the lexical meaning of the numbers and *most*. Rather, it is the pragmatically enriched meaning (of *most* and *61*) which tends to serve as antecedent for the following anaphoric pronoun. We thus have one case where 'all'/'a higher number' was categorically rejected ((8) and (9)), and one case where it was selected in the great majority of the cases (10). In fact, in another context I created for a *most* question (not here quoted), I got an intermediate result, where an 'all' antecedent was selected in 31.8% of the responses (and 'most but not all' in 68.2%).

As further support for the context dependence of anaphoric resolutions, consider the results for *more than half* as a discourse antecedent for *they*. In the *more than half* counterpart of (8), no subject chose 100%, all subjects preferring '51-99%'. Respondents then avoided 'all', despite the semantic compatibility of 'all' with *more than half*, and despite the reality of the situation, where 'all' was presented as true for the antecedent proposition. So, even the fact that an expression is only lower bounded, as *more than half* is, does not guarantee that the anaphoric pronoun refer to 'all'.

Now, if context determines the interpretation of the pronoun, how can we know what the lexical contribution of the antecedent is, as opposed to pragmatic adaptation? I believe that the context which biases us towards possibly distinguishing the two sets, is the crucial one. Under such circumstances, the pronoun picks out the **lexical** meaning of the antecedent as the pragmatically plausible interpretation for the pronoun, despite the explicit claim that the antecedent refers to 'all' in reality. The reason is that the lexical meaning is all the addressee can be confident that the speaker intended for sure. Under such circumstances we saw that the majority of the subjects chose an upper bounded interpretation. Crucially, subjects made the same choice of upper bounded interpretation for *most* and for the numbers, testifying that the lexical meaning of

most must be upper bounded, just like the lexical meaning of the numbers is (see Carston 1990, 1998, Geurts 1998 and references therein).[13]

In conclusion, the percentage estimates and the discourse anaphora questions point that *most* is lexically upper bounded. Recall that subjects virtually always refused to allow that *most* denoted 'all', even when no other legitimate value was available to them. This fact cannot stem from some absolute aversion to selecting 100%, since subjects did select 100% for *more than half* in a substantial minority of the cases. I have also argued that the avoidance of 100% for *most* but not for *more than half* cannot be explained by the pragmatic difference between the two expressions, since for values lower than 100% (up to 99%), it is *most* that selects the higher percentages, *more than half* showing a clear preference for smaller majorities. The discourse anaphora test, when applied to cases where there is a potential difference between the antecedent set and the anaphoric set, supports the percentage evaluation test in that it too demonstrates that the lexical meaning of *most* must be upper bounded. Only by assuming such an upper bound for *most* can we explain the fact that very often subjects took the anaphoric pronoun to refer to an upper bounded quantity, even though they were told that 'all' was the case for the antecedent.

Such choices point to the semantic, rather than extralinguistic status of the upper bound on *most*. Each of the three extralinguistic solutions fails to account for the ban on 100% for *most*. The fact that *most* received an upper bound in the absence of a scalar implicature (in the discourse anaphora questions) demonstrates that the upper bound is independent of such implicatures (and see Ariel 2004), the fact that *more than half* and *most* sharply diverge from their general pragmatic patterns when 100% is concerned shows that pragmatic tendencies (due to the Maxim of Manner) cannot here provide the explanation, and finally, the fact that the gap in acceptance of 100% and 99% was so dramatic for *most* demonstrates that pure probabilities cannot account for it either. The conclusion must be that *most* cannot mean 'more than half', because its semantics incorporates both lower and upper bounds.[14]

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[13] Note that this is not Kadmon's position. Her explanation for the findings where the pronoun was interpreted as an upper bounded number is that despite the claim re reality, a scalar implicature was attributed to the speaker.

[14] On the precise nature of the upper bound see Ariel 2004.

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