

AS (OF) YET

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1. A peculiar negative-polarity item¹

The English expression *as (of) yet* is a negative-polarity item with properties that have not been isolated before in the literature on polarity sensitivity. Just like its main ingredient, the adverb *yet*, it is an adverb of temporal perspective (cf. König 1977, Abraham 1980, Vandeweghe 1983, Nerbonne 1983, Löbner 1989, and Van Baar 1992 for discussions of this class of adverbs in German, Dutch and English). And just like *yet*, it is sensitive to the quantificational structure of the sentence in which it occurs. We may construct paradigms where the presence or absence of a negative quantifier is shown to have a direct effect on the acceptability of *as (of) yet*:

- (1) a. As of yet, there has been no answer from the Klingons.
b. *As of yet, there has been an answer from the Klingons.
c. As of yet, I haven't read more than three books on chess.
d. *As of yet, I haven't read less than three books on chess.
e. As of yet, few workers have filled out the forms.
f. *As of yet, many workers have filled out the forms.
g. As of yet, I have read less than three books on ufo's.
h. *As of yet, I have read more than three books on ufo's.

Cf. the corresponding sentences with *yet*:

- (2) a. There has been no answer from the Klingons yet.
b. *There has been an answer from the Klingons yet.
c. I haven't read more than three books on chess yet.
d. *I haven't read less than three books on chess yet.
e. Few workers have filled out the forms yet.
f. *Many workers have filled out the forms yet.
g. I have read less than three books on ufo's yet.
h. *I have read more than three books on ufo's yet.

Note that the simple presence versus absence of a negative item will not predict whether *as of yet* is licenced, as the pair (1c,d) shows. Another thing worth noticing is the position of *as of yet*. Whereas *yet* prefers a location either at the end of the

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sentence, or in sentence-medial position, *as of yet* is equally at ease in sentence-initial position, where *yet* can only occur as a connective adverb with concessive meaning, a use that must clearly be distinguished from the use as an adverb of temporal perspective. Thus, sentence (3) below cannot be viewed as a variant of (2a).

(3) Yet there has been no answer from the Klingons.

In this respect, temporal-perspective *yet* behaves like most other negative polarity items in English, which resist placement to the left of the negative operator which triggers them (cf. Jackendoff 1972, Ladusaw 1979). However, there is no general law forbidding placement of polarity items to the left of their triggers, as the behavior of the Dutch negative polarity item *hoeven* 'need' shows (Hoekstra, De Hoop and Zwarts, 1988).² Nor is there any evidence for a parameter which rules out such orderings in English, but not in (some) other languages (as has been suggested for Hindi by Mahajan 1990). Even if we disregard the distribution of *as (of) yet*, we may note that English has a few items which are clearly polarity sensitive, and nevertheless may show up in pre-trigger positions. One such item is the negation strengthener *for the life of X*, where X is some subject-oriented personal pronoun. This idiom, as the following naturally-occurring examples show, may occur to either side of the triggering element³:

- (4) a. I can't for the life of me see what is wrong with asking for what we really want!
b. And for the life of him, Dex can't remember a damn thing...
c. And for the life of me, I can't understand how a sane person could justify being SO UN-SOCIAL in a SOC.* group.
d. Though I can't for the life of me imagine what the Isramis would want with Julian.

I conclude from these examples that the position of a negative-polarity item vis-à-vis its trigger depends on the individual properties of that item, and not on properties common to the entire class of negative-polarity items. Differences in positional possibilities reflect lexical, rather than parametric, variation.

Still more unusual than the fact that *as (of) yet* may precede its trigger, is the make-up of its trigger-set. Alongside the usual triggers, such as regular negation, and negative quantifiers, we find a number of verbs which are negative in some loose sense, as well as a large number of adjectives of the form *un-X*. Here are some examples:

² The same could be said about its English counterpart *need*, cf.:

(i) You *need* not/only call.

³ The examples in (4) were taken from a corpus of postings on the internet, except for (4d), which comes from *The Secret History*, by Donna Tartt.

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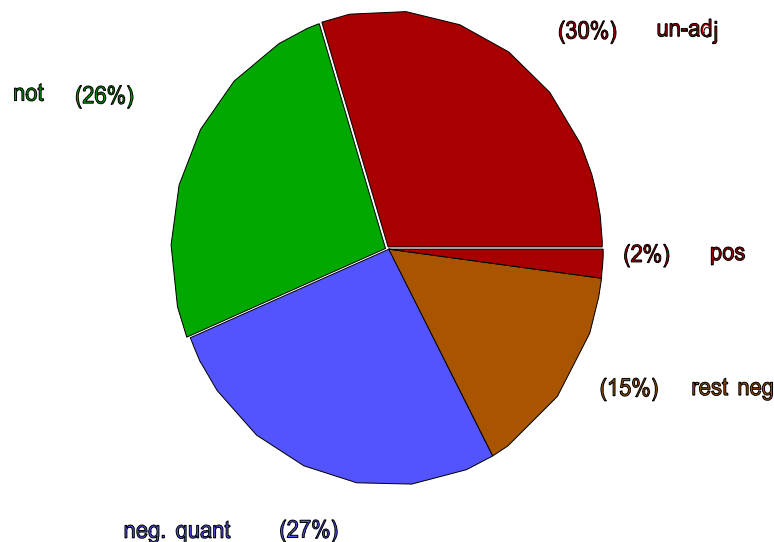
- (5) a. I cannot help but see the work of the Goddess in this, but as yet I fail to grasp the intentions behind her actions.
- b. One of the problems, as yet defying solution, is that of the genealogies in Genesis V and XI, which differ in the Hebrew, LXX, and the Samaritan Pentateuch.
- c. As for your so-called proposal to acquire the company at \$85 per share, or some higher price, you have as yet failed to demonstrate your ability to finance any such transaction at \$85 or any other value.
- d. Further details are as yet unknown.
- e. Suppose the input were a "concept" in some as yet undetermined representation.
- f. A Minolta accessory, as yet unpriced, converts the company's autofocus 35-mm single-lens reflex camera into a still video camera.

Such examples form an important part of the distribution of *as (of) yet*, as our database shows. This distribution is presented in chart 1 below (most occurrences concern the short form *as yet*; the form *as of yet* is rather less frequent).

Chart 1.

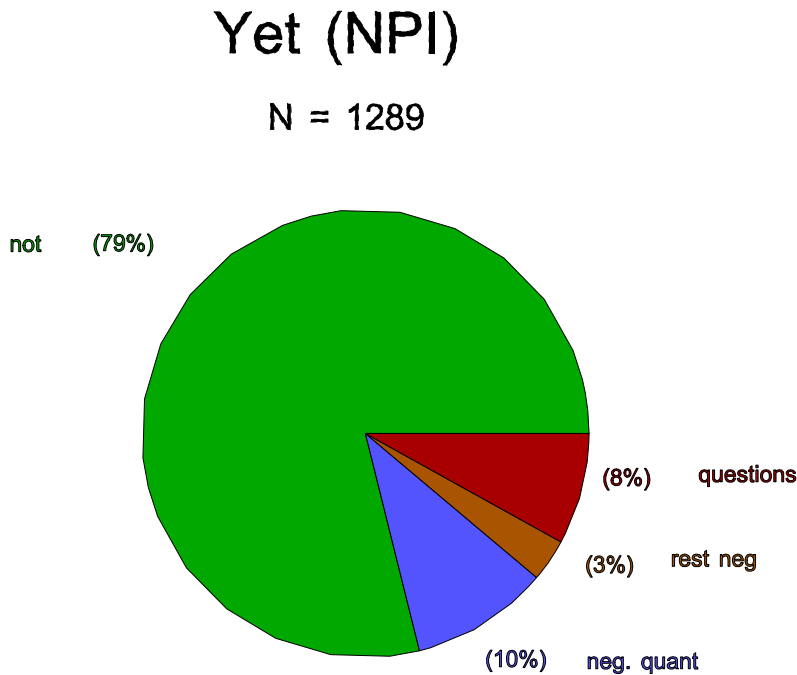
As (of) yet

N = 184



For comparison with *yet* in its use as a negative-polarity item, see also chart 2.

Chart 2.



The data were taken mainly from two sources: a large corpus of texts posted on the internet (about 11 million words), and articles from the Wall Street Journal, which are available on a CD-ROM published by the ACL. As the charts indicate, polarity-sensitive *yet* is much more common than *as yet*, but the data are more than sufficient to show some very significant differences among these items. One difference is the complete lack of cases where *yet* modifies an *un*-adjective. I take this to be evidence that *yet* is a regular negative-polarity item in that it has to occur in the scope of a downward-entailing operator. *As yet* clearly is not: its link to negation must be of a different nature, one which permits it to cooccur with *un*-adjectives. Another difference is that *as yet* may occur in positive sentences, although this is quite rare (2% of the cases were unambiguously positive).⁴ In this respect, *as yet* does not differ

⁴ Some examples that I found are:

- (i)
 - a. Some European countries have expressed reservations at the fund, and countries have as yet to pledge funding it beyond 1994.
 - b. Some of them have been fulfilled - others are as yet a mystery.
 - c. It's true that writing some of my magazine articles has been a bit bizarre, for the subjects were

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significantly from other polarity-sensitive items such as e.g. the verb *mind*, which also has a marginal use in positive sentences (about 1% of its occurrences in my data-base).

It is attractive to view the acceptability of the examples in (5) as a direct consequence of the negative character of the prefix *un-*. However, any appeal to the prefix⁵ is problematic. From a formal semantic point of view, e.g. that taken in generalized-quantifier theory and related Montagovian approaches, *unknown* or *undetermined* is a predicate like any other, just like *known* or *determined*, and denotes a set of individuals, or the characteristic function of such a set. The fact that the denotation of *un-X* does not overlap with that of *X*, and might even be its complement, is not relevant. Predicates of individuals simply cannot be argued to be monotone decreasing in the sense of Ladusaw 1979.

In this respect, there is a difference between NP arguments to adjectives and clausal arguments. In the latter case, we do find that *un-* turns an adjective into a monotone decreasing functor. For example, if proposition *p* implies *q*, then the statement "it is unlikely that *q*" will imply "it is unlikely that *p*". This is the reverse of what we can observe for *likely*: if it is likely that *p*, then it is likely that *q* (given that *p* implies *q*). So why are things different with sentences of the form *X is un-adj*, where *X* is not a clause? Within generalized quantifier theory, the answer is simple: functions of type $\langle e, t \rangle$ do not have a boolean domain, since there is no boolean order \leq among the entities of type $\langle e \rangle$ (cf. Hoeksema 1988 for a discussion of the consequences of this observation for the theory of conjunction and Keenan 1982 for a different perspective on this matter). Given this, we do not expect *un-*adjectives to trigger polarity-sensitive noun phrases when these are direct arguments of the adjective, but we do expect them to trigger polarity items that are part of a clausal complement (assuming that clauses are interpreted as propositions, which can be modelled as, e.g., functions from indices to truth-values), and this prediction is borne out, as the following examples show.

people as yet overlooked by Who's Who; at the same time, no one has ever considered writing a magazine piece about me.

⁵ E.g. by making use of affix-raising at Logical Form (cf. Pesetsky 1985 for such a proposal). This kind of approach is overly powerful, and would predict more than we in fact find. For example we would expect to see the following paradigm:

- (i) a. \$200 is as yet unaccounted for
- b. \$200 is not yet accounted for
- c. \$200 is yet unaccounted for

As a matter of fact, the c-option does not occur in our data. More generally, to account for the sentences in (1) in the text, we would need large-scale Quantifier Raising at LF of the type that is otherwise not possible in English for polarity licensing (cf. Ladusaw 1983 for a discussing of the merits of Logical Form for the treatment of polarity licensing). I refer to Hoeksema (1987) for a critical discussion of Pesetsky's proposal and a number of arguments against it. The differences between sentential negation and *un-*affixation with regard to polarity licensing and tag-question formation were already noted in Klima (1964).

- (6)
- a. *There was any student uninterested.
 - b. There wasn't any student interested.
 - c. *There was any book unobtainable.
 - d. There wasn't any book obtainable.
 - e. It's unlikely that there's any book left.
 - f. *It's likely that there's any book left.

and similarly in Dutch:

- (7)
- a. *Ook maar iemand was ongelukkig.
at-all anyone was unhappy
 - b. Het is onvoorstelbaar dat ook maar iemand het geloofde
it is unimaginable that at-all anyone it believed

However, if we remove the *un*-s from (5), the examples are no longer acceptable, and in our database we do not find any positive adjectives to speak of. This suggests that the adverbial expression *as (of) yet* is sensitive to the presence of *un*- in a way that *any* and *ook maar iemand* are not. The solution to this problem will rather obviously require us to recognize more structure to the meaning of an adjective than can be expressed by a characteristic function from individuals to truth-values.

2. Phase Quantification.

Within Löbner's theory of the German adverbs of temporal perspective *noch* and *schon*, one may appeal to the notion of *phase quantification* (Löbner 1987, 1989). A statement such as

- (8) Ich bin noch in Hamburg
I am still in Hamburg

puts the statement expressed by (9)

- (9) Ich bin in Hamburg

within the temporal perspective of a possible change. More precisely, Löbner interprets (8) with respect to what he calls an admissible interval $(t_i, t_e]$ within which the truth-value may not change from 0 to 1. Uttering (8) at time t presupposes a temporal perspective within which the truth-value of (8) may move from 0 to 1, or stay 0, but not change from 1 to 0. So a function f from times to the truth-value of (8) at these times will be monotone increasing within the admissible interval. Statements of the form *already p* are true at t_e when the admissible intervals for p with endpoint t_e contain a

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time t at which p is true. Statements of the form *still p* are true at t_c when the admissible intervals for not- p with endpoint t_c contain no time t at which not- p is the case. Put differently, we might say that admissible intervals for *already*, German *schon* are intervals in which the truth-value of the statement is monotone increasing, and that the admissible intervals for *still*, German *noch*, are the ones in which the truth-value of the sentence is monotone decreasing. Moreover, at the time of evaluation, both *already p* and *still p* require that p be true.

Suppose we view the pair of statements (p , $\neg p$) as names for positive and negative phases, respectively, of some entity Φ , which I will call here an abstract proposition. This is different from talking about $\neg p$ being a negative phase of p , and, equivalently, p being a negative phase of $\neg p$. In the latter mode of talk, both p and $\neg p$ can express negative phases, in the former mode, only $\neg p$ can. We now say that *still* presupposes that a change of phase has not obtained yet, whereas *already* presupposes that it has. *As yet*, on the other hand, presupposes a negative phase that has not changed up to the point of evaluation t_c . To make this proposal work, we must assume that pairs of adjectives such as *written/unwritten* map entities onto positive and negative phases of the same abstract proposition. *Not* creates a change of phase, and negative quantifiers map onto the phase opposite from the one a proper name or universal quantifier would map onto. Lack of space prevents me from developing a fuller account here.⁶

We have gained a new notion of phase, in which what matters is not just the ebb and flow of truth and falsity, but also the way in which the statement is built up. Instead of talking about phases in which a proposition p is true and phases in which it is false, we could focus on phases in which *un-X* holds of y and phases in which X holds. Hence negative predicates have to be distinguished semantically from positive ones if one wants to be able to deal with the intricacies of preposed *as yet*. Such a move is not entirely ad hoc. A study of the Dutch degree adverbs *bar* and *bijster* (Klein and Hoeksema 1993) showed a similar sensitivity to the difference between positive and negative members of antonymic pairs in these items. More directly related to *as yet* is the adverb *vooralnog* (literally: *voor-als-nog* = *for as yet*). This adverb is similar in meaning to *as yet*, and has somewhat similar distributional tendencies and preferences, but is not equally strongly polarity sensitive. This expression may frequently be found in sentences such as (10) below, where there is no form of negation whatsoever, whereas this is quite rare with *as yet*.

⁶ A matter that calls for further study is reversibility. Reversibility of processes plays a role in the semantics of the verbal prefix *un-*, and may also be relevant for *as yet*. Many sentences in which *as yet* occurs describe an irreversible change of state. For instance, an undiscovered solution may be undiscovered, but after it has been discovered it cannot become undiscovered anymore (it can be forgotten, but not be undiscovered). An investigation of the *un-*adjectives modified by *as yet* in our database reveals that 50 out of 54 are based upon a past participle. This is strikingly different from the *un-*adjectives involved in the litotes construction *not un-adj* (as in e.g. *Exploding terminals are not unusual here*), where a quick search of *not un-*strings revealed only 36 out of 194 past-participle-based cases. It is precisely participial forms which most frequently denote the outcome of an irreversible process.

- (10) Fred blijft vooralsnog voorzitter van het bestuur
 Fred stays as-yet chairman of the board
 "Fred stays chairman of the board for the time being"

In a sample of 100 occurrences of *vooralsnog* in the daily newspaper *De Volkskrant*, 44 were clearly positive (corresponding to only 2% for *as yet*), 29 negative, 9 with negative adjectives, 9 with restricting adverbs such as *slechts* "only, just", and 9 belonged to other, smaller categories. It is conceivable that *as yet* has become a negative polarity item as a result of grammaticalization, when the preferences and tendencies that we see in its Dutch counterpart became nearly categorical.

3. Conclusions.

The distributional pattern of *as yet* differs from that of more common negative-polarity items such as *yet* in at least two respects: it may precede its trigger, and the trigger may be a negative adjective or verb, most commonly an adjective with the prefix *un-*. This is further evidence for the thesis that negative-polarity items do not form a homogeneous class (Seuren 1976, Zwarts 1993).

Perhaps it is possible to derive the properties of negative polarity items from the requirements of their lexical semantics. Recent work by Krifka (1990) on expressions of minimal extent or quantity and by Kadmon and Landman (1993) on *any* has shown how properties of lexical semantics can be fruitfully combined with a theory of polarity sensitivity. In the case of *as yet*, this means that we must consider it against the background of a more general theory about adverbs of temporal perspective. If we are to do so, we must extend current theories of these adverbs, e.g. the one proposed in Löbner (1989), to account for the sensitivity of *as yet* to the negative character of the main predication. In terms of Löbner's theory, *as yet* and *yet* fill the same niche in the square of opposition for temporal perspective adverbs. Both are used to express the continuation of a negative phase. The difference between these items stem from a restriction of *as yet* to statements with a negative character, due either to a negative predicate or a negative quantifier or adverb, whereas *yet* is restricted to downward-entailing environments. This latter difference does not seem to be derivable directly from a difference in meaning. The comparison of *as yet* with its Dutch counterpart *vooralsnog* also shows that words with similar meanings must not have identical distributions. The Dutch item is used far more often in purely positive contexts. At the same time, it must be stressed that the prime environments of *as yet* seem to boost the use of *vooralsnog*, albeit more weakly.

An interesting topic for further study is the identification and characterization of other negative-polarity items which have the peculiar features of *as yet*. One such item appears to be the Dutch adverbial expression *ten enenmale*. This may be used with negative adjectives and usually precedes its trigger, cf.:

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- (11) Dat is ten enenmale onmogelijk/*mogelijk
that is to one-time impossible/*possible
"that is altogether impossible"

My conjecture at this point is that all expressions with the characteristic properties of *as yet* will turn out to be adverbial modifiers.

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