Bixlal: A general strengthening operator in Hebrew

This paper offers an analysis of the Hebrew particle *bixlal*, which is inspired by preliminary observations and ideas in Krifka 1995 and Migron (2003) and according to which *bixlal* is a flexible emphatic particle, i.e. one which leads to a strengthening effect in a variety of ways. We discuss the interpretation and distribution of *bixlal* in light of theories of polarity sensitivity and focus (Kadmon & Landman 1993, Krifka 1995, Chierchia 2011). We further compare our analysis of *bixlal* to Anderssen's (2006) "Widening" analysis of the similar German particle *uberhaupt*, and claim that at least for *bixlal* widening is just one of the ways in which strengthening can be satisfied. We support our conclusion with the behavior of *bixlal* with multidimensional adjectives involving universal and existential quantification over 'respects' (Sassoon (2011)).

Data: *bixlal* is the Hebrew translation of the English *at all*, as in (1). However, Migron (2003) shows that, unlike *at all*, *bixlal* can also appear in positive (and other UE) constructions (as in (2),(4),(5). In addition, we get different interpretations of *bixlal* depending on whether it is stressed or not (as in (1)-(2) vs. (3)-(5), respectively):

(1)   *dani lo gavoha [bixlal]$_F$* ("Danny is not tall at all (= not even to the slightest degree)

(2) (A: *Yosi is tall!*) B: *ve-dani [bixlal]$_F$ gavoha* ("And Danny is clearly tall / even taller")

(3) (A: *Are they married?*) (B: *hem lo [makirim]$_F$ bixlal*!) ("They don't even [know]$_F$ each other")

(4) (A: *Do Danny and Rina know each other?*) B: *hem bixlal [nesuim]$_F$!* ("They are even [married]$_F$!")

(5) (A: *Rina lives in Tel Aviv*) (B: *lo, hi bixlal mi-[xolon]$_F$*) ("No, she is actually from [xolon]$_F$")

Analysis Following ideas in Krifka (1995), and Migron (2003), we take all uses of *bixlal* to induce a strengthening effect. In particular, *bixlal* p indicates that p is stronger than its contextually salient alternatives. What determines the interpretation and distribution of *bixlal* is the interaction between (a) the nature of the strengthening relation (b) the placement of focus and (c) the polarity of the sentence. We start with (1)-(4), in which the alternatives are semantically scaled. In such cases p is standardly stronger than q iff p entails q and q does not entail p. When focus is on the predicate (as in (3)-(4)) we get standard "Roothian" alternatives to p. When the sentence is positive (or UE) the context has to contain a salient alternative which is weaker than p (as in (4)), and when *bixlal* appears in a negative (or DE) sentence (3), the context contains an originally stronger alternative, so the strengthening induced by *bixlal* is met. In contrast, when *bixlal* itself is focused the alternatives we get are different interpretations of p. For example, in the negative (or DE) (1) the interpretation of p is "Danny is not tall to the minimal degree / under the most liberal precision standard", and the alternatives are of the form "Danny is not tall to a nonminimal degree d / under a stricter precision standard" etc. In contrast, in the positive (2), p is "Danny is tall to a degree which is much higher than the standard" (i.e. he is very tall), and the alternative is "Danny is tall to a degree which is higher than the standard" (i.e. Danny is tall), which is contextually salient by comparison with the previous utterance ("Yosi is tall"). In all cases strengthening occurs.

We discuss two potential mechanisms in the case of stressed *bixlal*, in particular (a) the stressed on the operator induces alternative operators (similar to Beck's (2006) suggestion in the case of focus on *again*) and (b) the stress on the operator simply indicates no stress on any other element in p and hence no "Roothian" alternatives. But since the strengthening semantics of *bixlal* makes reference to alternatives, we end up with different alternative interpretations of p. We provide data from other cases of stressed operators (e.g. stress on the Hebrew *stam* and *davka)* which support the second approach.

Turning now to (5), which involves contrastive focus, and in which the alternative to p is not semantically stronger or weaker, we reject Migron's suggestion that this is a 'nonscalar' use of *bixlal* which merely indicates a shift from one alternative to the other. Instead we observe that the presence of *bixlal* in such cases leads to an effect of 'significant contrast" between p and its contrastive alternative. An utterance of (5) in a context c, for example, indicates that in c being from xolon is taken (at least by the speaker) to be significantly incompatible with being from Tel Aviv. Thus, for example, in a context where this incompatibility is not significant (e.g. in an international forum where each participant has to say where he or she is from) the use of *bixlal* in (5) is odd. Another example illustrating this point is (6):

(6) A: *ha-kav ha-ze hu be-orex meter* ("This line is one meter long")

  B: *hu (bixlal) be-orex [meter ve-xamiSa]$_F$* ("It is *(bixlal)* 1.05 meter long")

Without *bixlal*, B's utterance is felicitous in any context, but the presence of *bixlal* indicates that the incompatibility between the two assumed lengths of the line is significant. Thus, the presence of *bixlal* narrows down the set of contexts in which the sentence is felicitous. For example, when discussing the children's drawing in a kindergarten (6) with *bixlal* sounds odd. But in a context where 5 cms are significant (e.g. in a lab) it is felicitous. We thus analyze such cases as involving pragmatic strengthening, captured by comparing the level of incompatibility between p and its contrastive alternative.

Finally, we compare our analysis of *bixlal* to Anderssen's (2006) analysis of the similar German *uberhaupt* in terms of widening (the domain of interpretation). Under Anderssen's proposal, for example, the 'in general' use of *bixlal,* as in (7) involves widening of the comparative classes needed for deternmining the standard associated with the adjective:

(7) (A:*Danny is tall for his age)* B: *hu [bixlal]F gavoha (He is tall in general).*

We argue, however, that at least for *bixlal* widening is just one of the ways in which strengthening can be achieved. Crucially, however, this is not the case for cases like (8):

(8) (A: Yosi is short for his age) B: *ve-dani [bixlal]$_F$ namux* ("and Danny is even shorter")

We further support this view by examining the behavior of *at all* and *bixlal* with multidimensional adjectives like *healthy*, and *sick,* which according to Sassoon (2011) involve universal and existential quantification over 'respects' (respectively). A crucial thing to remember about Widening is that it always adds marginal / minor elements to the set. I.e. we start with a contextually given set, and when we widen it we add members which were not considered relevant, or important enough before. Thus, *at all*, which is only an NPI, i.e. appears only in DE contexts, is predicted to induce Widening only with existential quantification over 'respects', i.e .only with disjunctive adjectives (like *sick*) – similarly to PS *any*. In this construction "x is not A" has a reading "There is no contextually relevant property in A that x has", and "x is not A at all" should widen the set of contextually relevant properties, so minor properties are considered as well. In contrast, we do not expect Widening with universal quantification, i.e. with conjunctive adjectives . In this context "x is not A" has a reading "It is not the case that x has all relevant properties in A". In this case widening the set of relevant properties (i.e. including also minor properties) does not lead to strengthening. So "x is not A at all" should NOT add minor properties (but maybe should increase the degree of A)

In contrast, since *bixlal* can appear in a positive environment (like *any*), we expect to get Widening with conjunctive adjectives as well. In this construction "x is A" should have a reading "x has all relevant properties in A", and "x is [bixlal]F A" should widen the set to include also minor properties.

Now suppose that – (no) cancer and heart status are central, and (no) cold is minor. I.e. Under the narrow interpretation: <u>*John is not ill*</u>: He has no property in ill (e.g. he has no heart problems). Under the 'wide' interpretation, John has no cold either. And, under the narrow interpretation: <u>*John is not healthy:*</u> He does not have all properties in 'healthy', e.g. he has heart problems. Under the wide interpretation, John has a cold as well.

We can now show that the predictions are borne out: *At all* induces widening only with disjunctive multidimensional adjectives, e.g. *ill* (as in (9)), but not with disjunctive ones (*healthy*) as in (10). In contrast, *bixlal* CAN induce widening with the conjunctive *healthy* as in (11:

(9) <u>Mary:</u> John cancer in the past, but now he is not ill, right ? <u>Doctor</u> Right. In fact, he is not ill at all!
   ...he doesn't have a cold either (cf. ...# he doesn't have heart problems either)

(10) <u>*Mary:*</u> *John has cancer . He is not healthy! <u>Doctor</u> Right. In fact, he is not healthy at all.*
       #*...he has a cold as well (cf. ...he has heart problems as well.)*

(11) *A: We only take healthy people with us to that travel*
   B: Dani bari (ein lo beayot lev, or sartan) ("Danny is healthy (he has no heart problems, or cancer)
   C: ve-yosi bixlal bari (hu afilu lo mecunan). (and Yosi is bixlal *healthy (he doesn't even have a cold)*

Thus, strengthening can be accompanied with widening when quantification is involved, but can be achieved in other ways in non-quantificational structures (as shown above). This raises a possibility that the core effect of *any* is also strengthening, and that the widening effect reported with it (e.g.Kadmon & Landman 1993) is there simply because *any* involves quantification, so widening the domain of quantification is the only way to achieve strengthening.