Some footnotes on plurals
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I don’t want to sidetrack us from the main thread of Seth’s development, but with Seth’s agreement, I’ll post occasional footnotes or side notes on some of the things that come up in class or in Seth’s handouts or in the readings. Here’s the first set, based on material in the first three classes, corresponding mainly to the first handout, “The Basics of Plurals: Part I” (http://people.umass.edu/scable/LING720-FA10/Handouts/Basics1.pdf). Comments welcome.

1. On the use of plural predicate nominals as “basic data”.
This is a footnote to Seth’s initial strategy: start with plurals in predicate position, in predicate NPs; defer NPs or DPs in argument positions until later. So initial attention is to sentences like

(3c) Bill and Frank are boys.

I appreciate this strategy, which is new to me. I see it as a way to try to look at NPs and not DPs, in hopes of seeing the plural without the effects of various determiners, including null ones.

But this strategy is not without its own dangers, because of “agreement” phenomena and “dependent plurals”.

What about the sentence

(3c’) Bill and Frank are each boys.

That’s synonymous with Each of Bill and Frank is a boy. It has a “distributive” reading, forced by “each”. But if we were forced to take the plural at face value, it should mean “Each of Bill and Frank is boys”, or “Bill is boys and Frank is boys” – anomalous, of course. So the plural boys in (3c’) must not be a “semantic plural” – it’s some sort of ‘agreement plural’ or ‘dependent plural’. But then how do we know that the plural in (3c) is not the same?

Other examples of dependent plurals – a fascinating topic for anyone interested in puzzles of apparent mismatches between morphology and semantics –

(i) Trains leave for Amsterdam every half hour. (OK if it’s just one train that leaves each half hour. Of course it could be multiple trains leaving at once – that’s not excluded, but it’s not required.) Here the ‘dependent plural’ on ‘trains’ is licensed not by some other plural DP in the sentence but by the frequency adverbial ‘every half hour’. This and other examples were discussed in early work on the topic by Sjaak de Mey (de Mey 1981)

(ii) Unicycles have wheels – this was used by Chomsky (Chomsky 1975) to argue against compositionality. There is a reply in the same volume, (Partee 1975), that shows that Chomsky’s alternative suggestion of making plurality a feature of whole sentences can’t work, but without a compositional analysis of sentence (ii). I spent the next summer trying to find one; tried three approaches, found arguments against each, never published anything, but am always happy to provide counterexamples to proposals. I don’t know whether there have been any successful proposals – I haven’t kept up. Let me know!

(iii) The boys gave the girls flowers
Either of the second two DPs could be a dependent plural, and the third one could be a dependent plural dependent on ‘girls’.

The unpublished class handout squib (Partee 1985) shows that dependent (bare) plurals do not have the properties of Carlsonian bare plurals – further argument, if any is needed, that they need a separate treatment from “real” bare plurals.

2. On the basic semantics for Plural NPs

From page 5:

(13) **Interpretation of Plural NPs**

\[
[[ \text{NP pl} ]] = *[[\text{NP}]] = 'the closure of [[\text{NP}]] under +'
\]

This is basically Link’s semantics. Seth, like Link, illustrates this with lexical nouns: boy pl is boys, etc. But it has long been noticed that “pluralizing a singular NP” is by no means straightforward, and would at the very least require anti-cyclic transformations, since an NP can contain relative clauses which contain more NPs with relative clauses, etc. This issue came to the fore in the late 60’s when Chomskyans (maybe Dougherty, I forget) proposed a rule of each-hopping, which Chomsky defended against the generative semanticists even when it was shown to be clearly meaning-changing (for discussion of that aspect of the rule see for instance (Partee 1971)). The morphosyntactic problem was that if the transformation should change “Each man went home” to “The men each went home”, it should also change “Each of those books is a best-seller” to “Those books are each best-sellers”, but what can it do with “Each of those mountains is taller than the one (than the mountain) to its south” -- ???Those mountains are each taller than the one(s) (mountain(s)) to its (their?) south(*s) ? There’s simply no well-formed version of that one, and such examples can be multiplied. So some singulars have no well-formed plural; that could probably be treated by saying that the grammar only admits expressions that are morphosyntactically well-formed as well as interpretable. Then the rule above would just need a condition on it – if NP pl is well-formed, then it can be interpreted as *[[NP]].

Are there plural NPs that have no well-formed singular? Surely. (E.g. tunes that sound alike; widows of each other’s first husbands). Are there plurals with no well-formed singular whose meanings should be represented as *P, where we would need to posit some surface-ill-formed NP that expresses P? I don’t know.

In class there was mention of some plurals that shouldn’t be analyzed by that rule, particularly pronouns like we.

Other plurals that pretty clearly need a different treatment than the *P analysis include

a) sisters in Mary and Sue are sisters or Two sisters walked in, where the most natural interpretation is not *sister (for some (rare) 1-place predicate version of sister, but a reciprocal interpretation based on the relational reading of sister.
3. Footnote on MAX

See the definition of MAX on p.6 of handout 1:
Let S be a set of entities from *D.

MAX(S) = the unique x in S such that \( \forall y. y \in S \Rightarrow y \leq x \)

*That element in S which all other things in S are a part of*
(otherwise undefined)

Seth first noted that MAX is defined if there is an x in S such that \( \forall y. y \in S \Rightarrow y \leq x \).
Then to be more careful he amended it to say that MAX is defined if there is exactly one x in S such that \( \forall y. y \in S \Rightarrow y \leq x \).

Exercise: Show that those two conditions are equivalent. If there is such an x, there must be exactly one such x. (Most straightforward strategy: Assume that there are two distinct such elements, and derive a contradiction. That shows that the assumption must be false. This is known as a *reductio ad absurdum* proof.)

4. On the relation between argumental and predicative definite DPs

Seth has on p.8 a “Special Rule for Predicative DPs” – this was in the discussion of definites, separate from the earlier discussion of predicative NPs.

(25) Special Rule for Predicative DPs

\[
[[\text{is/are DP}]] = \lambda x . x = [[\text{DP}]]
\]

On this account, argument position DPs and predicate position DPs have the same presuppositions. Is that correct? Probably not always – Strawson had some arguments against that.

It seems nice to have “Dave is the boy” come out undefined when there are two boys in the model. But Strawson noted that we would like “Sarkozy is the king of France” to come out *false*, not undefined, when there is no king of France. (Unlike “The king of France is bald”, which should indeed come out undefined.)

In (Partee 1986) I discuss the differences in presupposition for definites in types e, <e,t>, and <e,t>,t> predicted by the type-shifting principles proposed there. For definites in predicate position, I predicted that they presupposed ‘at most one’, but not ‘exactly one’. So ‘Dave is the boy’ or ‘Kennedy is the U.S. Senator from Massachusetts’ should come out with presupposition failure, but ‘Sarkozy is the king’ should come out false. Seems right to me.

On the account in handout 1, where the predicate definite is derived from the e-type definite by what amounts to the “ident” type-shifter of Partee 1986, “Sarkozy is the king” will come out as having presupposition failure, just as “the king of France” does in argument position. This actually traces back to MAX – MAX itself is only defined if there is an element that ….
Of course, Partee 1986 was based on the old treatment of the definite article which went only with singulars, so it’s inadequate. Open question: if we abandon iota and move to MAX, how can we get a treatment on which “Sarkozy is the king of France” can come out false rather than with presupposition failure?

5. Collectives, distributives, and compositionality

In Handout 2 on page 4 (and in class on 9/14) it was noted that for Link and many others,

“• Predicates like “run” have the quirk that – *simply due to the kind of action they describe* – there is just no sense in which a plural entity could be their agent ‘collectively’.

• After all, given what running *is* (moving briskly on your two legs), what would it mean for some group of entities to run without each individual entity running?...”

Or we might more cautiously say not that a plural entity couldn’t be the collective agent of *run*, but just that it couldn’t be so “independently” of the individual runnings of its atomic parts.

But even for *run*, if we add modifiers and complements the situation looks different:

(v) *The boys on Team A ran faster than the boys on Team B.*

This may be true collectively in various ways, without it being true that each of the boys on Team A was individually faster than each on Team B. Maybe it was a relay race, so we judge the total time. Maybe we have other ways of computing the time of a team, e.g. taking an average. So while lexical *run* may be unambiguously distributive, we will need to design the compositional semantics carefully so as to show why phrases containing *run* are not always distributive.

References