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The notion of "zero anaphora" has played a prominent role in most approaches to Japanese grammar for at least the last three decades (Kuroda 1965; Clancy 1980; Hinds 1982). It's easy to see why: Japanese can be demonstrated to have far fewer explicit mentions of referents than some European languages. Thus where English, for example, must express what appears to be an obligatory "argument" of a verb, Japanese often does not.

(1) nihon no koto toka kiki -tai -shi sa
Japan of thing or hear-want-and FP
(I) want to hear about what's going on in Japan

The idea of "zero anaphora", "zero pronouns", or "ellipsis" arose naturally from this observation, and it has proven to be a productive approach to the description of Japanese clause structure. Two carefully argued and justifiably highly influential works are Clancy 1980 and Hinds 1982. Clancy 1980 is an especially insightful treatment of reference forms in Japanese Pear Stories from this perspective. In fact, for the kind of event structure found in narratives, an account which postulates "zero" and our account may not be very different, as we will see below.

When we began to look at ordinary Japanese conversation, however, the idea of "zero anaphora" proved to be problematic. In addition, some Japanese scholars have expressed reservations about the idea of "zero anaphora" (see especially Matsumoto 1981 and Okamoto 1985). Interestingly, parallel questions have been raised for Mandarin by Li in press and Tao 1996 and for Brazilian Portuguese by Dutra, p.c. In particular, most native speaker linguists seem to be uncomfortable with the idea that anything is "missing" in utterances for which "zero" has been postulated, even in examples like (1), where it is crystal-clear who wants to hear what's going on in Japan.

So we decided to try to figure out why a "zero" analysis evokes this discomfort. And the first thing we found out was that a zero analysis seems to be based on a standard assumption about argument structure, or "valency", which can be summarized as in (2):

(2) predicates HAVE one or more fixed "argument structures" based on their meanings, that is, on the nature of the "event" that is named by that predicate.

So, to take an example of Hinds 1982, the Japanese verb *taberu* 'eat' is said to evoke a scene in which there must be an eater and something which is eaten. Thus, if the eater, let's say, is REFERRED TO, but not MENTIONED, we can justifiably posit a "zero" in the "slot" which the verb *taberu* evokes. (3) is an example from our database.[2] The transcription system we are using is adapted from Du Bois et al. 1993; each line corresponds roughly to a prosodic unit, with a comma indicating continuing prosody, a period "final" prosody, and a question mark "appeal" prosody. Two hyphens means the prosodic unit was broken off. The equals sign means lengthening, and the brackets mean overlap.

(3) Talking about the party which M just came back from

M: oiishii mono atta -shi [sa=],
delicious thing existed-and FP
there were delicious things

K: [honto=] ippai tabeta no=?
really a.lot ate FP
really, did (you) eat a lot?

-> M: tabe **tabete** nai.
eat eat not
(I) haven't eaten (implying as well that she didn't eat much at the party)

For now, we'll put aside the issue of exactly what wasn't eaten. So, just focussing on the "eater", many scholars would say that when speakers can easily agree on what "obligatory" arguments a verb takes, and can easily identify who the "intended referent" is who is doing the eating, then positing a "zero" there, that is, saying that there is an unexpressed argument in that agent "slot", is unproblematic.

But we have two problems with this line of reasoning:

(4) a. For most of the predicates in our conversational database, there is no clear argument structure such that obligatory arguments can reliably be identified. That is, not only is it often not clear just what referents are being "intended", but it is not clear what "arguments" that predicate should be said to "take".
b. Even for action verbs like 'eat' and 'read', we think there is another way of looking at "argument structure", that raises questions about what is "obligatory".

So what we want to do here is suggest a different direction for thinking about argument structure, and see if it sheds new light on the "zero" question. We

propose replacing the notion of "argument structure" with a much looser and broader picture of the "meanings" of Japanese predicates. Instead of talking of predicates "requiring" certain types of "arguments", we want to follow Fillmore 1986, Goldberg 1995, and others, and suggest that predicate "meanings" be described as including a huge range of semantic and pragmatic associations regarding the sorts of activities, states, and participants that might be invoked when a given predicate is actually used. As pointed out by many researchers recently (including Bybee 1985, Bybee and Slobin 1982, Bybee and Moder 1983, Clancy forthcoming, Langacker 1987, Ono & Thompson 1995), these "meanings" are actually generalizations from many repetitions of hearing predicates used in association with certain types of human events and situations over the course of a person's lifetime. We wish to suggest that only some of these associations are captured by what linguists have talked about under the heading of "argument structure". Most importantly, we suggest that what people have been thinking of as "obligatory arguments" may be a matter of the predicate itself and the context. In other words, as in (5) on the handout,

(5) In many conversational contexts, there may be NO clear "obligatory" arguments.
That is, among the associations which are evoked by a given predicate it may be very difficult to separate the "obligatory" from the "non-obligatory".

Consider example (3) again, for instance. As we said before, the meaning of the predicate *taberu* 'eat' APPEARS to be describable in terms of someone who eats and something that is eaten. But it seems to us that the extent to which these associations are evoked in a given Japanese utterance depends entirely on the context. It is reasonable to assume that among the uses to which this verb is put, many of them involve specifying "eaters" and perhaps also "eatees", and relatively few of them involve specifying instruments; yet in some contexts, Japanese speakers will find it important to associate say, *hashi* 'chopsticks' with the predicate taberu. This means that *hashi* could also be part of *taberu*'s "argument structure", such that if it is not mentioned, it could be considered as a "zero". But few linguists would suggest such an analysis.

It is very important here to notice what we've just done. We've suggested that "argument structure" may be much more a matter of pragmatics than of "structure". Even for predicates like *taberu* 'eat' there are a number of possible associations regarding the participants in the eating event being reported; why, then, do we feel that the agent, the "eater", should be priviledged with an "obligatory" argument structure "slot" while the instrument, the 'chopsticks', say, should not?

The answer to this question clearly lies in the area of FREQUENCY. As we suggested above, it is reasonable to assume that among all the uses of *taberu* 'eat' in Japanese, the great majority of them will involve conversationalists being concerned about who the "eater" is, and very few of them will involve being concerned about what instrument is used. This is because, as quantified studies amply demonstrate (Givón 1979, 1983, 1984), people tend to talk most about people and the things that people do.

What this means is that, WITH FREQUENT REPEATED USE, for certain verbs, certain associations in fact DO get reified by grammars - the grammars of languages often do pick out certain associations - these are what we call "core" roles, or part of the "case frame". As shown by Bybee 1985, Clancy forthcoming, Du Bois 1987, Hopper 1987, 1988, and others, frequent repetition often leads to grammaticization. This is an important fact about languages. But we want to stress that it's not merely a structural fact, it's primarily a pragmatic fact because it is a direct result of frequency in USE.

So what does this all mean for argument structure and "zero"? Three things, as shown in (6):

(6)

a. We are proposing that argument structure in Japanese is primarily semantic and pragmatic, rather than structural. We suggest that even when grammars appear to make a clear "core" / "non-core" distinction, this distinction is only loosely grammaticized. In Japanese, for instance, it does not seem to be at all well grammaticized (cf Okamoto 1990).
b. If our sense of what argument structure is is on the right track, then there are no "obligatory" arguments, and the idea of an obligatory "slot" which can either be filled with a mentioned referent or a "zero" may not be appropriate.
c. The sense we have of an "intended referent", that we know perfectly well who it is who hasn't eaten in (3), can be accounted for by well-known inferential processes.
   That is, as has been discussed at length by Hinds 1982 for Japanese, and by Li in press and Tao 1993 for Mandarin, it is easy to infer in (3) who has not eaten from information in the verb and in the context. But this INFERRABILITY doesn't need to be accounted for by postulating "zero". Inferences like this are part and parcel of our use and comprehension of language. So we don't need to invoke "zero" to do that work. We are saying that there is no a priori reason to consider that the "eater" should have a priviledged status among the associations that go with *taberu*, except for the fact that they have a priviledged PRAGMATIC status based on the verb's meaning which leads to frequent use with concern for who the

> "eater" is. And, we suggest, it is this same pragmatic fact that leads linguists to postulate "zeros" for just those "core argument" associations.

So how does our view differ from the "zero" view? For verbs with relatively clear action scenes like *taberu* 'eat', it differs in the following way: the "zero" analysis postulates an agent "slot" for *taberu*, which can be either filled or not filled. When it is not filled, the "zero" analysis would postulate a "zero" in that slot. Our analysis suggests that there are no "slots" - there only SEEM to be such "slots" because with some kinds of verbs some associations are frequently of concern and come to be regularly associated with those verbs through repeated use. And verbs can to some extent be classified, by speakers and by analysts, according to the most frequent associations. As Hopper 1987 puts it,

> The linguistic system [can be seen] ... as a growing together of disparate forms. This convergence takes place through lateral association of real utterances.

Thus for verbs like *taberu*, there may not be a big difference between our analysis and the "zero" analysis. However, it is evident that our analysis opens up a more pragmatic view of argument structure that has interesting implications for other areas of grammar.

But we have another important point to make in this paper, and that is that MOST OF THE PREDICATES IN OUR CONVERSATIONAL DATA ARE NOT LIKE *TABERU* 'EAT'. That is, they are even less clear in what arguments they should be said to take. We would like to concentrate on these for the rest of this paper.

Our claim is that a close study of actual talk-in-interaction reveals several facts which conspire to reduce the appeal of a "zero" approach to Japanese clause structure:

(7) For a great majority of the predicates in our data, it is either counter-intuititve, difficult, or impossible to identify a particular referent when no argument occurs. Many of these predicates are part of fixed expressions with different degrees of lexicalization. These findings lead to our current proposal that when predicates appear with no overt arguments "zero" should not be postulated. We will now discuss these facts with examples.

First, it is often difficult to asign "missing" arguments to predicate nominals. Look at (8):

(8) O and T are trying to decide the time to meet

-> O: kayoobi dat -tara ne=,
Tuesday COP-if FP
if (it) is Tuesday/if (we meet on) Tuesday

T: [hai].
yes

O: [aa] san-ji han ga ii wa.
uh 3 -o'clock half SUB good FP
uh, three-thirty is good

-> T: san-ji han [desu ka]?
3 -o'clock half COP Q
three-thirty?

-> O: [onnaji] onnaji ne kyoo to.
same same FP today with
just like today

T: hai.
yes

In the utterances pointed to by the arrows, it seems difficult to settle on particular referents for the "missing" arguments.

Predicate adjectives are similar:

(9) T starts getting ready to leave, saying she should get going:

T: ano jaa,
well then

O: itte [itte],
go go
(you) go, (you) go

T: [raishuu=],
next.week
next week

-> O: un= itte **warui** kara.
mhm go bad because
mhm, (you) go because (by keeping you here I feel) bad

It is difficult to identify a particular referent which would be the "missing" argument of *warui* 'bad'. The translation reflects this difficulty.

Similarly:

(10) koko ni kure -ba **ii** n desu ka?
here at come-if good NOM COP Q
Is (it) good if (I) come here?/Is coming here good?

Again, it is difficult to come up with the referent for the "missing" argument for the adjectival predicate *ii* 'good'. One could say the "missing" subject is something like 'coming here', but of course that is already expressed in the form of the conditional clause (see Clancy et al. in press for a discussion of the grammaticization of conditionals as expressions of deontic modality). One could suggest that the entire expression in (10) is a lexicalized expression, of the type that Fillmore, Kay, and O'Connor (1988:505) call a "lexically open idiom", which consists of a conditional clause and the adjective ii. In that case, there is no point talking about its argumenthood. We tend to agree with that analysis. However, we should also emphasize that our conversational database is filled with lexicalized expressions like (10), which seem to be grammaticized without any "argument structure".

And, though we will not point this out for each case, many of the examples discussed in this paper seem to be associated with various degrees of lexicalization.

Let's consider another example:

(11) (T and O are talking about whether it matters how soon they get together again to make another recording

-> 1 T: ano hayaku i ano are **shi**-na -kya ikenai n desu ka?
uh quickly uh that do -not-if bad NOM COP Q
is (it) bad if (we) don't do that quickly?/
is not doing that quickly bad?

2 kore wa i --
this TOP
this

->3 O: **deki**-tara,
can -if
if (you) can/if (it's) possible

4 iya betsuni sonna koto nai sonna koto nai.
no particularly such thing not such thing not
No, we don't have to, we don't have to

The first line includes a predicate adjective *ikenai* 'bad' and the fourth line includes a predicate nominal *koto* 'thing', which are similar to the types we have seen already for which it is difficult to come up with a referent for the "missing" argument. However, in this example, we would like to focus on the verb *suru* 'do' in the first line. As the translation suggests, it is possible to think that here the subject 'we' is not expressed. However, it is equally possible to think that the subject of the verb in question is a generic referent like 'one' or 'you'. Further, the utterance can even mean 'is not doing that quickly bad?'

We can make a similar observation for the verb *dekiru* 'be possible' in the third line. As indicated in the translation, this clause could be seen as "missing" a subject argument 'you', but it could equally be seen as meaning that something is possible.

Some linguists would want to posit two (or even more) different "argument structures" for many of the predicates in our database, like *dekiru* 'be possible'. We do not favor that approach for the large number of similar predicates in our database, for the simple reason that there does not seem to be more than one "meaning" corresponding to these different "argument structures". Furthermore, for such predicates, native speakers often cannot specify which of the various argument structures is "intended". In fact, as Dutra, p.c., has suggested, we may want our model of language to reflect the fact that there are many contexts in which the "referent" is intended to be left "open". Thus, rather than say that *dekiru* 'be possible' has two different argument structures, we would want to say that its meaning allows a range of interpretations as to what might or might not be 'possible' in a given context.

The following example is even more instructive:

(12) Talking about how long the next recording session might take

-> O: **owatta** tokoro de **yame**-tara ee kara.
ended place at stop -if good because
(it's) good if (we) stop when (we)'re done/
stopping when (we)'re done is good

ni-jikan gurai shabet-temo.
2 -hour about talk -even
even if (we) talk about two hours/even talking two hours

betsuni antata ga ee n yat -tara,
particularly you SUB good NOM COP-if
if (it) is good with you

This segment has many of the features which we have already discussed. However, let us focus on the first line. Again it is difficult to come up with a specific referent for the "missing" argument for the verb *owaru* 'end/be done': it's something like 'our talking'. Similarly, the verb *yameru* 'stop' can be assigned the referent 'we', but as the second translation suggests, it does not have to be.

And again, we are not saying that the "difficulty" of finding an appropriate referent is causing us to reject an argument structure analysis according to which required "arguments" that are missing should be seen as "zeros". What we are saying is that MOST of the verbs in our conversations are of this type, which makes us question the assumptions underlying the "argument structure" and "zero" approach to Japanese clause structure.

Most functional and cognitive scholars of Japanese and other languages for which "zero" has been postulated would agree that examples like (8)-(12) do indeed raise major questions about the idea of "zero". Some have proposed that there seem to be "different kinds of zeros" (see Tao 1996 and Clancy forthcoming for important analysis of "different zeros"). But we are going two steps farther in our analysis, as shown in (13):

(13) Ono-Thompson:

1. we are saying that the cases in our conversational data where a "zero" analysis seems inappropriate may be the MAJORITY of cases in ordinary conversation;
2. we are saying that there is no PRINCIPLED difference between these cases and the one illustrated with *taberu* 'eat' in (3) above. If "zero" is not appropriate for (8)-(12), then it is not appropriate for (3) either.

We conclude that, while "zero anaphora" may have appeared to be a useful metaphor for describing aspects of Japanese clause structure, it may actually be a misleading one. Our examination of conversations suggests a need to supplant this idea with a more realistic model in which semantics and pragmatics play a primary role, in which what has been known as "argument structure" is seen as essentially a pragmatic matter, with the "meanings" of predicates evolving from repeated occurrences in actual language USE. In such a model, the notion of "zero" would play no role. Referents, like much else in linguistic communication, would be inferred from the entire range of semantic and pragmatic factors which are present in the actual interactions in which speakers engage in everyday life.

NOTES

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[2] Our database consists of three very spontaneous and informal conversations among family members and friends, totalling approximately 6 minutes, about 500 intonation units.

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