Thematic Proto-Roles and *Zibun*

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1 Introduction

Matters concerning *zibun*[1] have been some of the most controversial issues in (particularly generative) linguistics. *Zibun* commands a long history of being the target of linguistic research and has received plenty of attention of linguists in general. This paper sheds—though in a preliminary fashion[2]—new light on *zibun* with respect to its interpretation and is organized in the following manner. A brief overview of the past studies is given in section 2, providing the reader with the set of standard data. This section points out that the set of relevant facts are not treated uniformly, exhibiting an uneasy and arbitrary division of a single phenomenon into syntactic and pragmatic domains. In section 3, a new approach to *zibun* based on the THEMATIC PROTO-ROLE theory (Dowty 1989/1991) is introduced which is capable of furnishing a unified explanation for the disjunctively treated standard facts. With some modifications in section 4, the current system is shown to be able to provide coverage for previously undiscovered data introduced there. The new data expand *zibun*'s horizon since they are problematic for any existing account.

2 Past treatments

Let us glance at some standard facts about *zibun* (more examples to follow) and examine the past proposals aimed at explaining them. Among the past accounts proposed, there are two categories: (a) syntactic and (b) pragmatic approaches.

2.1 Syntactic accounts

Syntactic accounts for *zibun* can come in various forms depending on the kind of theoretical framework assumed by them. However, since such accounts—regardless of a particular choice of a framework—are uniformly based on configurational properties of sentences, it seems to be reasonable to extract the essence of the accounts in a general way as below. (See Inoue

[1]Though basically an account for data of the form *X-zisin* 'X-self' can be provided along the lines of the current proposal, the data involving *X-zisin* are ignored here. However, it is noted in passing that the claim often made in the literature concerning the locality of *X-zisin* binding is false as the example below demonstrates.

(i) Taroo$_i$ -ga [$_S$ sono kiji-ga (hokademonai) zibun/kare-zisin$_i$-o hihansi-ta] -to kinisitei-ru
-NOM that article-NOM none.other.than self/he-self-ACC criticize-PAST -COMP worry-PRES
'Taroo$_i$ worries that the article criticized (none other than) self$_i$'

Clearly, *zibun/kare-zisin* in this example, does not have to be bound in the minimal local S domain containing it.

[2]See Fukushima (in progress) for a more definitive statement on the subject matter.

(1976) for a summary of the classical transformational approaches. More recently, some try to derive the syntactic conditions seen in the text from LF movement and VP-adjunction (Katada 1991) or from binding by INFL (Aikawa 1993).)

(1) Syntactic conditions on *zibun* binding

- Subject condition: the antecedent of *zibun* has to be the subject.
- C-command condition: the antecedent has to c-command *zibun*.

According to such assumptions, the data in (2) below is expected. In (2a), *Taroo* is the c-commanding subject for *zibun* but the same NP is neither in (2b) and (2c). In (2d), both *Hanako* and *Taroo* are the c-commanding subjects for *zibun*.

(2) a. Taroo$_i$ -ga zibun$_i$-o but-ta
-NOM self-ACC hit-PAST
'Taroo hit himself'

b. *[$_{NP}$ Taroo$_i$ -no otooto] -ga zibun$_i$-o but-ta
-GEN brother -NOM self-ACC hit-PAST
'*Taroo$_i$'s brother hit himself$_i$'

c. *Zibun$_i$-ga Taroo$_i$ -o but-ta
self-NOM -ACC hit-PAST
'*Himself hit Taroo'

d. Hanako$_i$ -ga [$_S$ Taroo$_j$ -ga zibun$_{i/j}$-o home-ta]-to omot-ta
-NOM -NOM self praise-PAST-COMP think-PAST
'Hanako thought that Taroo praised her/himself'

With the assumption that causatives are syntactically complex involving S-embedding, the data below can also be easily accounted for. On some derivational stage, both *Hanako* and *Taroo* will be the c-commanding subjects, hence both are possible antecedents for *zibun*. So far so good.

(3) Hanako$_i$ -ga Taroo$_j$ -o/-ni [$_{NP}$ zibun$_{i/j}$-no ie]-de mat-ase-ta
-NOM -ACC/-DAT self-GEN house-at wait-CAUS-PAST
'Hanako made Taroo wait at her/his house'

2.2 Pragmatic accounts

It did not take a long time for researchers to recognize that the syntactic story told above about the distribution of *zibun* is incomplete (Kuno (1978) and Kameyama (1985); see also Sells (1987)). An examination of the data in (4) is sufficient to show the inadequacy of the syntactic conditions.[3] Here *Taroo* is neither the subject of the sentence nor c-commanding *zibun*.

[3]An account assuming the 'psych verb' status of *kurusimeta* 'agonized' may be possible along the line of Belletti and Rizzi (1988). We ignore such an account for now but will come back to it below and show that such an account is also problematic.

(4) [$_S$ Zibun$_i$-ga bakana]-koto-ga Taroo$_i$ -o kurusime-ta
self-NOM stupid-COMP-NOM -ACC agonize-PAST
'The fact that self$_i$ is stupid agonized Taroo$_i$'

Faced with such data, the following pragmatic account was proposed.

(5) Pragmatic condition on *zibun* binding

- *Zibun* as a logophoric pronoun.
- *Zibun* is anteceded by a logophoric NP referring to an individual whose speech, thought, feelings, or general state of consciousness are reported.

In (4), a report is being made of *Taroo*, a logophoric NP, concerning his feelings, or general state of consciousness, making it a possible antecedent of *zibun*, a logophoric pronoun.

2.3 Summary

Upon summarizing the current state of affairs with regard to the treatments of *zibun*, the following picture (6) emerges. As correctly pointed out by Iida (1992)[4], the distribution of *zibun* which ought to be treated as a single phenomenon is unnaturally and arbitrary divided into *disjunctive* domains each of which operates independently according to unrelated rules and conditions.

(6) Disjunctive conditions on the antecedent of *zibun*

- C-commanding subject *or* ...
- A logophoric NP.

3 Proposal

3.1 Assumptions

One of the aims of the current proposal is to remedy the unnatural disjunctive accounts for *zibun* currently assumed in the literature and open up a possibility of treating various data involving *zibun* in a uniform manner. We begin with the basic approach in this section and then see how it can be extended to widen the coverage of the data in the next section. The key concept is that of entailment-theoretic THEMATIC PROTO-ROLE of Dowty (1989/1991)[5].

[4]Iida (1992), in attempting to provide a uniform account for *zibun*, tries to reduce the task of *zibun* binding to the matters of pragmatic 'points of view' in conjunction with a minimal syntactic restriction. Such an approach appears to let some data slip though its coverage as shown below.

[5]Dowty (1989) explicates a model-theoretic approach to thematic proto-roles in which an INDIVIDUAL THEMATIC ROLE (ia) is defined as a set of entailments (ib) made available for each argument of a predicate. Traditional thematic role labels such as 'agent', 'theme', etc. correspond to Dowty's THEMATIC ROLE TYPEs (ic).

(i) a. Given an n-place predicate δ and a particular argument x_i, the INDIVIDUAL THEMATIC ROLE $< \delta, i >$ is the set of all properties α such that the entailment below holds.

$\Box[\delta(x_1, ..., x_i, ...x_n) \rightarrow \alpha(x_i)]$

b. TRIVIAL INDIVIDUAL THEMATIC ROLE ENTAILMENT

$\lambda x_i \exists x_1, ...\exists x_{i-1}, ...\exists x_{i+1}, ...\exists x_n [\delta(x_1, ..., x_i, ...x_n)]$

According to Dowty, thematic roles are not primitives but rather derived concepts utilizing independently available lexical properties (i.e. entailments) of lexical items.[6] Also, instead of being discrete objects, thematic roles are located along the continuum of roles the dimension of which is characterized by the concepts of PROTO-AGENT (an 'agent-like' element) and PROTO-PATIENT (a 'patient-like' element). As seen in (7), both proto-agent and proto-patient are clusters of a verb's entailments available for each argument of the verb.[7]

(7) a. PROTO-AGENT properties

- volitional involvement in the event or state.
- sentience (and/or perception).
- causing an event or change of state in another participant.
- movement (relative to the position of another participant).
- (exists independently of the event named by the verb).

b. PROTO-PATIENT properties

- undergoes change of state.
- incremental theme.
- causally affected by another participant.
- stationary relative to movement of another participant.
- (does not exist independently of the event, or not at all).

3.2 The basic account

Capitalizing on the proto-role theory, the basic account of *zibun* is deceptively simple as seen in the following convention (8a) with two ancillary definitions (8b, c).[8]

(8) a. Basic *zibun* interpretation (preliminary):

c. Given a set T of *pairs* $< \delta, i_\delta >$ where δ is an n-place predicate and i_δ the index of one of its arguments (possibly a different i for each verb), a THEMATIC ROLE TYPE τ is the intersection of all the individual thematic roles determined by T.

It is noted, as pointed out by Dowty (1991), that thematic proto-roles are independently motivated in that, among other things including child language acquisition, they play a crucial role in predicting argument selection patterns of predicates—a semantic argument with more PROTO-AGENT properties will be lexicalized as the syntactic subject.

[6]In this way, Dowty's approach is distinct from that of Jackendoff (1987) based on CONCEPTUAL STRUCTURES. In the latter, though they are also non-primitives, thematic roles are defined by employing the *primitive* vocabulary of conceptual semantics, namely predicates like BE, GO, TO, IN, AT, ORIENT, etc. Thus, in comparison to Dowty's truly primitive-free characterization of them, Jackendoff defines thematic roles by employing other primitives.

[7]As emphasized by Dowty, it is important to distinguish entailments arising purely from the lexical property of a given predicate *per se* and those arising from the (pragmatic) inferences made based on a situation described by such a predicate. For example, if Mary hits John, he (being a live human) will certainly feel something (i.e. sentience below). But this is not what the predicate *hit* necessarily entails for the object argument since Mary can hit a rock as well.

[8]The convention is a revision of a previous formulation found in my oral presentations (Fukushima 1993). Also Engdahl (1990) points out the relevance of thematic proto-roles for the interpretation of anaphors in English. In passing, it is noted that, though she is concerned with a much restricted range of data involving *zibun*, Uda (1993) independently proposes an account for *zibun* drawing on thematic proto-roles. The crucial difference between the current approach and Uda's is that the former is *purely semantic* while the latter is partially syntactic in which a hierarchy of grammatical relation plays a role.

If an *argument* of a given semantic predicate possesses at least one PROTO-AGENT property, then it can be the antecedent of *zibun* contained in the (TRANSITIVE) PREDICATE-COMMAND DOMAIN of the predicate. *Zibun* contained inside of some element cannot be anteceded by that element.[9]

b. PREDICATE-COMMAND (P-COMMAND):

A semantic predicate PREDICATE-COMMANDS its arguments and adjuncts in a modificational relationship with it.

c. (TRANSITIVE) P-COMMAND DOMAIN:

An element p-commanded by a predicate is in a p-command domain of the predicate. An element *contained in* a p-command domain of a predicate is in a TRANSITIVE p-command domain of that predicate[10]

(8a) may appear to some to be equivalent to saying that the antecedent of *zibun* is a (traditional) 'agent' (whatever that may be). As demonstrated below, this is not true at all since the range of arguments that count as a proto-agent and that of a mere (traditional) 'agent' are far from identical. It is also emphasized that the current proposal avoids all the conceptual as well as empirical problems encountered by an account of *zibun* (e.g. Momoi (1985)) (or any other linguistic theory for that matter) that assumes primitive thematic roles such as 'agent', 'theme', etc.[11]

3.3 Standard facts explained away

Let us consider some standard examples here to see the workings of the account proposed. Data given in (2) (repeated in (9)) is straightforwardly accounted for.

(9) a. Taroo$_i$ -ga zibun$_i$-o but-ta (=(1a))
-NOM self-ACC hit-PAST
'Taroo hit himself'

b. *[$_{NP}$ Taroo$_i$ -no otooto] -ga zibun$_i$-o but-ta (=(1b))
-GEN brother -NOM self-ACC hit-PAST
'*Taroo$_i$'s brother hit himself$_i$'

c. *Zibun$_i$-ga Taroo$_i$ -o but-ta (=(1c))
self-NOM -ACC hit-PAST
'*Himself hit Taroo'

d. Hanako$_i$ -ga [$_S$ Taroo$_j$ -ga zibun$_{i/j}$-o home-ta]-to omot-ta
-NOM -NOM self praise-PAST-COMP think-PAST
'Hanako thought that Taroo praised her/himself'

[9]This prevents *zibun* from making an infinite reference to itself.

[10]This is similar to GPSG's DOM$^+$ predicate defined over syntactic feature structures (GKPS 1985). We take '*contained in*' to be a transitive relation.

[11]See Ladusaw and Dowty (1988) and Dowty (1991) for vexing problems faced by the traditional primitive approach to thematic roles and the employment of such concepts for linguistic research.

In (9a), *Taroo* will have several proto-agent properties made available by the predicate *but* 'hit' and *zibun* is in the p-command domain of the predicate. There will be no proto-agent entailments for *Taroo* in (9b) to be furnished by the predicate *but*—it is not an argument of the predicate. Though *zibun* is indeed in the p-command domain of the predicate in (9c), *Taroo* does not have any proto-agent properties. Rather it commands plenty of proto-patient entailments. In (9d), *Hanako* is the proto-agent of the matrix predicate *omotta* 'thought' and *zibun* is in the transitive p-command domain of the predicate. Also the same is true for *Taroo* with regard to the embedded predicate *hometa* 'praised' and *zibun* is in the p-command domain of it.

How would a causative sentence like (3) above (repeated in (10a)) be handled? Semantically, (10a) will be represented (with *zibun* indicated as *x*) as in (10b).

(10) a. Hanako$_i$ -ga Taroo$_j$ -o/-ni [NP zibun$_{i/j}$-no ie]-de mat-ase-ta (=(3))
-NOM -ACC/-DAT self-GEN house-at wait-CAUS-PAST
'Hanako made Taroo wait at her/his house'

b. CAUSE(Hanako', at-*x*'s-house'(wait'(Taroo')))

Though it is assumed that causatives are syntactically simplex, *mat-ase* 'make.wait' is analyzed as semantically complex consisting of two predicates *mat* (wait') and *(s)ase* (CAUSE). Each (transitive) p-command domain of the two predicates contains *zibun* (*x*) and both predicates entail at least one proto-agent property for their arguments *Taroo* and *Hanako*, making both NPs possible antecedents for *zibun* in the respective domains.

Moving to the next type of data, we consider (4) (repeated in (11)). As recalled from the discussion in the previous section, (11) is different from the data in (2) and (3) in that the c-command subject condition fails, making it necessary to appeal to the pragmatic condition.

(11) [S Zibun$_i$-ga bakana]-koto-ga Taroo$_i$ -o kurusime-ta (=(4))
self-NOM foolish-COMP-NOM -ACC agonize-PAST
'The fact that self$_i$ is foolish agonized Taroo$_i$'

The way *zibun* is interpreted here is no surprise from the current point of view. Though *Taroo* is a syntactic object of the verb *kurusimeta* 'agonized', due to the lexical property of the predicate in question, there is at least one proto-agent entailment for *Taroo*, namely sentience. *Zibun* is in the transitive p-command domain of the predicate since it is included in the subject which is (directly) p-commanded by the predicate. This makes *Taroo* a legitimate antecedent of *zibun*.

Above, I have demonstrated that the range of data that has been treated *disjunctively* (i.e. syntactically or pragmatically) in the literature can indeed be handled as a uniform set of facts under the current proposal—a welcome result. Now we consider more data that are quite perplexing for an account based on a structural condition like c-command (including psych movement) or a pragmatic factor like logophoricity.

(12) a. [S Zibun$_i$-no musume-ga ziko-ni at-ta -koto]-ga
self-GEN daughter-NOM accident-DAT have-PAST -COMP-NOM
[NP Ziroo$_i$ -no kao]-o massao-ni si-ta
-GEN face-ACC pale-DAT make-PAST
'That his$_i$ daughter had an accident made Ziroo$_i$ surprised and scared'
(as a report about the mental state of Ziroo)

b. *?[S Zibun$_i$-no penki-ga kobore-ta -koto] -ga [NP Ziroo$_i$ -no kao] -o siroku si-ta
self-GEN paint-NOM spill-PAST -COMP -NOM -GEN face -ACC white make-PAST
'(Int.) That his$_i$ paint spilled made Ziroo$_i$'s face white'
(as a report about the mere physical condition of Ziroo's face)

c. [NP Zibun$_i$-no kootikusi-ta riron] -ga Ziroo$_i$ -ni meisei-o motarasi-ta
self-GEN construct-PAST theory -NOM -DAT fame-ACC bring-PAST
'The theory that he$_i$ constructed, brought fame to Ziroo$_i$'

The novel contrast between (12a) and (12b) (also familiar (12c); see below) is totally unexpected from a structural point of view since they share the same structural configuration in the relevant respect. Semantically, however, the two are quite distinct. In (12a) *kao-o massao-ni su* '(Lit.) make (someone's) face pale' is an idiomatic expression meaning 'surprise and upset (someone)'. This semantic property of the idiomatic expression gives rise to a proto-agent entailment (i.e. sentience) for *Ziroo* making it a possible antecedent of *zibun* just as in (4) above. In contrast, there is no idiomatic expression in (12b) entailing a proto-agent property for *Ziroo*, hence the impossibility of it to antecede *zibun*.

The contrast (12a) vs. (12b) above can also be accounted for by the logophoric condition but such an explanation is no use for (12c) where no reports are made about Ziroo's speech, thought, feelings, or general state of consciousness. The present system provides a straightforward account. All that has to be recognized is that the indirect object *Ziroo* (the possessor of the acquired fame) obtains at least one proto-agent entailment, namely existence independently of the event named by the verb *motarasita* 'brought'. This is the same proto-agent property that a predicate like *have* entails for the subject who is a possessor in a sentence like *John has a bike*. (Of course (as in (11) above) many more proto-agent entailments are available for the subject *zibun-no kootikusi-ta riron* 'the theory that self constructed' but this subject, being an element containing *zibun* in addition to being inanimate, is disqualified as an antecedent for it.)

In this section it has been demonstrated that, in addition to some new data (like (12a, b)), the standard set of data involving *zibun* found in the literature can be accounted for in a uniform fashion under the present proposal based on the theory of thematic proto-roles. It is emphasized that the standard data set has traditionally received unnatural disjunctive treatments. In the next section I will introduce more new data that necessitate an extension of the current proposal. The extension, however, is not an abandonment of the central idea presented in this section. Rather, it retains a strong dependency on thematic proto-roles.

4 Extension

We have so far seen various types of data involving *zibun* that have appeared in the literature. However, they by no means exhaust the range of relevant facts. In this section

we will have an exposure to more data and expand the current system in order to account for them.

4.1 More data

We begin with the examination of the relevant data and make important observations about their properties. (13a) (so far unnoted in the literature as far as I can tell) establishes that any account that restricts the antecedent of *zibun* to a subject is incorrect. In (13a), not only the subject *Taroo* but also the (dative) indirect object *Ziroo* can be the antecedent of *zibun*. Faced with such data, simply dropping the subject condition is not good enough due to the fact that (13b) is ill-formed with *zibun* anteceded by *Ziroo*. In fact, these data are quite problematic for a configurationally-based (c-command, etc.) account since they have the identical structural properties.

(13) a. Taroo$_i$ -ga Ziroo$_j$ -ni [s (sonna toki-wa) zibun$_{i/j}$-ga tayorininaru] -to it-ta
-NOM -DAT such time self-NOM reliable -COMP tell-PAST
'Taroo$_i$ told Ziroo$_j$ that self$_{i/j}$ is reliable (at such a moment)'

b. Taroo$_i$ -ga Ziroo$_j$ -ni [s zibun$_{i/*j}$-ga bakada] -to it-ta
-NOM -DAT self-NOM foolish -COMP tell-PAST
'Taroo$_i$ told Ziroo$_j$ that self$_{i/*j}$ is foolish'

Unfortunately, the current approach as stated in the previous section does not offer a completely satisfying account for the data in question either. (13b) is what is expected and unproblematic because *Ziroo* does not have any proto-agent entailment from the predicate *itta* 'told'. *Taroo* on the other hand is a solid proto-agent for the same predicate which (transitively) contains *zibun* in its p-command domain, making it a possible antecedent. The same hold for *Taroo* in (13a) as well. But what is unexpected at the moment is that (non-proto-agent) *Ziroo* in (13a) is also a possible antecedent for *zibun*. Something more needs to be said.

What is interesting to observe with respect to the contrast above is that it is possible to identify a natural class of predicates that allow the interpretational pattern seen in (13a). The predicates in this class (call them 'opinion' predicates) seen in (14a) can be independently characterized as those that occur with the (syntactic) adjunct *X-ni-totte* 'for X' and not occurring in the ('regular') double *-ga* structure.[12] This class can be contrasted with the one in (14b) that does not satisfy the criterion. Even more interesting is the fact that, when the adjunct *X-ni-totte* is present in the structure as in (14c), the construal pattern between *zibun* and its possible antecedents is distinct from when the adjunct is absent as in (13a). Here, the NP *Hanako* in the adjunct is a possible antecedent for *zibun* along with *Taroo*, the matrix subject. But now *Ziroo* is unable to antecede *zibun*.

(14) a. Opinion predicates

[12]It is important to distinguish between the 'regular' double *-ga* construction with a 'neutral' reading for both *ga*-marked NPs as in *Taroo-ga Eigo-ga tokuida* 'Taroo is good at English' and the 'extra' double (in fact possibly multiple) *-ga* construction which gives rise to a 'focus' reading as in *Sensinkoko-ga dansei-ga tanmei-da* 'It is an industrialized nation where men are shortlived'. The predicates in (14a) do not appear in a double *-ga* structure of the former type.

doosiyoomonai 'is helpless', ***nasakenai*** 'is disappointing', ***tanomosii*** 'is dependable', ***tayorininaru*** 'is reliable', ***tuyoimikatada*** 'is a strong ally', etc.

b. Non-opinion predicates

bakada 'is foolish', ***but*** 'hit', ***hasir*** 'run', ***rikooda*** 'is smart', ***yaseteiru*** 'is thin', ***yotteiru*** 'is drunk', etc.

c.

Taroo$_i$	-ga	Ziroo$_j$	-ni	[s (sonna toki-wa)	zibun$_{i/*j/k}$-ga
	-NOM		-DAT	such time-TOP	self-NOM
Hanako$_k$	-ni-totte	tayorininaru]	-to	it-ta	
	-for	reliable	-COMP	tell-PAST	

'Taroo$_i$ told Ziroo$_j$ that self$_{i/*j/k}$ is reliable for Hanako$_k$ (at such a moment)'

The next data set (also unnoticed in the literature as far as I am aware) is (15) and exhibits a very interesting contrast. Again the data clearly shows that a structurally-based account is helpless in that the configurational properties of (15a, b) are completely identical in the relevant sense. It also argues strongly against a psych movement approach to *zibun*— if in (15a) ***kurusimeta*** 'agonized' is a psych verb with the 'surface' subject *zibun* in some 'deep' object position that can be c-commanded by the intended antecedent ***Ziroo*** on D-S, the example should be well-formed. Such an account will be evoked for the data like (4) above as well as (15b). It is also noted in passing that an account that assumes a 'minimal' syntactic condition (like the one found in Iida (1993)) requiring that *zibun* has to be commanded by some higher (or superior) element within a hierarchy of grammatical relation will be problematic faced with (15b).

(15) a. *Zibun$_i$-ga Ziroo$_i$ -o kurusime-ta
self-NOM -ACC agonize-PAST
'Self$_i$ agonized Ziroo$_i$'

b. [$_{NP}$ Sonna/ Doosiyoomonai/ Tayorininaranai zibun$_i$] -ga Ziroo$_i$ -o kurusime-ta
such/ helpless/ unreliable self -NOM -ACC agonize-PAST
'Such/Helpless/Unreliable self$_i$ agonized Ziroo$_i$'

Though the prediction according to the current system is correct with respect to (15b), it is incorrect with respect to (15a). The reason is that in both cases ***Ziroo*** will obtain a proto-agent entailment (sentience) from the predicate ***kurusimeta***, hence a possible antecedent for *zibun* in either example. Something more has to be said about this also. However, whatever needs to be said will not be about the configurational properties of the sentences since the data in (16a, b) as a pair contrasts with the pair (15a, b) sharply. Despite the fact that all the sentences under consideration share the identical syntactic structures, ***Ziroo*** will never be able to antecede *zibun* in (16a, b).

(16) a. *Zibun$_i$-ga Ziroo$_i$ -o but-ta (=(1c))
self-NOM -ACC hit-PAST
'Self$_i$ hit Ziroo$_i$'

b. *[NP Sonna/ Doosiyoomonai/ Tayorininaranai zibun$_i$] -ga Ziroo$_i$ -o but-ta
such/ helpless/ unreliable self -NOM -ACC hit-PAST
'Such/Helpless/Unreliable self$_i$ hit Ziroo$_i$'

4.2 Solutions

In this subsection, we consider possible solutions within the current framework to the interesting problems raised by the two types of data introduced above, namely the contrast in (13) and the contrast between (15) and (16).

4.2.1 Conventional implicature

Let us begin with the former, the contrast between (13a) and (13b) (repeated in (17)).

(17) a. Taroo$_i$ -ga Ziroo$_j$ -ni [S (sonna toki-wa) zibun$_{i/j}$-ga tayorininaru] -to it-ta
-NOM -DAT such time self-NOM reliable -COMP tell-PAST
'Taroo$_i$ told Ziroo$_j$ that self$_{i/j}$ is reliable (at such a moment)'

b. Taroo$_i$ -ga Ziroo$_j$ -ni [S zibun$_{i/*j}$-ga bakada] -to it-ta
-NOM -DAT self-NOM foolish -COMP tell-PAST
'Taroo$_i$ told Ziroo$_j$ that self$_{i/*j}$ is foolish'

The clue has already been offered when we considered the distinct lexical properties of the two classes of predicates in (14a, b). First, we recall that CONVENTIONAL IMPLICATURES (Grice 1975) arising from the *lexical* properties of a word give rise to presuppositions.[13] Looking back to (14a, b) from this perspective reveals the fact that the two classes of predicates do differ with respect to their potential for evoking conventional implicatures.

The opinion predicates in (14a) are the ones that are used for expressing opinions and *necessarily* presuppose some evaluative action the dimension of which is specified by the individual predicates. For example, *tayorininaru* 'is reliable' (seen in (17a)) used in both declarative and negative sentences as in (18) presupposes the act of making an evaluation on Hanako along the dimension of reliability. In this case the opinion can be attributed to the speaker or the speaker can simply be reporting Taroo's judgment. But the important point is that there will always be an act of evaluating involved and the same goes for the other predicates in the group.

(18) a. Hanako -wa Taroo -ni-totte tayorininar-u
-top -for be.reliable-PRES
'Hanako is reliable for Taroo'

b. Hanako -wa Taroo -ni-totte tayorininar-a-nai
-top -for be.reliable-PRES-NEG
'Hanako is not reliable for Taroo'

[13]It is emphasized here that the extended accounts proposed in this subsection (based on conventional implicatures) makes no appeal to an exclusively pragmatically-oriented wild card like CONVERSATIONAL IMPLICATURES arising from the way a given conversation is carried out. A clear line is drawn between the matters that can be predictable primarily from lexical properties of a word and those for which lexical properties play a secondary or no role at all.

In contrast to (14a), there is no such conventional implicature necessarily available for the non-opinion predicates in (17b). So, for example, ***bakada*** 'is foolish' (seen in (17b)) may or may not involve opinion formation—a speaker may simply be reporting a fact. For this particular predicate, there is a *contingent* implication for an evaluative action but, for others like ***but*** 'hit' in the same group, such an action is down right implausible.

The extended convention given in (19) below builds on the basic *zibun* interpretation in (8a) above.

(19) Extended *zibun* interpretation:

> A lexically triggered conventional implicature can *indirectly* furnish a predicate whose proto-agent entailments can be used to determine the antecedent of *zibun* as done in the basic *zibun* interpretation.

With (19), the contrast in (17) is accounted for in the following way. In (17a), the fact that *Taroo*—the proto-agent of the matrix predicate *itta* 'told'—can antecede *zibun* requires no further comments. *Ziroo* which in this sentence can plausibly be taken as an individual making an evaluative judgment presupposed by the predicate *tayorininaru* 'is reliable' will be taken as a proto-agent (with sentience) of the conventionally implicated predicate *tayorinisu* 'rely'. This in effect 'drags' *Ziroo* in to the p-command domain of the predicate *tayorininaru* where *zibun* is included, making *Ziroo* a possible antecedent.

What happens in (17b) is quite different where no conventionally implicated predicate can be furnished to make *Ziroo* a proto-agent of the predicate ***bakada*** 'is foolish'. *Taroo* which is the proto-agent of the matrix predicate *itta* 'told' is the only possible antecedent for *zibun* in this case.

4.2.2 Competition

Let us now consider the second challenge to the present (in fact any) account of *zibun*, namely the contrast between (15) and (16) (repeated in (20) and (21)).

(20) a. *Zibun$_i$-ga Ziroo$_i$ -o kurusime-ta
self-NOM -ACC agonize-PAST
'Self$_i$ agonized Ziroo$_i$'

b. [NP Sonna/ Doosiyoomonai/ Tayorininaranai zibun$_i$] -ga Ziroo$_i$ -o kurusime-ta
such/ helpless/ unreliable self -NOM -ACC agonize-PAST
'Such/Helpless/Unreliable self$_i$ agonized Ziroo$_i$'

(21) a. *Zibun$_i$-ga Ziroo$_i$ -o but-ta (=(1c))
self-NOM -ACC hit-PAST
'Self$_i$ hit Ziroo$_i$'

b. *[NP Sonna/ Doosiyoomonai/ Tayorininaranai zibun$_i$] -ga Ziroo$_i$ -o but-ta
such/ helpless/ unreliable self -NOM -ACC hit-PAST
'Such/Helpless/Unreliable self$_i$ hit Ziroo$_i$'

It is noted that in all the examples under consideration, *zibun* is the syntactic subject. In addition, (20) involves the matrix predicate that can furnish a proto-agent entailment (sentience) to the direct object which can be the antecedent of *zibun* only in (20b). The key to this puzzle resides in the combination between proto-agenthood and the presence of an opinion-laden evaluative modifier for the subject *zibun* like *sonna* 'such' and *tayorininaranai* 'unreliable' (c.f. the discussion on opinion predicates in the previous subsection).

One aspect of the proto-role theory that is not very clear from Dowty's (1991) discussion is the concept of 'competition' on a general level between elements with varying numbers of the same proto-role type entailments. In a more restricted domain like syntactic subject selection, the idea of competition play a significant role—the element with the largest number of proto-agent entailments will be lexicalized as a syntactic subject and *mutatis mutandis* for the selection of a syntactic direct object.

For an explanation of the contrast seen in (20), we can appeal to the concept of competition and minimally revise the basic *zibun* interpretation (8a) in the following way.

(22) Basic *zibun* interpretation (revised):

> Only an *argument* of a given semantic predicate possessing the largest number of PROTO-AGENT properties can be the antecedent of *zibun* contained in the (TRANSIT[VE) PREDICATE-COMMAND DOMAIN of the predicate. *Zibun* contained inside of some element cannot be anteceded by that element.

Looking at (20a) from this perspective, we recognize that the subject *zibun* commands the largest number of proto-agent entailments: (a) causing an event or change of state in another participant and (b) exists independently of the event named by the verb, while the direct object *Ziroo* possesses only one such property: sentience. Thus the subject *zibun* is the only possible choice for the antecedent but due to the restriction on self reference, it fails to be so, resulting in ungrammaticality. In contrast, the situation is different for (20b) where the direct object *Ziroo* possesses the same number of proto-agent entailment tokens as the subject, namely *two* instances of sentience. One is provided by the predicate *kurusimeta* 'agonized' and the other is made available by the evaluative modifiers *sonna*, *tayorininaranai*, etc. in a similar manner as described in the previous section via conventional implicature (see (19)). In this sentence *Ziroo* can plausibly be considered to be making an evaluative judgment indicated by the modifiers. Though, as in (21a), the subject *zibun* disqualifies as an antecedent for itself, the direct object with the same number of proto-agent properties can take over and antecede *zibun* in the subject position.

The story is completely different for (21) both examples of which are ill-formed. The reason is that there is *no* proto-agent entailment whatsoever for the direct object of *but* 'hit' in (21a). There are five such entailments for the subject *zibun*: (a) volitional involvement (b) sentience (c) causing an event (d) movement (e) exists independently of the event named by the verb. But, again due to the prohibition on self reference, the subject is not a possible antecedent for itself. In (21b) the addition of the opinion modifiers as done in (20b) does not help since, even after *Ziroo* acquires one such entailment, it is still outnumbered by the subject *zibun*.

Finally, it is noted that (22) which is based on the idea of competition will not cause any inconsistency for the account of causative sentences like (3) above. The reason for this is that, though they are syntactically simplex with a case array of a simplex sentence, semantically causatives are analyzed as having a complex structure with two separate predicates each of which can provide an independent p-command domain for its arguments.

4.3 Summary

In this section we have seen how the set of more intricate data that have so far escaped the attention of researchers can plausibly be accounted for based on the basic *zibun* interpretation (8a) outlined in section 3. Though we have appealed to the additional concepts like conventional implicature and competition, in the center of the extended accounts remains the notion of thematic proto-role, particularly proto-agent.

5 Concluding remarks

Though what has been demonstrated here is far short of being complete with respect to explaining the behaviors of *zibun*, I have established the following points. First, the currently assumed disjunctive accounts is not only conceptually implausible but empirically incorrect. Second, aided by the concept of thematic proto-role, a unifying account can be formulated that is able to encompass both the standard and expanded set of data. I would like to close by pointing out some potential problems for the present account without offering any speculations on how to solve them (see Fukushima (in progress)).

The first problem is the treatment *zibun* in a passive sentence. According to Dowty (1991), all the relevant proto-role entailments are retained even after a syntactically active predicate is passivised. Following this naively seems to give rise to incorrect predictions by the current account—the interpretation of *zibun* should be the same in both passives and actives which is obviously not true as the data below can attest. Something more has to be said about them.

(23) a. Taroo$_i$ -ga zibun$_i$-o home-ta
-NOM self-ACC praise-PAST
'Taroo praised himself'

b. *Zibun$_i$-ga Taroo$_i$ -ni home-rare-ta
self-NOM -DAT praise-PASS-PAST

A different sort of problem is encountered when considering a sentence like (24), an adapted version of familiar examples.

(24) [NP Zibun$_i$-no sippai]-ga Ziroo$_i$-no syusse-o samatage-ta
self-GEN mistake-NOM Ziroo-GEN promotion-ACC hinder-PAST
'His$_i$ mistake hindered Ziroo$_i$'s promotion'

The problem here is that *zibun* and its antecedent are not in the p-command domain of the same predicate. The former is in the transitive p-command domain of the predicate

samatageta 'hindered' and the latter in that of (the nominal predicate) *syusse* 'promotion' where it is indeed a proto-agent. Since the two p-command domains are separate this renders the construal pattern in (24) unexpected from the current point of view. Again something more has to be said about this, too.

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