CASE FORMS AND CASE RELATIONS IN SORA

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1. Background

1.1 Sora

Sora is a Southern Munda language spoken by about 300,000 people in the border districts of Andhra Pradesh and Orissa in India. The variety of Sora under discussion in my paper is that spoken by Mr. Tabono Savra, a resident of Sendoq, a small village near Serango in the southern part of Ganjam District in Orissa. The field work on which this paper is based was conducted in about ten months in India in 1963 and 1965-66.

1.2 Lexicase

My doctoral dissertation in 1967 was a description of the syntax of Sora. One of the aspects of Sora syntax that I now feel was treated inadequately in that work was the system of relations between noun phrases and predicates, and the surface devices by which these relations were signalled. Since that time, a number of generative grammarians have come to understand the nature and importance of such relations, and the works of Charles Fillmore and his students have begun to provide us with the formal machinery to treat them in generative grammars. However, one problem that has not been given serious attention in Fillmorean case grammar, or in the case lexicalist work of the English Syntax Project at UCLA, is the important generalizations that can be
tured in the mapping of case relations onto case ms.

In recent years, I and some of my students and leagues at the University of Hawaii, including fessors Liem and Manley who have also presented ers at this conference, have been developing a sion of generative case grammar that will allow a mmar to capture generalities about case realiza- ms as well as case relations, generalities that ll be comparable beyond the boundaries of a given guage. This approach, which has been referred to 'lexicase' in Harvey Taylor's dissertation on case Japanese (Taylor 1971), provides that every nominal stituent in a sentence be marked for the case rela- in obtaining between it and the predicate or head n of its construction, and for a case form which ifests this relation. The resulting descriptions mewhat similar to the studies of the traditional mmarians. Thus where a traditional gramman ht speak of a particular use of, say, the dative e as the 'dative of personal agent' (Fillmore 1:36), a lexicase grammar would mark that constit- t as having the [+D] case form and the [+AGT] e relation. In the subsequent discussion, I will low Fillmore in referring to case-marked constit- ts as 'actants' (Fillmore 1969:367).

Case in Sora

Within this lexicase framework, I have attempted make some sense out of the array of elements which nal the various case relations in Sora sentences. situation is somewhat more complex in Sora than say, Latin, because Sora does not have a system noun inflections which can be sorted out in a rly straightforward way into 'cases', or case forms.
Instead, case relations are signalled by several distinct types of grammatical devices, including subject and object agreement, word order, postpositions, and noun compounding and derivation. These can, however, be sorted out and grouped into grammatically equivalent sets in a fairly interesting and revealing way. The explication will involve first a discussion of the case relations I have had to posit for Sora, and then of the case forms by which they are realized, and the various markers which correspond to the case forms.

2. Case Relations

2.1 The Agent case relation [+AGT]

2.11 Definition

The Agent case relation [+AGT] in Fillmore's terms is 'the typically animate perceived instigator of the action identified by the verb' (Fillmore 1968:24). I do not assume, however, that 'Agent' is to be equated with 'intent'.¹ In Sora, agents occur only in those sentences having non-nominative Objective case constituents (Taylor 1971:38). This definition seems to formally capture quite neatly the traditional common-sense conception of transitive verbs—those verbs that refer to an action that is directed toward some object. Agents occur in few if any of the 'middle' derived verbs in Sora (Starosta 1971b:202-204) referred to by Biligiri (1965:232) as '+N' verbs.

2.12 Realization

The Agent case relation can only appear in the [+NM] case form; that is, Sora is an accusative language which lacks a passive construction. These verbs translated as passives in Biligiri's article on Sor verbs (Biligiri 1965:232) are simply instances of
jectless transitive verbs marked for non-third son object agreement.

The Instrumental case relation [+INS]

1 Definition

The definition of the Instrumental case relation be used here is somewhat broader than that usual in Lmorean case grammars. It includes not only 'the animate force or object causally involved in the ion or state identified by the verb' (Fillmore 8:24) but also the material or means involved sally in the action, and any objects or materials ch may be necessary to the performance of an action ch is in some sense semantically 'intransitive', t is, an action that does not affect any external ect directly. In this sense, anything played with lived by means of would be eligible to be consid- d an instrument. This means that while it is still e that any verb allowing an agent must also allow instrument, there are verbs such as m?en- 'live' k?eniet- 'die' which allow instruments but do not ow agents. Conveyances, which are treated as in- uments in some languages, are locatives in Sora. s, Sora travel in the bus, never with or by the .

2 Realization

The Instrumental relation is realized only by [+I] case form, and possibly by [+NM] when it urs as the subject of the bañ- 'to be useful '. However, this verb appears too infrequently in texts for me to be very certain on this point, and examples given by Ramamurti (1938:52) are incon- sive.

The Objective case relation [+OBJ]
2.31 Definition

The Objective case relation [+OBJ] is, as usual, the 'wastebasket' case relation, 'the semantically most neutral case, the case of anything representable by a noun whose role in the action or state identified by the verb is identified by the semantic interpretation of the verb itself' (Fillmore 1968:25). In general, it will be that element which is acted upon, or whose state or existence is predicated. However, this relation subsumes several that have been treated as distinct in other case grammars, including Experience and Result/Factive. These two types will be treated here as the interpretations given to the neutral Objective case when it appears with psychological and creative verbs respectively. It also includes actants that have generally been considered agents previously; for example, the subjects of the following English sentences would all be considered [+OBJ] by this definition:

(1) Keone moved slightly.
(2) Kimo ran the mile in four minutes flat.

Except for the untenable criterion of 'intention', there is really no compelling reason to consider 'Keone' and 'Kimo' to be agents in these sentences; and if they are so considered, important syntactic and semantic generalizations must be abandoned (Starosta 1971a:444-445). Objective is the normal case relation of the subjects of intransitive, middle motion, and stative verbs, and of the objects of subjectless existential verbs.

2.32 Factive/Result and the criterion of coreference

I was originally hesitant about including Result/Factive as a subtype of Objective, but it
turns out that there are several reasons for treating them as grammatically equivalent. First of all, their syntactic behavior is almost identical. Both are realized by the same case form, and both agree in person and number with verbs. In general, they are in complementary distribution, since Result occurs only with creative verbs and Objective normally doesn't. However, there is a small class of verbs, exemplified səbja- 'make, construct' with which both can occur simultaneously. By Fillmore's claim that only one instance of a given case relation can occur in a single sentence (1971:38), it would seem necessary to conclude that when both Objective and Result occur in the same sentence, either they are different cases or the sentence is really complex at the deep structure level (Fillmore 1971:38). Since the lexical case framework does not distinguish deep and surface structure levels and thus cannot analyze a simple sentence as complex at some other level, we would seem to be forced to adopt the former alternative, and conclude Objective and Factive/Result are distinct case relations. There is, however, a third possibility to consider, namely that Fillmore's 'one-instance-per-cause' principle is too strong, and that two instances of the same case relation can in fact occur in the same simple sentence if they are coreferential, that is, if the referent of one actant is identical or included in the referent of the other. For example, it is well known that a simple sentence can contain any number of Locatives, as long as they are related in a hierarchy of inclusion (Fillmore 1971:38); thus it is perfectly acceptable to say:

(3) Keone was lying on a bench under a palm tree near the beach at Ala Moana Park.
This sentence is allowed to contain four Locative constituents because they form a hierarchy of inclusion; all refer to the same location, though they vary in the degree of specificity with which they identify this location. In that sense, we can say the four Locative actants are coreferential, and satisfy the condition suggested above. Two other solutions that might be proposed to account for such sentences, for example, to treat them as complex or conjoined in deep structure, or to consider them to be a single branching constituent with each prepositional phrase a reduced relative clause modifying the preceding noun, both seem unconvincing, and in any event are not available to a grammar written in a framework that makes the strong claims about the nature of syntax that are made in lexicase.

It does not seem to have been noticed by any other case grammarians that the criterion of coreference makes it possible to consider separate non-locative actants as having the same case relationship in a simple sentence. Consider for example:

(4) I slapped him on the leg. (Fillmore 1970:126)
(5) The tractor broke John's leg with its right front wheel. (Lee 1969:38)

In case grammars which allow a deep structure, such sentences can be considered to be derived respectively from structures like:

(4') I slapped his leg (Fillmore 1970:126)
(5') The tractor's right front wheel broke John's leg (Lee 1969:38)

However, in a lexicase grammar, this obvious solution is not available, but the coreference criterion is
available; each sentence can be considered to contain two tokens of the same case relation:

(4") I slapped him on the leg

\[
\begin{array}{c}
\text{[+AC]} \\
\text{[+OBJ]}
\end{array}
\begin{array}{c}
\text{[+L]} \\
\text{[+OBJ]}
\end{array}
\]

(5") The tractor broke John's leg with its

\[
\begin{array}{c}
\text{[+NM]} \\
\text{[+INS]}
\end{array}
\begin{array}{c}
\text{[+I]} \\
\text{[+INS]}
\end{array}
\]

Note that these sentences cannot be interpreted to mean that 'the leg' and 'the wheel' are not inalienable parts of 'him' and 'the tractor' respectively. The second must be part of (included in, inalienably possessed by) the first. That is, such split case relations must satisfy the proposed coreference condition.

Returning to the question of the distinction between Objective and Factive, it appears that the criterion of coreference can be adduced to allow both to be considered subtypes of the same case relation, Objective. Consider the Sora sentence (4):

\[
\begin{array}{cccc}
1 & 3 & 2 & 4 \\
\text{anîn kürsî-n aŋal-ən sēbja-lə} \quad \text{(Starosta 1967:127)}
\end{array}
\]

\[
\begin{array}{cc}
\text{[+0]} \\
\text{[+OBJ]}
\end{array}
\begin{array}{cc}
\text{[+0]} \\
\text{[+OBJ]}
\end{array}
\]

1 4 3 2

'He made a chair out of firewood' or 'He made firewood out of the chair'

I would like to claim that this sentence contains two instances of the Objective case, both of them referring to the same physical material, with the real-world different of the chair included in the real-world
referent of the firewood or vice versa. Thus it is unnecessary to posit a separate Factitive or Result case; Factitive is just a type of Objective cooccurring with a [+factitive] verb (cf. Kullavanijaya, 1974). By Fillmore's definition, the Objective noun's "role in the action or state identified with the verb is identified by the semantic interpretation of the verb itself." I interpret this to mean that the object [+AC,+OBJ] of a factitive verb such as idol 'write' can be identified by means of a rule of semantic interpretation as that which comes into existence as a result of the action of the verb, and thus no separate Factitive case relation need be postulated. Similarly, the object of a verb like jom 'eat' can be interpreted by means of a semantic interpretation rule triggered by the presence of the feature [+afct] in the verb's matrix as that participant in the event which is affected by the action of the verb. In the same way, the object of a verb like gij 'see' will be neither created nor affected, since 'see' is non-factitive, non-affected [-fctv,-afct]. Sora verbs such as sėbja 'make', then, are considered to be both factitive and affected [+fctv,+afct]:

(7)  
\[
\begin{align*}
\text{gij 'see'} & : & +V & -afct \\
 & & +NM & \\
 & & +[+DAT] & \\
 & & +[+AC] & \\
 & & +[+OBJ] & \\
\end{align*}
\]

\[
\begin{align*}
\text{idol 'write'} & : & +V & -afct \\
 & & +NM & \\
 & & +[+AGT] & \\
 & & +[+AC] & \\
 & & +[+OBJ] & \\
\end{align*}
\]
jom 'eat'  səbja 'make'

\[
\begin{array}{c}
+V \\
+afct \\
-fctv \\
+\text{NM} \\
+\text{AGT} \\
+\text{AC} \\
+\text{OBJ}
\end{array}
\]

\[
\begin{array}{c}
+V \\
+afct \\
+fctv \\
+\text{NM} \\
+\text{AGT} \\
+\text{AC} \\
+\text{OBJ}
\end{array}
\]

is means that the object of səbja can be interpreted either factitive or affected; or, if two objects are present, one will be interpreted as factitive and the other as affected. If two objects cooccur with a single verb, they must be coreferential by the criterion stated above. Generally, the context of situation will allow the Semantic Interpretation Component (Taylor 1971:11) to distinguish them. It is possible, however, for sentences such as (6) above to allow two different interpretations in an appropriate context.

Allowing two tokens of a given case to occur in a single sentence, subject to the coreference criterion, becomes possible to account for the similarity in syntactic behavior of the two types of actant, which would otherwise have to be treated as accidental.

Certain verb classes in Sora impose special requirements on their Objective actants. For example, personal verbs require that their subjects (if any) be abstract, and therefore third person singular by probably universal rule:

\[
\begin{array}{c}
+V \\
[+\text{AC}] \\
+[+\text{DAT}] \\
+[\text{NM}] \\
(+[+\text{OBJ}]) \\
+\text{NM} \\
-\text{abst}
\end{array}
\]
(8a) [+abst] → [+mass]
(8b) [+mass] → [+spkr] → [+addr]

spkr = speaker
addr = addressee

Another example is the class of middle verbs, which require their [+OBJ] constituents to be marked [+afct]. This same fact has been noted for Gorum by Zide (1972:210) and for Tagalog by Ramos (1973:55-56).

2.33 Realization

The Objective case relation can be manifested by the Nominative [+NM], Accusative [+AC], and Locative [+L] case forms.

2.4 The Dative case relation [+DAT]

2.41 Definition

I consider the Dative case relation to be the relation which identifies 'the animate being affected by the state or action identified by the verb' (Fillmore 1968:24), though I diverge from Fillmore's proposals in that I label an actant as Dative only if
it occurs with a verb which also allows an Objective actant to cooccur with it in the same sentence. In general, I would agree with Fillmore (1971:42) that is a mistake to define case in terms of animateness, since that is confusing 'true case-like notions' with selectional criteria. The Soras, however, have their own ideas on this subject, and it is in fact grammatically as well as semantically impossible to get an inanimate Dative in Sora, as will be seen below.

Like 'Factitive', the syntactic behavior of the Dative case relation is almost identical to that of the Objective; transitive verbs agree with both Dative and Objective actants in person and number (with Dative taking precedence when both are present and marked [+AC] in the same sentence), and both actant...
does require compounding with 'noun auxiliaries' (Tarlosta 1967:169-178) when their head nouns are

... However, when Dative and Objective cooccur in

sentence, as they frequently do, they are never

referential, and thus must be treated as separate

... relations by Fillmore's principle of limiting

... relations to one instance of each per clause.

I have followed Fillmore's suggestion (1968:49, 49)

in considering the relation between a noun and its

... to be Dative. As far as I can determine,

... possess in Sora is expressed directly, it is

... expressed syntactically as a relation between

... there is no place in the case frame of any

... for possessors. They must come in as attributes

... other nouns (10), as possessive affixes (11), as

... catives (12), or as concrete Benefactives (13) or

... locic Benefactives (14). Thus it is not possible to

... them directly:

1 2 3

1 3 2

*ŋen lebu-n dēko-tay

I have money.

[+NM][+AC]

[+DAT][+OBJ]

Instead, one must say one of the following sentences:

1 2 3 4

1 2 3

1) posij-en a-lebu-n dēko

The child's money

[+G]

[+NM]

[+OBJ]

[+poss]

2) lebu-ŋen dēko

My money exists.

[+NM]

[+OBJ]

[+poss]

3) meŋ-ŋen lebu-n dēko

There is money on/near

[+AC]

[+NM]

[+OBJ]

[+LOC]

2 me.
An interesting related fact is that the verbs "b'u" and "tem" 'sell' take Locatives rather than Datives. That is, you can sell something 'at the trader's' but not 'to the trader'. This seems to be connected with the general Sora tendency to avoid animate head noun in non-subject constituents. This tendency will be described in detail in the sections on Noun Auxiliaries below.

2.42 Realization

The Dative case relation can be manifested by the Accusative [+AC] or Genitive [+G] case forms.

2.5 The Comitative case relation [+COM]

2.51 Definition

The Comitative case relation is 'that which is somehow associated in a parallel way with...another actant in the verbal activity or state described' (Taylor 1971:42). The parallel actant may be referred to as the 'partner' of the Comitative actant. It is usually an Agent or Objective.

(15) anin bate yer-ba
    [AC]  [I]
    [COM]

Go with him!
(Ramamurti 1938:5)

Comitative may also be used in adding things together...
So with me and with six other people, there were seven.

This usage, there would seem to be no limit on the number of occurrences of Comitative actants. It may be part of the meaning of Comitative that it is to be considered together with one or more actants as a single semantic unit, a series of or more Comitative actants meets the coreference criterion previously mentioned; that is, their referents together with the referent of the 'partner' which they are associated constitute a single antecedent entity, in which each of them is included. The act which tends to confirm this proposal is the operation that in Sora, when a singular Comitative ant has a singular subject as a partner, the verb inflected for agreement with a plural subject, indicating that the Comitative actant and its partner form a unit for purposes of agreement as well as purposes of determining how many actants of a given case may occur.

2 Realization
The Comitative case relation is manifested by her the Instrumental [+I] or Comitative [+C] case.

The Benefactive case relation [+BEN]
2.61 Definition

The Benefactive case relation is the relation of the entity for whose benefit an action is performed, or for the benefit of which a state exists; or the entity in whose place an action is performed; or that which is given in exchange for something else; or the reason or purpose for which an action is undertaken; or frequently in Sora, the topic about which comment is to be made. All these definitions seem to exhibit some degree of semantic coherence, and so far I can find no syntactic motivation in Sora for separating them into separate case relations. The 'reason' or 'purpose' use of Benefactive would perhaps be the most likely candidate for treatment as a separate case, say, Reason ([+RSN]), and I did analyze it in this way until recently. However, there seems to be a storable partial complementarity between the topic reason, and beneficial aspects of the [+BEN] case relation; concrete [+BEN] actants may be either beneficial or topic, while abstract actants are interpreted as topic or reason. Nominalized sentences are abstract, and are always interpreted as Reason when occurring in the Benefactive case relation. Finally I do not know of any examples of a 'Reason' [+BEN] cooccurring with another [+BEN] in the same sentence.

2.62 Realization

The Benefactive case relation is always realized by the Benefactive case form [+B].

2.7 The Locative case relation [+LOC]

2.71 Definition

The Locative case relation designates the area within which an action takes place or a state obtains or the point or area to or from which a motion is directed. It is possible in Sora to dispense with


1 Case relations as Source, Goal, and Direction.

Each of these can be accounted for as sub-case features of Locative actants which depend on lexical properties of elements such as verbs, prepositions, and noun neighbors. Some type of Locative relation can occur with every Sora verb, and some verbs such as directional and motion verbs impose particular requirements on the sub-type of Locative with which they can occur.

2 Realization

The Locative case relation can be realized only the Accusative [+AC] and Locative [+L] case forms.

The Time case relation [+TIM]

1 Definition

The Time case relation obtains between the dative and the actant which states its time or duration. A time expression can occur with any predicate, though most predicates impose restrictions on its type allowed. Event verbs, for example, do not allow duration Time actants. The behavior of the case is very similar to that of the Location case, but there are syntactic and lexical as well as semantic differences, particularly in the area of the form.

2 Realization

The Time case relation, like the Locative relation, is realized by the Accusative [+AC] case form. It can also surface in a kind of participial clause, typically common in Sora, in which a sentence describing a previously completed or continuing action embedded as subordinate to the main verb of another clause. The verb stem of the subordinate use is reduplicated, with the first stem ending in
-an and the second ending in the past tense affix -le for the completive sub-type, and with both stems ending in -ata for the continuative type:

(17) 1 2 3 4 5- 5 6
    reja-n de-lê jimana den sae-an sae-le anin-ji
    7 8 9 10
    a-j/en/r/om-g/en/r/a-n-ji oscay-teji

3 4 2 1 5- 5 6
Even if it is cold, having borne it, they
10 7 8 9
prepare their food and drink. (cf. jom-
'eat' and ga- 'drink')

(18) 1 2- 2 3 4 5
    at-te-goj dimed-ata dimed-ata aboj arsi-n kun
    6 7 8 9 10 11 12
    a-bênda-leq-ên aboj angaj-ên a-d?eq gj-te

2- -2 1- -1 3 4 12 9
Always sleeping like that, one monkey saw a
10-11 8 5-6 7
moon in the tank.

2.9 The Manner case relation [+MAN]

2.91 Definition
The Manner case relation is the relation that
describes the manner or conditions under which an
action is carried out. Sora allows [+MAN] actants
occur in sentences which do not contain an Agent.

2.92 Realization
The Manner case relation can be manifested on
by the Instrumental [+I] case form and by manner
adverbs, those ending in -ge in Sora.

3. Case forms
So far, the case system of Sora may seem fair
straightforward. It is in the case forms, however,
the system of markers which signal the case relatio
Interesting complications are encountered. While language such as English signals the presence of case relations by word order, subject agreement, prepositions, and pronoun suppletion, Sora case markers include subject agreement and object agreement, directional verb inflection, verbal derivational affixes, tpositions, and free and bound noun auxiliaries (Arosta 1967:169-179). The latter are bound or obligatorily possessed nouns with special cooccurrence case-bearing properties. Sora is somewhat unusual in that various lexical classes of nouns are prevented from being marked for certain cases. For example, mate nouns can never be marked for dative or locative directly. Instead, they occur as attributes of certain dummy nouns which do allow marking for these cases. These dummy nouns I have referred to in my dissertation as 'noun auxiliaries' (Nax). Examples will be given in the discussion of the individual case forms.

The Nominative case form [+NM]
The Nominative case form marks the grammatical subject of the sentence, a category whose presence is obligatory in a Sora sentence. It is identified by the fact that it never takes postpositions, frequently precedes the other actants in a sentence, and cooccurs with non-stative verbs in person and number. Nominative case form realizes Agent, Objective, possibly Instrumental case relations.

The Accusative case form [+AC]
The Accusative case form is the most versatile of the Sora case forms. It never cooccurs with postpositions, and follows the Nominative if both occur in the same sentence. The Accusative case form may realize four case relations: Objective, Locative,
Dative, and Time. When it carries Dative or Objective, the verb agrees with it in person and number, means of a set of affixes distinct from those marking subject agreement, and morphologically related to the personal pronouns. The co-occurrence of Accusative and each of the four case relations it realizes is subject to certain lexical restrictions:

3.21 Dative accusatives [+AC,+DAT]

Although the Dative case relation is always carried by the Accusative case form, all Sora nouns except one are forbidden from occurring in the case relation [+DAT]. The one exception is the noun auxiliary d?ɔŋə, which may be marked positively for [DAT] [OBJ]. This form, an obligatorily possessed noun, appears related to the homophonous word d?ɔŋə-ən 'body', though it requires a separate lexical entry. Although formally a noun such as pəsiŋ-ən 'child' cannot be directly marked [+DAT], it can occur in a Dative actant as a possessive attribute of the only noun which can be [+DAT], d?ɔŋə. Since d?ɔŋə is selectively prevented from occurring with inanimates, effect only animates can hold Dative relationships with ditransitive verbs. If we were to translate d?ɔŋə as 'body', in Sora you wouldn't give money to a child, you would give money to his body:

(19) *ənin pəsiŋ-ən ləbu-ŋ tiy-1ɛ

1 6 2 5

He gave the child money.

(20) anin pəsiŋ-ən a-d?ɔŋə ləbu-ŋ tiy-1ɛ

1 6 5 2 3 4

He gave money to the child('s body).
Objective accusatives [+AC,+OBJ]

The situation with respect to the Objective case relation is somewhat similar. In Sora, human nouns never carry the Objective case relation directly, instead must be attributes to the same noun auxiliary, d?ɔŋ. That is, you cannot say:

1 2 5
*anîn pesîj-ən ɡiʃ-1ɛ

1 5 2
He saw the child.

Instead, you must say:

1 2 3 4 5
anîn pesîj-ən a-d?ɔŋ ɡiʃ-1ɛ

1 5 2 3 4
He saw the child('s body).

Notice that while all animate nouns must cooccur with ən when dative, it is only the human subset of animate nouns that require d?ɔŋ as objectives. Non-animate animates can be objectives with or without d?ɔŋ, both forms can be found:

1 2 5
anîn kəsîm-ən tîb-1ɛ

[+AC]
[+OBJ]

1 2 3 4 5
anîn kəsîm-ən a-d?ɔŋ tîb-1ɛ

[+AC]
[+OBJ]
[+poss]

1 5 2 3 4
He divided the chicken('s body)

Locative accusatives [+AC,+LOC]

The Accusative case form can also realize the locative case relation, but again, lexical restric-
tions are involved. Only a certain sub-set of Sora nouns is marked for the ability to occur in the Locative case relation directly. This set includes names for such things as places, structures, and land forms: hills, fields, forests, and so on. These nouns will contain the semantic feature [+locn] in their lexical matrices. Thus one can say:

\[
\begin{array}{ccc}
1 & 2 & 3 \\
\text{an in bëru-n yër-le} \\
\hline
& +AC & \\
& +LOC & \\
& +locn & \\
\end{array}
\]

He went to the hill field

Other nouns, however, cannot be marked directly for Locative. To use a word such as d?a 'water' as Locative, one must compound it with a bound nominal Combining Form like leŋ 'place, area'. The resulta [+locn] compound can then be used like a lexically locative noun:

\[
\begin{array}{cccc}
1 & 2 & 3 & 4 \\
kudub-ënji d?a-leŋ-ën gëlo-lejì \\
\hline
& +AC & \\
& +LOC & \\
& +locn & \\
& +inter & \\
\end{array}
\]

All of them fell in the water.

This leŋ can also be added to nouns which are already members of the location class. In this case it adds the idea of interiorness. Thus bëru-leŋ-ën means 'in the field' or 'the inside of the field'.

These facts can be formalized by the following rules:
1. \([+N] \rightarrow [-\text{locn}]:\) all nouns except those already marked \([+\text{locn}]\) in their lexical matrices are \([-\text{locn}].\)

2. \([+\text{locn}] \rightarrow [+\text{LOC}]:\) location nouns may or may not be marked for the Locative case relation directly.

3. \([-\text{locn}] \rightarrow [-\text{LOC}]:\) non-location nouns cannot be marked directly for the Locative case relation.

4. \[
\begin{bmatrix}
+\text{N} \\
-\text{anim} \\
\alpha F_1
\end{bmatrix} \quad + 
\begin{bmatrix}
+\text{N} \\
+\text{CF} \\
+\text{locn} \\
+\text{inter}
\end{bmatrix} \quad \rightarrow 
\begin{bmatrix}
+\text{N} \\
-\text{anim} \\
+\text{locn} \\
+\text{inter} \\
\alpha F_1
\end{bmatrix}
\]

Any noun can be compounded with the location bound Combining Form \(\text{leq}\). The resulting compound noun is \([+\text{locn},+\text{inter}].\) For further examples of compounding derivation rules applied to Sora nouns, see Starosta 1971b; for English examples, see Starosta 1971c.

Another bound nominal Combining Form, \(\text{ba},\) can be compounded with non-location inanimate nouns to form a \([+\text{locn}]\) noun which is unmarked for interior-

\[
\begin{array}{cccccc}
1 & 2 & 3 & 4 & 5 & 6 \\
\text{anin} & \text{semo} & \text{ba} & \text{n} & \text{e?} & \text{-ti-l-i\text{\textbar}\text{n}}
\end{array}
\]

\[
\begin{bmatrix}
+\text{NM} \\
+\text{AGT} \\
+\text{AC} \\
+\text{OBJ} \\
+\text{locn}
\end{bmatrix}
\]

1 3-5 4 6 2
He didn't give me the paddy field.

Since \(\text{ba}\) cannot be a word by itself, it is not listed in the lexicon, and a special rule is estab-

lished to account for \(\text{ba}-\) compounding:
(29) \[
\begin{align*}
\text{[+N]} & \quad [\text{+N}] \\
\text{-anim} & \quad \text{+CF} \\
\alpha_F^i & \quad \text{+locn} \\
\end{align*}
\] \rightarrow \begin{align*}
\text{[+N]} & \quad [\text{+N}] \\
\text{-anim} & \quad \text{+locn} \\
\alpha_F^i & \quad \text{+locn}
\end{align*}

The ba forms are true compound nouns, and as such are subject to diachronic processes of semantic and phonological change. Thus sëro-ba-n 'paddy field' is formed from sëro-n 'paddy rice' and the nominal Combining Form ba 'point, place', but the resulting compound noun means 'paddy field' rather than just a place where paddy might be piled, threshed, etc. Another kind of change in a compound noun which is the output of this rule can be observed in the word form 'place of work, job'. This word has two possible pronunciations, baraban and barabən. The first of these forms is the one that would be expected from compounding of ba with the noun bara-n 'work', with the internal structure bara-ba-n. The second form, however, seems to be the result of a reanalysis, with the final vowel reduced to e and reinterpreted as part of the usual post-consonantal noun suffix en, indicating a new internal structure barab-en instead of bara-ba-n.

Certain direction verbs require that their Locative actants be specified as 'goal'. This requirement can be met by compounding the [+locn] noun of the Locative actant with ba-, which adds the required feature [+goal].

(30) \[ \text{do təgɛlda-λɛn-ɛn sən-bə-λɛn əro-lay} \]

\[
\begin{align*}
\text{[+AC]} & \\
\text{[+LOC]} & \\
\text{[+goal]} \\
\end{align*}
\]

\[1 \ 2 \ 3 \ 4 \ 5 \ 6 \ 7 \ 8\]

\[ \text{So in the morning we reached our home (place)} \]
This fact can be accommodated by modifying the derivational rule in (29) to:

\[
\begin{align*}
+N & \quad \text{ba} \\
-\text{anim} & \quad +\text{CF} \\
\text{locn} & \quad +\text{locn} \\
\text{af}_i & \\
\end{align*}
\]

\[
\begin{align*}
+N & \quad \text{ba} \\
-\text{anim} & \quad +\text{locn} \\
\text{goal} & \quad +\text{locn} \\
\text{af}_i & \\
\end{align*}
\]

The fact that the possessive pronominal suffix -\text{len}" in (30) follows rather than precedes ba is additional confirmation for the claim that ba plus the immediately preceding noun do in fact form a single compound noun.

With location-class nouns, ba is optional if the loco allows but does not require a [+goal] Locative:

\[
\begin{align*}
1 & \quad 2 & \quad 3 & \quad 4 \\
\text{anlen} & \quad \text{s\textsuperscript{?}un(ba)n a} & \quad \text{pa\textsuperscript{\textdagger}lenay} \\
+\text{AC} & \quad +\text{LOC} & \quad (+\text{goal}) \\
\end{align*}
\]

1 4 3 2
We brought it (to) home.

Animate nouns can also be used as location nouns the same way as inanimates, but in such cases, a different form, m\textsuperscript{\textgamma} 'area, vicinity' is used. This form, like d\textgamma\textsuperscript{\textgamma}, is an obligatorily possessed noun, rather than a bound Combining Form like \texteta\textsuperscript{\textgamma} or ba.

This means that it cannot only serve as the head of a noun phrase with an animate attribute (33), but it also constitute a noun phrase by itself, provided it has an animate possessive affix (34):
(33) do konne biŋ babu-n a-men ly-lay
   [+AC
   +LOC
   +poss
   +locn]

(34) meŋ-ŋeŋ esuŋ eyem teneŋ-le do ŋeŋ soy-lay
   [+AC
   +LOC
   +poss
   +locn]

1 3 7 4 5 6 2
So however I came to the Babu('s vicinity) he
5 1 2 2 1 3
It stopped near me (in my vicinity) for a little
4 6 7 8
time and I fired.

To accommodate these facts, it is only necessary to
add the following entry to the lexicon:

(35) meŋ 'area, vicinity'
   [+N
   -NM
   -anim
   +locn
   +poss
   [-[-anim]]

This makes it possible for an animate noun to appear
in a Locative constituent, but only as a possessive
attribute to the noun meŋ. When an animate noun is
to occur as a Locative goal, it must first be made
[+locn] by making it an attribute to the noun auxili-
ary meŋ. Since meŋ, the head noun of the Noun
Phrase, is [+locn], it is of course subject to com-
pounding with ba by derivational rule (31):
The man goes (with) dancing to the woman (‘s vicinity).

Since men is listed in the lexicon as an independent noun, it can also occur without an attribute. However, since it is obligatorily possessed [+poss], it will still appear with a possesive pronominal affix in example (12)). When it is compounded with ba, the [+poss] feature carries over, and the derived compound noun is also obligatorily possessed:

Where I stood, there the tiger slid (down) to me (to my vicinity).

Time accusatives [+AC,+TIM]

The Time case relation also appears in the Accusative case form, and its behavior is very similar to that of the Locative relation. Again, there is a class of Sora nouns which may be marked directly
for the Time relation. This includes words such as eyem 'time', dinna 'day', palli 'week', and tega 'morning', as in:

(38) anin tega-da-n yer-len
    [+AC]
    [+TIM]
    [+time]

1 3 2
He went in the morning.

Other nouns, however, cannot be marked directly for Time, and must appear as attributes of such time marked noun auxiliaries as a?neng 'during', a?mem 'before', and tiki 'after'. a?mem and tiki are considered [+time] nouns rather than postpositions because they can occur alone, meaning 'the time before that' and 'the time after that' respectively, and I have assumed for the time being that a?neng is also a noun auxiliary, although I have found no example of it occurring alone.

The nouns occurring with these [+time] noun auxiliaries, and I include entire nominalized sentences as instances of derived nouns (cf. No. 19), are almost exclusively abstract. I have however found one exception to this rule:

(39) sora-mem-enji ora-n a?neng bayaacya bensa-l
     [+FAC]
     [+TIM]
     [+time]

7 8
anin-ji m?en-teji

1 2 7 8 5 6 4
The Sora people, they live very well during the mango (season).
Nouns already in the time class can be further ved with the addition of ḥe, with the result ing 'a bounded interval of time'. This is com-
elogous to the use of the same element, ḥe, location-class nouns to mean 'a bounded area':

\[
\begin{array}{cccccccc}
1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\text{eten-tē} & \text{a-bara-n} & \text{a-lēm-be-n} & \text{dē-te-len} & \text{kun} \\
8 & 9 & 10 & 11 & 12 & 13 \\
\text{a-dinna-leh-ēn} & \text{anh-ēn} & \text{dēr-gēm-dēr-gēm} & \text{bara-ba-n} \\
\text{[+TIM]} & \text{[+lochn]} & \text{[+time]} & \text{[+nter]} \\
14 \\
\text{a-yēr-tē}
\end{array}
\]

Whatever work we have to do on that day, we go to our various jobs.

Fact can be accounted for by derivation rule 4), which is allowed to apply to [+time] nouns, e they are lexically marked [-anim]. The result-
compounded nouns will then be specified for the ures [+lochn, +nter, +time]. There is no incompat-
"ity between [+lochn] and [+time], and it is quite al to find that some language uses the same word refer to location in space or time (Cf. Starosta :3).

See no time elements corresponding to the tive noun auxiliaries mēn and ba, but there is a er analogous element in 'season', found in several ounds:

daga-in-en 'summer' < daga-n 'heat' + in-en 'season'
(42) reŋa-iŋ-en 'winter' < reŋa-n 'cold' + iŋ-en 'season'

This seems comparable in function to the bound noun ba 'place' found in the compounds sërɔ-ba-n 'paddy field' and bara-ba-n 'place of work' mentioned above and a similar compounding rule can be posited to account for these forms:

(43)

\[
\begin{array}{c}
\begin{array}{c}
+N
\\[+\text{temp}]
\\[+\text{F}_i]
\end{array}
\\+\underbrace{\begin{array}{c}
+N
\\[+\text{time}]
\\[+\text{seas}]
\end{array}}_{iŋ}
\\\rightarrow
\begin{array}{c}
+N
\\[+\text{time}]
\\[+\text{seas}]
\\[+\text{temp}]
\\[+\text{F}_i]
\end{array}
\end{array}
\]

Of course this rule is much less general than the rules for len and ba, since it only applies to temperature nouns, and since the output compounds are marked as seasons rather than more generally as any period of time characterized by a particular temperature range.

3.3 The Locative case form [+L]

The Locative case form is signalled by two postpositions, sërĩŋ 'from' and sikoyja 'up to, until'. These elements refer to orientation rather than motion. This case form can realize not only Locative (44 and 45) and Time (46 and 47), but also Objective (48):

(44) do reŋa-iŋ-en a?nẹŋ aninji s?uŋ-en sërĩŋ jen-

\[
\begin{array}{c}
\begin{array}{c}
\text{+AC}
\\[+\text{LOC}]
\end{array}
\\[+\text{src}]
\end{array}
\]

8 9
leer duŋ-tenji

1 3 2 4 7 9 6
So during the winter they also leave from the
5 8
house early.
So the deer, having got up, went to a place somewhat distant.

So we work at our tasks from morning until evening.

So that chicken, after being fed continuously from small on, grew big.
The Soras get everything from clothes to loes from the Oriyas.

We might say that these postpositions govern the Accusative case, since they occur with almost all the case relations that occur with the Accusative case form. On the infrequent occasions when they occur with animate nouns, the animate noun must appear as an attribute of məŋ to make it eligible to appear as [+LOC], as illustrated in example (48) above.

I have heard phrases such as the following from missionaries and Sora evangelists:

(49) jisun a-məŋ-ba-n sərinya

This construction also occurs in the Sora Bible, I believe, and seems to be an example of King James Sora rather than of colloquial language. It seems very awkward to me, possibly due to the semantic conflict of [+src] with [+goal], which implies the feature [-src].

There is a special use of the [+L] postposition sərinya in comparative constructions:

(50) apiɾmənta sed-ɾun-ən sərinya kristu-məɾ-ənji
Compared to former weddings, the Christian people's wedding is thus:

The Instrumental case form [+I]

The Instrumental case form carries the Manner, Instrumental, and Comitative case relations. It is alluded by the postposition batte:

\[
\begin{align*}
1 & \quad 2 & \quad 3 & \quad 4 & \quad 5 \\
\text{anin batte yer-ba} & \quad [+AC] & \quad [+I] \\
\text{[+COM]}
\end{align*}
\]

Go with him!

\[
\begin{align*}
1 & \quad 2 & \quad 3 & \quad 4 & \quad 5 \\
kundin batte po-in-ten & \quad [+AC] & \quad [+I] \\
\text{[+INS]}
\end{align*}
\]

He stabbed me with a knife.

The Comitative case form [+C]

The Comitative case form can only realize the comitative case relation. The marker of the [+C] form is the postposition empera:

\[
\begin{align*}
1 & \quad 2 & \quad 3 & \quad 4 & \quad 5 & \quad 6 \\
te?te?en yer-an yer-le te?te a-gorjan-mer-ewnji & \quad [+AC] & \quad [+COM] & \quad [+poss]
\end{align*}
\]

\[
\begin{align*}
7 & \quad 8 & \quad 9 & \quad 10 & \quad 11 & \quad 12 & \quad 13 \\
\text{empera kinsar-en a-sarya-ben asen bo sora} & \quad [+C]
\end{align*}
\]

\[
\begin{align*}
14 & \quad 15 & \quad 16 \\
tuleb-ba-n anlen a-gen-lay
\end{align*}
\]
Having gone there, I entered a large forest with the people of that village there to shoot Samba.

3.6 The Benefactive case form [+B]

The Benefactive case form can realize only the Benefactive case relation, although, as previously stated, the Benefactive case relation has several functions. The markers of the [+B] case are the postpositions asən, ə?mele, and əbsele. I can find no clear difference of meaning between them, and they are generally interchangeable in sentences:

(54) hindo sora-mer-ənji əbsele əsuj ber-na
     $\text{[FAC]}$
     $\text{[+B]}$

5- 5 6 4 1 2-3
A few words about the Hindu Soras.

(55) de-te pedde bindo anjen ə?mele ıjaja ted
     $\text{[FAC]}$
     $\text{[+B]}$

2- 2 1 3 6-7
That may be right, but there's nothing in it for us.

(56) aninji tuləb-ən yər-təji $\text{[ora-n a-paŋ-be-n]}$
     $\text{[FAC]}$
     $\text{[+B]}$

1 3 2 7 6 5
They go to the forest for the purpose of getting mangoes.

3.7 The Genitive case form [+G]

The Genitive [+G] case form carries the Dative case, the possessive relation between a head noun a
attributes. The [+G] case form has no overt
fixes, prepositions, or noun auxiliaries. It is
characterized by requiring all nouns to which it is an
dtribute to be marked for possession and to agree
with it in person and number. The first and second
person personal pronouns may not occur in the [+G]
form; instead, first and second person possession
signalled solely by pronominal affixes on the head

\[
\begin{array}{c}
\text{1 2} \\
\text{s?un-Šen} \\
\text{2 1} \\
\text{'my house'} \\
\text{2 1} \\
\text{s?un-nem} \\
\text{2 1} \\
\text{'your house'} \\
\text{2 3 1} \\
\text{(anin) a-s?un-Šen} \\
\text{3 1 2-3} \\
\text{'his house (of his)'} \\
\text{2 3 1} \\
\text{ešečlo-n a-s?un-Šen} \\
\text{3 1 2-3} \\
\text{'her house of the woman'}
\end{array}
\]

Notice that bound noun auxiliaries like mën and d?e
allow almost exactly the same pattern, although the
English translations make them look quite different:

\[
\begin{array}{c}
\text{1 2} \\
\text{mën-Šen} \\
\text{1 2} \\
\text{'near me'} \\
\text{mën-nem} \\
\text{1 2} \\
\text{'near you'} \\
\text{(anin) a-mën} \\
\text{3 1-2} \\
\text{'near him'} \\
\text{ešečlo-n a-mën} \\
\text{3 1-2} \\
\text{'near the woman'} \\
\text{1 2} \\
\text{d?e-Šen} \\
\text{1 2} \\
\text{'to me'} \\
\text{d?e-nem} \\
\text{1 2} \\
\text{'to you'}
\end{array}
\]
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>3</th>
<th>1-2</th>
</tr>
</thead>
<tbody>
<tr>
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<td>a-ð?ọŋ(ẹn)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ẹnẹ̀ọ̀lẹ́-n</td>
<td>a-ð?ọŋ(ẹn)</td>
<td>1-2</td>
<td>'to him'</td>
<td>'to the woman'</td>
</tr>
</tbody>
</table>

4.0 Conclusion

4.1 Overview of case forms, case relations, and case markers

<table>
<thead>
<tr>
<th>NM</th>
<th>G</th>
<th>AC</th>
<th>L</th>
<th>I</th>
<th>C</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>agrmt</td>
<td>agrmt</td>
<td><strong>P:</strong></td>
<td>serĩŋ sikoja</td>
<td>batte</td>
<td>ẹmpẹra</td>
<td>asẹn ẹbsẹla e?mele</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGT</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBJ</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>X</td>
</tr>
<tr>
<td>DAT</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>X</td>
</tr>
<tr>
<td>LOC</td>
<td>Nax: -leŋ-ẹn</td>
</tr>
<tr>
<td></td>
<td>-ba-n ẹn</td>
</tr>
<tr>
<td>TIM</td>
<td>Nax: a?mẹŋ tiki a?nẹŋ</td>
</tr>
<tr>
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<td>X</td>
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</tbody>
</table>

*Noun auxiliary

**Postposition*
Summation

I believe that the case forms and case relations outlined in this paper will make possible a clearer classification of Sora verbs and a subsequent overall case description of Sora syntax. It should also make the case system of Sora accessible for comparison with the systems of other languages described previously in a lexicase framework.

1. This means, for example, that I reject the identity of the 'imperative test' as a means of identifying Agent subjects. Verbs other than those with Agent subjects can be imperative:

Hit it with your horn! (AGT)

See no evil, hear no evil, speak no evil! (DAT, DAT, AGT)

Be quiet! (OBJ)

Be a man! (OBJ)

Moreover, sentences with Agent subjects can be interpretable as non-intentional:

That union carpenter broke the picture window with a two-by-four (AGT)

This sentence may have either an intentional or non-intentional subject, but to say that the case of the subject is not AGT in the non-intentional interpretation leads to all kinds of generality losses.

2. In a lexicase grammar, agreement can be accounted for using inflectional subcategorizational roles and morphophonemic rules. For example, ISR-1 now states that a non-existential non-stative verb possesses a subject which may be singular or plural [+plur], and first person [+spkr], second person [+adr], or third person [-spkr,-addr]:

\[
(+{ [+NM] } )
\]

-1. \([-\text{stative}] \rightarrow (+ ( [+\text{plur} ] ) )\)

This states that all (non-stative) non-directional first person singular verbs, and all singular cislocal verbs, take the suffix ay:
MR-1. \[ \bar{V} \rightarrow ay\bar{V} \]

MR-2 states that all (non-stative) non-directional active second person singular verbs, and all singular translocative verbs, take the suffix \(-\epsilon:\)

\[
\left[ \begin{array}{c}
+NM \\
-spkr \\
+addr \\
-(plur) \\
-dir \\
-MIDL \\
+NM \\
-(plur) \\
-cisloc \\
-MIDL
\end{array} \right]
\]

MR-2. \[ \bar{V} \rightarrow \epsilon\bar{V} \]

Such rules can be formulated to account for all inflection and agreement phenomena in Sora. For the conventions applying to such rules, and for all exemplification of their use in a full-scale grammatical description, see Li 1973.
REFERENCES


