Sama Verbal Semantics:
Classification, Derivation and Inflection

Charles Walton
Summer Institute of Linguistics

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# TABLE OF CONTENTS

## CHAPTER 1. THEORETICAL BACKGROUND

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.1</td>
<td>Sama Typology</td>
<td>2</td>
</tr>
<tr>
<td>1.1.1</td>
<td>Focus System</td>
<td>4</td>
</tr>
<tr>
<td>1.1.2</td>
<td>Terminology—Topic, Subject, Actor, Pivot</td>
<td>10</td>
</tr>
<tr>
<td>1.2</td>
<td>A Theory of Verb Semantics</td>
<td>14</td>
</tr>
<tr>
<td>1.2.1</td>
<td>Stative Verbs</td>
<td>21</td>
</tr>
<tr>
<td>1.2.2</td>
<td>Achievement Verbs</td>
<td>21</td>
</tr>
<tr>
<td>1.2.3</td>
<td>Accomplishment Verbs</td>
<td>22</td>
</tr>
<tr>
<td>1.2.4</td>
<td>Activity Verbs</td>
<td>23</td>
</tr>
<tr>
<td>1.2.5</td>
<td>Revised Classes</td>
<td>25</td>
</tr>
<tr>
<td>1.3</td>
<td>Role and Reference Grammar</td>
<td>29</td>
</tr>
<tr>
<td>1.3.1</td>
<td>Actor and Undergoer</td>
<td>29</td>
</tr>
<tr>
<td>1.3.2</td>
<td>Semantic Relations of Arguments</td>
<td>32</td>
</tr>
<tr>
<td>1.3.3</td>
<td>Verb Classes—Logical Structures and Semantic Relations</td>
<td>33</td>
</tr>
<tr>
<td>1.3.4</td>
<td>States</td>
<td>34</td>
</tr>
<tr>
<td>1.3.5</td>
<td>Activities</td>
<td>37</td>
</tr>
<tr>
<td>1.3.6</td>
<td>Achievements</td>
<td>39</td>
</tr>
<tr>
<td>1.3.7</td>
<td>Accomplishments</td>
<td>39</td>
</tr>
<tr>
<td>1.3.8</td>
<td>Summary</td>
<td>40</td>
</tr>
<tr>
<td>1.3.9</td>
<td>The Layered Structure of the Clause</td>
<td>43</td>
</tr>
</tbody>
</table>

## CHAPTER 2. CLASSIFICATION OF SAMA UNAFFIXED VERBS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>Introduction</td>
<td>47</td>
</tr>
<tr>
<td>2.1</td>
<td>Locative States</td>
<td>48</td>
</tr>
</tbody>
</table>
2.2 Non-locative States .............................................. 49
  2.2.1 Condition States ........................................... 49
  2.2.2 Perception States .......................................... 51
  2.2.3 Cognition States ........................................... 52
  2.2.4 Possession State Predication ............................ 53

2.3 Activity Verbs .................................................. 54
  2.3.1 Motion Verbs ................................................ 54
  2.3.2 Potentially Agentive Activities ........................ 55
  2.3.3 Agentive Activities ........................................ 57

2.4 Achievement Verbs .............................................. 60

2.5 Accomplishment Verbs .......................................... 61

2.6 Summary .......................................................... 65

CHAPTER 3. SAMA VERBAL DERIVATION

3.0 Introduction .................................................... 68

3.1 N- as an Inchoative Affix ..................................... 68

3.2 N- and mag-, Deriving Verbs from Nouns .................... 70

3.3 mag- as Agentive ............................................... 73

3.4 pa1-, Derived Activities ...................................... 74

3.5 pa2-, Causatives as Derived Accomplishments .............. 77

3.6 ka- as DO Canceller ............................................ 83

3.7 um- as DO Canceller ............................................ 86

3.8 an, Locative Focus or Valence Increaser? ................. 87

3.9 Summary .......................................................... 95
CHAPTER 4. SAMA VERBAL INFLECTION AND SYNTACTIC PROCESSES

4.0 Introduction ........................................... 97

4.1 Sama Inflection ........................................... 97

   4.1.1 Imperative (undergoer focus) with -un ........ 98
   4.1.2 Undergoer Focus Non-agentive with ta- ....... 100
   4.1.3 Benefactive Focus Imperative with -in ........ 102
   4.1.4 Instrument Focus with paN- .................... 104
   4.1.5 Location and Time Focus with pan-...-an .... 105

4.2 Major Voice Oppositions .............................. 106

   4.2.1 Undergoer Focus with $............... 107
   4.2.2 Actor Focus with N- and mag- ............. 108

4.3 Voice Oppositions and the Typology of Sama ... 112

   4.3.1 Ergativity in Sama Morphology ............... 112
   4.3.2 Ergativity in Sama Syntax .................. 115
   4.3.3 Passive ...................................... 116
   4.3.4 Antipassive .................................. 118
   4.3.5 Voice Oppositions and Syntactic Operations .... 122
   4.3.6 Summary ..................................... 130
   4.3.7 Conclusion ................................... 132

BIBLIOGRAPHY ............................................. 134
LIST OF TABLES

1. Sama Verbal Affixes .................................. 10
2. Syntactic Criteria for Verb Classes ................. 19
3. Logical Structure of Verb Classes .................. 24
4. Revised Verb Classes ................................. 28
5. Logical Structures and Semantic Relations ........ 42
6. Sama Verbal Classes (Unmarked) .................... 66
7. Sama Verbal Affixes (Derivational) ................ 95
8. Sama Inflectional Affixes ............................ 131

LIST OF FIGURES

1. Actor/Undergoer Hierarchy ............................ 41
2. The Layered Structure of the Clause ............... 44
ABBREVIATIONS USED IN THIS BOOK

(A) actor
AF actor focus
AFF affix
(B) beneficiary
BF benefactive focus
dl dual
ex exclusive
FOC focus
(I) instrument
I Set I pronoun
II Set II pronoun
IF instrument focus
IMP imperative
inc inclusive
L(OC) locative
LF locative focus
NEG negative
NP noun phrase
O object
Ø unmarked/zero morpheme
OBL oblique
PASS passive
PAST past tense
pl plural
PERF perfective
PM person marker
POSS possessive
PREP preposition
PRO pronoun
PrP pragmatic pivot
PRT particle
Q question
sg singular
(U) undergoer
UF undergoer focus
1.0 Introduction

Samal is a language spoken by several hundred thousand people in the Sulu Archipelago of the Philippines, as well as along the coast of Sabah, North Borneo, Malaysia, and in scattered locations throughout Indonesia. There are eleven or more dialects that are sufficiently different to require separate grammatical analysis. The particular variety of Sama under study in this paper is spoken on Pangutaran Island, which is located forty miles northwest of Jolo, Sulu.

In approaching the analysis of a Philippine language, one is confronted with many problems: some of the most difficult lie in the verbal system. Problem areas in the verbal system include the following: the semantic distinctions between classes of unaffixed verbs; a complex system of affixes; and the diverse semantic shifts that verbs manifest with various kinds of inflection.

In a sketch of Sama given below, the focus system is illustrated, showing that any NP argument of a verb can be focussed. The problem lies in determining what focus is appropriate for use in a given context, and in predicting the semantic shifts likely to occur with different affixation of the verb. This problem is further complicated in Sama by the fact that many verbs occur uninflected, but still indicate focus. To solve this problem, a theory of verbal semantics is proposed that will provide a principled explanation of verb classes and their logical structures and show what semantic relations obtain between any given predicate and its arguments.
The theory itself is presented in Chapter One. In Chapter Two it is shown that the theory predicts what verb classes occur in Sama in unaffixed form. Chapter Three illustrates how the theory explains the derivational morphology, and Chapter Four shows how the theory explains the inflectional morphology.

Evidence is given for ergativity in Sama in both morphology and syntax. The ergative analysis of undergoer focus and the consequent antipassive analysis of actor focus provides an explanation for the reduced transitivity of actor focus verbs, and accounts for a breakdown in the distinction between derivational and inflectional morphology. In addition to explaining the role that inflection and the focus system play in verbal semantics and the semantic relations between predicates and their NP arguments, the theory also explains the role of focus in higher syntactic processes.

1.1 Sama Typology

Before describing the theory of verb classification, it is necessary to consider some of the facts about the basic typology of Sama, and to clarify some terminological problems.

Although Sama shares many of the characteristics of other Philippine languages, it is also distinctive in many respects. Word order is basically verb, subject (actor), object (undergoer), although some freedom of reordering is possible. Unlike noun phrases in other Philippine languages, Sama NPs are minimally marked for case. Actor and undergoer NPs are marked only if they occur as pronouns. Oblique NPs are the only NPs which are marked both when they occur as pronouns and as lexical nouns. Actor and undergoer can be distinguished, however, even if both are lexical nouns, by their order of occurrence, or of course by substituting a pronoun for one of them. Pronouns are marked in a manner similar to case marking.
(1.1)  

**a. Tagalog**

\[ \emptyset \text{-} \text{b-in-ili} \ ng \ bata' \ ang \ isda \ sa \ palengke \]  
UF-PERF-buy PRT child PRT fish OBL market

'The child bought the fish at the market.'

**b. Sama**

\[ \text{bay } \emptyset \text{-} \text{b'lli} \ onde' \ daing \ ma \ tabu' \]  
PAST UF-buy child fish OBL market

'The child bought the fish at the market.'

The Tagalog example in (a) shows an initial verb \text{bili} 'buy' affixed for undergoer focus with the null \( \emptyset \) affix. The infix -in- indicates perfective. The actor noun phrase is marked by a case marking particle ng. The undergoer noun phrase is marked by the focus marking particle ang. And the locative noun phrase is marked by the oblique phrase marker sa.

The Sama example in (b) differs from the Tagalog example in (a) in several important respects. The past tense in Sama is not indicated by verbal inflection but by the particle bay, although undergoer focus verbs may also and often do occur without bay and are still interpreted as past tense. The verb b'lli 'buy' which occurs initially in the clause is unmarked inflectionally; with a transitive verb this indicates undergoer focus. The actor NP onde' 'child' is in the first postpredicate position (the usual position of the actor) but is unmarked for case. The undergoer NP daing 'fish' follows the actor, but unlike the undergoer in the Tagalog example, has no focus marking particle, even though it is the focussed NP. The location NP is marked by the oblique marker ma. Sama ma, though it marks oblique case like Tagalog sa, is actually a preposition, not a case marking particle, because it also has lexical meaning and is a member of a class of prepositions.\(^3\)
1.1.1 Focus Systems

As can be seen from the preceding examples, Sama, like other western Austronesian languages, has a focus system. In a focus system one NP in a clause is indexed by the morphology of the verb as being "in focus". The exact pragmatic and semantic content of being "in focus" will be discussed in Chapter Four.

Focus in Philippine languages refers to a system of voice oppositions in which the affixation of the verb codes one NP as being of greater salience than the others in the clause. This NP has been traditionally called topic; however, in this work it will be referred to as the focussed NP (for reasons stated in Section 1.1.2). In the fourth chapter, it will also be referred to as 'pivot' because of the pivotal role the focussed NP plays in higher syntactic processes.

Although any NP in the clause may be focussed, it is usually one of the more central arguments (actor or undergoer). Focussed NPs must be referential and definite; non-focussed NPs may or may not be referential and definite. In Sama when a non-focussed NP is definite it is usually so marked (e.g., proper noun, pronoun, possessive, or deictic).

In most Philippine languages each NP is marked by a case marking particle which is replaced by a special focus marking particle when that NP is in focus. The following examples from Tagalog illustrate this point:

(1.2)

a. b-um-ili ang lalake ng isda sa bata
   AF-buy FOC man (U) fish L child
   'The man bought some fish from the child.'

b. ø-b-in-ili ng lalake ang isda sa bata
   UF-PERF-buy (A) man FOC fish L child
   'A/the man bought the fish from the child.'
In (1.2a) the verb bili 'buy' is marked with the infix -um- to indicate that the actor NP is in focus. In (1.2b) the verb is marked by Ø indicating undergoer focus. Other analysts have claimed that -in- performs a double function of indicating perfective and undergoer focus; however, this is not relevant to our discussion. In (1.2c) the verb is marked with the suffix -an indicating that the location NP is in focus.

The various NP arguments in the clause are also marked for case. In (1.2a–c) ng can be seen to mark both actor and undergoer when they are not in focus and sa marks location. In most Philippine languages the case marking particle of the NP in focus is replaced by a focus marking particle such as Tagalog ang; in (a) it is the actor case marker ng which is replaced, in (b) the undergoer case marker ng, and in (c) the locative case marker sa.

The following examples from Tinggian (Binongan Itneg) illustrate a similar system of morphological marking for focus and co-indexing of case marking particles in a Northern Philippine language. Unlike Tagalog, which marks both non-focussed actor and undergoer with ng, Tinggian has contrastive marking for non-focussed actor (i.e., nit) and undergoer (i.e., ta).

(1.3)

a. takaw-en nit lalaki sit baka di bilig
   steal-UF (A) man FOC cow L field
   'A/the man stole the cow from the field.'

b. n-ag-takaw sit lalaki ta baka di bilig
   PERF-AF-steal FOC man (U) cow L field
   'The man stole a cow from the field.'
Example (a) shows that the verb takaw 'steal' occurs with the suffix -en indicating undergoer focus. The actor NP is marked with the actor case marking particle nit and the location NP is marked with the location case marking particle di. The undergoer NP however has had its case marking particle ta replaced by sit indicating that it is the NP in focus.

In (b) the verb takaw is affixed with nag- indicating actor focus as well as perfective (the imperfective is mag-). The undergoer NP is marked with the case marking particle ta and the actor NP has had its case marking particle nit replaced by the focus marking particle sit.

The example in (c) has the verb takaw 'steal' marked for location focus with the compound affix pag-...-an. The regular case marking particles occur with the actor NP (nit) and the undergoer (ta) since they are not in focus. However, the location NP has its case marking particle replaced by sidi, the focus marking particle. (Case marking particles in Tinggian have a rather complex morphology which will not be discussed here.)

Sama is different from most other Philippine languages in that it does not have case marking particles for the actor and undergoer, nor a focus marking particle like Tagalog ang and Tinggian sit/sidi. Oblique NPs are marked, but they are marked by prepositions rather than case marking particles.

There are two basic sets of pronouns in Sama as shown in the following chart. Set I pronouns occur as non-focussed actor, as possessor in possessive constructions, and with uk 'by' when the actor occurs in an oblique NP. Set II pronouns occur both as focussed actor or undergoer, and with prepositions.
### Sama Pronouns

If all the arguments occur as nouns the actor and undergoer are unmarked, resulting in a high degree of ambiguity and difficulty in decoding the meaning of the sentence. However in actual speech it is uncommon for all the arguments of a verb to occur as nouns since in real life there is a great amount of contextual information which precludes the need to specify all NPs. In this case the use of pronouns contributes to the disambiguating of NPs which would otherwise be unmarked.

The following examples illustrate five different focus types in Sama:

\[(1.4)\]
\[
\begin{array}{llll}
\text{UF-put} & \text{lsgI(A)} & \text{coffee(U)} & \text{OBL teapot} \\
\hline
\text{Ø-tau'} & \text{ku} & \text{kahawa} & \text{ma sili'} \\
\end{array}
\]

'I put the coffee in the teapot.'
The examples in (1.4a-e) show five different focus types which indicate that virtually any NP in a clause may be focussed: (a) is undergoer focus; (b) is actor focus; (c) is location focus; (d) is instrument focus; and (e) is benefactive focus.

In example (a) the verb tau' 'put' has a null affix indicating undergoer focus; the actor NP is a pronoun of Set I which here indicates non-focussed actor. The undergoer NP is in focus as indicated by the verb morphology but has no special focus marking particle, and the location NP is marked by a preposition ma.

Example (b) has the verb tau' 'put' with a nasal prefix N-6 indicating actor focus, and the actor NP, which is in focus, is replaced by a Set II pronoun which is used in this instance to mark focus.

In (c) the verb tau' 'put' is affixed with -an7 and the location NP is in focus. The location NP, since it is now in focus, loses its oblique marker ma and is made specific by the demonstrative iyu 'that'.

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In (c) the verb tau' 'put' is affixed with -an7 and the location NP is in focus. The location NP, since it is now in focus, loses its oblique marker ma and is made specific by the demonstrative iyu 'that'.
In example (d) the verb is affixed with $paN-$-$an$ indicating instrument focus. The focussed instrument is preposed but it is not otherwise marked. The undergoer NP is unmarked for case and the location NP is marked with the preposition $ma$ 'at/on'.

Example (e) illustrates benefactive focus. The verb $tav'$ is affixed with $-in$. The beneficiary is the focussed NP; hence it occurs as a Set II pronoun which indicates focus.

The chart in Table 1 illustrates the variety of Sama verbal affixes. Some of the affixes in the table are derivational and will be discussed in Chapters Three and Four. In most contexts, the affixes $N-$, $-an$, and $\emptyset$ appear to have a grammatical function but no lexical content. Other affixes have not only grammatical function but also convey lexical meaning as listed on the left of the chart. Though not shown on the chart, some affixes (e.g., $N-$, $mag-$, and $-an$) have more than one grammatical function, as will become evident in the discussion to follow. The theory of verbal semantics presented here will explain the variety of functions and interpretations of both the derivational and inflectional affixes in a principled and revealing way.
### Table 1. Sama Verbal Affixes

<table>
<thead>
<tr>
<th>FOCUS</th>
<th>Actor</th>
<th>Undergoer</th>
<th>Benefactive</th>
<th>Instrument</th>
<th>Time/Location</th>
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<tbody>
<tr>
<td>MEANING</td>
<td>N-</td>
<td>Ø</td>
<td>paN-</td>
<td>paN-</td>
<td>-an</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>mag-</td>
<td>-an</td>
<td></td>
</tr>
<tr>
<td>Passive</td>
<td></td>
<td></td>
<td></td>
<td>-i-</td>
<td></td>
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<tr>
<td>Comprehensive/</td>
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<td>Reciprocal</td>
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<td>Action</td>
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<td>Abilitative/</td>
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<td>Non-agentive</td>
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<td></td>
<td></td>
<td>ka-</td>
<td>ta-</td>
<td></td>
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<tr>
<td>Non-agentive</td>
<td></td>
<td></td>
<td>um-</td>
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<tr>
<td>Imperative</td>
<td></td>
<td></td>
<td>-un</td>
<td>in</td>
<td></td>
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<tr>
<td>Motion</td>
<td></td>
<td></td>
<td>pal-</td>
<td></td>
<td></td>
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<tr>
<td>Causative</td>
<td></td>
<td></td>
<td>pa2-</td>
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<tr>
<td>Inchoative</td>
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<td>N-</td>
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<td>Agentive</td>
<td></td>
<td></td>
<td>mag-</td>
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<td></td>
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<td>N-</td>
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1.1.2 Terminology—Topic, Subject, Actor, Pivot

By means of the discussion of the focus system in this paper I have attempted to avoid a terminological confusion that has plagued Philippine linguistics. Until 1958 Filipinists referred to the phenomenon of focus in terms of voice oppositions such as active and passive. Not being satisfied that the distinction between the
structures in question was at all like the English distinction between active and passive, Healey (1958) applied the term "focus" to the function of the verb morphology that indexed one NP in the clause as being more salient than the others. McKaughan (1958), using the term "focus", also referred to the focussed NP as the "topic" of the clause.

With the emergence of Case Grammar in the late 1960's, terms for the case roles were added to the descriptions of the grammar, and this eventually added to the confusion of terms. Longacre (1968), in doing research on discourse, pointed out that the use of the term "topic" created problems because there are also sentence topics which are preposed to the verb, as well as the topic (i.e., focussed NP) which is internal to the clause, and that these are two different kinds of topic because they have different functions in discourse. The confusion was sufficient that McKaughan (1973) proposed going back to the term "subject" for the grammatical category of focussed NP.

More recently Schachter (1976, 1977) has also identified topic with subject and has sought to define the reference and role-related properties of subject (topic). The development of Relational Grammar has raised new interest in more precise definitions of grammatical categories that are regarded as universal. The notion of subject was regarded as an especially elusive one and in need of more precise definition. Keenan (1976) sought to do this and came up with more than 30 properties of subjects. However, in Philippine languages these subject properties seem to be divided between the topic and the actor.

Foley and Van Valin (1977) surveyed the way in which the proposed properties of subjects 'applied' to grammatical categories in three languages: Lakhota, Tagalog, and Navaho. They found that the properties did not clarify the notion of subject for those particular languages. Hence, they concluded that the notion of subject is not a relevant category for universal grammar.
The term subject is not appropriate for the focussed NP because of the confusion over the definition of the term subject and because the focussed NP lacks some of the grammatical properties typical of subjects. Furthermore, it has been pointed out by Chafe (1976) and Prince (1982) that focus and topic are distinct grammatical categories with distinct pragmatic functions. This distinction between focus and topic holds true for Philippine languages as well. Among the distinctions between focussed NP and topic are the following:

1. Topics are usually marked phonologically, whereas focussed elements (pivots) are not.

2. Focussed items are coded morphologically, whereas topics are coded by position (e.g., preposed).

3. Focussed NPs have specific tasks in a variety of syntactic constructions whereas topics do not. Topics serve a wider range of functions, such as setting "spatial, temporal, or individual domains within which the main predication holds" (Chafe, 1976:50; Li and Thompson, 1976).

(1.5)

a. Tagalog

sa tindahan b-um-ilî ang lalake ng isda
L store AF-buy FOC man PRT fish
'At the store the man bought fish.'

b. Tinggian (Itneg)

kandi awi payyan nag-ayaw sid lallakay mi
OBL old.time yet AF-raid FOC men 1pl.exI
'In the old days our men went raiding

di Lubuagan
LOC Lubuagan
in Lubuagan.'
c. **Sama**

```
ma lahat Kompang N-b'lli aku lahing
OBL town Kompang AF-buy lsgII(A) coconut(U)
'In the town of Kompang I'll buy coconuts.'
```

d. **Sama**

```
aku N-b'lli lahing ma lahat
lsgII(A) AF-buy coconut(U) OBL town
'I'll be the one to buy coconut in the town of Kompang.
Kompang
Kompang.'
```

The examples in (1.5a-c) from three widely diverse Philippine languages, show topic NPs that are not marked for focus by the verb. They are marked as topicalized by the fact that they are preposed. Normal word order in these languages is verb initial. The Tagalog example in (a) has a locative topic. Depending on the discourse it occurs in, it could function to express counter expectation, that is, if it was expected that he bought the fish some place else; or it could serve to change the location in which the events are reported to have taken place.

The Tinggian example in (b) also has a topic that is not focussed by the verb. Here it is an oblique NP expressing time. The phrase kandi awi payyan 'in the old days' sets the time parameter of the discourse in which the action that took place is reported. The focussed NP of the clause is sid lallakay mi 'our men'. Although the focussed NP could have been made a topic, it would have been pragmatically unacceptable at the place in the discourse where this sentence occurred, because it is required that the time parameter be set at the beginning of the discourse.

The examples in (c) and (d) are from Sama. Example (c) shows an oblique NP, ma lahat Kompang 'in the town of Kompang', as the topic of the sentence. This topic could function to contrast one location with another as
the place of the action in a context mentioning several locations, or it could serve to contrast the activity done in that particular place with that done in another place. Example (d) shows the focussed actor NP aku 'I' as a topic which sets the actor in contrast with other potential actors. The fact that both a topic and a focussed NP can occur in the same clause, as in (a) and (c), shows that they are distinct.

In order to avoid the terminological confusion that has developed, I will use the terms in the following way: **topic** indicates the NP that has been preposed to the position before the verb, as in examples (1.5a-d); **focus** refers to the grammatical function whereby the verb is marked morphologically to indicate that a particular NP is 'in focus'; and **focussed NP** refers to the argument of the verb which is cross-referenced by the verb morphology. The term **actor** will be used to indicate the participant that is involved in effecting the action of the verb. The term subject will be avoided. Instead, when talking about the syntactic properties of focussed NPs, we will employ the notion of 'syntactic pivot' (Heath, 1975; Dixon, 1979). Pivots are defined in terms of syntactic constructions. In English, for example, the subject NP is crucially involved in a variety of constructions, for example, equi-NP-deletion, participial relativization, and subject raising, and accordingly it is the pivot of these constructions. The relevant Sama constructions will be discussed in Chapter 4.

1.2 A Theory of Verb Semantics

As stated in the introduction, this analysis seeks to provide a system of classification for Sama verbs that will account for the grammatical relations between a verb and its related noun phrases in a clause, as well as for the thematic relations that exist between a predicate and its arguments (i.e. agent, effector, patient, theme, etc.).
Past analyses of Philippine verbs have classified them either according to affixation potential (Wolff, 1970) or according to the case frame of the clause in which the verb could occur (Forster and Barnard, 1968). However, those approaches did not take into account at least one important fact regarding Philippine languages. The case frame approach in particular assumed that the various inflections that a verb stem occurred with had no effect on the semantics of the verb, but rather produced a group of related clauses having essentially the same meaning and grammatical relations. The stem itself was regarded as being a member of a particular class characterized by its case frame; inflection of the stem was regarded as not normally changing the class or case frame of the verb. If the case frame changed in an obvious way with a certain affix, that affixation was regarded as derivational rather than inflectional.

It will become evident in the course of this discussion that this is not, in fact, the case. Rather, this analysis will show that a group of related clauses that occur with a particular verb stem have differences in meaning that are significant and relevant to the classification of the verbs themselves. The class of a verb will be seen to be semantically defined by the verb's inherent semantic content and the relation that obtains between the verb, in its particular morphological form, and the clause in which it occurs, in other words, the semantic relationship between the verb and its arguments. To develop this system of classification we will need to account not only for the inherent semantic content of the verbs, but also for the derivational morphology and much of the inflectional morphology, since derivational and inflectional affixes often affect the class of the verb.

In order to achieve this purpose, it is necessary to approach the classification with a theory that has a major emphasis on verb semantics. Dowty's (1979) theory of verb semantics is useful in this regard. As this theory points out, verb semantics cannot be studied in isolation; clause structures are also relevant to the classification. Since clause structure in Philippine languages is centered around the focus system, which is
involved in interclausal relations as well as discourse functions, a theory is needed that deals with the interaction of semantics, syntax and discourse. Role and Reference Grammar (hereafter RRG) developed by Foley and Van Valin in *Functional Syntax and Universal Grammar* (1984) (henceforth FSUG) is such a theory, since it makes use of Dowty's (1979) theory of semantics and seeks to account for relations between syntax and discourse. The goal of RRG, as expressed in FSUG,

... is to demonstrate that crucial features of clause structure such as case markings and voice options are intimately tied up with ... interclausal phenomena and accordingly can be fully understood only with reference to them. Hence the analysis of the morphosyntax of the clause must, on this view, proceed from an interclausal and ultimately discourse perspective. (FSUG:1)

In this book we will make use of both Dowty's theory of verb semantics and some concepts from RRG. As a basis for this analysis, we will look first at Dowty's system of verb classification.

Dowty's system of verb classification is one of lexical decomposition based on Vendler's (1967) four classes of verbs: states, activities, achievements, and accomplishments. While some approaches to lexical decomposition attempt to account for the complete semantic content of the predicate, this analysis seeks to identify only the relevant components required for classification. The transfer verbs in the following sentences illustrate this point:
A theory of lexical decomposition that attempts to account for the complete meaning of predicates would be interested in how the exchange took place (whether it was direct, or mediated through some other agent), and what other components differentiated the meanings of the verbs from each other. A more limited theory of lexical decomposition, such as Dowty proposes, would give attention only to those aspects of meaning relevant to the classification of the verbs, that is, they are transfer verbs, having one participant acting volitionally to effect the change of location of an object from one personal location (participant) to another.

Basic to Dowty's theory is the notion, drawn from Vendler, that aspect is an essential parameter in any classification of verbs. Vendler claimed that the time (in a broader sense than tense) schemata presupposed by various verbs provide a means for "exploring and clarifying the behavior of any verb whatever" (Vendler, 1967:98). One of the distinctions in schemata is between 'verbs which participate in continuous tenses vs. those which do not'. Verbs that may have continuous tense may be further separated into 'those proceeding toward a terminal point', that is, accomplishments, and 'those not proceeding toward a terminus', that is, activities. On the other hand, verbs that do not have continuous tenses can also be separated into two classes; those which can be predicated for single moments are achievements, whereas those predicated for a longer
period of time are **states** (Vendler, 1967:100-103). Examples of these types are given below:

<table>
<thead>
<tr>
<th>States</th>
<th>Activities</th>
<th>Accomplishments</th>
<th>Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>know</td>
<td>run</td>
<td>paint a picture</td>
<td>recognize</td>
</tr>
<tr>
<td>believe</td>
<td>walk</td>
<td>make a chair</td>
<td>spot</td>
</tr>
<tr>
<td>have</td>
<td>swim</td>
<td>deliver a sermon</td>
<td>find</td>
</tr>
<tr>
<td>desire</td>
<td>push a cart</td>
<td>draw a circle</td>
<td>lose</td>
</tr>
<tr>
<td>love</td>
<td>drive a car</td>
<td>recover from</td>
<td>die</td>
</tr>
<tr>
<td></td>
<td></td>
<td>illness</td>
<td></td>
</tr>
</tbody>
</table>

The various semantic and syntactic tests which are seen to delineate the classes are presented in Table 2 (Dowty, 1979:60).
## Theoretical Background

### Table 2. Syntactic Criteria for Verb Classes
(adapted from Dowty 1979:60)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>State</th>
<th>Activities</th>
<th>Accomplishments</th>
<th>Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Meets non-stative tests (see section 1.2.1)</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>?</td>
</tr>
<tr>
<td>2. Has habitual interpretation in simple present tense:</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>3. ( \phi ) for an hour, spend an hour ( \phi )-ing:</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>bad</td>
</tr>
<tr>
<td>4. ( \phi ) in an hour, take an hour to ( \phi ):</td>
<td>bad</td>
<td>bad</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>5. ( \phi ) for an hour entails ( \phi ) at all times in the hour:</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>d.n.a.</td>
</tr>
<tr>
<td>6. ( X ) is ( \phi )-ing entails ( X ) has ( \phi )-ed:</td>
<td>d.n.a.</td>
<td>yes</td>
<td>no</td>
<td>d.n.a.</td>
</tr>
<tr>
<td>7. Complement of stop:</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>bad</td>
</tr>
<tr>
<td>8. Complement of finish:</td>
<td>bad</td>
<td>bad</td>
<td>OK</td>
<td>bad</td>
</tr>
<tr>
<td>9. Ambiguity with almost:</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>10. ( X ) ( \phi )-ed in an hour entails ( X ) was ( \phi )-ing during that hour:</td>
<td>d.n.a.</td>
<td>d.n.a.</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>11. Occurs with studiously, attentively, carefully, etc.</td>
<td>bad</td>
<td>OK</td>
<td>OK</td>
<td>bad</td>
</tr>
</tbody>
</table>

OK = the sentence is grammatical, semantically normal  
bad = the sentence is ungrammatical, semantically anomalous  
d.n.a. = the test does not apply to verbs of this class
Seeking an explanation for Vendler's four categories in terms of aspectual properties, Dowty makes the following hypothesis:

The idea is that the different aspectual properties of the various kinds of verbs can be explained by postulating a single homogeneous class of predicates--stative predicates--plus three or four sentential operators and connectives. English stative verbs are supposed to correspond directly to these stative predicates in logical structure, while verbs of the other categories have logical structures that consist of one or more stative predicates embedded in complex sentences formed with these "aspectual" connectives and operators. (Dowty, 1979:71).

Dowty's use of the term "aspect" as referring to this classification is different from the traditional use of the term aspect. Traditionally "aspect" referred to different affixes or syntactic frames that occur with verbs and distinguish "different ways of viewing the internal temporal constituency of a situation" (Comrie, 1976a:3). Dowty, on the other hand, extends the use of the term "aspect" to refer to the inherent meaning of the verb itself (Dowty, 1979:52).

I will follow Dowty, then, in classifying verbs according to their logical structure, and in assuming that the stative class of verbs is basic and all other classes can be derived from it. In other words, the non-stative verbs have an underlying stative verb in their logical structures, and the meaning of each verb in a class is a function of a particular stative predicate and the operator(s) and/or connective of the class. The logical structure of the verb consists of the underlying stative predicate plus the aspectual operators and/or connective. Lexical decomposition is involved only to the degree required to define the class in these terms.
1.2.1 Stative Verbs

Stative verbs express a state or condition; in contrast, other classes express a change of state, which may be indefinite or definite. Definite changes of state may be single or complex. Adopting Lakoff's (1965) distinction between stative and non-stative verbs, Dowty proposes a series of syntactic tests for non-stative predicates which are listed as follows:

1. "Only non-statives occur in the progressive."
2. "Only non-statives occur as complements of force and persuade."
3. "Only non-statives can occur as imperatives."
4. "Only non-statives co-occur with the adverbs deliberately and carefully."
5. "Only non-statives appear in pseudo-cleft constructions."
6. Activity and accomplishment verbs occurring in the simple present have a "frequentive (or habitual) interpretation in normal contexts". (Dowty, 1979:55)

Stative verbs are not restricted to intransitive verbs and adjectives but include transitive verbs as well. Some examples of intransitive statives are itch, burn, exist; and transitive statives are love, hate, know, and have. Among the various kinds of statives are the following: condition states, eg. tall, sick, happy, and fat; cognition verbs, eg. know, believe, and doubt; possession verbs, eg. have, own, and hold; and locative verbs, eg. sit, stand, be in, and be found at.

1.2.2 Achievement Verbs

Achievement verbs express a single change of state or an inchoative meaning such as matured, realize, and lose. In the logical structure there is an underlying stative verb and the logical operator BECOME which
indicates inchoactive. For example, the logical structure of matured would be:

\[ \text{BECOME mature'}(x) \]

and the logical structure of realize would be:

\[ \text{BECOME know'}(x,y) \]

and the logical structure of lose would be:

\[ \text{BECOME NOT have'}(x,y) \]

In each of these examples there is an underlying stative predicate (e.g., mature'), the logical operator \text{BECOME}, and the argument(s) of the predicate represented by \((x)\) or \((x,y)\) (see Dowty, 1979:73-79).

1.2.3 Accomplishment Verbs

Accomplishment verbs have the meaning of a causative change of state or location. The meaning might be paraphrased, "someone did something that caused an object to change state or location." From the paraphrase it is evident that these verbs have two underlying predicates, that is, do and change, which could be said to be joined by \text{CAUSE}. \text{CAUSE} is a sentential connective. As such it relates the causing event, usually expressed by an activity predicate, to the caused event, which is usually an achievement predicate. The verb kill is an accomplishment and has the following logical structure:

\[ [(x) \text{ does something}] \text{ CAUSE [BECOME NOT alive'}(y)] \]

This, of course, is a preliminary description which will be expanded later in this chapter (see Dowty, 1979:91-99).
1.2.4 Activity Verbs

Activity verbs express action or motion, that something is being done, or that something is moving or being moved. No underlying state predicate has yet been suggested by Dowty for this class. But for many verbs in this class, the operator DO seems to capture a feature that distinguishes them from verbs of other classes. DO represents the notion of agency in the logical structure and was adopted from Ross (1972). The difference between the verbs hear and listen is that the logical structure of listen has the component of agency, DO, whereas hear does not.

Listen is one of a group of cognitive activity verbs which correspond to cognitive state verbs and may be distinguished from their stative counterparts by the occurrence of agency or DO in their logical structure.

<table>
<thead>
<tr>
<th>Cognitive State</th>
<th>Cognitive Activity (+ Agent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>see</td>
<td>look at, watch</td>
</tr>
<tr>
<td>hear</td>
<td>listen to</td>
</tr>
<tr>
<td>feel</td>
<td>feel</td>
</tr>
<tr>
<td>smell</td>
<td>smell</td>
</tr>
</tbody>
</table>

The semantics of DO is defined by Dowty as a situation in which the action or state is "under the unmediated control of the agent" (Dowty, 1979:118).

There is also a group of activity states corresponding to condition statives where the difference cannot accounted for by positing agency in the logical structure of the activity verbs, for example, George is unintentionally being obnoxious. This difference between state and activity can be accounted for by positing a general activity predicate do'.

Theoretical Background 23
The test that shows that these activities are not agentive is that they can occur with 'unintentionally', for example, Susan is unintentionally being pedantic.

A summary of the four classes and their logical structures follows in Table 3 (FSUG:39).

<table>
<thead>
<tr>
<th>Verb Class</th>
<th>Logical Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>predicate'(x)</td>
</tr>
<tr>
<td>Achievement</td>
<td>BECOME predicate'(x)</td>
</tr>
<tr>
<td>Activity</td>
<td>DO (x, [predicate'(x)])</td>
</tr>
<tr>
<td>Accomplishment</td>
<td>$\phi$ CAUSE $\psi$ (where $\phi$ is normally an activity verb and $\psi$ an achievement verb)</td>
</tr>
</tbody>
</table>

Table 3. Logical Structure of Verb Classes (adapted from FSUG:39)
1.2.5 Revised Classes

Vendler's attempt to classify verbs once and for all is seen to have several problems. Stated generally, the distinction between activities and accomplishments breaks down when minor changes occur in the verbal complement. Motion verbs, though generally regarded as activities, may be accomplishments if they occur with a destination or terminus.

(1.6)
a. Bill ran for an hour.
b. Bill ran to the store.
c. Bill ran a mile.

Sentence (a) has an activity verb whereas (b) and (c) are accomplishments since they both have a destination or terminus. The suggested syntactic test for activity verbs is that they may occur with for while accomplishments may occur with in, for example, Bill ran for an hour, but not *Bill ran in an hour; also Bill ran a mile in four minutes, but not *Bill ran a mile for four minutes.

Some other verbs can occur with both in and for as in the following examples:

(1.7)
a. Sally read the book for an hour.
b. Sally read the book in an hour.

Here in sentence (a) read is an activity verb since it is understood that the predicate had no terminus (i.e., the book is not finished). On the other hand the occurrence of in with read in (b) means she finished the book. Thus, in the context of in the verb read has an
accomplishment interpretation with the book being the terminus.

A particular verb may be either an activity or an accomplishment depending on whether or not it has a definite undergoer. If the definite undergoer of an accomplishment verb is changed to an indefinite plural or a mass noun, the verb will have an activity interpretation.

(1.8)
a. I'll drink a cup of tea.
b. I'll drink tea.

In (a) the verb drink is an accomplishment, but in (b) when the object is a mass noun the verb drink is an activity (see Dowty, 1979:60-63).

These and other factors led Dowty to the revised classification in Table 4 (1979:184).

The classes in Table 4 were developed by Dowty from the four Vendlerian classes of Table 3 by considering DO (agency) as a potential component of all classes rather than just the activity class as it appears in Table 3. Just as there are potentially agentive states, there are also potentially non-agentive activities and accomplishments. The other difference between Tables 3 and 4 is the distinction between single and complex change of state (i.e. Table 4, classes 5 & 6 vs. 7 & 8).

It should be pointed out that Dowty felt that the most important distinction between accomplishments and achievements is not agency or complexity of change of state, but rather the presence or absence of a subsidiary causal event which is shown in the logical structure by the component CAUSE. According to this definition there are potentially both achievements and accomplishments which fall into all four of the definite change of state classes (5-8) (Dowty, 1979:183). However, the majority of accomplishments are found in
classes 6 and 8, with only a few occurring in class 7 and hardly any in class 5. Achievements are found mainly in class 5. Dowty also observed that the event described by a certain verb may be perceived to be a single change of state in one situation (He died at 6:45 this morning), but a complex change of state in another (The old man finally finished dying). (Dowty, 1979:183) Therefore it is possible for an event that is normally perceived to be a single change of state to be perceived as a complex change of state in unusual circumstances, and vice versa.
<table>
<thead>
<tr>
<th>Non-agentive</th>
<th>Agentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a be asleep, be in the garden (stage-level), love, know object-level</td>
<td>2a possibly be polite, be a hero, etc. belong here, or in 4.</td>
</tr>
<tr>
<td><strong>States</strong></td>
<td></td>
</tr>
<tr>
<td>1b interval statives: sit, stand, lie</td>
<td>2b interval statives: sit, stand, lie (with human subjects)</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td></td>
</tr>
<tr>
<td>3 make noise, roll, rain</td>
<td>4 walk, laugh, dance (cf. 2a)</td>
</tr>
<tr>
<td><strong>Single change of state</strong></td>
<td></td>
</tr>
<tr>
<td>5 notice, realize, ignite</td>
<td>6 kill, point out (something to someone)</td>
</tr>
<tr>
<td><strong>Complex change of state</strong></td>
<td></td>
</tr>
<tr>
<td>7 flow from x to y, dissolve</td>
<td>8 build (a house), walk from x to y, walk a mile</td>
</tr>
</tbody>
</table>

I. Momentary (1a and "habituals" in all classes) vs. interval predicates (1b, 2b, 3-8). Syntactic test: ability to occur in the progressive. (Note: 6 and especially 5 appear less readily in the progressive than other interval predicates.)

II. Predicates entailing definite or indefinite change (3-8) vs. those entailing no change (1 and 2). Syntactic test: ability to occur in do constructions (pseudo-clefts, do so reduction, etc.).

III. Definite change of state predicates (5-8) vs. activity predicates or indefinite change of state predicates (3 and 4). Syntactic test: Does x was V-ing (pragmatically) entail x has V-ed?

IV. Singulary change predicates (5-6) vs. complex change predicates (7-8). Syntactic test: Is x finished V-ing acceptable?

V. Agentive (2, 4, 6, 8) vs. non-agentive (1, 3, 5, 7) predicates. Syntactic test: ability to occur in agentive contexts like imperatives, persuade x to V, do V deliberately, etc.

Table 4. Revised Verb Classes (adapted from Dowty 1979:184)
1.3 Role and Reference Grammar

The system of verb classification presented in the preceding section provides a theory for analyzing the semantic structure of predicates. What is still needed is a theoretical model to facilitate the analysis of the role structure of the clause that takes into account the relationship among verbal semantics, syntax and discourse. In this section several concepts employed by Role and Reference Grammar that complement Dowty's theory of verb classification will be presented. These concepts are as follows: (a) the notion of actor and undergoer, (b) a theory for linking thematic relations of arguments to the logical structure of verbs, (c) sub-classes of stative verbs, and (d) the layered structure of the clause.

1.3.1 Actor and Undergoer

It has long been recognized that a pair of sentences exhibiting the same semantic relations may have different syntactic form. For example, the active and passive paraphrases of related transitive clauses show that the object of the active and the subject of the passive bear the same semantic relation to the predicate.

(1.9)
a. Alex killed a deer.
b. A deer was killed by Alex.

Here the doer of the action and the person or thing affected by the action both bear the same semantic relation to the predicate in the active and passive construction even though the syntactic relation is different. To capture these semantic relations to the predicate, RRG employs the terms actor and undergoer. The actor is the person or thing that performs, effects, instigates, or controls the state or action expressed by the predicate. The undergoer is the person or thing affected by the state or action expressed by the
predicate. Actor and undergoer are more general categories under which the familiar designations agent, effector, goal, and patient may be subsumed.

The notion of actor is not the same as subject, as illustrated in (b) above where the actor Alex is the 'object' of the preposition by and the undergoer is the 'subject'. 'Subject' and 'object', in this case, are syntactic in the sense that they are defined in terms of their position in relation to the verb. Actor and undergoer, on the other hand, are defined in terms of their semantic relation to the predicate.

Further evidence for the non-equivalence of actor and subject comes from clauses with only one argument.

(1.10)
a. Elmo walks to school.
b. Sam talks too much.
c. The gates close at nine o'clock.
d. The patient tires easily.

In sentences (a-d) each predicate has a single argument which is syntactically subject. In (a) and (b) the single argument is both actor and subject, while in (c) and (d) the argument is an undergoer even though it is syntactically a subject. This difference may be accounted for by the fact that the verbs in (a) and (b) express activity hence the single argument is an actor; whereas, in (c) and (d) the verbs express a change of state that the participant undergoes, hence the argument is an undergoer.

The notions of actor and undergoer do not account for the full range of thematic relations that may obtain between a predicate and its arguments: they are macro-roles under which the more specific thematic relations may be subsumed. More specific relations that actors may manifest are the following:
(1.11)
a. An assassin killed the candidate. (Agent)
b. The saw severed the limb. (Instrument)
c. The winner accepted a trophy. (Recipient)
d. The children sensed the danger. (Experiencer)
e. The beacon radiates a signal. (Source)

In sentences (a-e) the subject of each sentence is actor, but, in each case, the actor has a more specific semantic relation to the verb. In (a) assassin is an agent; in (b) saw is an instrument; in (c) winner is a recipient; in (d) children is an experiencer; and in (e) beacon is a source.

Undergoers also manifest more specific semantic relations as in the following:

(1.12)
a. The waiter served the coffee. (Theme)
b. The host cooked the turkey. (Patient)
c. The winner crossed the finish line. (Location)
d. The robber relieved Sam of his cash. (Source)
e. The court awarded the plaintiff one million. (Recipient)

Here the undergoer of each sentence, though affected by the action expressed by the predicate, also shows a more specific relation to the predicate. The term theme will refer to a located entity which undergoes a change of location; patient refers to an entity that undergoes a change of state or condition. In (a) coffee is a theme; in (b) turkey is a patient; in (c) finish line is a
location; in (d) Sam is a source; and in (e) plaintiff is a recipient.

The specific semantic relation of an argument to the predicate is not syntactically determined, which is evident from the examples above in (1.11) and (1.12). Rather it is a function of the semantics of the verb itself.

The notion of actor and undergoer as semantic macro-roles is readily applied to the arguments of predicates as they are conceived of in Dowty's theory of verbal semantics. The question before us now is, how can the more specific semantic relations and their linking to predicate arguments be accounted for within the framework of this theory?

1.3.2 Semantic Relations of Arguments

Gruber (1965) proposed a theory of semantic relations which was later developed by Jackendoff (1972, 1976) in which the semantic relations of a verb's arguments are analyzed as functions of the arguments of an abstract predicate contained in the semantic structure of the verb. The relations of the arguments of the abstract predicate \( GO(x,y,z) \) are \( x = \) Theme, that is, the thing that moves; \( y = \) Source, that is, the original position of Theme; and \( z = \) Goal, that is, the final position of Theme. Thus in the sentence 'The book fell from the table to the floor', book is a Theme; table is the Source; and floor is the Goal, since the verb \( \text{fell} \) is analyzed as containing the abstract predicate \( \text{GO} \).

Another abstract predicate \( \text{CAUSE} \) is specified as a two place predicate, \( \text{CAUSE}(x,e) \) in which \( x \) is an Agent and \( e \) is an Event (and a sentential argument). This means that verbs containing the semantic component \( \text{CAUSE} \) will all have as their arguments an agent and an event. A recent paper by Carrier-Duncan applies the Gruber-Jackendoff theory to Tagalog derivational word formation.
1.3.3 Verb Classes—Logical Structure and Semantic Relations

Having adopted a theory of verb classification that provides logical structures for verbs, and a scheme for linking semantic relations to logical structures, we will now illustrate how these considerations apply to English verbs. The analysis will show how the macro-roles of actor and undergoer are realized in the logical structure, and how specific semantic relations of predicates are linked to them. In other words, given that the logical structure of the verb see is see'(x,y), our theory should show us what the specific semantic relations of x and y are and which one is actor and which is undergoer.

1.3.4 States

The stative classes are the most basic in the theory since other classes are analyzed as having an underlying stative predicate plus logical operators and/or connectives. Hence, the analysis of the semantic relations of state verbs has implications for the other classes as well. The verb watch is an example of this. As an activity verb, watch has the logical structure DO see'(x,y); and notice, as an achievement verb has the logical structure BECOME see'(x,y); and the accomplishment verb show has the logical structure [... \text{CAUSE \ BECOME see'}(x,y)]]. Since stative predicates are posited as underlying all the other classes, a detailed and explicit analysis of the stative class is necessary before proceeding with an analysis of the other classes.

Foley and Van Valin (1984) distinguish two main classes of state verbs, locative and non-locative. The locative state class has no sub-classes. However, the non-locative state class has four sub-classes; condition state, perception, cognition, and possession. The simplest of these classes is condition state which has the logical structure.
In example sentences like **The man is tall** and **The boy is sick**, the logical structures would be the following:

```
\text{tall}'(\text{man}) \quad \text{and} \quad \text{sick}'(\text{boy})
```

Since the predicate expresses the condition or state of an entity \(x\), the argument \(x\) has the semantic relation of \text{PATIENT}.

The next class in order of complexity are the stative predicates that express location such as **be at**, **be in**, **be on**. Location predicates have the logical structure \text{be-at}'(x, y). Here the argument \(x\) is the object whose location is predicated and hence is a \text{THEME}; and \(y\) is the position at which the theme is located and hence is a \text{LOCATIVE}.

The contrast between these two classes can be seen in the following examples in (1.13) and their logical structures in (1.14).

(1.13)
\begin{enumerate}
\item a. The child is happy.
\item b. The rabbit is in the garden.
\end{enumerate}

(1.14)
\begin{enumerate}
\item a. \text{happy}' (the child)
\item b. \text{be-at}' (the rabbit, the garden)
In (1.13) both the child and the rabbit are undergoers, but more specifically, the child is a patient, the rabbit is a theme (i.e. the participant to whom location is attributed), and the garden is a locative.

Closely related to the location class is the possession class for which the theory posits an abstract predicate have', and the logical structure have'(x,y). Although the locative aspect is not immediately obvious in verbs like have, it is apparent in paraphrases of have such as be in x's possession, for example, Sarah has the money = The money is in Sarah's possession. In the sentence Sarah has the money the logical structure is have' (Sarah, money) and the thematic relations of the arguments are Sarah (x) = locative and money (y) = theme. The difference between the location state and the possession state class is only in the order of their arguments. In the locative state be-at' the first argument is theme and the second is a locative, whereas, with the possession class the first is a locative and the second is a theme. Many languages have no equivalent to the English verb have but rather express possession with a locative construction. The following examples are from two Philippine languages, Tinggian and Tagalog:

(1.15)

a. awad ta paltoog kan-ni Juan (Tinggian)
   there-is PRT shot.gun LOC-PM Juan
   'Juan has a shot gun.'
   (lit. 'There is a shot gun at/with Juan. ')

b. na-sa akin ang pera (Tagalog)
   AFF-LOC POSS-lsg PRT money
   'The money is with me./I have the money.'
Since many languages can or must express possession with locative constructions rather than a locative verb, it is reasonable to posit a locative thematic relation for the possessor (x).

The two remaining non-locative state predicates are perception and cognition verbs. Foley and Van Valin (1984) argue that just as alienable possession verbs also have a locational component to their meaning, so predicates of knowing and believing have a locational component to their meaning. The locational aspect of cognition verbs is evident in the following metaphors and paraphrases.

(1.16)
a. Is John thinking about something?
b. Does John have something on his mind?
c. Sid thinks of nothing but Susie.
d. Sid can't get Susie out of his mind.
e. George hopes that he will be elected.
f. George holds the hope that he will be elected.

The locational component of cognition verbs is illustrated in (1.16b) on his mind, in (d) out of his mind, and in (f) holds the hope. On this basis Foley and Van Valin conclude that "the thought, belief, or knowledge is located with respect to the thinker, believer, or knower's mind" (FSUG:50). Hence, the logical structure of believe is believe'(x,y), and the semantic relations are x, the believer, is a locative, and y, the belief, is a theme.

Perception verbs are also stative since they meet the syntactic tests proposed by Dowty. Furthermore, their status as statives is seen in their occurrence in the logical structure of other verbs as noted in Section
1.3.4. The locational component of their meaning can be seen in the following examples.

(1.17)
a. I saw that John was tired.
b. John appeared tired to me.
c. I heard something like thunder.
d. It sounded like thunder to me.
e. A vision of her beauty flashed before my eyes.

An extensive argument for the locative analysis of perception verbs has been given by Wierzbika (1980).

The logical structure of perception verbs is see\((x,y)\) and the semantic relations of the arguments are \(x\) is a locative and \(y\) is a theme.

1.3.5 Activities

Activity verbs and their logical structures were discussed in Section 1.2.4 and it was indicated that Dowty posited two types of activity verbs, those that may involve DO and those that may not. Those that are potentially volitional may involve DO in their logical structure. These include verbs like swim, walk, and run; they might be represented as \(DO(x,\text{predicate}'(x))\) in the logical structure in the case that they are agentive, or simply as \(\text{predicate}'(x)\) in the case that they are non-agentive.

The volitional activity verb with DO in its logical structure is illustrated in the following example:

(1.18)
a. Jeanne swims every day.
b. \(DO(\text{Jeanne},[\text{swim}'(\text{Jeanne})])\)
The argument of DO is an agent.

An example of an activity verb that is potentially non-volitional is laugh in the following sentences:

(1.19)

a. Pete intentionally laughed at the boss's joke.

b. Pete unintentionally laughed at the boss's remark.

The logical structures of these sentences are the following:

(1.20)

a. \( \text{DO}(\text{Pete} [\text{laugh}'(\text{Pete, joke})]) \)

b. \( \text{laugh}'(\text{Pete, remark}) \)

In example (a) \text{Pete} is an agent but in (b) \text{Pete} is an effector. The terms agent and effector refer to the specific semantic relation that the actor has to the predicate. The agent is the entity that exercises unmediated control over the action or state expressed by the verb. On the other hand, the effector is an entity that brings about an action or state which is not under his control.

There are also activity verbs that may not have DO in their logical structure. These express motion of some kind, for example, fall, roll, and rotate.

(1.21)

a. The book fell off the shelf.

b. The marble rolled down the hall.
Dowty indicated that these verbs could be characterized as move'(x) and stated the truth conditions for it. However, FSUG points out that move'(x) can be defined in terms of logical structure as be-at'(x,y) & BECOME NOT be-at'(x,y). The semantic relations of the arguments are theme and locative.

1.3.6 Achievements

Achievement verbs are characterized by an inchoative meaning and contrast with other definite change of state verbs (i.e., accomplishments) by the fact that they do not have DO or CAUSE in their logical structure. They are by definition non-volitional, or non-controlled. The inchoative meaning is represented in the logical structure by the logical operator BECOME.

The semantic relations of the arguments of achievement verbs are the same as those of the underlying state verb from which they are derived. If there is a condition state underlying the achievement as in the animal got fat, which has the logical structure BECOME fat'(x), the single argument is a patient just as it is with a state verb. Furthermore, if it is a two place achievement verb with an underlying perception state, the two arguments are locative and theme, for example, Bill noticed Sue, has a logical structure BECOME see'(x,y), in which x = location and y = theme.

1.3.7 Accomplishments

Accomplishment verbs are distinguished from other verb classes by the sentential connective CAUSE which joins the underlying predicates in its complex logical structure. The first embedding in the logical structure is usually an activity predicate, which may be agentive or not, and the part embedded after the connective CAUSE is usually an achievement predicate. Thus, the logical structure indicates that something was done (do') to CAUSE something to BECOME a particular state'.

In the sentence Igor contaminated the well, there are three interpretations that need to be considered for representation in logical structure. First, contaminated could be a non-agentive action that Igor happened to do that caused the well to be contaminated. Second, it could be an agentive action that Igor did that had the unintended effect of causing the well to be contaminated. Third, it could be an agentive action that had the intended effect of causing the well to be contaminated. These three interpretations can be represented respectively in logical structures as follows:

(1.22)

a. \([\text{do'}(\text{Igor})] \text{ CAUSE } [\text{BECOME contaminated'}(\text{well})]\]

b. \([\text{DO(Igor,}\text{[do'}(\text{Igor})])]} \text{ CAUSE } [\text{BECOME contaminated'}(\text{well})]\]

c. \(\text{DO(Igor,}[\text{DO(Igor,}\text{[do'}(\text{Igor})])]} \text{ CAUSE } [\text{BECOME contaminated'}(\text{well})]\)

In (1.22a) \text{do'} represents a general activity predicate that is unmarked for agency. As a non-agentive actor, Igor is an effector, that is, he did something (volitional or not) that brought about the effect of the well being contaminated. In (b) the operator DO modifies \text{do'}, making the argument of \text{do'} an agent. This means that the action itself was volitional, but the effect was not necessarily volitional, that is, the intentional (agentive) activity had an unintended result. In (c) the outer DO has scope over the whole logical structure, indicating that the activity and its effect were intended and under the control of an agent. Igor occurs as the actor argument at each layer of decomposition of the first sentential predicate.

1.3.8 Summary

The verb classes presented in this chapter are summarized in Table 5 along with their corresponding logical structures and semantic relations.
The Gruber-Jackendoff theory of semantic relations when combined with RRG's notion of actor and undergoer provides the basis for a more thorough analysis of the eight verb classes proposed by Dowty. It is now possible to link the logical structures of predicates to specific semantic relations. RRG claims that such linking of arguments follows a strict hierarchy of access to actor and undergoer. The hierarchy of accessibility to actorhood is as follows: Agent > Effector > Locative. The hierarchy of accessibility to undergoer, though there is some variability with particular verbs, is generally Patient > Theme > Locative > Effector. These two hierarchies may be combined to form the following cline:

\[
\begin{align*}
\text{ACTOR:} & \quad \text{Agent} \\
& \quad \text{Effector} \\
& \quad \text{Locative} \\
& \quad \text{Theme} \\
\text{UNDERGOER:} & \quad \text{Patient}
\end{align*}
\]

Figure 1. Actor/Undergoer Hierarchy
(adapted from FSUG:59)

The hierarchy of semantic relations is regarded as a continuum in which the number of categories is not considered fixed, but rather language specific. Some languages may make more (or fewer) specifications than others. This hierarchy makes the claim that language specific semantic relations are ranked on this continuum. For example, if a language combined the relations of effector and agent, such an effector-agent would still outrank locative for accessibility to actor. (For a more detailed discussion of the hierarchy see FSUG, Section 2.6.)
I. State Verbs

A. Locative  
- be-at'(x,y)  
  \[ x = \text{theme} \]  
  \[ y = \text{locative} \]

B. Non-locative  
1. State or condition  
  \[ \text{predicate}'(x) \]  
  \[ x = \text{patient} \]

2. Perception  
  \[ \text{see}'(x,y) \]  
  \[ x = \text{locative} \]  
  \[ y = \text{theme} \]

3. Cognition  
  \[ \text{believe}'(x,y) \]  
  \[ x = \text{locative} \]  
  \[ y = \text{theme} \]

4. Possession  
  \[ \text{have}'(x,y) \]  
  \[ x = \text{locative} \]  
  \[ y = \text{theme} \]

II. Activity Verbs

A. Potentially agentive  
1. Agentive  
  \[ \text{DO}(x,[\text{predicate}'(x)]) \]  
  \[ x = \text{agent} \]

2. Non-agentive  
  \[ \text{predicate}'(x) \]  
  \[ x = \text{effector} \]

B. Motional  
  \[ \text{fall}'(x) \]  
  \[ x = \text{theme} \]

III. Achievement Verbs  

BECOME \[ \text{state}'(x) \]  
  \[ x = \text{patient} \]

BECOME \[ \text{know}'(x,y) \]  
  \[ x = \text{locative} \]  
  \[ y = \text{theme} \]

IV. Accomplishment Verbs

A. Agentive  
  \[ \text{DO}(x,[\text{predicate}'(x)]) \text{ CAUSE \ [BECOME \text{state}'(y)]} \]  
  \[ x = \text{agent} \]  
  \[ y = \text{patient} \]

B. Non-agentive  
  \[ [\text{predicate}'(x)] \text{ CAUSE \ [BECOME \text{state}'(y)]} \]  
  \[ x = \text{effector} \]  
  \[ y = \text{patient} \]

---

Table 5. Logical Structures and Semantic Relations  
(adaptation of FSUG:53)
1.3.9 The Layered Structure of the Clause

All theories of grammar make crucial assumptions about the nature of the structure of the clause. All versions of transformational generative grammar, for example, assume a constituent structure model of clause structure. Role and Reference Grammar makes no such assumptions. It assumes a layered, or multilevel, conception of the clause. The innermost layer of the clause is the NUCLEUS. The nucleus is the most essential part of the clause; it is the part that contains the predicate. The part of the clause most closely associated with the predicate is the CORE, which is made up of the arguments of the predicate. The core may have one or more arguments depending on the valence of the predicate. The core arguments of the clause are non-oblique and traditionally have been called subject and direct object. The outermost layer of the clause is the PERIPHERY and consists of arguments that are not required by the predicate and hence are not so closely tied to the predicate or governed by it. These arguments usually express notions of time, location, beneficiary, and manner. Furthermore, they are always oblique. In English, the nucleus contains the verb; the core contains subject and object; but with some verbs it may also include arguments such as object complement, predicate nominative and indirect object; and the periphery contains all the prepositionally marked arguments. This conception of the clause may be represented schematically as in Figure 2.
Figure 2. The layered structure of the clause (FSUG:78)

It must be emphasized that this notion of clause structure is not based on immediate constituent analysis. It makes no assumption about the ordering of constituents or the continuity of constituents. This notion of clause structure attempts to capture a generalization about the type of relationships that will be found to obtain between a predicate and its arguments in a clause in any language regardless of whether it is configurational or non-configurational. In other words, this notion of clause structure captures certain generalizations about languages whether they can be said to have constituent structure or not (see Foley and Olson, in prep.; FSUG:Ch.3,5).
NOTES

1. The data on the Sama language of Pangutaran Island included in this work was collected by Janice and Charles Walton under the auspices of the Summer Institute of Linguistics between 1975 and 1980. Appreciation is expressed to the following language assistants who helped us learn and collect data on the Sama language: Madarsad Butuhasan, Corona, Elena Salamat, Juriati Hajiran, Dayya Amil and the residents of Kompang, Cagayan de Sulu, Philippines.

2. The terms actor and undergoer will be discussed in detail in Section 1.3.1. The terms designate a general semantic relation of the nominal arguments to the verb in a clause. Actor indicates the entity which instigates, controls or effects the action expressed by the verb. Undergoer indicates the entity affected by the action or state expressed by the verb.

3. Sama has a class of prepositions that can occur as oblique markers (e.g., pa 'to', min 'from', ka 'with', man 'by' etc.) whereas Tagalog has only two oblique markers, sa 'non-personal' and kay 'personal'; the Tagalog particles do not carry a more specific lexical meaning.

4. In actor focus clauses an additional argument (eg. undergoer or beneficiary) may occur as a set II pronoun. This problem is discussed in Section 3.8.

5. The first person dual pronouns are often used for first person plural inclusive also, and in this work are sometimes glossed as plural inclusive where they are used that way.

6. The prefix N- is a nasal that undergoes assimilation in some environments but is realized as allophonic variants in others. Preceding /p,b,t,s,k/ N- assimilates to the point of articulation of the stem initial consonant and that consonant is deleted. In other environments N- is realized by the following allophonic variants:
7. The suffixes, -an, -in, and -un, manifest the process of apenthesi s in that, following a stem final vowel, an /h/ is inserted before the suffix.

8. Traditionally -an has been regarded as a location focus affix. However this is not the view taken here (further discussion of -an in Section 3.8).

9. In addition to focussing the benefactor, the affix -in is also imperative.
CHAPTER 2

CLASSIFICATION OF SAMA UNAFFIXED VERBS

1.0 Introduction

Although Dowty arrived at his system of verb classification through an analysis of English verbs, he claims that the aspect calculus should be applicable to other languages of the world. Foley and Van Valin (1984) have shown that Dowty's aspect calculus can provide a revealing and non-trivial analysis of Lakhota and Tagalog verb systems.

In Chapter One it was pointed out that although Sama has a complex system of verbal affixation, there are many verbs that occur in unaffixed form. Without the coding of verb morphology it is difficult to predict the syntactic behavior of these verbs. In this chapter Dowty's theory of verb classification, as amended in FSUG, will be applied to Sama verbs. Given a particular verb in Sama, the theory will assign a logical structure, predict the semantic relations of the arguments of the predicate, and the behavior of the verb in syntactic tests.

The discussion in this chapter will begin with Sama stative verbs and their various sub-classes (2.1-2.2.4); then activity verbs with sub-classes will be presented (i.e., motion verbs and verbs of potential agency) (Section 2.3.0-2.3.3). Achievement verbs will be presented in 2.4 and accomplishment verbs in 2.5.

Stative verbs, in Dowty's system, are basic and underlie the other classes of verbs. Foley and Van Valin suggest that statives occur as a single locative type and a non-locative type having four sub-types: condition, perception, cognition and possession (see Sections 1.2.1 and 1.3.4).
2.1 Locative States

In Sama there is a basic locative state verb *niya'* which requires various free translations in English but in its most basic sense means 'there is'. The locative state verb in Sama has the logical structure of be-at'*(x,y)* although both arguments are not always realized syntactically.

\[(2.1)\]
\[\begin{align*}
a. \textit{niya'} & \quad \textit{aa} \\
& \textit{there.is} \quad \textit{person} \\
& \text{'}There is someone (here).' \\

b. \textit{niya'} & \quad \textit{aa} \quad \textit{ma-itu} \\
& \textit{there.is} \quad \textit{person} \quad \textit{at-here} \\
& \text{'}There is someone here.' \text{ or } \text{'}Someone is here.' \\

c. \textit{ma-itu} & \quad \textit{aa} \quad \textit{kemon} \\
& \textit{be.at-here} \quad \textit{person} \quad \textit{all} \\
& \text{'}Everyone is here.'
\end{align*}\]

Although the Sama locative state verb has the same logical structure as that of English, the syntactic realization is different. The *niya'* means 'to exist' and implies location *(y)* as in *(a)*. In example *(b)* where the location is stated, it is an oblique argument of the verb marked by the preposition *ma 'at'.

The example in *(c)* shows that the locative argument may be incorporated in the predicate *ma-itu 'be/here'*. The logical form of examples *(a–c)* is be-at'*(x,y)* where *x* is a theme and *y* is a location. The example in *(a)* is an instance of the locative not being specified. It can be represented by Ø in logical structure, for example, be-at'*(x,Ø)* (see FSUG:86, fn.7). The motivation for this analysis is that if *(a)* is said in a normal conversation it means 'someone is here (e.g., at the door)'; or if it occurs at the beginning of a narrative it serves as an introduction of the main character placing him in the story setting. The example in *(c)* requires a specific NP for the theme argument, whereas
(a) and (b) usually have non-specific NP theme arguments.

In the statement niya' Tuhan 'there is God/God exists', niya' seems to be truly existential. However, the most common use of this sentence is in disputes where it means 'God is my witness (lit. God exists/there is God; God is here)'. This way of invoking God as a witness appears to be due to the fact that niya' implies a location, that is, here, the place requiring a witness. Although niya' is used as in English existentials, it always implies a location in the logical structure. These facts support the claim that the logical structure of these verbs is be-at'(x,y) in which x is a theme and y is a locative.

2.2 Non-locative States

Though non-locative state verbs in English are of four different sub-classes, only three of these occur in Sama. There is a condition state, a perception state and a cognition state class; however, there are no possession verbs in Sama.

2.2.1 Condition States

The first subtype of the non-locative stative class is state or condition, for example,

itōm  'to be black'

hāp  'to be good, pretty'

l:mmōk  'to be fat'

pasu'  'to be hot'.
The logical structure of the non-locative state verb is predicate (x) where x is a patient.

(2.2)

a. l'mmök sapi' iyu
   fat cow that
   'That cow is fat.'

b. itöm badju' ku
   black shirt my
   'My shirt is black.'

c. pasu' na makina lansa'
   hot now engine launch
   'The launch's engine is hot.'

In (2.2a) the stative verb is l'mmök 'fat'; in (b) it is itöm 'black', and in (c) it is pasu' 'hot'. In (a) sapi' 'cow' is the single argument of the state predicate, that is, the entity affected by the state; hence it is a patient and undergoer. Likewise, badju' 'shirt' in (b) and makina 'engine' in (c) are also patient undergoers.

This class may be further subdivided on the basis of the potential derivations that some verbs can undergo. They will be discussed in a later section on derivation (see 3.8). These condition verbs are all non-agentive statives. However, Dowty's aspect calculus predicts a class of agentive states and gives evidence from English (Dowty's class 2a in Table 4).

Although there are no unaffixed agentive state verbs in Sama there are some condition state verbs that can be affixed to form agentive state predicates, for example, dupang 'to be foolish' and tuyu' 'to be diligent'.

(2.3)

a. dupang anak ta iyu
   foolish child ldllI that
   'That child of ours is foolish.'
b. mag-dupang anak ta iyu
   AFF-foolish child ldll that
   'That child of ours is being foolish.'

c. tuyu' anak iyu
diligent child that
   'That child is diligent.'

d. mag-tuyu' anak iyu mag-peha
   AFF-diligent child that AFF-search
   'That child is being diligent in searching.'

There are also some nouns such as addat 'politeness, custom' which may be affixed to form agent state verbs. When affixed with mag- to make it a verb this means 'be polite'.

(2.3)

(2.4)

e. mag-addat onde' iskul
   AFF-politeness child(A) school
   'The school children are being polite' (or
   'The school children know how to be polite').

Further discussion of derived agent state verbs is in Section 3.3.

2.2.2 Perception States

A second sub-class of non-locative stative predicates are perception verbs like see and hear. The logical structure of these verbs is see'(x,y) and the semantic relations of the arguments of the predicate are x is a locative and y is a theme.

(2.4)
a. Ø-nda' nu aku tu maas na
   UF-see 2sgI(A) 1sgII(U) here old already
   'You see me that I'm old already.'
b. Ø-ke nu h'ling na
  UF-hear 2sgI(A) speech(U) 3sgI
  'You hear his words.'

That the actor argument of perception verbs is a locative is not immediately obvious; however, Foley and Van Valin cite various arguments to support a locative thematic relation for the x argument (see Section 1.3.4 this book; see also Wierzbicka, 1980).

2.2.3 Cognition States

Cognition verbs are the third subtype of non-location state predicates. Examples of verbs in this class are the following: hagad 'believe', ta'u 'know', and awam 'to be unaware'. The logical structure of cognition verbs is believe(x,y) in which x is a locative and y is a theme (see Section 1.3.4).

(2.5)

a. hagad aku ba'-an nu
  believe 1sgII(A) tell-AFF(U) 2sgI
  'I believe what you told me.'

b. niya' ma pikil-an ku hagad bay
  there-is OBL think-AFF 1sgI believe PAST
  ba'-an nu
tell-AFF 2sgI
  'I have in mind to believe what you told me.'

In (2.5a) the verb hagad 'believe' is a cognition predicate. The pronoun aku 'I' is a locative actor and the undergoer is the sentential complement ba'-an nu 'what you told me'. The undergoer of the embedded complement is deleted under co-reference with the focussed actor of the matrix sentence. In (b) the locational aspect of the actor argument is seen in the phrase niya' ma pikil-an ku 'I have in mind' which is substituted for the actor of the verb hagad 'believe'.
2.2.4 Possession State Predication

The last of the stative predicates is the possession sub-class which is analyzed for English (FSUG:48) as having the logical structure \text{have}'(x,y) in which the semantic relation of the arguments is that $x$ is a locative and $y$ is a theme. Sama does not have a possession class of state verbs. However, there are several interesting ways that Sama expresses possessive predication. One of the most common ways is with the existential predicate niya' 'there is' which has the logical structure \text{be-at}'(x,y).

(2.6)

a. niya' sin ma si Oto'  
there.is money OBL PM Oto  
'Oto has some money.'  
(lit. There exists money at Oto.)

b. niya' sin si Oto'  
there.is money PM Oto  
'Oto has money./Oto's money exists.'

c. ma-si Oto' sin iyuy  
be.at-PM Oto money that  
'That money is Oto's./That money is for Oto.'

Sentences (2.6a) and (2.6c) illustrate the locative relation of the possessor. In (a), ma-si Oto' 'at Oto' is marked as oblique by the preposition ma. In (b) Oto' is in a possessive relation to the head of the NP sin si Oto' 'Oto's money'. In sentence (c) the predicate ma-si Oto' 'at Oto' is homophonous with the prepositional phrase in sentence (a). Although this could be interpreted as topicalization or fronting of the prepositional phrase, it is not. Topicalization would not change the meaning but in (c) the money must be made definite.

From the above examples it is seen that Sama does not have verbs to express possession. Rather it expresses possession with a locative existential predicate and a locative phrase (as in (2.6a), or it
forms a predicate with a locative construction as in (2.6c), or it uses a possessive determiner on the theme NP as in (2.6b).

2.3 **Activity Verbs**

Dowty's theory of verb classification claims that activity verbs (in fact, all other verbs) are derived from stative verbs by a system of logical operators and connectives. The claim is made that although no adequate abstract predicate can be posited for activity verbs, the conditions for the logical structure can be stated (see 1.3.5 and 1.2.4). There are two types of activity verbs; those involving agency (symbolized by DO), and those not involving agency. Verbs not involving agency are plain motion verbs like fall, roll, and rotate. Examples of verbs involving agency are swim, walk, and talk.

2.3.1 **Motion Verbs**

Unaffixed motion activity verbs in Sama express the non-agentive movement of an entity. The moved entity is an undergoer theme. Some verbs in this class are the following: hug 'fall', tanak 'drop/lose', h'bba 'fall over', liyud 'run off (as water)', and hanut 'drift'.

(2.7)

a. bay aku hug min pantan
   PAST lsgII(A) fall OBL porch
   'I fell off the porch.'

b. h'bba sultan ma pantan
   fall.over king OBL porch
   'The king fell over on/at the porch.'

c. tanak kemon olen na
   drop all marbles 3sgI
   'All his marbles dropped/ He lost all his marbles.'
The examples in (2.7a-c) illustrate the use of Sama motion verbs. In each sentence the thing moved is an undergoer theme. Example (a) shows min pantan 'from the porch' as a locative source, and (b) shows ma pantan 'on/at the porch' as a locative that could be either goal or the site of the activity. However, (c) shows no location phrase at all, which indicates that location is not required. Each of these verbs may occur without either an explicit or an implied location. Thus, the logical structure of motion verbs is predicate'(x) where x = theme.

2.3.2 Potentially Agentive Activities

In addition to the motion class of activity verbs there are other activity verbs which are potentially agentive. These fall into two classes, non-agentive and agentive. The non-agentive class has the logical structure predicate'(x) in which x is an effector; and the agentive class has the logical structure DO(x,[predicate'(x)]) in which the argument x is an agent.

The non-agentive class of activity verbs includes hebok 'to be noisy' and t'tto 'to laugh'. The following sentences illustrate this class.

(2.8)

a. hebok ka'u pabaik
   be.noisy 2sgII(A) again
   'You are being noisy again.'

b. angay ka'u t'tto
   why 2sgII(A) laugh
   'Why are you laughing?'

The question may be asked if these are really activity verbs or if they might not be statives. Dowty reiterates various syntactic tests that may be applied to determine whether a predicate is stative or not. Among these tests are the "non-stative tests" proposed by Lakoff (1965). Some of these are easily translatable
into Sama and may be applied quite nicely. One such test is that only non-statives can occur as imperatives. With these two verbs this is most naturally done with negative imperatives:

(2.9)

a. daa ka'u hebok
   don't 2sgII(A) be.noisy
   'Don't you be noisy!'

b. daa ka'u t'tto
   don't 2sgII(A) laugh
   'Don't laugh!'

Even though these imperatives would seem to indicate that the above examples express agency, this is not the case because they cannot occur in agentive contexts like 'persuade' laɣoɣs, and 'forbid' lang.1

(2.10)

a. *1-i-lagɔs uk na iya hebok
   PASS-persuade OBL 3sgI(A) 3sgII(U) be.noisy
   'He was persuaded by him to be noisy.'

b. *1-i-lagɔs uk na iya t'tto
   PASS-persuade OBL 3sgI(A) 3sgII(U) laugh
   'He was persuaded by him to laugh (unintentionally).'

The apparent contradiction in syntactic behavior evidenced in (2.9), where the verbs are in an imperative context, and in (2.10), where they cannot occur in the context of persuade and forbid, is due to the fact that daa 'negative imperative' provides the agentive component to the verb. If truly agentive activities occur with a second person singular pronoun they may be interpreted as imperative, for example, lahi ka'u 'you flee/run away'. However, t'tto and hebok cannot be interpreted imperatively with a second person pronoun. They can only mean 'you're being noisy' or 'you're laughing'. This is evidence that these verbs are
non-agentive activities. The following section shows how they may be affixed to form agentive verbs.

2.3.3 Agentive Activities

This discussion leads us to the class of agentive activity verbs which have an agent relation as part of their logical structure. In the two sets of examples (2.10) and (2.11) (a) and (b) we see that these non-agentive roots can be made into agentive verbs by adding the verbal prefix mag-. To reiterate what was said above, the logical structure of agentive activity predicates is DO(x,[predicate'(x)]). In this instance mag- functions very much like the operator DO.

(2.11)

a. 1-i-Oggs uk na iya mag-hebok
   PASS-persuade OBL 3sgI(A) 3sgII(U) AFF-noisy
   'He was persuaded by him to make noise.'

b. 1-i-Oggs uk na iya mag-t'tto
   PASS-persuade OBL 3sgI(A) 3sgII(U) AFF-laugh
   'He was persuaded by him to laugh (intentionally).'

The examples in (2.11a-b) represent a derived class of agentive activity verbs using the same roots as in (2.8). They are presented here in contrast to the non-agentive activity verbs in (2.8a-b). As a derived class they will be discussed in Section 3.3.

There is also, however, a class of agentive activity verbs which are not derived but rather occur without affixation. Examples of this class are lähi 'flee', and libut 'go around'.

(2.12)

a. lähi kita saung
   flee lpl.inclII(A) tomorrow
   'We'll flee tomorrow.'
b. libut iya kapu'puan
go.around 3sgII(A) islands
'He was (sailing) around the islands.'

a'. l-i-ögöS uk . mma' kita lahi saung
PASS-persuade OBL father 1pl.incII flee tomorrow
'We were persuaded by father to flee tomorrow.'

b'. l-i-ögöS uk nakura' iya libut
PASS-persuade OBL captain 3sgII go.around
'He was persuaded by the captain to go around kapu'puan
islands
the islands.'

Here in (2.12) lahi 'flee' and libut 'go around' are agentive activity verbs. The examples in (2.12a') and (b') show that when the agency test is applied to lahi and tulak, they do in fact pass the test. That is, lahi and libut may occur in the environment of 'force' or 'persuade'. The test to distinguish activity verbs from accomplishments is 'Does x is V-ing entail x had V-ed?' (Dowty 1979:57). If the answer to the question is 'yes' the verb is an activity verb; and if the answer is 'no' the verb is an accomplishment verb. The question applied to libut may be translated as follows:

bang masi iya libut kapu'puan
if still 3sgII go.around islands

hati na bay iya libut
mean 3sgI past 3sgII go.around

'If he is still going (sailing) around the islands does it mean he has gone around?'
The fact that the answer to this question is 'yes' indicates that this is an agentive activity verb.

The logical structure presented here is for a one place predicate, that is, a predicate with one core argument. There are also agentive activity predicates that have more than one core argument. The logical structure of these may be accounted for as \( \text{DO}(x,[\text{predicate}'(x,y)]) \) in which \( x \) is an agent and \( y \) is generally a theme.

Some verbs that are apparently of this type are as follows: agad 'to wait for', and bo 'to carry'.

\[(2.13)\]

a.  \( \phi \)-agad ta sehe ta
      UF-wait ld1I(A) companion(U) ld1I
   'We'll wait for our companion.'

b.  \( \phi \)-bo ta kapanyapan ma-ihi'
      UF-carry ld1I(A) preparations(U) OBL-there
   'We'll carry our preparations there.'

The test\(^2\) to distinguish activity verbs from accomplishment verbs may be applied to (2.13a) as follows:

\[\text{bang masi li' } \phi \text{-agad ta sehe ta} \]
\[\text{if still yet UF-wait ld1I(A) companion ld1I} \]
\[\text{bay ta-hinang ta } \phi \text{-agad?} \]
\[\text{PAST able-do ld1I(A) UF-wait} \]

'If we are still waiting for our companion, have we waited?''
The entailment part of the question above literally says, 'have we been able to do waiting?' The answer to the question is 'yes', indicating that agad 'wait' is an activity verb. The example in (2.13b) can also be framed in the same syntactic test yielding the same result, thus giving evidence that these verbs express an indefinite change of state and are activity verbs.

2.4 Achievement Verbs

Achievement verbs in Sama express a non-agentive single change of state and include the following verbs: sipat 'to recognize a condition', t'kka 'to arrive', p'dda 'to go out' (as a fire), and buhaw 'to sink or capsize'. These achievement verbs include both transitive and intransitive verbs. The intransitive achievement verbs are seen in the following examples.

(2.14)

a. t'kka na ulan
   arrive already rain
   'The rain has arrived.'

b. bang nsa' niya' atőp tapahan p'dda api na
   if not there.is roof drying.shed go.out fire 3sgI
   'If the drying shed has no roof the fire goes out.'

c. bay buhaw lansa kami
   PAST swamp launch lpl.exI
   'Our launch was swamped.'

The intransitive achievement verbs have the logical structure BECOME predicate'(x) and the thematic relation of the single argument (x) of the predicate is that of patient (see 1.2.2 and 1.3.6).

Transitive achievement verbs rarely occur unaffixed, since there is a non-agentive undergoer focus affix ta- which normally occurs with them. One of the few examples which does occur unaffixed is sipat 'realize'.
Although there are a few verbs in this class which occur unaffixed, most of the verbs in this class occur in affixed form; many of the verbs are derived from the stative class and will be discussed in Section 3.1. The logical structure of the transitive achievement verbs is BECOME predicate'(x,y). More specifically, the logical structure of sipat 'realize' is BECOME aware'(x,y) where the argument x is a locative and the argument y is a theme.

Dowty's syntactic test for distinguishing single change of state from complex change of state is 'Is x finished V-ing acceptable?' In each case the answer is clearly no, as can be seen from the following example:

(2.16)

a. *ubus ø-sipat ku
   finish UF-realize lsgI(A)
   'I finished realizing ...'

Additional support for this analysis of the logical structure of achievement verbs is drawn from the derivational morphology of inchoatives which will be presented in the next chapter (Section 3.1).

2.5 Accomplishment Verbs

Accomplishment verbs may be either single change of state or complex change of state, non-agentive or agentive, although they are more commonly agentive. All accomplishment verbs have the sentential connective CAUSE in their logical structure. The contrast between single and complex change of state does not appear in
the logical structure, but may be determined by the application of syntactic tests. Agentive accomplishment verbs have DO in their logical structures, while non-agentive accomplishments do not. So the logical structure of an agentive accomplishment would be:

\[\text{DO}(x,[\text{do}'(x)]) \text{ CAUSE } [\text{BECOME predicate}'(y)]\]

and the logical structure of a non-agentive accomplishment would be:

\[\text{do}'(x) \text{ CAUSE } [\text{BECOME predicate}'(y)]\]

regardless of whether it is single or complex change of state.

Non-agentive accomplishments do not normally occur in unaffixed form in Sama, and when they do, the non-agentive causer can only occur in an oblique construction similar to that used for the actor in a passive construction. This is probably due to the fact that the lack of agency reduces the transitivity and weakens the CAUSE relationship, and this is reflected by the fact that inanimate (non-agentive) causers are demoted from core to peripheral status, while agentive causers with the same verb may occur as core actors. (cf. (2.17a) and (2.19a))

(2.17)
a. tutung uk l'tte' kabbun kami cf.(2.19a)
burned OBL lightning plantation 1pl.exI
'Our plantation was burned by lightning.'

Some examples of agentive accomplishment verbs are the following:

1) Single change of state agentive accomplishments:
2) Complex change of state agentive accomplishments:

(2.18)

a. Ö-bono' sultan banta na
   UF-kill king(A) enemy(U) 3sgI
   'The king killed his enemy.'

b. bay Ö-tanõm ku binhi gandum di'aw
   PAST UF-plant lsgI(A) seed(U) corn yesterday
   'I planted the seed corn yesterday.'

c. Ö-butas ku sigam mag-h'nda
   UF-separate lsgI(A) 3plI(U) married
   'I'll separate that married couple.'

2) Complex change of state agentive accomplishments:

(2.19)

a. bang tiggang na kayu Ö-tutung ta na
   if/when dried now wood UF-burn ldlI(A) already
   'If the wood is dried we burn it.'

b. Ö-hakut ku lahing pa diyata'
   UF-carry repeatedly lsgI(A) copra OBL above
   'I carry the copra aboard.'

The interpretation of the logical structure as applied to sentence (2.18a) is the agent (DO), Sultan (x), did something (do') that caused (CAUSE) his enemy (y) to become (BECOME) not alive (predicate').

The example in (2.18b) appears to be ambiguous since it seems open to an activity interpretation. Dowty, however, pointed out that the distinction between activities and accomplishments is "fuzzy" and that accomplishments can be made into activities in the presence of an indefinite goal (1979:185). Applying the syntactic test 'x is finished V-ing' makes the classification of the verb become evident. If the result is acceptable the verb is an accomplishment; if it is not, the verb is an activity. The following is an application of the test to sentence (2.18b):
(2.18)
b'. ubus $\emptyset$-tanom ku binihi gandum di'aw
finished UF-plant lsgI(A) seed(U) corn yesterday
'I finished planting the seed corn yesterday.'

The fact that tanom is acceptable in this syntactic environment shows that it is in fact an accomplishment verb.

In sentence (2.19a) the verb tutung 'burn' has a focussed undergoer, kayu 'wood', which is deleted from the matrix clause under co-reference with kayu in the conditional clause. The application of the syntactic test, 'Does x was V-ing (pragmatically) entail x has V-ed?' yields a negative answer. This indicates that the verb is a definite change of state (accomplishment) rather than an activity verb. In (b) the verb hakut 'haul/carry repeatedly' yields the same result when the test is applied. Dowty (1979:62) has pointed out that it is not just the verb that gives a sentence an accomplishment reading but the NPs that are the arguments of the predicate. In order to be an accomplishment predicate the undergoer must not be indefinite plural or a mass noun. He gives the following example:

(2.20)
a. John ate the bag of popcorn in an hour.

b. *John ate popcorn in an hour.

The mass noun popcorn in sentence (b) gives the predicate an activity reading which makes the resultative test 'V-ed in an hour' not applicable. However, the Sama examples in (2.19a) and (b) cannot have an indefinite undergoer NP reading because for a NP to be in focus it must be definite. In sentence (2.19a) kayu must be interpreted as 'the wood' because the verb is undergoer focus which makes the undergoer NP definite. Likewise in (2.19b) lahing must be interpreted
as definite 'the copra'. Even though there is no overt marking on lahing 'copra' to indicate definiteness, the focus of the verb requires a definite undergoer NP. Hence, we see that in Sama the verb morphology itself interacting with the underlying semantics of the verb signals the accomplishment status of the predicate.

2.6 Summary

The following chart in Table 6 summarizes the unmarked (unaffixed) verbal classes of Sama. A comparison of Table 6 with Table 4 (Dowty, 1979:184) and Table 5 (FSUG:53) shows that all of Dowty's classes occur in Sama in unaffixed form with the exception of the agentive state class. Furthermore, all of the sub-classes of state verbs suggested by FSUG occur with the exception of possession state verbs.

The relevance of the notion of verb classification proposed by Dowty is clearly illustrated by the Sama data. Although the classification principles were designed for analyzing English, Dowty (1979:72,110) implies that these principles apply to other languages as well. The applicability to Sama and the analysis of Tagalog and Lakhota by Foley and Van Valin (FSUG), indicate that a claim of universal status for these principles would be in order.

That these classes occur in Sama in unaffixed form is of special interest because it implies that these semantic primitives (i.e., underlying stative predicates and a system of logical operators and connectives) are more than a function of the morphology or surface structure of Sama; they are, in fact, a part of the logical structure of verb roots.
**Table 6. Sama Verbal Classes (unmarked)**

<table>
<thead>
<tr>
<th>1. STATE</th>
<th>NON-AGENTIVE</th>
<th>AGENTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATIONAL</td>
<td>niya' 'there is' (x,y)</td>
<td>---</td>
</tr>
<tr>
<td>NON-LOCATIONAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONDITION</td>
<td>l'nmk 'at' (x)</td>
<td>---</td>
</tr>
<tr>
<td>COGNITION</td>
<td>ta'u 'know' (x,y)</td>
<td>---</td>
</tr>
<tr>
<td>PERCEPTION</td>
<td>nda' 'see' (x,y)</td>
<td>---</td>
</tr>
<tr>
<td>POSSESSION</td>
<td>derived</td>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. INDEFINITE CHANGE OF STATE (ACTIVITY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOTION</td>
</tr>
<tr>
<td>NON-MOTION</td>
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</tbody>
</table>

| 3. SINGLE CHANGE OF STATE               |
| (ACHIEVEMENT)                           | t'kka 'arrive' (x) |
| (ACCOMPLISHMENT)                        | bono' kill' (x,y) |

| 4. COMPLEX CHANGE OF STATE              |
| (ACCOMPLISHMENT)                        | tutung 'burn' (x,y) |
| (ACCOMPLISHMENT)                        | tutung 'burn' (x,y) |
| where x = inanimate                     | where x = inanimate |
| causer marked by uk is animate          | causer marked by uk is animate |
This analysis of the semantics of unaffixed verbal classes predicts how these classes will interact with Sama morpho-syntax (i.e., how a verb root undergoes a derivational process) to become a member of another verb class. This claim will be supported by the analysis of derivational and inflectional morphology in Chapters Three and Four.

NOTES

1. The verbs logos persuade' and lang 'forbid' occur as passives with the infix -i-. Passive will be discussed in Section 4.3.2.

2. English examples of the application of this test are as follows for the verbs wait (for a friend) and eat (a sandwich):

   a. Does the sentence 'Sam was waiting for a friend' entail (pragmatically) 'Sam has waited for a friend'?

   b. Does the sentence 'Mario was eating a sandwich' entail (pragmatically) 'Mario has eaten a sandwich'?

With sentence (a) the answer is 'Yes, Sam has waited for a friend.' This indicates that wait is an activity verb. On the other hand, in (b) the answer is, 'No, Mario has not eaten a sandwich,' indicating that eat is an accomplishment verb when it has a definite undergoer such as 'a sandwich'.

3.0 Introduction

In Chapter Two the system of verb classification proposed by Dowty (1979) and modified by Foley and Van Valin (1984) was applied to Sama using verb roots that commonly occur in unaffixed form. However, the most common verbs in Sama are not unaffixed forms. In Sama, there is both derivational and inflectional morphology. In this analysis, we will use the term "derivational morphology" to refer to morphological processes which change the logical structure of the predicate. This may involve the incorporation of a previously peripheral argument into the core of the clause, the addition of a new core argument, or a change in the operators in the logical structure of the predicate.

The chart of affixes in Table 1 showed that some affixes have lexical meaning in addition to grammatical function. The discussion in this chapter will show how affixes alter the logical structure of predicates and/or the syntactic structure of the clause in the following ways: N- occurs with statives making them inchoative; N- and mag- verbalize nouns and make them agentive and also make some states and activities agentive; pal- derives motion activity verbs from root words of various categories and pa2- derives accomplishment verbs from verbs of other classes: ka- and um- make verbs non-agentive; and an alters the clause by increasing the valence of the verb.

3.1 N- as an Inchoative Affix

Achievement verbs may be derived from stative verbs by the addition of the nasal prefix N- as can be seen from the following examples:
(3.1)
a. l'mmɔk sapi' kami
    fat cow lpl.exI
    'Our cow is fat.'

b. N-l'mmɔk sapi' kami
    AFF-fat cow lpl.exI
    'Our cow became fat.'

c. bang pa-dagan l'kkas pasu' makina lansa iyu
    if AFF-run fast hot engine launch that
    'If it runs fast, the launch's engine is hot.'

d. bang pa-dagan l'kkas N-pasu' na makina lansa iyu
    if AFF-run fast AFF-hot now engine launch that
    'If it runs fast, the launch's engine becomes hot.'

In the above examples (a) and (c) l'mmɔk 'fat' and
pasu' 'hot' are stative verbs. The addition of N- to the
verbs in (b) and (d) makes the verbs inchoative; the
stative verb root is made into an achievement verb.

The logical structure of (3.1b) is BECOME fat'(x)
and that of (3.1d) is BECOME hot'(x). The semantic
relation of the argument (x) is that of patient. In
these instances the prefix functions like the logical
operator BECOME; however, only a sub-set of state verbs
occurs with the inchoative affix N-.

The sub-set of state verbs that does not occur with
N- to form inchoative may have an inchoative aspect
expressed by the addition of the verb song
'approach/proceed/become'. Verbs in this sub-set are the
following: mehe 'large', langkaw 'tall', ta 'distant',
sikot 'near', taha 'long', lɔm 'deep', b'nsi 'angry'.

(3.2)
a. langkaw onde' iyu
    tall child that
    'That child is tall.'
b. song na langkaw onde' iyu
approach now tall child that
'That child is getting tall./That child is going to
be tall.' (lit. 'That child is approaching tall.')

c. b'nsi na mastal
angry now teacher
'The teacher is angry.'

d. song na b'nsi mastal
approach now angry teacher
'The teacher is getting angry./The teacher is about
to be angry.'

It is apparent from the fact that these verbs require
song, a motion verb, to form inchoatives, that the state
in question is regarded as a point toward which movement
or progress is made. Before reaching that point, x
cannot be said to be in the state.

3.2 N- and mag-, Deriving Verbs from Nouns

The prefix N- is also used to derive verbs from
nouns. However, most of the nouns that serve as bases
for such verbs are instrument type nouns, for example,
badja' 'a plow', p'ssi 'fish hook', songket 'a pole',
gala 'a coconut cutting knife', and tambal
'remedy/medicine'.

(3.3)
a. N-badja' si mma' ma huma'
AFF-plow PM father(A) OBL garden(U)
'Father plows in the garden.'

b. N-p'ssi si Abdul sõbad saung
AFF-hook PM Abdul(A) bonito(U) tomorrow
'Abdul will fish for bonito tomorrow.'
Dowty (1979:64) has pointed out that when a mass noun or an indefinite plural occurs as an undergoer, the verb behaves like an activity verb (see 1.2.5). The verbs in (3.3a–c) are activities rather than accomplishments since the action does not involve a terminus. The undergoers in (b) and (c) are indefinite or mass nouns, and the undergoer may be omitted from each; for example, (3.3b) with the undergoer omitted means 'Abdul will go fishing tomorrow.' The syntactic test for distinguishing an activity from an accomplishment is, 'does x was V-ing (pragmatically) entail x has V-ed?' When applied to these verbs, the answer is 'yes' which indicates that these verbs are activities. The logical structure for these predicates is \( \text{DO}(x, [\text{predicate}'(x, y)]) \). The semantic relations of the arguments to the predicate are \( x \) is agent and \( y \) is location in (a), and theme in (b) and (c).

There are also some instrument type nouns that do not occur with the prefix N- but may be verbalized with the prefix mag- instead, for example, litag 'a snare', bubu 'a fish trap'.

\[(3.4)\]

a. mag-litag si Oto' manuk labuyu'
   \text{AFF-snare PM Oto(A) wild.chicken(U)}
   'Oto snares wild chickens.'

b. mag-bubu maas hi' daing
   \text{AFF-trap old.man(A) that fish(U)}
   'That old man traps fish.'
These predicates are also activity verbs and have the same logical structure as the examples in (3.3a-c).

There are also some nouns that can occur with either the prefix N- or mag- and show a correlate meaning difference. When these noun roots occur with N- the meaning is generally, 'to perform an activity'. In contrast, when these nouns occur with mag- it means to attend an activity that is performed. Included in this class are the following: **tambal** 'medicine/remedy', **tugsuk** 'an injection', and **duwaa** 'a prayer ceremony'.

(3.5)

a. N-tambal doktol manga d'nda
   AFF-medicine doctor(A) PL woman(U)
   'The doctor treats women.'

b. mag-tambal manga d'nda ma doktol hi'
   AFF-medicine PL woman(A) OBL doctor that
   'The women go for treatment to that doctor.'

c. N-duwaa kita ma onde' saki
   AFF-prayer.ceremony lpl.incII(A) OBL child sick
   'We'll perform a prayer ceremony for the sick child.'

d. mag-duwaa kita ma onde' saki
   AFF-prayer.ceremony lpl.incII(A) OBL child sick
   'We'll have/attend a prayer ceremony for the sick child.'

These too are activity verbs as are the others which are derived from nouns and have the same logical structure as those above. All of the examples in (3.5) are actor focus. The undergoer focus construction of these verbs is formed with -an which will be discussed in Section 3.8. However, there is evidence that the undergoer focus forms are not activity verbs.
3.3 **mag- as Agentive**

Verb roots that do not express volition were seen to derive a volitional or agentive component with the affix **mag-** in Chapter Two (see 2.2.1 and 2.3.3). In Section 2.2.1 agentive state verbs were derived from condition state verbs.

*(3.6)*

a. dupang anak iyu
   foolish child(U) that
   'That child is foolish.'

b. mag-dupang anak iyu
   AFF-foolish child(A) that
   'That child is acting foolish.'

Here in *(3.6a)* **dupang** 'foolish', is a condition state verb with a patient undergoer argument. In (b) the verb is affixed with **mag-** which gives it an agentive component. Thus the undergoer patient of (a) becomes the actor agent of (b) changing the logical structure from

foolish'(*x*), where *x* = patient, to

DO(*x*, [foolish'(x)])

where *x* is an agent.

In Section 2.3.3 agentive activity verbs were derived from non-agentive activity verbs.

*(3.6)*

c. hebok na li' ka'u
   noisy now still 2sgII(A)
   'You are still noisy.'

d. mag-hebok na li' ka'u
   AFF-noisy now still 2sgII(A)
   'You are still making noise.'
In (3.6c) hebok 'be noisy' is a non-volitional activity verb with an actor that is an effector. However, the verb is made volitional with the addition of the affix mag- in (d). The logical structure is also changed from noisy'(x) in which x is an effector, to DO(x,[noisy'(x)]) in which x is an agent. The analysis of the function of mag- as adding DO to the logical structure of the predicate is consistent with the function of mag- in the previous section, where mag- derived an activity verb from a noun. In both cases, mag- indicates that the derived verb has DO in the logical structure as well as being actor focus.

3.4 pal, Derived Activities

The discussion in this section will show how a prefix that derives motion activity verbs is translated in the logical structure of the verb, and how that prefix can occur with a wide variety of root words to derive activities. These verbs appear to be agentive because of the English translations, but are actually unmarked for agency.

Root words of various types occur with pal- to form activity verbs that express motion (pal- is labelled with a superfix to distinguish it from a homophonous form that indicates causative). There are two types of activity verbs that are formed with pal-. One type expresses motion that is oriented toward a destination. The other type expresses motion that does not involve a destination.

Activity verbs as presented in Chapter One (1.2.4 and 1.3.5) were represented in a general way (e.g., run') since decomposition could not reveal an underlying stative verb. However, Foley and Van Valin (1984) showed that by using the operators and connectives already adopted and adding the sentential connective '&' meaning 'and then', the logical structure of motion verbs could be represented as follows:
These formulas represent motion from a place and to a place respectively.

The prefix pal- is used to form motion verbs in the following way. It may occur with deictics and location words such as itu 'this/here' and diyata 'above' to express movement to that location. It can also be used with words that indicate a position or destination as in the following: kid 'side' with pal- means 'roll or lie on one's side', and da'OB 'the inner surface of a body or object' with pal- means 'to roll or lie on one's stomach'. With these verbs it seems that pal- translates as BECOME be-at' in a logical structure like (3.7b). The interesting thing about pal- is that it derives a class of verbs by providing a morphological realization for an abstract predicate that was posited by Foley and Van Valin for the logical structure of motion verbs.

The following examples illustrate the wide variety of root words that may occur with pal- to form motion activity verbs:

deictics, e.g., itu 'here', ian 'there (near)', iyu 'there (near hearer)', ihi 'there (far)';

location words, e.g., luwas 'outside', diy0m 'inside', deyo 'below';

body position, e.g., bahak 'on one's back', da'OB 'on one's stomach';

spacial relation, e.g., labay 'pass by', lanjal 'continue on course', song 'proceed (spacially and figuratively)', sunu' 'in succession';
spacial recurrence, e.g., baik 'return/repeat', bing 'return/ other side', s'il'e' 'change places', tudul 'follow';

body motion, e.g., dagan 'run', l'ngngoy 'swim', laksu 'jump', leng 'fly'; and

speed, e.g., sigla' 'quick', l'kkas 'fast', laun 'slow'.

The following sentences show examples of motion verbs that are derived from root words of various categories:

(3.8)

a. pa-itu sigam saung
   AFF-here 3plII(A) tomorrow
   'They'll come tomorrow.'

b. pa-luwas onde' buttihi'
   AFF-outside child(A) now
   'The child is going outside now.'

c. pa-bahak na ka'u
   AFF-lie now 2sgII(A)
   'You lie down now.'

d. pa-dagan onde' pa iskul
   AFF-run child(A) OBL school
   'The children run to school.'

e. pa-l'kkas na kita tarasaw na
   AFF-fast now 1pl.incII(A) late already
   'Let's hurry; it's late already.'
In example (3.8a) the deictic *itu* 'here/this' is affixed with *pal-* resulting in the meaning 'come here'. Sentence (b) shows *pal-* occurring with *luwas* 'outside' meaning 'go outside'; and in (c) *pal-* is combined with *bahak* 'back or outer side', resulting in the meaning 'lie down/lie back'. In (d) *pal-* occurs with the verb *dagan* 'run' and indicates activity but is unmarked for agency. In (e) *pal-* is affixed to the stative verb *l'kkas* 'fast/quick' and results in the meaning 'to act quickly' or 'to hurry'. While these examples seem to be agentive (i.e. to have DO in their logical structure), other verbs have a non-volitional interpretation when they occur with *pal-*.

(3.9)

a. *pa-luwas kemon bohe* na
   
   AFF-outside all water 3sgI
   
   'All the water ran out of it.'

b. *pa-dagan lansa dam-bahangi'*
   
   AFF-run launch one night
   
   'The launch ran/travelled the whole night.'

Here the actor is of necessity non-volitional in each case because the argument is manifested by an inanimate NP. Hence the single argument is a theme, that is, the thing that moves. Comparing (3.8b) and (d) with (3.9a) and (b) shows that *pal-* has nothing to do with agency, but rather expresses the component of motion activity. *Pal-* thus occurs with words of various categories to form motion activity verbs which are unmarked for agency.

3.5 *pa2-* Causatives as Derived Accomplishments

Accomplishment verbs have a complex logical structure in which two underlying sentential elements are linked by the sentential connective CAUSE. The first sentential element usually has an activity predicate, and the second, usually, an achievement. As is true in many other languages, causation in Sama is a function reflected in the morphology. The verbal prefix *pa2-*
'cause' may be affixed to verbs of various classes (states, activities, achievements and accomplishments) thereby making them derived accomplishments.

(3.10)
a. (state)
tahak na kiyakan
cooked now food(U)
'The food is cooked.'

a'. (accomplishment)
pa-tahak ku na kiyakan
AFF-cooked lsgI(A) now food(U)
'I cooked the food.'

b. (activity)
lahi na onde' di'aw
flee now child(A) yesterday
'The child left yesterday.'

b'. (accomplishment)
pa-lahi ku na onde' di'aw
AFF-flee lsgI(A) now child(U) yesterday
'I sent the child away yesterday.'

c. (achievement)
p'dda na api hi'
go.out now fire(U) that
'The fire went out.'

c'. (accomplishment)
pa-p'dda ta na api hi'
AFF-go.out ldlI(A) now fire(U) that
'We put out the fire.'

d. (accomplishment)
Ø-inum na kahawa hi'
UF-drink 3sgI(A) coffee(U) that
'He drank that coffee.'
In each of the above examples an accomplishment predicate is derived from another predicate by the occurrence of the prefix pa2-. In addition to the change of verb class there is a correlated addition of a core argument to the predicate, or in other words an increase in the valence of the verb. The occurrence of the pa2- prefix translates in logical representation as the addition of the sentential connective CAUSE and an unspecified activity predicate in its first argument. This may be represented schematically as in (3.11).

(3.11)
a. STATE/ACHIEVEMENT/ACTIVITY
   (BECOME) predicate'(x)

b. ACCOMPLISHMENT
   [DO(z,[do'(z)])] CAUSE
   [(BECOME) predicate'(x)]

In (3.11), (a) represents the structure of the predicate (i.e., a state, achievement, or activity) prior to the affixation of pa2- and (b) represents the logical structure of the derived verb to which pa2- has been affixed.

The examples in (3.10a) and (a') show a basic stative verb tahak 'cooked/ripe/ready-to-eat' and its single argument kiyakan 'food' which bears the semantic relation of patient to the verb. The logical structure of (a) is cooked (x) and x = patient. In sentence (a') pa-tahak 'cause to be cooked' is an accomplishment verb which has the following logical structure:
\[ \text{DO}(z, [\text{do}'(z)]) \text{ CAUSE } [\text{BECOME cooked'}(x)] \]

where \( z \) (the causer) = agent and \( x \) = patient.

In (3.10b) \text{lahi} 'flee' is an agentive activity (motion) verb with a logical structure \( \text{DO}(x, [\text{flee'}(x)]) \) in which \( x \) = agent. However, in (b') \text{pa-lahi} 'cause to flee' is a derived accomplishment verb expressing a definite single change of state. The logical structure of the derived verb is \( \text{DO}(x, [\text{do}'(x)]) \) \text{ CAUSE } [\text{flee}(z)] and the semantic relation of the arguments are \( x \) (the causer) = agent and \( z \) (the causee) = effector.

Sentences (3.10c) and (c') show the derivation of an accomplishment verb (c') from an achievement verb (c). In (c) \text{p'dda} 'go out' is a non-agentive single change of state with the logical structure \text{BECOME gone out'}(y) and \( y \) has the semantic relation of patient. Example (c') shows the derived accomplishment \text{pa-p'dda} 'cause to go out' which has the logical structure \( \text{DO}(x, [\text{do}'(x)]) \) \text{ CAUSE } [\text{BECOME gone out'}(y)] and the semantic relation of the arguments are \( x \) = agent and \( y \) = patient.

The sentences in (3.10d) and (d') illustrate the derivation of an accomplishment verb (d') from another accomplishment verb (d). In (d) \text{inum} 'drink' is an agentive complex change of state verb with the logical structure

\[ \text{DO}(x, [\text{do}'(x)]) \text{ CAUSE } [\text{BECOME drink'}(y)]. \]

The derived accomplishment in (d') has the logical structure

\[ \text{DO}(z, [\text{do}'(z)]) \text{ CAUSE } [[\text{DO}(x, [\text{do}'(x)])] \text{ CAUSE } [\text{BECOME drink'}(y)]] \]
and \( z \) (the causer) = agent, \( y \) (the undergoer) = patient, and \( x \) (the causee) = secondary agent.

Comrie argues that in causative constructions, the case marking of the causee of a transitive verb is normally that of an indirect object. Foley and Van Valin give a semantic reason for this: according to the hierarchy for eligibility to actor and undergoer, the most agentive argument will always be the actor. Therefore the causer will always be the actor. The argument closest to the patient end of the hierarchy (see Figure 1) will always be the undergoer. Therefore the undergoer of the caused verb will also be the undergoer of the causative construction. This means that actor and undergoer are not available for the causee (the actor of the caused verb), so the causee normally receives instead the case marking of indirect object, although there are some exceptions.

Sama seems to be one of the exceptions, as shown by the examples in (3.10) and (3.12). In (3.10d) inum 'drink' is a transitive verb with an agent actor na 'he' and a theme undergoer kahawa 'coffee'. In (3.10d') inum is affixed with the causative prefix pa2- and a causer (ku 'I') is added. As expected, the causer is the actor. However the causee iya does not receive oblique marking as would be expected for an indirect object, as will be seen in (3.12b). Since neither the causee iya 'him' nor the theme kahawa 'coffee' have oblique marking, it is not evident from this example which of them is the primary undergoer. However in (3.12a) we see that the causee can be questioned using the wh- question word say 'who', while in(e.12b) attempting to form a question on the causee using an oblique question ma say 'to whom', produces an ungrammatical sentence. Sentence (3.12a) is evidence that the causee is the focussed undergoer and a core argument; sentence (3.12b) is evidence that the causee cannot be moved to indirect object or to peripheral status. In (3.12c) the theme kahawa cannot be questioned using the wh- question word ay 'what'. In order to question the theme, it is necessary to use an instrument focus construction as shown in (3.12d). This indicates that, in the unmarked causative construction, the causee is in focus. Since with other types of verbs
the causative pa²- forms undergoer focus constructions, and other constructions in the language are undergoer focus in their unmarked form, it reasonable to assume that the unmarked form of this causative construction is undergoer focus also. This is evidence that although both the causee and the theme are core arguments, it is the causee, not the theme, which is the primary undergoer.

(3.12)

a. say pa-inum nu kahawa
   Q AFF-drink 2sgI(A) coffee(U)
   'Whom did you give coffee to drink?'

b. *pa-inum nu kahawa ma say
   AFF-drink 2sgI(A) coffee(U) OBL Q
   'To whom did you give coffee to drink?'

c. *ay pa-inum nu ma iya
   Q AFF-drink 2sgI(A) OBL 3sg
   'What did you give him to drink?'

d. ay paN-pa-inum nu iya
   Q AFF-AFF-drink 2sgI 3sgII(U)
   'What did you give him to drink?'

As will be seen in Section 3.8, a similar thing occurs with the suffix -an. A second (locative) undergoer is incorporated into the core of the clause, and it is this locative undergoer which is focused unless the verb is further affixed, even though the other undergoer may be a patient or theme and therefore higher on the hierarchy for undergoer. It seems that both the causative affix pa²- and the affix -an suspend the operation of the hierarchy for undergoer and allow another argument to fill the undergoer slot, rather than the one highest in the hierarchy. When this happens, the argument which would normally have filled the undergoer slot is not pushed into the periphery, but remains in the core, resulting in what appears to be two undergoers, although only one may be focused or function as undergoer pivot.
3.6 *ka*- as DO Canceller

The prefix *ka*- indicates actor focus and means 'able to' or 'happen to'. Its undergoer focus counterpart *ta*- will be discussed in Chapter 4, although neither one of these affixes is regarded as being more basic than the other. An affix with a meaning such as this not only alters the semantics of the verb, but in many cases also alters the logical structure of the predicate. If the verb root to which it is affixed has an agentive meaning in its unaffixed form, the addition of the affix *ka*- typically cancels the agentive component of the verb (represented by DO in the logical structure) making the verb non-agentive. Thus this affix functions to derive non-agentive accomplishment verbs from agentive accomplishment verbs and non-agentive activities from agentive. If, on the other hand, the verb to which *ka*- is affixed is already non-agentive in its unaffixed form, the addition of the prefix *ka*- does not necessarily change the logical structure but rather modifies the meaning of the verb to express the ability or potential of the actor to perform the action. When *ka-* occurs with stative roots, the verb usually becomes an achievement (3.13a') or a non-agentive activity (3.13e'-g) since the abilitative component is incompatible with stative verbs.

(3.13)
a. (state)

    tuwi na si Putli'
sleep now PM Princess
'Princess is asleep.'

a'. (achievement)

    ganta' kutukutuhan ka-tuwi na si Putli'
while being.deloused AFF-sleep now PM Princess
'While being deloused, Princess happened to fall asleep/ was able to fall asleep.'
b. (agentive accomplishment)

\[ \emptyset - t'\text{llön} \ na \ buwa' \ hi' \]
\[ \text{UF-swell} \ 3\text{sgI}(A) \ \text{fruit(U)} \ that \]
'He swallowed the fruit.'

b'. (non-agentive accomplishment)

\[ \text{ka-}t'\text{llön} \ iya \ buwa' \ hi' \]
\[ \text{AFF-swell} \ 3\text{sgII}(A) \ \text{fruit(U)} \ that \]
'He happened to swallow the fruit.'

c. (achievement, unmarked for agency)

\[ \emptyset - \text{kila} \ ku \ d'\text{nda} \ hi' \]
\[ \text{UF-recognize} \ 1\text{sgI}(A) \ \text{woman(U)} \ that \]
'I identify/recognize that woman.'

c'. (achievement, non-agentive)

\[ \text{ka-}kila \ aku \ d'\text{nda} \ hi' \]
\[ \text{AFF-recognize} \ 1\text{sgII}(A) \ \text{woman(U)} \ that \]
'I happen to recognize that woman./I am able to recognize that woman.'

d. (agentive activity)

\[ \text{N-hinang} \ li' \ ka'u \ kalaatan \]
\[ \text{AF-do/make} \ \text{still} \ 2\text{sgII}(A) \ \text{bad.things(U)} \]
'You are still doing bad things.'

d'. (non-agentive activity)

\[ \text{ka-hinang} \ na \ ka'u \ laat \]
\[ \text{AFF-do/make} \ \text{now} \ 2\text{sgII}(A) \ \text{evil(U)} \]
'You happen to do wrong.'

e. (perception state)

\[ \emptyset - \text{nda}' \ nu \ \text{bud} \ iyu \]
\[ \text{UF-see} \ 2\text{sgI}(A) \ \text{mountain(U)} \ that \]
'You see that mountain.'
e'. (non-agentive activity)

\[
\begin{align*}
\text{ka-nda'} & \quad \text{ka'u} & \quad \text{bud} & \quad \text{iyu} \\
\text{AFF-see} & \quad 2\text{sgII(A)} & \quad \text{mountain(U)} & \quad \text{that}
\end{align*}
\]

'Are you able to see that mountain?'

f. \[
\begin{align*}
\text{nsa'} & \quad \text{aku} & \quad \text{ka-nda'} & \quad \text{bud} & \quad \text{iyu} \\
\text{NEG} & \quad \text{lsgII(A)} & \quad \text{AFF-see} & \quad \text{mountain(U)} & \quad \text{that}
\end{align*}
\]

'I cannot see that mountain.'

g. \[
\begin{align*}
\text{nsa'} & \quad \text{aku} & \quad \text{ka-nda'}; & \quad \text{buta na} & \quad \text{aku} \\
\text{NEG} & \quad \text{lsgII(A)} & \quad \text{AFF-see} & \quad \text{blind} & \quad \text{now} & \quad \text{lsgII}
\end{align*}
\]

'I cannot see; I am blind.'

In (3.13a) tuwi 'sleep' is a non-agentive stative verb, since tuwi is not 'under the unmediated control of an agent'. So here the ka- affix cannot be said to cancel the agentive component DO since the verb root is already non-agentive. Rather it makes the verb abilitative and at the same time makes it an achievement verb (single change of state).

Example (b) on the other hand is an agentive accomplishment verb expressing a single change of state (Dowty’s class 6, Table 4) here used in its unaffixed form which means undergoer focus. In (b') the agentive component of t'illön 'swallow' (in (b)) is cancelled by the addition of ka- so that ka-t'illön means 'happened to swallow'. Given the right context ka-t'illön can also mean 'able to swallow'. An example of this would be ka-t'illön onde' bigi tambal 'the child is able to swallow medicine tablets'.

In (3.13c) kila 'recognize/identify' is an undergoer focus single change of state (achievement) verb that is unmarked for agency. With ka- affixed in (c'), 'recognize' is necessarily non-agentive and may also have an abilitative meaning. Since the unaffixed form of the verb is unmarked for agency, it seems that the primary function of ka- here is not to cancel agency. Sometimes the primary function is to express an abilitative meaning, but it may also have the function of changing the verb from undergoer focus to actor focus.
without introducing the component of agency. (Other actor focus affixes N- and mag- are agentive.)

In (3.12d) the verb ᵃ CultureInfo呐 'do/make' is an activity verb expressing agentive indefinite change of state. The addition of ka- to the verb in (d') makes it a non-agentive activity verb.

Examples (e) through (g) illustrate a perception verb nda' 'see' which is stative in its unaffixed form. When a stative perception verb is affixed with ka- the verb becomes a non-agentive activity and expresses an abilitative meaning. The previous examples (a-d) could be interpreted simply as non-agentive, but not necessarily as abilitative. However, (e') and (g) cannot be simply non-agentive but must have an abilitative meaning. In (f) and (g) nsa' aku ka-nda' can only mean 'I am not able to see'; the remainder of sentence (g) ('I'm blind') reinforces the abilitative interpretation but the interpretation is not dependent upon it. It is interesting to note that the actor focus prefix ka- not only expresses an abilitative meaning, but also changes the verb from undergoer focus to actor focus and in so doing makes the undergoer omittable (further discussion of omitting the undergoer of actor focus verbs is in 4.3.4).

3.7 -um- as a DO Canceller

Another verbal affix that cancels the agentive component of the verb is the infix -um-. This affix seems to occur with a very limited class of verbs. It should be pointed out that -um- in Sama (of Pangutaran) is very unlike the -um- infix in other Philippine languages, particularly Tagalog. In Tagalog the affix -um- has a high frequency, whereas in Sama -um- occurs very infrequently. The Tagalog -um- occurs with actor focus verbs to indicate volitional action or with stative verbs to give them an inchoative meaning, whereas the Sama -um- occurs mainly with motion verbs to make them non-agentive.
(3.14)
a. tudju aa pa luma' Saupak
go.toward person(A) OBL house Saupak
'The man is going to Saupak's house.'

a'. t-um-udju aa pa luma' Saupak
AFF-go.toward person(A) OBL house Saupak
'The man is headed for Saupak's house.'

b. ø-sagnat-an nu badju' ma lansang
UF-hang-AFF 2sgI(A) shirt(U) OBL nail
'Hang the shirt on the nail.'

b'. s-um-agnat badju ku ma lansang
AFF-hang shirt lsgI OBL nail
'My shirt got caught on a nail.'

The verb tudju 'go toward' in sentence (3.14a) is an agentive activity verb which is rendered non-agentive by the infix -um- in example (a'). Likewise sagnat-an 'hang up' is an agentive accomplishment verb, and it is made non-agentive by the infix -um- in (b'), resulting in an achievement verb.

3.8 -an, Locative Focus or Valence Increaser?

The suffix -an occurs in many Philippine languages and is generally regarded as a location focus suffix. There are several respects in which Sama is different from other Philippine languages, or at least requires a different analysis from what has traditionally been given for other Philippine languages. We propose that in Sama the suffix -an is not a focus marking affix, but rather a derivational affix which functions to increase the valence of the verb. We shall look at several sets of examples and show how this analysis of -an is supported by various types of data, while alternative analyses do not adequately explain the data or else apply to only part of it.
First of all it should be pointed out that in any given Sama clause no more than one NP can be placed in focus. If we view the focussed NP as the pivot of the clause, then this claim is supported by the fact that only one NP in a clause can have pivot functions such as those involved in clefting and wh- question formation (see Section 4.3.5). Furthermore, focussed pronouns (but not nonfocussed pronouns or noun-headed NPs) are attracted by the prepredicate past tense particle bay, and in any given clause only one pronoun is eligible for attraction to bay.

The suffix -an can be shown to increase the transitivity of a clause by increasing the number of arguments which a given verb can have within its core. Depending on the verb class, this increase in transitivity may take various forms, three of which will be exemplified here.

The first of these is illustrated in the examples in (3.15) where a peripheral beneficiary, marked by the oblique preposition ma, is incorporated into the core of the clause as a nuclear unmarked NP when -an is suffixed to the verb. In unaffixed form, verbs of this class take two core arguments (actor and undergoer). But the suffix -an allows the incorporation of a third argument (locative undergoer) into the core of the clause.

(3.15)

a. Ø-b'lli ku taumpa' ma si Andi
   UF-buy lsgI(A) shoes(U) OBL PM Andy(B)
   'I bought the shoes for Andy.'

b. N-b'lli aku taumpa' ma si Andi
   AF-buy lsgII(A) shoes(U) OBL PM Andy(B)
   'I bought some shoes for Andy.'

c. Ø-b'lli-an ku si Andi taumpa'
   UF-buy-LOC lsgI(A) PM Andy(B/U) shoes(U)
   'I bought Andy some shoes.'
d. N-b'lli-an aku si Andi taumpa'
AF-buy-LOC lsgII(A) PM Andy(B/U) shoes(U)
'I bought Andy some shoes.'

In (3.15a) and (b) the beneficiary _ma si Andi_ is a peripheral NP marked by the oblique preposition _ma_, while in (3.15c) and (d) _si Andi_ is unmarked (which is indicative of a core NP). In (c) the beneficiary _si Andi_ has been incorporated into the core of the clause as an undergoer and is in focus. This can be seen when the particle _bay_ is added to the clause and the pronoun _iya_ is substituted for _si Andi_, _bay iya ø-b'lli-an ku taumpa' 'I bought him some shoes'. Because the locative undergoer _iya_ is in focus, it is attracted to a prepredicate position by the particle _bay_.

This might lead one to conclude that _-an_ indicates benefactive or locative focus. However, if this were true, it would imply a double marking for focus in sentence (d) where both _N-_ (actor focus) and _-an_ occur. If _-an_ were a locative focus marker this would mean that both actor and beneficiary (locative) were in focus in sentence (d). We have mentioned already that only one NP can be in focus. In this case it is the actor which is in focus. This becomes evident when the past tense particle _bay_ (which attracts a focussed pronoun) is added to the clause, _bay aku N-b'lli-an iya taumpa' 'I bought him some shoes.' Here the actor pronoun _aku_ is attracted by the prepredicate particle because it is in focus, whereas the beneficiary _iya 'him' is not attracted even though it is from the same set of pronouns that may be used for focus. This shows that in sentence (d) the undergoer-beneficiary _si Andi_ is not in focus, although it is a core argument.

In sentence (c), the locative _si Andi_ was incorporated into the core of the clause and was also in focus. In sentence (d), _si Andi_ was incorporated into the clause as a core argument, but not as the focussed NP, since the tests applied identify the actor as the focussed NP. So we conclude that _-an_ is not a locative focus marking affix but rather functions to incorporate
into the core of the clause an additional argument, which may or may not be focussed.

Some intransitive verbs also show an increase in transitivity when suffixed with -an, by allowing the addition of a second argument to the core of the clause. Without -an these verbs take only actors as core arguments, but when affixed with -an a second argument (undergoer) is added to the core of a verb.

(3.16)

a. lilla na aku ma kabayaan nu submit now lsgII(A) OBL will 2sgI 'I submit to your will.'

b. lilla-an ku tiksa' hi' submit-AFF lsgI(A) hardship(U) that 'I endured that hardship.'

In (3.16a), the verb lilla 'submit' has an actor, aku 'I' which is unmarked for agency. The second argument, ma kabayaan nu 'to your will' is not a core argument since it is marked with the preposition ma. The example in (b) shows the verb affixed with -an, and an undergoer, tiksa' hi' 'that hardship', is incorporated as a core argument of the verb. This is evidenced by the lack of the preposition in sentence (b). So we see that here again the function of the suffix -an is to add another argument (which would otherwise be oblique) to the core of the clause, thereby increasing the valence of the verb.

Certain stative verbs also show an increase in transitivity when suffixed with -an. Some of the verbs that are in this subclass are the following: l'ppa 'to be free', ungkad 'to be open', lamud 'to be mixed', högöt 'to be tight', and lanu' 'to be clean/smooth'. When affixed with -an, they form accomplishment verbs (single change of state). (They do not occur with pa2-, the causative affix, to form accomplishments.) For this set of verbs, however, there are several alternative analyses that need to be considered and disposed of.
before it will be entirely clear that the best analysis for this occurrence of -an also is that it functions as a valence increaser.

When affixed with -an, these verbs take an actor which is the agent of the change of state. In addition to deriving an accomplishment verb from a stative root (thereby introducing an actor to the clause), the suffix -an also adds the potential for a third core argument (a beneficiary), as will be seen in the examples in (3.17) and (3.18).

(3.17)

a. Ø-ungkad na lawang
   open now gate(U)
   'The gate is open.'

b. Ø-ungkad-an nu lawang
   UF-open-AFF 2sgI(A) gate(U)
   'You open the gate.'

c. Ø-ungkad-an nu lawang ma aku
   UF-open-AFF 2sgI(A) gate(U) OBL 1sg
   'You open the gate for me.'

d. Ø-ungkad-an nu aku lawang
   UF-open-AFF 2sgI(A) 1sgII(B/U) gate(U)
   'You open the gate for me.'

(3.18)

a. Ø-l'ppa na sapi' tabi
   free now cow(U) lpl.incl
   'Our cow is loose.'

b. Ø-l'ppa-an nu sapi'
   UF-free-AFF 2sgI(A) cow(U)
   'You free the cow./Let the cow loose.'

c. Ø-l'ppa-an nu sapi' ma aku
   UF-free-AFF 2sgI(A) cow(U) OBL 1sg
   'You free the cow for me./Let the cow loose for me.'
d. Ø-l'ppa-an nu aku sapi'
   UF-free-AFF 2sgI(A)  lsgII(B/U)  cow(U)
   'You free the cow for me./Let the cow loose for me.'

Here we see how a basic stative verb in the (a) examples becomes a derived accomplishment verb in the (b) examples when it occurs with -an. The examples in (3.17) with the verb ungkad 'open' might lead one to think that -an indicates locative focus, since in some Philippine languages the verb 'to open' takes a locative undergoer. In other words lawang in (3.17a) would be a simple undergoer, whereas in (3.17b-d) it would be a locative undergoer. The affix -an would mark the undergoer as both focussed and locative. However, this analysis does not account for the use of -an with the verb l'ppa 'free' in the sentences in (3.18). It does not seem possible to interpret sapi' 'cow' in these sentences as a locative undergoer.

Another tempting analysis might be to translate -an as CAUSE in the logical structure of the verb. Since CAUSE is a component of the logical structure of accomplishment verbs that distinguishes them from statives, one might be tempted to analyze the suffix -an as a causative affix, a morphological feature which would correspond directly to the component CAUSE in the logical structure of the verb. This would mean that the suffix -an which occurs with statives would be a homophonous but distinct morpheme from the -an which adds a locative undergoer to the core of the clause.

However in examples (3.18d) and (3.17d) we see that a locative undergoer (beneficiary) has been added to the core of the clause in the form of aku 'I' which is a member of the set of pronouns used for core arguments. Notice that this is the same thing that happened in example (3.15c). When the verb was affixed with -an, it allowed a locative undergoer (beneficiary) to be added to the core of the clause.

This suggests that the parallels in the use of -an with stative verbs, intransitive verbs and transitive verbs go well beyond homophony. Whether -an is causative or not seems independent of the role -an plays
as a valence/transitivity increaser with all three sets of verbs.

The suffix -an does not function exactly the same way in the sentences in (3.17) and (3.18) as it did in (3.15). In (3.15) the only thing that -an did was to incorporate a locative undergoer (beneficiary) into the core of the clause, whereas in the examples in (3.17) and (3.18) it seems to be doing two things; it adds an actor-agent to the clause as well as adding the potential for a beneficiary as a core argument. In (3.17d) we see that the beneficiary may also occur as an oblique NP (not in focus), whereas in the examples in (3.15) the beneficiary never occurred as an oblique NP when the verb was affixed with -an, even when it was not in focus.

However, in spite of these differences, the simplest explanation seems to be that in all these examples -an has a similar function—that of making it possible to add one or more arguments to the core of the clause. The arguments are added in the following order: If the unaffixed verb has one core argument (either actor or undergoer), then when it is affixed with -an the other possible core argument is added. If it already has two core arguments, then the affix -an signals a marked undergoer choice (beneficiary undergoer), and this too results in an increase in the number of core arguments of the verb.

Examples (3.17) and (3.18) are perhaps the most interesting cases, as they exhibit this double function of -an. In these examples, two arguments are added to the core of the clause. In both (a) examples there is a single argument that is an undergoer. In the (b) examples an actor-agent is added with -an. In the (d) examples a locative undergoer (beneficiary) is also added to the core. Even though -an has two functions here, it does not occur twice due to a morphological constraint. Note that it would be impossible (because of the ordering rule) to have sentences like those in (3.19) in which -an adds a marked undergoer choice to a clause without an actor.
(3.19)
a. *ungkad-an aku lawang (cf. (3.17b))
open-AFF lsgII gate
'The gate is open for me.'

b. *l'ppa-an aku sapi' (cf. (3.18b))
free-AFF lsgII cow
'The cow is free for me.'

How do these verbs come to have the component CAUSE in them if -an is not a causative affix? Since the argument added is an agent and this agent is a separate entity from the undergoer of the stative verb, the only possible logical relationship between the agent and the stative verb is causative. It is logically impossible for x to do the state(y) agentively, but it is possible for x to do something agentively that causes a change of state in y. Therefore the component CAUSE is necessarily included with the addition of an agent to a stative verb root. There is no other logical relationship that can exist between them.

There are agent state verbs which don't have a causative component in them, but these are derived using the affix -mag, by which the undergoer of the stative verb becomes the agent of the derived agent state verb. The agent is not a separate entity. The affix -mag also changes the focus of the verb to actor focus, whereas -an is not a focus marking affix, so the verb remains undergoer focus. The undergoer does not become the agent, as it does with mag-, but instead an unfocussed actor is introduced into the clause.

So we see that there is no need to find something in the surface structure which is translated as CAUSE in the logical structure, if the the function of -an is simply to add another argument to the core of the verb. The fact that -an can be seen to have this same function with a variety of verb root types, while no other single analysis covers all of the situations in which -an occurs, strengthens our claim that -an is a derivational affix whose function is to increase the valence of the verb to which it is affixed.
3.9 Summary

Table 7 summarizes the derivational affixes discussed in this chapter, showing how they correspond to the logical operators and connectives found in the logical structures.

<table>
<thead>
<tr>
<th>CANCELS</th>
<th>ADDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO (agency)</td>
<td>ka-</td>
</tr>
<tr>
<td></td>
<td>(ta-)</td>
</tr>
<tr>
<td></td>
<td>-um-</td>
</tr>
<tr>
<td>BECOME be-at' (motion)</td>
<td>pa1-</td>
</tr>
<tr>
<td>BECOME (achievement)</td>
<td>N-</td>
</tr>
<tr>
<td>CAUSE (accomplishment)</td>
<td>pa2-</td>
</tr>
<tr>
<td>increased valence</td>
<td>-an</td>
</tr>
</tbody>
</table>

Table 7. Sama Verbal Affixes (derivational)
As Chapter Two showed that the unmarked classes reflect the semantic categories in the logical structures of verb roots, so Chapter Three shows how derivational affixes also reflect the same logical operators and connectives in the surface structure (i.e., in the morpho-syntax) of Sama.

The agency component of agentive verbs may be cancelled by the affix ka- or its undergoer focus counterpart ta-, or by um- which occurs only with a limited class of verbs. On the other hand, non-agentive verbs may be made agentive with the affix mag-, which functions like the operator DO and derives agentive activities from non-agentive activities or states. Both N- and mag- also function like DO in deriving activity verbs from instrument type nouns. The affix pal-functions like BECOME be-at' to derive motion activity verbs from a variety of types of root words. N- is an inchoative affix which functions like BECOME to derive achievements from stative verbs. Pa2- functions like the connective CAUSE and derives accomplishments from all classes of verbs. And -an increases the valence of a verb by adding one or more arguments to the core of the clause. Notice that all of the logical operators and connectives proposed by Dowty may be found in the surface structure of Sama verbs.
4.0 Introduction

In the preceding chapter the Sama system of verbal derivation was outlined. The purpose of this chapter is to present the Sama system of verbal inflection and to show how verbal aspect and mode is affected by inflection. It will be argued that Sama is an ergative language in both morphology and syntax, and that antipassive and passive constructions play an important role in Sama syntax and verbal semantics. A change in focus can have the result of changing the class of the verb. Finally, the notion of pivot will be discussed in terms of its relevance in explaining various syntactic processes in Sama.

4.1 Sama Inflection

The inflectional affixes of Sama can be considered in two classes: (a) affixes which express other than the primary voice opposition, for example, ta- abilitative undergoer focus, -un imperative undergoer focus, -in imperative benefactive focus, paN-instrument focus, and paN-...-an time/location focus; and (b) those affixes which mainly express the primary voice oppositions, for example, Ø undergoer focus and N- actor focus. A discussion of the inflectional affixes is preliminary to the larger question of syntactic processes, which is dealt with in the latter part of this chapter. First to be discussed are the inflectional affixes that express more than the major voice oppositions.
4.1.1 Imperative (undergoer focus) with -un

The imperative mode in Sama may be indicated in several ways; one is by inflecting the verb with -un which indicates undergoer focus imperative. Other verbs occurring without -un in both undergoer focus and actor focus are interpreted as imperative if they meet the following conditions:

1. The actor argument is second person or first person dual/plural inclusive;
2. They occur in non-past;
3. They are agentive verbs (and not affixed with non-agentive ka- or ta-); and
4. They do not occur with prepredicate particles nsa' 'not', bang 'if/when', or a question word or intonation.

(4.1)

a. t'lløn-un tambal itu
   swallow-IMP medicine(U) this
   'Swallow this medicine.'

b. tabas-un bi li' sauwal itu
   cut.out-IMP 2plI(A) yet trousers(U) this
   'Cut out these trousers.'

c. ke-un tøød bissala itu
   hear-IMP really word(U) this
   'Listen carefully to my words.'

d. mag-sau' na kaam ka si Abdul
   AF-eat.together now 2plII(A) OBL PM Abdul
   'You all eat together with Abdul.'
Examples (4.1a-c) illustrate imperatives formed with undergoer focus constructions by affixing -un. In (b) the actor is stated, but (a) and (c) show that the actor may be omitted when it is second person singular. In (d) the verb is an actor focus imperative which can only be distinguished from a question by a lack of question intonation. Most verbs that form actor focus with N- can also have an imperative interpretation.

The example in (4.1c) is problematic since perception state verbs do not occur as imperatives. The reason for this is that as stative verbs, they are non-agentive, that is, they do not have DO as a part of their logical structure. This indicates that ke 'hear', which is a stative verb root, is no longer stative when it occurs with -un. In Chapter Two, Dowty's tests for non-statives indicated that only non-statives occur in the imperative and, furthermore, only non-statives occur with 'studiously, carefully, attentively'. The adverb tōd 'really, intently, very' occurring in example (c), indicates that ke-un is non-stative. The following examples show that an unaffixed verb that is agentive is potentially imperative but an unaffixed perception verb is not.

(4.2)

a. Ø-ke nu bissala ku
UF-hear 2sgI(A) word(U) lsgI
'You heard my words./Did you hear my words?/*Hear my words!'

b. Ø-amu' nu ma aku ma mma' nu bulawan
UF-request 2sgI(A) OBL lsg OBL father 2sgI gold(U)
'You request the gold from your father for me.'

c. Ø-amu'-un ma aku ma mma' nu bulawan
UF-request-IMP OBL lsg OBL father 2sgI gold(U)
'You request the gold from your father for me.'
By contrasting examples (4.1c) and (4.2a) it can be seen that when ke occurs without the imperative affix -un as in sentence (4.2a) it does not have an imperative interpretation. On the other hand, in (4.2) examples (b) and (c) amu' 'request' can have an imperative interpretation with or without the affix -un because, as an agentive activity verb, it has DO as a part of its logical structure.

These examples show that perception verbs such as ke 'hear' and nda' 'see' in their unaffixed form do not in fact occur as imperatives; the unaffixed roots cannot have an imperative interpretation even if the intonation is imperative. Furthermore, when -un occurs with roots that are perception state verbs, it functions as a derivational affix. It derives an activity verb from the perception state root (i.e., it adds DO to the logical structure of the verb). Hence, the meaning of ke-un is 'listen' rather than 'hear'; and nda'-un means 'look' rather than 'see'.

4.1.2 Undergoer Focus Non-agentive with ta-

In Chapter Three Section 6 the actor focus affix ka- 'able to' was discussed as derivational in terms of the effects the abilitative meaning has on the logical structure of predicates (i.e., the cancelling of DO thereby making an agentive predicate non-agentive). The undergoer focus affix ta- 'able to' is the inflectional counterpart of ka-. Since ta- is undergoer focus, it only occurs with verbs that are transitive, whereas ka- occurs with both transitive and intransitive verbs. Like ka-, ta- also has the effect of demoting the actor from agent to effector. However, the actor of a ta- verb is even less salient than the actor of a ka- verb. Whereas the actor cross referenced by ka- is in focus and must be definite and referential, the actor of the ta- verb is non-focussed and may be indefinite and non-referential. An actor of such salience (or lack of salience) may be omitted as illustrated in example (4.31) below.
(4.3)
a. \(\text{Ø-k'illo' a} \text{a daing kuhapu} \text{man(A) fish(U) grouper} \)
   \(\text{get} \text{A man/someone got (took) the grouper fish.'} \)

b. \(\text{N-k'illo' si mma' daing kuhapu} \text{father(A) fish(U) grouper} \)
   \(\text{get} \text{Father got (fetched) some grouper fish.'} \)

c. \(\text{ka-k'illo' si mma' daing} \text{father(A) fish(U)} \)
   \(\text{get} \text{Father was able to get (catch) some fish.'} \)

d. \(\text{ta-k'illo' a daing kuhapu} \text{man(A) fish(U) grouper} \)
   \(\text{get} \text{Someone/a man was able to get (catch) the grouper fish.'} \)

e. \(\text{ta-t'illo' na buwa' hi'} \text{fruit(U) that} \)
   \(\text{swallow} \text{He happened to swallow the fruit.'} \)

f. \(\text{ta-kila ku d'nda hi'} \text{woman(U) that} \)
   \(\text{recognize} \text{I happen to recognize that woman.'} \)

g. \(\text{ta-hinang na dusa} \text{offense} \)
   \(\text{do} \text{He happened to commit the offense.'} \)

h. \(\text{ta-nda' ku bud iyu} \text{mountain(U) that} \)
   \(\text{see} \text{I can see that mountain.'} \)

i. \(\text{nsa' ta-nda' bud iyu} \text{mountain(U) that} \)
   \(\text{see} \text{The mountain can't be seen (by anyone).'} \)
The examples in (4.3a–d) show the contrast between normal undergoer (a) and actor (b) focus, and non-agentive actor (c) and undergoer (d) focus. The focussed actors of (b) and (c) are definite and referential, but the non-focussed actors of (a) and (d) are indefinite and (potentially) non-referential. The actor NP in (d) is less salient than the actor NPs in (a–c) since it is indefinite, non-focussed, non-referential and non-agentive (i.e., demoted from agent in (a) to effector in (d)).

The examples in (e) through (i) are undergoer focus counterparts of sentences in (3.13) showing ta- to be the inflectional variant of ka-. The example in (4.3i) shows that the actor of a non-agentive undergoer focus verb formed by ta- may be omitted.

4.1.3 Benefactive Focus Imperative with -in

Verbs may be inflected with the suffix -in to indicate benefactive focus. Although the suffix -an can also be used to indicate a benefactive undergoer (Section 3.8), -an constructions are not all primarily benefactive. The -in and -an constructions contrast in the following ways:

(a) -in can be used only to indicate benefactive focus; whereas -an incorporates an argument into the core of the clause and that argument can have any one of several thematic relations to the predicate; furthermore the incorporated argument is not necessarily in focus.

(b) -in is always imperative as well as benefactive; whereas -an is imperative only if the intonation is imperative;

(c) -in cannot occur with any other affixes except pag-, which forms gerundives; whereas -an may co-occur with all verbal prefixes.
In (4.4a) the verb is undergoer focus and the beneficiary is an oblique argument of the predicate marked by ma 'for'. In (b), however, the affix -in focusses the beneficiary so it is no longer oblique. Example (c) shows the oblique argument promoted to the core of the clause with -an, where it is incorporated as a locative undergoer and is in focus. The derivational character of -an as opposed to -in is seen in (d) and (e) where it is seen that -an is able to take further affixation, that is, actor focus with N-, whereas -in cannot be made actor focus. The verb in (e) was already benefactive focus with -in, which both incorporated the previously oblique NP into the core and focussed it. That the verb could not be further focussed for actor shows that -in does not independently promote the oblique argument to core without focussing it as -an does.
4.1.4 **Instrument Focus with paN-**

The verbal prefix **paN-** is used to inflect verbs for instrument focus. In doing so, it does not promote the oblique argument to core independent of the focus operation as was the case with the affix -an. Rather, instrument focus and promotion of the argument to core are one operation. The following examples illustrate this point:

(4.5)

a. Ø-b'lli ku tana' maka sin si mma'
   UF-buy lsgI(A) land(U) OBL money(I) PM father
   'I'll buy the land with father's money.'

b. N-b'lli aku tana' maka sin si mma'
   AF-buy lsgII(A) land(U) OBL money(I) PM father
   'I'll buy some land with father's money.'

c. paN-b'lli ku tana' hi' sin si mma'
   AFF-buy lsgI(A) land(U) that money(I) PM father
   'I'll buy the land with father's money.'

d. *paN-b'lli-an ku si Andi taumpa'
   AFF-buy-AFF lsgI(A) PM Andy shoes(U)
   'I'll buy Andy some shoes with
   sin si mma'
   money PM father
   father's money.'

e. ay paN-b'lli nu tana' hi'
   Q AFF-buy 2sgI(A) land(U) that
   'What will you buy the land with?'

The examples in (4.5a) and (b) are undergoer focus and actor focus respectively. The instrument argument in each is in an oblique NP marked by the preposition maka 'with'. In (c) the verb is instrument focus with the occurrence of paN- and the instrument argument is not marked by maka. This indicates that the argument has been promoted to core. Example (d) shows an attempt to
promote an oblique argument to core with the affix -an and then focus the argument with paN-. The result is ungrammatical, which shows that the function of paN- is not simply to focus an argument that has been independently promoted to core. Rather, paN- signals both operations at once. Example (e) shows that the instrument argument has been promoted to core and focussed, since it can be replaced by the focussed question word ay 'what'. If the argument were not in focus, the question word would have to occur with the preposition maka.

4.1.5 Location and Time Focus with paN-...-an

The compound affix paN-...-an is affixed to verb roots to focus either the argument of the verb that expresses the location of the event, or the one that expresses the time at which the event occurs. The following examples illustrate these constructions:

(4.6)

a. paN-b'lli-an ku bari' tabu' salasa
   AFF-buy 1sgI(A) knife(U) Tuesday's.market(LOC)
   'I bought a knife at Tuesday's market.'

b. paN-kawin-an sigam pangantin sangöm salasa
   AFF-marry 3plI(A) couple(U) Tuesday.night(TIME)
   'They'll marry the couple on Tuesday night.'

c. paN-sagat-an ta kahanga parian ungus
   AFF-gather.shells 1dI(A) conch(U) Sandy.beach(LOC)
   'We'll gather conch shells at Sandy Beach.'

d. paN-sagat-an ta kahanga
   AFF-gather.shells 1dI(A) conch(U)
   'We'll gather conch shells
   saung subu
tomorrow.morning(TIME)
tomorrow morning.'
In (4.6a) the verb *b'lli* 'buy' is affixed with the compound affix *paN*-...-*an* to indicate location focus and the location argument of the verb, *tabu* salasa 'Tuesday's market' is the focussed NP. (This is a location since the head noun is market.) Example (b) shows that the argument expressing time, *sangom* salasa 'Tuesday night', can be focussed by affixing the verb *kawin* 'marry' with *paN*-...-*an*. Examples (c) and (d) show location and time focus respectively using a different verb.

4.2 Major Voice Oppositions

Having discussed inflection that expresses other than the primary voice oppositions, the discussion will now turn to inflection that does concern primarily the major voice oppositions, actor focus and undergoer focus. It will be shown that the unmarked focus choice is the single argument of an intransitive verb or the undergoer of a transitive verb. This is characteristic of ergative languages. Sama is shown to be ergative both in morphology and syntax. The typical voice opposition for ergative languages is active-antipassive. An antipassive analysis of Sama actor focus constructions provides new insights into the relationship between the change of focus and change of verb class. It will be shown that in actor focus constructions the undergoer is demoted from definite to indefinite and the verb is reduced in transitivity, with the potential for omitting the undergoer. This results in a change of verb class, i.e., accomplishment verbs typically become activity verbs. Passives are discussed in contrast to ordinary undergoer focus. The fact that Sama has passives distinct from regular undergoer focus is added support for the ergative analysis. Finally, the role of the focus system is presented as being crucial to syntactic operations (such as relativization, topicalization, clefting, etc.).

Sama has many verbs that can occur in their unaffixed form. Core arguments of the clause are also unmarked (i.e., for case) unless they occur as pronouns, for example:
The verb b'lli 'buy' is unaffixed, indicating undergoer focus. Both d'nda 'woman' and daing 'fish' are unmarked for case and rely on word order for interpretation, though word order is relatively free.

Only one NP in the clause can be in focus. If there is doubt concerning which NP is in focus there are various tests that can be used to identify the focussed NP. The substitution of a pronoun for an NP will identify which NP is in focus. Non-focussed actors occur as Set I pronouns (e.g., ku 'I'). Focussed arguments occur as Set II pronouns (e.g., aku 'I').

4.2.1 Undergoer Focus with Ø

Sama verbs are Ø marked in inflection for undergoer focus. Or, to say it another way, the morphologically unmarked form of transitive verbs is undergoer focus.

(4.7)

a. Ø-tigad  onde'  so
   UF-cut  child(A)  snake(U)
   'The child cut the snake.'

b. Ø-b'lli  ku  taumpa'
   UF-buy  lsgI(A)  shoes(U)
   'I bought the shoes.'

c. Ø-k'illo'  nu  aku
   UF-fetch  2sgI(A)  lsgII(U)
   'You fetch me.'
The sentences in (4.7) show the verbs tigad 'cut, chop', b'lli 'buy' and k'llo 'fetch' as unaffixed verb forms. In (a) the NPs are not marked for case, but the \(\emptyset\) marking of the verb co-indexes the undergoer NP as being in focus. The usual word order is for the actor NP to be the first NP following the verb, and for the second NP to be undergoer. Sentence (b) shows the first NP as a Set I pronoun which indicates that the actor is not in focus. Hence, by elimination we could conclude taumpa 'shoes' to be the focussed NP. And, in sentence (c) both NPs occur as pronouns with the undergoer NP as a Set II pronoun. Set II pronouns are used for all core arguments except non-focussed actor; if the actor is in focus, all core arguments in the clause may occur as Set II pronouns. In such cases the focussed argument can be identified by making the sentence past tense with the prepredicate particle bay which always attracts the focussed pronoun.

Other undergoer focus constructions occur with ta- and -un, which have been discussed in Sections 4.1.2 and 4.1.1. There is also an undergoer focus construction that occurs with the infix -i- which will be discussed as passive in Section 4.3.3, since the contrast between -i- verbs and ordinary undergoer focus (\(\emptyset\) verbs) can best be seen when presented in the context of ergativity.

4.2.2 Actor Focus with N- and mag-

In sections 3.2 and 3.3 the prefixes N- and mag- were analysed as adding DO to the logical structure of the predicate. This is true for stative verbs as well as activity verbs that are not marked for agency. This section deals with the syntactic function of N- and mag- which is to make verbs actor focus that already have DO in their logical structure but are otherwise undergoer focus. For example, the examples in (4.7) are undergoer focus and agentive but can be made actor focus by adding the affix N- or mag- as shown in (4.8).
(4.8)
a. mag-tigad onde' so
   AF-cut child(A) snake(U)
   'The child cut a snake.'

b. N-b'lli aku taumpa'
   AF-buy 1sgII(A) shoes(U)
   'I'm buying some shoes.'

c. N-k'llo' ka'u ma-aku
   AF-get 2sgII(A) OBL-1sg
   'You fetch/get me.'

In (4.8a) mag- indicates that the verb is actor focus and onde' 'child' is the focussed actor. The undergoer snake' is not in focus and thus is not definite. The verbs in (b) and (c) are marked with N-, indicating actor focus, and the actors are manifested by Set II pronouns, which indicate focussed actor. In (c) the undergoer is marked oblique, which is a characteristic of undergoers of antipassive verbs, which will be discussed in 4.3.4. The oblique marking here is likely due to the fact that the pronominal NP is animate and personal; the undergoer NPs in (a) and (b) are not personal or pronominal and are not oblique. Actor focus may also be indicated by the prefix ka- (see 3.6). However, with ka-, the focussed actor is not an agent as it is with N and mag-, but rather an effector.

Intransitive verbs also occur with N- and mag- as in the following examples:

(4.9)
a. N-pundukaku dai'-llaw
   AFF-sit.up 1sgII(A) dawn
   'I arise at dawn.'
In (4.9a) the verb *punduk* 'sit up/arise' is affixed with *N-* which in this case indicates agency. If the verb is unaffixed it is unmarked for agency though it is still actor focus. The example in (b) shows the verb *lilla* 'submit' affixed with *N-* indicating actor focus and agentive activity. The unaffixed form of the verb *lilla* 'submit' is unmarked for agency and be used to mean submitting under duress or inevitability.

The difference between *N-* and *mag-* is one of degree of activity. *N-* usually indicates limited or neutral activity. On the other hand, *mag-* indicates comprehensive or reciprocal activity.

(4.10)

a. bang kiyoblaan hibal na ka'u
   if startled move now 2sgII(A)
   'When startled, you moved.'

b. minsan kiyoblaan nsa' aku N-hibal
   even startled not 1sgII(A) AFF-move
   'Even if I am startled, I won't move.'

c. subay nsa' mag-hibal onde' iskul
   should not AFF-move child school
   'School children should not be moving around.'

d. Ø-bono' na banta' na
   UF-kill 3sgI(A) enemy(U) 3sgI
   'He killed his enemy.'

e. N-bono' iya banta'
   AFF-kill 3sgII(A) enemy(U)
   'He killed an enemy.'
Verbal Inflection

f. mag-bono' sigam
   AFF-kill 3plII(A)
   'They're killing/fighting each other.'

g. mag-bono' iya anak na t'1lu
   AFF-kill 3sgII(A) child 3sgI three
   'He killed all three of her children.'

The example in (4.10a) shows the unaffixed intransitive verb hibal 'to move'. It is actor focus but unmarked for agency. In (b) it is affixed with N- making the verb agentive, and in (c) the verb is affixed with mag- meaning comprehensive action. Example (d) shows an undergoer focus transitive verb which is made ordinary actor focus in (e) by the affix N-. In (f), with a plural actor, the verb is reciprocal with mag-. Then in (g), also with mag-, the verb means comprehensive action. These examples show that mag- can mean either comprehensive action or reciprocal action and that the exact interpretation depends upon the context of the sentence.

If the verb is necessarily non-agentive and it is logically impossible (or unfeasible) to make it agentive (eg., hiccough, and palpitate), mag- serves to express comprehensive action but not agency, as seen from the following examples:

(4.11)
a. mag-soklo' onde'
   AFF-hiccough child
   'The child is hiccoughing.'

b. mag-k'bbut-k'bbut kok-atay na
   AFF-palpitate heart lsgI
   'His heart is palpitating.'
Although any NP in a clause may be focussed, the basic focus opposition in Sama is between actor focus and undergoer focus. This opposition is reflected throughout most of the verbal system (see Table 1, Section 1.1). For example,

1. Imperatives may occur as actor focus with mag-, or undergoer focus with -un;
2. Non-agentic verbs may be derived as actor focus with ka-, or undergoer focus with ta-;
3. Benefactive may occur as actor focus with N- plus -an, or as undergoer focus with Ø plus -an; and
4. Causatives can be made actor focus by adding N- to the undergoer focus causative affix pa2-.

Cena (1979) has argued that Tagalog is a patient oriented language. De Guzman (1983) and Gerdts (1983) have suggested an ergative analysis for Tagalog and Ilocano respectively. In the remainder of this book, data will be presented in support of an ergative analysis of Sama, and an attempt will be made to show what implications this has for an understanding of Sama verbal semantics and the function of voice oppositions in higher syntactic operations.

4.3.1 Ergativity in Sama Morphology

In the previous sections we have seen that verbs marked for undergoer focus have Ø or a null affix and that the actor focus is marked by N- or mag-. This suggests that the undergoer focus is the unmarked focus choice for transitive verbs. There are also unmarked intransitive verbs and the comparison of the two constructions is of the utmost importance. While with the unmarked transitive verb it is the undergoer NP that is marked for focus (i.e., a set II pronoun can occur), with unmarked intransitives it is the 'subject'-like
argument that is marked for focus. Unmarked intransitives are illustrated in the following examples:

(4.12)

a. l'sso na onde' sated now child(U) 'The child is full.'

b. t'tto na aku laugh now lsgII(A) 'I laughed.'

In sentence (4.12a) the unaffixed verb l'sso 'to be sated' has one argument which is an undergoer. In our previous classification in Chapter Two we indicated that the predicate argument structure of state or condition verbs is predicate'(x) in which the thematic relation of the argument to the predicate was that of patient. In sentence (b), however, the argument of the intransitive verb is an actor. Both of these arguments are in focus. Furthermore, the actor argument of the intransitive verb t'tto is case marked by the Set II pronoun aku which is the same case marking that the undergoer argument of a transitive clause receives. This is evidence that Sama is morphologically an ergative system.

Dixon (1979:119) laid out the following schema to exemplify an ergative system. The 'semantic-syntatic' relations are symbolized $S$ = intransitive 'subject'. $A$ = transitive 'subject' (actor), and $O$ = transitive 'object' (undergoer).

\[
\begin{align*}
\text{NOMINATIVE} & \quad \{A\} \quad \text{ERGATIVE} \\
\text{ABSOLUTIVE} & \quad \{S\} \\
\text{ACCUSATIVE} & \quad O
\end{align*}
\]
The diagram indicates that if the 'subject' (S) of an intransitive clause and the 'object' (O) of a transitive clause receive the same case marking (e.g., absolutive) then the system is ergative. On the other hand, if the 'subject' (A) of a transitive clause and the 'subject' (S) of an intransitive clause receive the same case marking (i.e., nominative) then the system is accusative.

(4.13)

a. (intransitive)
\[ t'tto \ na \ aku \ (4.12b) \]
\[ \text{laugh now lsgII(A)} \]
'I laughed.'

b. (transitive)
\[ \emptyset-k'illo' \ nu \ aku \ (4.7c) \]
\[ \text{UF-fetch 2sgI(A) 1sgII(U)} \]
'You fetch me.'

Examples in (4.13a) and (b) are the same as previous examples (4.12b) and (4.7c). They are here repeated so that the evidence for morphological ergativity can be examined. In (a) the intransitive verb \[ t'tto \ 'laugh' \] is morphologically unmarked, and the 'subject' NP is a Set II pronoun. In sentence (b) the transitive verb has inflection indicating 'object' or undergoer focus (Ø marking), and the NP that is co-indexed for focus is marked by the occurrence of \[ aku \ 'I' \], the Set II pronoun. Hence the lack of morphological marking of intransitive verbs and the Ø marking of transitive verbs which are 'object' focus shows that S and O (in Dixon's terms) are treated identically, as far as verbal inflection is concerned. Furthermore, the 'subject' NP of the intransitive clause is case marked the same as the 'object' NP of the transitive clause, that is, both require the pronouns of Set II (the \[ aku \] set). These are two distinct pieces of evidence for morphological ergativity in Sama. Further evidence for the ergative analysis comes from the fact that Sama has a passive construction. This makes a passive analysis of ordinary
undergoer focus constructions implausible. For further discussion of passive see Section 4.3.3.

4.3.2 Ergativity in Sama Syntax

In addition to morphological ergativity in Sama, there is also syntactic ergativity. Dixon (1979) discusses syntactic ergativity with reference to syntactic processes like relativization and coordination. In Sama, syntactic ergativity can be seen in the following processes: relativization, \textit{wh-} question formation, pseudo-cleft formation and topicalization of core arguments. Syntactic ergativity exists when the 'subject' of an intransitive clause and the 'object' of a transitive clause are treated the same way in one or more syntactic processes. The following examples show relative clauses, the first of which is intransitive and the second of which is transitive.

\begin{align}
(4.14) \\
\text{a. } & \text{lun\textgreek{g}ay na kunsi bay tanak di'aw} \\
& \text{lost now key(U) PAST drop yesterday} \\
& \text{'}The key which dropped yesterday is lost.' \\
\text{b. } & \text{p'ddi na tangan ku bay p'pp\textgreek{o}k mastal} \\
& \text{painful now hand(U) lsgI PAST UF-strike teacher(A)} \\
& \text{'}My hand which the teacher struck yesterday is painful.' \\
\text{c. } & \text{*bay t'tto mastal bay \textgreek{O}-p'pp\textgreek{o}k tangan ku} \\
& \text{PAST laugh teacher PAST UF-strike hand(U) lsgI} \\
& \text{'}The teacher who struck my hand laughed.' \\
\text{d. } & \text{bay t'tto mastal bay N-p'pp\textgreek{o}k tangan ku} \\
& \text{PAST laugh teacher PAST AF-strike hand(U) lsgI} \\
& \text{'}The teacher who struck my hand laughed.'
\end{align}
Sentence (a) contains an intransitive relative clause bay tanak diaw 'which dropped yesterday'. The 'subject' of this relative clause is kunsi 'key' and has been deleted under co-reference to its head.

Sentence (b) on the other hand contains a transitive relative clause bay p'ppök mastal 'which the teacher struck'. The 'object' of the embedded clause tangan ku 'my hand', has been deleted since it is co-referential with the head noun in the matrix clause. Thus the S of the intransitive clause and the O of the transitive clause can be relativized with no modification of the verb. The actor argument cannot be relativized as (4.14) shows. The deleted coreferential NP in the relative clause in this example is not in focus, hence the ungrammaticality of the relative clause. In order to relativize the actor of a transitive clause, an actor focus form must be used, as in (4.14d), so that the actor is in focus and can be deleted. The fact that S and O, but not the A, can be relativized with an unmodified verb form indicates that relativization in Sama treats S and O the same and A differently from both. This is a clear case of syntactic ergativity.

The most important thing about this is that it is the focussed NP that is eligible for relativization. In 1.1.2 the notion of syntactic pivot was introduced and it was stated that it is defined in terms of syntactic constructions. Looking at these relative clauses, one can see that, in every case, there must be an argument in the relative clause coreferential with the head noun, which does not occur in the actual syntactic form. This argument must be in focus, as the examples in (4.14) illustrate. Thus the focussed NP is the syntactic pivot of the relative clause, since it is the NP which is crucially involved in the construction. In Section 4.3.5 it will be seen that the focussed NP is the syntactic pivot for all of the major syntactic constructions in Sama.

4.3.3 Passive

Passives differ from active sentences in two ways: the undergoer in a passive is the pivot and the actor
argument is changed from core to peripheral status (Perlmutter and Postal, 1977; Keenan, 1975; and FSUG:188). In Sama, verbs affixed with \(-i-\) have a focussed undergoer the same as ordinary undergoer focus verbs; as such the undergoer must be definite and referential. Furthermore, being in focus makes it eligible for participation in other syntactic operations (4.3.5).

Some grammarians have analyzed subject focus clauses as active and object focus clauses as passive, for example, relational grammarians (Perlmutter and Postal, 1977). This, however, is not a viable analysis for Sama since Sama has a passive, that is, \(-i-\) verbs, which contrast with the other undergoer focus verbs in that the actor argument of \(-i-\) verbs is changed from core to peripheral status. This contrast is seen in the following examples:

(4.15)
a. \(\emptyset\)-soho' na so N-k'llo' ma-kita
   UF-command 3sgI(A) snake(U) AF-get OBL-1pl.inc
   'He commanded the snake to get us.'

b. s-i-oho' uk na so N-k'llo'
   PASS-command OBL 3sgI(A) snake(U) AF-get
   'The snake was commanded by him

   ma-kita
   OBL-1pl.inc
to get us.'

c. \(\emptyset\)-b'lla d'nda kiyakan kami
   UF-cook girl(A) food(U) lpl.exI
   'The girl cooked our food.'

d. b-i-lla uk d'nda kiyakan kami
   PASS-cook OBL girl(A) food(U) lpl.exI
   'Our food was cooked by the girl.'
As stated above, a reason for regarding -i- verbs as passive in Sama is the changed status of the actor from a core to a peripheral argument of the verb. Evidence for the peripheral status of the actor of -i- verbs is drawn from the above examples. First, the actor argument of -i- verbs is always marked oblique by uk 'by' as in (4.15b), (d) and (e). Secondly, the actor of -i- verbs can be moved to a position following other peripheral arguments of the verb as in (4.15e), but the regular actor (not marked by uk) cannot, as shown in (4.15f). Thirdly, the actor of -i- verbs can be omitted as in (h) but the actor of ordinary undergoer focus verbs cannot; example (g) is ungrammatical because the actor has been omitted. This is evidence that -i- verbs are passives, but ordinary undergoer focus verbs are not.

4.3.4 Antipassive

Philippine languages have been treated by most analysts according to models used in describing accusative languages. Actor focus constructions have been analyzed as active verbs and object focus constructions as passives. However, the analysis of Sama
ergativity and the existence of a passive construction distinct from undergoer focus calls for a new analysis of voice in Sama. The typical voice opposition in ergative languages is active-antipassive. Dixon (1979) describes antipassive as a syntactic operation that derives an intransitive sentence from an underlying transitive sentence:

Antipassive places the deep A NP in surface S function, and marks the deep O NP with an oblique case/preposition/etc. (This NP can then be deleted.) (Dixon, 1979:119)

For this discussion it is sufficient to say that antipassivization involves making the Actor the pivot NP, thereby making it deletable under co-reference with a higher NP in certain constructions. In the discussion of relativization in the previous section, it was seen that the actor focus construction in Sama has precisely this function, and this suggests strongly that actor focus in Sama should be considered an antipassive construction. It is somewhat unusual, however, in that the undergoer does not normally receive oblique case marking, cf. (4.8a-b).

(4.16)

a. Ø-nda' nu aku
   UF-see 2sgI(A) 1sgII(U)
   'You see me.'

b. N-nda' ka' u ma-aku
   AF-see 2sgII(A) OBL-1sg(U)
   'You look at me.'

c. N-nda' ka' u tana' taun
   AF-see 2sgII(A) land(U) forest
   'Look at/for some forest land.'

d. N-nda' ja' aku
   AF-see only 1sgII(A)
   'I'm just looking around.'
e. Ø-nda' nu
UF-see 2sgI(A)
*'You see./You are seeing.'
'You see it.'

Here sentence (a) is a transitive clause with a focussed undergoer; it is an ergative construction. Sentence (b), the related actor focus construction with N-3 is an antipassive. In sentence (b), N- changes the verb nda' 'see' to actor focus and adds DO to the logical structure making it an agentive perception activity verb. The undergoer ma-aku 'at me' is animate and marked oblique by ma-. In (c) the undergoer tana' 'land' is inanimate and not oblique, but is interpreted as indefinite, since it is not in focus and not marked by a pronoun or demonstrative. Then, in (d) the undergoer is omitted altogether, showing that the antipassive in Sama is indeed a derived intransitive. The sentence in (e) is ungrammatical if intended as omitting the undergoer. Since the verb is undergoer focus the undergoer cannot be omitted; it can only be deleted under co-reference with a higher NP, or when the referent is immediately evident in the context of the speaker and hearer. In order to be grammatical, sentence (e) must mean 'You see it.'

There are some interesting instances in which the semantics of the verb are affected seriously by the change from undergoer to actor focus (i.e. antipassivation).

(4.17)
a. Ø-bono' Sultan banta' na
UF-kill king(A) enemy(U) 3sgI
'The king killed his enemy.'

b. N-bono' Sultan banta' na
AFF-kill king(A) enemy(U) 3sgI
'The king kills/fights some of his enemies.'
The examples in (4.17a-e) show that the semantics of a verb can change with inflection that changes focus. In (a) the verb is undergoer focus and an accomplishment verb but in (b) through (e) the verbs are actor focus and activity verbs. This is due to the fact that the focussed NP must be definite and referential. Dowty pointed out (1979:62-63) that if an indefinite plural or mass noun is substituted for the undergoer of an accomplishment verb, the verb behaves like an activity verb. Here the change in focus from undergoer to actor makes the undergoer either indefinite or a mass noun and changes the verb from an accomplishment to an activity. Within the two classes of agentive activities and agentive accomplishments, there is a correlation between focus and the verb class; that is, actor focus with activity verbs and undergoer focus with accomplishments.

Examples (d) and (e) show that antipassives have a further demotion of the undergoer in that it can be omitted from the sentence altogether.

Dowty (1979:184, Table 4; see Section 1.2.5, this book) categorizes activity verbs as indefinite change of state and accomplishment verbs as definite change of state. This helps to account for the two meanings of verbs like bono' 'fight/kill'. With a focussed undergoer (which is definite) the verb means 'kill'; the verb is an accomplishment, a definite change of state. On the other hand, with a non-focussed (indefinite) undergoer the verb is an activity and normally means 'fight'.
This change of verb class which comes with a change of focus breaks down the distinction between derivation and inflection, since the inflection process also affects the class of the verb.

4.3.5 Voice Oppositions and Syntactic Operations

In Chapter One (1.1.2) the term "pivot" was introduced to refer to the focussed NP in the discussion of Sama syntax, and in 4.3.2 it was shown that the focussed NP is in fact the syntactic pivot in Sama relative clauses. A distinction has been made in RRG between two types of pivot.

This notion of pivot captures the syntactic constraints on grammatical operations which restrict their application to particular NP types; it is therefore entirely syntactic in nature. However, the conditions governing which argument of a verb will occur as pivot in a given clause are not syntactic but rather semantic and/or pragmatic... Some syntactic constructions require that a particular argument be pivot due to the semantics of the construction. The clearest case of this is an imperative construction in which the pivot is normally an agent by virtue of the meaning of an imperative illocutionary act... When the choice of an argument as the pivot of a particular construction is determined semantically, then such a pivot is a semantic pivot [SmP]... Other constructions have no such semantic requirement but do have constraints of a pragmatic nature, such that occurrence as pivot correlates with certain pragmatic properties. In some instances, this may relate to being definite vs. indefinite, e.g., in Tagalog the pivot NP must be interpreted as minimally referential (specific) and usually definite. More significant, however, are situations in which a syntactic operation in one clause, e.g., deletion, depends crucially on the
pivot being coreferential with a controlling NP in a different clause; this is often the case in coordinate structures. The choice of the argument functioning as pivot in this situation is not governed by its semantic function but rather by its being coreferential with another NP in the discourse, which is a pragmatic property... Accordingly, when the choice of an argument as the pivot in a particular construction is influenced by pragmatic factors such as definiteness or coreference, such a pivot will be called a pragmatic pivot [PrP]; that is, the syntactic status of an argument as pivot derives from its status in discourse. (Van Valin, 1983:65-66)

The preceding sections on passive (4.3.3) and antipassive (4.3.4) pointed out that focus selection in Sama is based on discourse considerations, such as definiteness and referentiality. This indicates that the focussed NP in Sama is a pragmatic pivot.

A typology of languages has been proposed by Van Valin and Foley (1980) which classifies languages as either role dominated or reference dominated. Reference dominated languages are those in which discourse functions are syntacticized within the clause; these languages have pragmatic pivots. Languages which are role dominated do not have this syntacticization; they have only semantic pivots (FSUG; see Sections 4.1 and 4.3). By this criteria, Sama is a reference dominated language. Since Sama is an ergative language the unmarked choice for pivot in a transitive clause is the undergoer (4.3.1). Actor can be promoted to pivot by the antipassive construction.

The following syntactic operations have the focussed NP as pragmatic pivot (PrP) in Sama:

(1) Wh- questions are formed using the focussed NP as PrP;
(2) Cleft sentences are formed using the focussed NP as PrP;

(3) Unmarked sentence-initial topics can only be formed from the focussed NP as PrP;

(4) Prepredicate particle attractors (e.g., bay 'PAST' and nsa' 'NEG') attract only the focussed NP (pronoun) as PrP;

(5) Floating modifiers attract only the focussed NP as PrP.

The following paragraphs and examples will illustrate the above syntactic operations. The NP that has been moved or deleted under co-reference will have a (t) marked at its original location in the sentence for purposes of comparison. The notation, however, is not meant to represent "trace" as it does in Chomsky's "On Binding" and other work growing out of Extended Standard Theory.

**Wh- Question Formation.** Wh- questions involving a core argument of a clause are formed in the following way: the NP about which the question is formed must be pivot, a question word ay 'what' or say 'who' is substituted for the pivot NP and then moved to the beginning of the clause. This is illustrated in the following examples:

\[(4.18)\]

a. Ø-b'lli d'nda hi' daing ma tabu'
   UF-buy woman(A) that fish(U) OBL market
   'The woman bought the fish at the market.'

b. ay Ø-b'lli d'nda hi' (t) ma tabu'
   what UF-buy woman(A) that OBL market
   'What did the woman buy at the market?'
c. N-b'lli d'nda hi' daing ma tabu'
   AF-buy woman(A) that fish(U) OBL market
   'The woman buys some fish at the market.'

d. say N-b'lli (t) daing ma tabu'
   who AF-buy fish(U) OBL market
   'Who buys some fish at the market?'

e. *say Ø-b'lli (t) daing ma tabu'
   who UF-buy fish(U) OBL market
   'Who buys fish at the market?'

Example (4.18a) shows a clause with an undergoer focus verb, and (b) shows that the question word *ay'what* has replaced the pivot NP (the undergoer) and has been moved to a prepredicate position. To question the actor argument, the actor must be in focus (i.e., pivot). In (c) the verb N-b'lli is actor focus and d'nda 'woman' is pivot. Example (d) shows a question formed on the actor-pivot in which the pivot has been replaced by the question word *say'who* and *say* has been moved to a prepredicate position. The example in (e) is ungrammatical because the question word does not represent the focussed argument of the verb. Wh-questions can only be formed on a core argument of a clause and only when that argument is pivot. If the argument to be questioned is not a core argument, either the argument must be promoted to pivot through affixation of the verb or questioned with an oblique question word (e.g., ma-ay 'for/with what', ma-say 'for/with whom').

**Cleft Constructions.**

(4.19)

a. iya na daing bay Ø-b'lli d'nda (t) ma tabu'
   3sgII now fish PAST UF-buy woman(A) OBL market
   'That's the fish the woman bought in the market.'
b. *iya na d'nda bay Ø-b'llli (t) daing ma tabu' 
3sgII now woman PAST UF-buy fish(U) OBL market
'That's the woman who bought the fish in the market.'

c. iya na d'nda bay N-b'llli (t) daing ma tabu'
3sgII now woman PAST.AF-buy fish(U) OBL market
'That's the woman who bought some fish in the market.'

Sentences (4.19a-c) illustrate cleft constructions. The cleft part consists of the moved NP which must be 
PrP, and an initial iya which is either a pronoun 
'3sgII' or a determiner homophonous to it. In (a) daing 
'fish' is the clefted element and is the undergoer of 
the sentence. The verb is undergoer focus. However, in 
(b) d'nda 'woman' is the actor and clefted element, but 
the verb is still undergoer focus resulting in an 
ungrammatical sentence. This shows that a non-focussed 
actor may not be clefted. In (c), on the other hand, the 
verb is actor focus, making d'nda 'woman', the focussed 
NP. Accordingly, the cleft construction is grammatical. 
Here again the focussed NP is the syntactic pivot of the 
construction.

**Topicalization.**

(4.20)
a. bay Ø-b'llli d'nda daing ma tabu'
PAST UF-buy woman(A) fish(U) OBL market
'The woman bought the fish at the market.'

b. daing bay Ø-b'llli d'nda (t) ma tabu'
fish(U) PAST UF-buy woman(A) OBL market
'The fish, the woman bought at the market.'

c. *d'nda bay Ø-b'llli daing ma tabu'
woman(A) PAST UF-buy fish(U) OBL market
'The woman, she bought the fish at the market.'
d. bay N-b'lli d'nda daing ma tabu'
PAST AF-buy woman(A) fish(U) OBL market
'The woman bought some fish at the market.'

e. d'nda bay N-b'lli (t) daing ma tabu'
woman(A) PAST AF-buy fish(U) OBL market
'The woman, she bought some fish at the market.'

f. *daing bay N-b'lli d'nda (t) ma tabu'
fish(U) PAST AF-buy woman(A) OBL market
'Fish, the woman bought at the market.'

In sentence (a) **daing** 'fish' is the undergoer-pivot of an undergoer focus construction; in (b), it has been topicalized. In (c), however, the non-focussed actor **d'nda** 'woman' is ungrammatically topicalized rather than **daing** 'fish' which is the undergoer-pivot of an undergoer focus construction. Sentence (d) is an actor focus construction. In (e) the actor, **d'nda** 'woman' has been topicalized. In (f) the nonfocussed undergoer **daing** 'fish' has been topicalized in an actor focus construction, resulting in an ungrammatical sentence. This shows that only the focussed core argument may be topicalized and thus may be the pivot for topicalization. As with the other constructions discussed in this section, in order for an actor to be topicalized, the verb must be actor focus, as in (d) and (e). Note that, as expected, with an actor focus verb the undergoer may not be topicalized as (f) shows.

Pre-predicate Particle Attraction. In Sama there are various pre-predicate particles including the following: **bay** 'past', **nsa** 'negative', and **bo** 'and then/so'. These particles occur preceding the predicate and always attract the PrP (i.e., the focussed NP) if it occurs as a pronoun. Non-focussed actor pronouns cannot be attracted and nouns do not occur with the pre-predicate particle unless they are topicalized.
In sentences (a) and (b) there appear to be two focussed pronouns (i.e., Set II pronouns). They are both Set II pronouns because both arguments are non-actor core arguments of the clause, however, only one can be in focus. The question is, 'Which one is in focus?' Only the pivot pronoun is attracted, so *iya is the PrP. Sentence (b) is ungrammatical because the non-pivot argument is attracted. This sentence can be considered grammatical if the meaning is changed to 'I bought her fish at the market.' Sentence (c) is grammatical because it focusses the locative undergoer *aku 'lsg', thereby promoting it to PrP.

Floating Modifiers. Some linguists have referred to syntactic operations that involve floating quantifiers (Schachter, 1976; Cena, 1979). In Sama there is a category of floating modifiers that is involved in moving the PrP from a clause-internal position (i.e., following the verb) to a prepredicate position. Floating modifiers differ from pre-predicate particles in that floating modifiers attract the NP that is PrP whether or not it is a pronoun.

(4.22)

a. luhay du onde' ta-lapay uk bono' easily indeed child AFF-include by fight 'The child will likely be caught in the fray.'
b. alōd du so-sandu'  b-i-ono' 
difficult indeed cobra  PASS-kill
'It's difficult to kill a cobra.'

c. *arak ku ta-lapay onde'  pa-dongpal
almost lsgI(A) AFF-include child(U) AFF-crash
'I almost involved the child in the crash.'

d. arak onde' ta-lapay ku pa-dongpal
almost child(U) AFF-include lsgI(A) AFF-crash
'I almost involved the child in the crash.'

The floating modifiers in the above examples are all shown to attract the PrP of the clause. In (a) luhay 'easily' attracts the focussed undergoer which is onde' 'child'. In (b) the floating modifier alōd 'difficult' attracts the undergoer 'cobra' which is pivot. Sentence (c) is ungrammatical because it shows the actor, which is not the pivot, being attracted by arak 'almost'; because the verb is undergoer focus the actor may not be attracted by the floating modifier, as (c) shows. In (d) the undergoer is attracted, making it a grammatical sentence. To show (c) and (d) as actor focus would result in an awkward sentence (though probably grammatical) because it would imply that hitting the child was intentional unless the verb were affixed with ka- non-intentive, but even then it would imply desire to hit.

The actor can be made pivot in these constructions as is seen in the following:

e. luhay aku N-daog atu ku
easily lsgII(A) AF-defeat opponent lsgI
'I'll easily defeat my opponent.'
Here in (e) the Set II pronoun is attracted by the floating modifier luhay 'easily' because it has been promoted to PrP through antipassivization.

4.3.6 Summary

The summary chart in Table 8 shows how Sama inflectional affixes indicate the focus of the verb as well as some of the minor syntactic processes. Verbs may be affixed for Actor, Undergoer, Instrument, Location, or Beneficiary focus.

The chart further shows that Sama is an ergative language morphologically. In the discussion we have shown that Sama is also ergative syntactically. Once it is seen that Sama is ergative and hence undergoer oriented, the antipassive nature of actor focus constructions becomes evident. The passive construction in Sama provides additional support for the claim that Sama is ergative since its existence makes a passive analysis of the ordinary undergoer focus implausible. Ordinary undergoer focus constructions cannot delete the actor, whereas passive can either delete the actor or must mark it as oblique.

The function of the focus system is accounted for in terms of the higher syntactic processes that the focussed NP may participate in. The role of the focus system is to make it possible for any argument to undergo these syntactic processes. Only the focussed NP (PrP) is available for major syntactic processes such as relativization, wh-question formation, and clefting. Without the focus system, which allows such diversity, it would be impossible to relativize, etc., on anything except the undergoer in transitive clauses or the single argument of intransitive clauses.
Intransitive (actor focus):
agentive activity \( N-/\text{mag}- \)

Ergative (undergoer focus):
agentive \( \emptyset \)

Antipassive (actor focus):
agentive \( N-/\text{mag}- \)

Passive \( -i- \)

Instrument focus \( \text{paN-} / \text{paN-} \ldots -\text{an} \)

Location/Time focus \( \text{paN-} \ldots -\text{an} (\sim \text{pag-} \ldots -\text{an}) \)

Imperative
undergoer focus \( -\text{un} \)
benefactive focus \( -\text{in} \)

Abilitative (non-agentive)
undergoer focus \( \text{ta-} \)
actor focus \( \text{ka-} \)

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Table 8. Sama Inflectional Affixes
4.3.7 Conclusion

In the introduction, it was proposed that this book would give a semantic classification of Sama verbs that would account for the relation of the arguments in a clause to the predicate. It has been shown how the system of verb classification proposed by Dowty (1979) combined with the insights of Role and Reference Grammar (FSUG) explain not only the intraclausal semantic and syntactic relationships but also some of the relationships of arguments between clauses. It has been concluded that Sama is both morphologically and syntactically ergative. The ergative analysis of Sama categorizes actor focus verbs as antipassives, which provides the theoretical framework for understanding the semantic and syntactic changes that occur when a transitive verb is focussed for actor. That is, the undergoer is demoted to indefinite; the verb has reduced transitivity because the undergoer may be omitted from the clause; and the verb typically changes from an accomplishment to an activity verb. Furthermore, it has been illustrated how the focus system functions in higher syntactic operations.

From this beginning, it is evident that this study will provide the basis for future research in intraclausal relations such as coordination and subordination. It should also contribute to an explanatory analysis of the organization of participants (i.e., dramatis personae) and semantic relations in Sama discourse.

It is my hope that this analysis will contribute to a better understanding of Sama grammar and that it will be useful to other researchers in Sama studies as well as to those interested in Philippine languages in general.
NOTES

1. The actor does not occur with -in unless it is plural.

2. Other Sama languages do not have Ø marked intransitives, but S and O are nevertheless treated identically.

3. N- and mag- are the main actor focus prefixes; mag- indicates comprehensive action, and when the actor is plural often indicates reciprocal action. With some verbs like nda' 'see' there is a preference for N- over mag-. As is illustrated in sentence (b) N- also functions derivationally. In (b) N changes the verb nda' 'see' to actor focus and adds DO to the logical structure, making it an (agentive, perceptive) activity verb.
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Sama Verbal Semantics


