

# AF verbs: transitive, intransitive, or both?\*

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As far as the transitivity of AF verbs is concerned, there are two conflicting hypotheses in the Austronesian literature. In the ergative hypothesis (Starosta 1997), AF verbs are uniformly identified as antipassive/intransitive; in the symmetrical-voice hypothesis (Kroeger 1993), AF verbs are claimed to be able to occur as transitive on a par with NAF verbs. In this paper, we address the issue by looking into six Formosan languages, namely, Paiwan, Tsou, Seediq, Atayal, Saisiyat, and Kavalan. We find that Formosan languages are not homogeneous in this regard. In Paiwan, Seediq, Atayal, and Saisiyat, AF verbs can denote causativity and thus can be semantically transitive; this option is not open for Tsou and Kavalan. In Paiwan, Tsou, Atayal, and Kavalan, AF verbs are grammatically intransitive since patients occur as oblique noun phrases in AF clauses. However, in Seediq and Saisiyat, patients surface as core arguments in AF clause and thus AF verbs can be grammatically transitive. Given that antipassive is an indication of ergative language, we assume that Paiwan, Tsou, Atayal, and Kavalan are more ergative than Seediq and Saisiyat. We also conclude that the ergative hypothesis is too strong a claim and the symmetrical-voice hypothesis has very limited application in Formosan languages.

Keywords: the ergative hypothesis, the symmetrical-voice hypothesis, AF verbs, antipassive, transitivity, causativity, ergativity.

## 1. Introduction

### 1.2 Research questions

In Austronesian languages, verbs can be divided into two types with regard to their focus markings, that is, Actor-focused<sup>1</sup> verbs (AF verbs for short) vs. Non-Actor-focused verbs (NAF verbs for short). While it is generally agreed that NAF verbs are both morphosyntactically and semantically transitive, the question whether AF verbs are transitive or not is disputed. In the literature, there are two conflicting hypotheses as to the transitivity of AF verbs. In the ergative hypothesis (Starosta 1988, 1997), AF verbs are identified as morphosyntactically and semantically intransitive, whereas in the symmetrical voice hypothesis, AF verbs are said to be able to occur as transitives on a par with NAF verbs (Kroeger 1993). The paper will address the issue of symmetry in terms of Formosan languages in the

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<sup>1</sup> In this paper, we use Actor to cover thematic roles such as agent, experiencer, and theme, which can all be designated as the subject by the same focus marker (normally in *m*-form).

hope of contributing to the better understanding of AF clauses. We shall answer the following research questions regarding Formosan languages:

- (A) Are AF verbs antipassive/intransitive?
- (B) Are core and oblique arguments distinguishable?
- (C) Are the voice systems symmetrical or asymmetrical?
- (D) What is the grammatical status of focus markers?

## 1.2 Semantic and morphosyntactic transitivity

The notion of transitivity can be understood from two perspectives, one from morphosyntactic viewpoint, and the other from semantic standpoint. Morphosyntactically, a verb will be identified as transitive if it takes more than one core argument; in contrast, a verb will be analyzed as intransitive if takes only one core argument. It is generally held that the identification of a core argument is determined by its morphosyntactic behavior (e.g. case marking, anaphoric reference, etc.). Under this conventional view, transitivity is a clear-cut matter and involves categorical distinction. A verb is either transitive or intransitive. There is no murky area. On the other hand, Hopper and Thompson (1980) argue that transitivity is a matter of degree and exhibits prototypical effects. It involves not only the participants of a verb but also other semantic properties of the clause. A clause can be more or less transitive than another, depending on the sum of the defining properties it bears. The defining properties, each of which focuses on a different semantic facet of the clause, can be summarized as follows:

(1) Criteria for the measurement of transitivity (Hopper and Thompson 1980:252)

|                      | <u>HIGH</u>           | <u>LOW</u>         |
|----------------------|-----------------------|--------------------|
| A. PARTICIPANTS      | 2 or more (A and O)   | 1 participant      |
| B. KINESIS           | action                | non-action         |
| C. ASPECT            | telic                 | atelic             |
| D. PUNCTUALITY       | punctual              | non-punctual       |
| E. VOLITIONALITY     | volitional            | non-volitional     |
| F. AFFIRMATION       | affirmative           | negative           |
| G. MODE              | realis                | irrealis           |
| H. AGENCY            | A high in potency     | A low in potency   |
| I. AFFECTEDNESS of O | O totally affected    | O not affected     |
| J. INDIVIDUATION     | O highly individuated | O not individuated |

To demonstrate how transitivity is measured, let us consider the following pair:

(2) Hopper and Thompson (1980:253)

- a. Jerry likes beer.
- b. Jerry knocked Sam down.

In the traditional sense, (2a) and (2b) are equally transitive. However, in Hopper and Thompson's sense, (2b) is much higher in transitivity than (2a) in that it displays more transitivity properties than (2a), as indicated below:

(3) Hopper and Thompson (1980:253)

Kinesis: action

Aspect: telic

Punctuality: punctual

Affectedness of O: total

Individuation of O: high, referential, animate, and proper

It is obvious that Hopper/Thompson's view departs from the morphosyntactic view of transitivity in fundamental manner. The former is holistic, in which a variety of factors are taken into account, whereas the latter is analytic; for the former approach, transitivity is scalar, while, for the latter, transitivity is dichotomous. The two views are basically incompatible. However, each view can uncover some important aspects of verbs and clauses and thus can not be discarded. In this paper, we will adopt both views but discuss them separately if necessary.

The rest of the paper will proceed in the following order. Section 2 reviews the ergative hypothesis and the symmetrical-voice hypothesis. Section 3 is the main body of the paper. In this section, we will illustrate the diversity of Formosan languages with regard to the transitivity of AF clauses and the symmetricality of the voice systems in Formosan languages. We will also demonstrate how a core argument is differentiated from a peripheral argument in syntactic operations such as object-control and how semantic transitivity is distinguished from grammatical transitivity. Section 4 discusses how causative AF verbs are derived and their impacts upon the voice systems. Section 5 concludes the paper by discussing the implications of this study and the issues open for further study.

## **2. Literature review**

### **2.1 The ergative hypothesis**

Under the framework of Lexicase, Starosta (1988, 1997) claims that Formosan languages are purely ergative languages. His major thesis could be translated as follows:

(4) AF/NAF asymmetry

- a. NAF clauses exemplify the ergative pattern and are thus morphosyntactically/semantically transitive. The Actor occurs as a core argument and is singled out to be marked with genitive case, as opposed to the patient. The patient is interpreted as definite and the clauses usually involve completed events.
- b. AF clauses demonstrate the antipassive pattern and should thus be morphosyntactically/semantically intransitive. The patient argument is realized as an oblique argument and interpreted as indefinite. The clauses usually denote on-going processes.

Before proceeding to the discussion of the AF/NAF asymmetry, a note on antipassive is in order. As pointed out by Comrie (1978), Baker (1988), and Tallerman (1998:185), antipassive is a hallmark of ergative language and is not found in accusative languages. Like passive, antipassive turns a transitive into an intransitive via a process of promotion of an NP and demotion of another. However, the two processes differ as to their treatment of the direct object: antipassive demotes it into an oblique object, whereas passive promotes it into the subject. A widely observed semantic effect of antipassivization is that the demoted object turns to be indefinite. For example:

(4') Greenlandic Eskimo (Sadock 1980)

- a. Angut-ip    arnap            unatar-par  
       man-Erg    woman(Abs)    beat-Indic.3S  
       'The man beat the woman.'
- b. Angut        arnap-mik    unatar-a-voq  
       man(Abs)    woman-Inst    beat-Apass-Indic.3S  
       'The man beat a woman.'

In (4'a), the noun phrase *arnap* 'woman' is semantically definite. However, it turns to be indefinite in (4'b), where it is suffixed with the antipassive marker *mik* and demoted into an oblique object.

Now let us return to Starosta's AF/NAF asymmetry. Consider the following contrasts:

(5) AF clauses, Yami (Ho 1990:60, 74, cited in Starosta 1997:143-144)

- a. ya m-azies u kanakan  
Tns<sup>2</sup> AF-bathe Nom child  
'The child is taking a bath.'
- b. ya k-um-an si mapapu su suli  
Tns eat-AF Nom Mapapu Obl taro  
'Mapapu is eating taros.'

As shown in (5a-b), the sentences involve progressive aspect. As you can see in (5b), the patient argument *suli* is interpreted as indefinite. Compare the following NAF clause:

(6) NAF clause, Yami (Ho 1990:74, cited in Starosta 1997:144)

- ya na ni-kan ni mapapu u suli  
Tns Gen.3S Perf-eat Gen Mapapu Nom taro  
'Mapapu has eaten up the taros.'

Sentence (6) observes a rather different pattern from (5a-b). The Actor *mapapu* is marked with genitive case and the patient argument *suli* nominative case. Semantically, *suli* is interpreted as definite rather than indefinite. Moreover, the sentence denotes a completed event instead of an on-going process.

Starosta argues that the patterns above seem to fit Hopper and Thompson's antipassive-ergative dichotomy well:

(7) Antipassive vs. Ergative in transitivity (Hopper and Thompson 1980: 268)

| Antipassive                        | Ergative                    |
|------------------------------------|-----------------------------|
| a. Verb codes only one participant | Verb codes two participants |
| b. Imperfective aspect             | Perfective aspect           |
| c. Partitive O                     | Total involvement of O      |
| d. Indefinite O                    | Definite O                  |
| e. Stative/Involuntary V           | Kinetic/Volitional V        |
| f. Passive participation of A      | Active participation of A   |

<sup>2</sup> Abbreviations used in this paper are listed as follows:

|                         |                      |                   |                         |                |
|-------------------------|----------------------|-------------------|-------------------------|----------------|
| Acc: accusative         | Adv: adverb          | AF: Actor focus   | Asp: aspect             | Cau: causative |
| Dat: dative             | Gen: genitive        | Fut: future tense | LF: locative focus      | Loc: locative  |
| Lnk: linker             | NAF: Non-Actor focus |                   | Nom: nominative         |                |
| Obl: oblique            | Past: past tense     | Perf: perfective  | PF: Patient focus       |                |
| P: plural               | Red: reduplication   |                   | Tns: tense              |                |
| 1: first person pronoun | 2: second person     |                   | 3: third person pronoun |                |

In Starosta's analysis, AF verbs are semantically and grammatically intransitive, as opposed to NAF verbs. The AF/NAF dichotomy is clear-cut.

## 2.2 The symmetrical voice hypothesis

### 2.2.1 Kroeger (1993)

On the other hand, Kroeger (1993) contends that AF verbs can be morphosyntactically transitive in Tagalog. His evidence is that the patient argument can serve as an antecedent of the missing embedded subject in AF clauses, as shown below:

(8) Tagalog (Kroeger 1993:47)

nanghuli ng magnanakaw ang polis  
catch(AF) thief Nom police  
nang pumapasok sa bangko  
enter(AF) Dat bank

'The police caught a/the thief when entering the bank.'

Sentence (8) is ambiguous: either *thief* or *police* can be interpreted as the subject of *entering the bank*. This indicates that the patient *thief* is also a core argument. An adjunct or peripheral argument cannot serve as an antecedent. Compare:

(9) Tagalog (Kroeger 1993:48)

bumisita si Juan sa hari nang nagiisa  
visit(AF) Nom Juan Dat king Adv AF.Imperf-one  
'Juan visited the king alone.' (Juan is alone.)

As shown in the interpretation, the oblique argument *the king* cannot function as a controller. Thus, the sentence is unambiguous, as opposed to (8).

In Kroeger's analysis, AF verbs can take two core arguments and thus occur as transitives on a par with NAF verbs. There seems to be no morphosyntactic asymmetry between AF verbs and NAF verbs. Therefore, the voice system appears to be morphosyntactically symmetrical in Tagalog.

### 2.2.2 Ross (2002)

Ross (2002) also identifies the voice system in Tagalog as morphosyntactically symmetrical, but in a different sense. Unlike Kroeger, Ross does not identify AF

clauses as transitive. Instead, he remarks that it is hardly possible to distinguish between AF and NAF with regard to their morphosyntactic transitivity. Ross's main argument is that both AF and NAF clauses have *ang*-phrase and *ng*-phrase and the system thus looks symmetrical, as schematized below:

(10) The symmetrical voice system in Tagalog

|                          | <u>AF</u> | <u>NAF</u> |
|--------------------------|-----------|------------|
| The agent is marked by   | ang       | ng         |
| The patient is marked by | ng        | ang        |

While there is no problem that the *ang*-marked phrase occurs as a core argument, it is hard to tell whether the *ng*-marked phrase is a core argument or not. Ross states:

“It is hard to distinguish between core and oblique arguments in Tagalog. Across languages, an oblique is typically coded by a special structure, usually an adpositional phrase. But Tagalog usually does not use a special structure in peripheral phrases. Instead, a peripheral phrase, like a core argument, is coded only with a phrase marker.” (Ross 2002:28)

For example:

(11) Tagalog (Foley and Van Valin 1984:135)

b-in-ilh-an ng lalake ng sida ng pera ang tindahan  
 buy-LF Gen man Obl fish Inst money Nom store  
 ‘The man bought fish in the store with money.’

As shown in (11), agent, patient, and even instrument are all marked with *ng* in the NAF clause. Morphosyntactically, they are not distinguished. Likewise, the patient/theme argument in AF clauses is also marked with *ng*:

(12) Tagalog

- a. siya ang naka-kita ng aksidente  
 3S.Nom Nom AF-see Obl accident  
 ‘He’s the one who saw a/the accident.’
- b. siya ang nag-bigay ng premyo kay Ben.  
 3S.Nom Nom AF-give Obl prize Loc Ben  
 ‘He’s the one who gave a/the prize to Ben.’

Ross thus concludes:

“There is no unambiguous way to say that either the *ng*-agent or *ng*-patient is core or oblique, and therefore there is no unambiguous way of talking about the transitivity of the clauses. All we can say is that the system is morphosyntactically symmetrical.” (Ross 2002:31)

### 3. Object-control, transitivity, and symmetricality

In this section, we will demonstrate that syntactic processes such as object-control can distinguish between a core argument and a peripheral argument, which in turn help identify the symmetricality of the voice systems in Formosan languages.

#### 3.1 NAF clauses as transitive

After reviewing the previous analyses of Tagalog and other Austronesian languages concerning transitivity, it is now time to check whether these analyses can carry over to Formosan languages. The Formosan languages under study are mainly (Paran and Truku) Seediq, (Northern) Paiwan, Kavalan, and Tsou. The data are obtained from our own field notes. When necessary, we also cite the previous researchers' works on other Formosan languages such as (Wulai and Mayrinax) Atayal, and Saisiyat.

We agree with Starosta's observation that NAF verbs are semantically and morphosyntactically transitive in Formosan languages. Since we have discussed the issue thoroughly elsewhere (Chang 1997, Chang 2003), we will not go into details here. It is useful to keep in mind that every NAF clause encodes at least two arguments, that is, an Actor and a non-Actor, and both of which occur as core arguments. It follows that NAF clauses are morphosyntactically transitive. While there are some seemingly intransitive NAF clauses that appear to have only one argument, they turn out to be not genuine NAF clauses upon closer inspection. For example:

(13) Paiwan (Wu 2003)

- a. ma-melavalav-an a      icu      a      djalan  
Red-wide-AN      Nom      this      Lnk      road  
'This road is wide.'
- b. sa-sac'ac'al-an-anga (nu)sa      kasiv  
Red-light-AN-Asp      these      wood  
'These woods are light.'

The examples in (13a-b) are obviously intransitive, regardless of whether we adopt Hopper and Thompson’s definition or the conventional definition of transitivity. These sentences are surprising at first glance, since the verbs look like being marked with the Location-focused suffix *-an*. However, upon a closer look, we realize that these sentences are not genuine NAF clauses. As noted by H.-C. Chang (2000) and Weng (2000), the aspect marker *na-* can only co-occur with AF verbs in Paiwan. For NAF verbs, the aspectual infix *-in-* should be used instead. Compare:

(14) Paiwan (H.-C. Chang 2000:101)

- a. na-t-em-ekel ti palang tua vava  
Asp-drink-AF Nom Palang Obl wine  
‘Palang drank wine.’
- b. t-in-ekel ni palang a za vava  
drink-NAF Gen Palang Nom that wine  
‘Palang drank that wine.’

It should be noted that the seemingly NAF verbs in question co-occur with *na-* instead of *-in-*:

(15) Paiwan (Wu 2003)

- a. na-ma-melavalav-an a icu a tjalan  
Asp-Red-wide-AN Nom this Lnk road  
‘This road used to be wide.’
- b. na-sa-sac’ac’al-an-anga (nu)sa kasiv  
Asp-Red-light-AN-Asp these woods  
‘These woods used to be light.’

This suggests that these verbs do not belong to the category of NAF verbs. It could be the case that the suffix *-an* has been grammaticalized and hence loses its function as an LF suffix. If the analysis is on the right track, we can maintain that NAF verbs are all transitive across Formosan languages. In the subsequent sections, we will focus on the issue whether AF verbs can be equally transitive.

### 3.2 AF verbs: transitive or intransitive

It is true that intransitive concepts are normally represented by AF verbs across Formosan languages. First, one-argument events or states are usually encoded by AF

verbs. For example:

(16) Kavalan

- a. m-uRing ya sunis  
AF-cry Nom child  
'The child is crying.'
- b. m-RaRiw-ti ya sunis  
AF-run-Perf Nom child  
'The child ran away.'

(17) Atayla and Paiwan (Zeitoun and L. Huang 2000:397)

- a. ma-sibniing ku' nabakis (Mayrinax Atayal)  
AF-rich Nom old.man  
'The old man is rich.'
- b. ma-leva ti kalalu (Northern Paiwan)  
AF-happy Nom Kalalu  
'Kalalu is happy.'

It is also true that AF clauses can be antipassive-like. It is often found that AF clauses denote on-gong processes and their patient arguments are interpreted as indefinites. This contrasts sharply with NAF clauses, as the following pairs illustrate:

(18) Kavalan

- a. p-um-ukun tu sunis ya baqi  
hit-AF Obl child Nom old.man  
'The old man is hitting a child.'
- b. pukun-an-na na baqi ya sunis  
hit-PF-3S.Gen Gen old.man Nom child  
'The old man hit the child.'

(19) Wulai Atayal (L. Huang 1993: 41-42)

- a. m-in-qbaq-saku' ke' na' tayan  
AF-Perf-learn-1S.Nom word Gen Atayal  
'I studied Atayal' (I may still be learning it, and may still not know how to speak the language).
- b. q-in-baq-an-maku' ke' na' tayan  
learn-Perf-LF-1S.Gen word Gen Atayal  
'I learned Atayal' (I learned it and now, as a result, I know how to use it).

The AF verbs denote incomplete events, as shown in (18-19a), while the NAF verbs

depict completed events, as shown in (18-19b).

However, the general tendency is simply one-way implication and cannot be equivalent to grammatical categorization. It does not mean that AF verbs occur invariably as intransitives and cannot encode transitivity. As noted in Yeh (2003) and Chang (2003), AF verbs are able to represent semantic transitivity as well as intransitivity in some Formosan languages. Consider the following pairs:

(20) Truku Seediq

- a. m-tutuy ka pawan  
AF-wake.up Nom Pawan  
'Pawan wakes up.'
- b. t-m-utuy knan ka hiya  
wake.up-AF 1S.Acc Nom 3S.Nom  
'He wakes me up.'

(21) Northern Paiwan (H.-C. Chang 2000:96)

- a. ma-pulaw-anga ti palang  
AF-drunk-Asp Nom Palang  
'Palang is drunk.'
- b. na-p-en-ulaw ti palang tjay kalalu  
Perf-cause.drunk-AF Nom Palang Obl Kalalu  
'Palang caused Kalalu to get drunk.'

As shown in (20-21), the AF clauses in the (b) sentences are causative while those in the (a) sentences are stative/inchoative. While it is very obvious that the a-sentences are intransitive, it is not self-evident that the b-sentences are transitive. Under Hopper and Thompson's definition of semantic transitivity, the (b) sentences should be identified as transitive, since they display all the defining properties of semantic transitivity, including two participants, agency, affectedness, individuation, dynamicity, telicity, punctuality, volitionality, affirmation, and realis. The question is whether they are morphosyntactically transitive. Specifically, it should be figured out whether the object noun phrase occurs as a core argument or a peripheral argument of the verb. One criterion that is widely used by linguists is to see what kind of case markers is used. The sentences will be identified as transitive if the object is marked with accusative case, but as intransitive if the object is marked with oblique case. However, as noted by Ross in Section 2.2.2, the criterion of case markers is not always useful. More reliable diagnostics are in order. Apart from case marking, there are other aspects in which core arguments are distinguished from peripheral arguments, such as verbal agreement, word order, and syntactic processes (Napoli

1993, Tallerman 1998, Van Valin 2001). There is generally no object agreement in Formosan languages (except for Rukai). So the diagnostics of verbal agreement is not pertinent here. The validity of word order varies in Formosan languages since not every Formosan language has fixed word order. The most stable and reliable test might involve syntactic processes, in particular, obligatory control. It is generally held that core arguments can serve as obligatory controllers but peripheral arguments cannot (Williams 1980). Along this line of observation, only two types of obligatory control are observed, namely, subject-control, where the matrix subject serves as a controller, and object-control, in which the matrix object functions as a controller. For example:

- (22) a. John<sub>i</sub> promised Bill<sub>j</sub> [PRO<sub>i/\*j</sub> to come].  
 b. John<sub>i</sub> persuaded Bill<sub>j</sub> [PRO<sub>\*i/j</sub> to come].

The control will fail if the core argument is demoted via processes such as passivization or nominalization. Compare:

- (23) a. \*Bill<sub>j</sub> was promised by John<sub>i</sub> PRO<sub>i</sub> to leave.  
 b. <sup>??</sup>John<sub>i</sub>'s persuasion of Bill<sub>j</sub> PRO<sub>j</sub> to leave irritated the host.

As shown in (23a-b), the demoted noun phrases *John* and *Bill* cannot serve as the antecedents of the missing subjects in the embedded clauses, as opposed to their counterparts in (22a-b).

With this in mind, let's consider the obligatory control in Seediq first:

(24) Paran Seediq (Chang 1997:199)

- a. heyai s-um-uluwa yaku<sub>j</sub> [m-imah sino PRO<sub>\*i/j</sub>]  
 3S permit-AF 1S(Acc) AF-drink wine  
 'He permits me to drink wine.'
- b. heyai h-um-etun yaku<sub>j</sub> [beebu isu PRO<sub>\*i/j</sub>]  
 3S stop-AF 1S(Acc) beat 2S.Neu  
 'He stops me from beating you.'

(25) Truku Seediq

- a. pkdudug knan<sub>j</sub> [m-usa PRO<sub>\*i/j</sub>] ka pawan<sub>i</sub>  
 persuade(AF) 1S.Acc AF-go Nom Pawan  
 'Pawan persuades me to go.'
- b. pskiyux knan<sub>j</sub> [m-usa PRO<sub>\*i/j</sub>] ka hiya<sub>i</sub>  
 force(AF) 1S.Acc AF-go Nom 3S.Nom  
 'He forces me to go.'

As shown in (24a-b) and (25a-b), the AF patients *yaku* and *knan* can control the reference of the missing subjects in the control complements. Given that only core arguments can serve as obligatory controllers, this would suggest that *yaku* and *knan* occur as core arguments and the AF clauses with (accusative) *yaku* and *knan* are morphosyntactically transitive. It follows that AF verbs can be both semantically and grammatically transitive in Seediq. The voice system in Seediq is thus symmetrical on a par with Tagalog.

By contrast, object-control does not seem to be attested in Paiwan<sup>3</sup>. Consider:

(26) Northern Paiwan

pa'aDil ti palang<sub>i</sub> tjai kalalu<sub>j</sub> a [pa-kan PRO<sub>i/\*j</sub>]  
 force(AF) Nom Palang Obl Kalalu Lnk Cau-eat  
 lit. 'Palang forced Kalalu such that he caused her to eat.'

Unlike Seediq, the oblique noun phrase *kalalu* can not serve as an obligatory controller in Paiwan, as shown in (26). This implies that the oblique noun phrase does not occur as a core argument. This observation is further evidenced by the fact that in addition to patient arguments, the case markers *tua/tu/tjai* can also co-occur with oblique arguments such as instrument and goal. For example:

(27) Paiwan (Li 2004)

- a. a ci'aw c-in-avu tua asaw ni kina  
 Nom fish pack-Perf(PF) Obl leaf Gen mother  
 'Mother packed the fish with the leaves.'
- b. tima zua na-c-em-aca tua buni' a pa-sa tua pana  
 who that Perf-pour-AF Obl mud Lnk Cau-go.to Obl river  
 'Who poured the mud into the river?'

There seems to be syntax-semantic mismatches with regard to the transitivity of AF verbs in Paiwan. Semantically, AF verbs can be transitive, as shown in (21b); morphosyntactically, they are invariably antipassive or intransitive, as evidenced by

<sup>3</sup> It should be noted that sentences exhibiting object-control are by no means unfound in Paiwan. For example:

(i) Tang (1999:530)  
 s-em-avuta ti kai tai kui a k-em-an tua ci'aw  
 force-AF Nom Kai Acc Kui Lnk eat-AF Acc fish  
 'Kai forces Kui to eat fish.'

However, there is strong tendency to favor Actor control over object control. Thus, for the informants we consult, the sentence would be better if its embedded verb takes the causative prefix *pa-* instead of the AF marking.

(26).

Similar mismatches are also found in (Mayrinax) Atayal. In Atayal, causative AF verbs are prevalent, as shown in (28b):

(28) Mayrinax Atayal (L. Huang 2000a:371)

- a. ma-taqu' ku' 'ulaqi'  
AF-fall.down Nom child  
'The child fell down.' (He is on the floor now.)
- b. t-um-aqu' cku' nabakis ku' 'ulaqi'  
push.down-AF Acc old.man Nom child  
'The child pushed the old man to fall down.'

However, the noun phrase marked by the case marker *cku'* does not seem to occur as a core argument, given that it fails to serve as an obligatory controller in *persuade*-type control constructions. It must be raised to the subject position to be eligible for anaphoric reference. To achieve the goal, the matrix verb must be inflected for NAF. For example:

(29) Mayrinax Atayal (L. Huang 1995:198-199)

- a. siwal-an ni' yumin 'i' limuy 'i' m-aniq cku' qulih  
allow-LF Gen Yumin Nom Limuy Lnk AF-eat Acc fish  
'Yumin allowed Limuy to eat fish.'
- b. sa-siwal-an 'i' m-aniq cku' qulih ni' yumin 'i' limuy  
Red-allow-LF Lnk AF-eat Acc fish Gen Yumin Nom Limuy  
'Yumin will allow Limuy to eat fish.'

The distribution of *cku'* also supports our analysis. In addition to marking patient arguments, *cku'* can also be used to mark oblique arguments such as dative and locative. For example:

(30) Mayrinax Atayal (1995:98, 103)

- a. m-in-aiq-ci' cu' pila' cku' 'ulaqi'  
AF-Past-give-1S.BN Acc money Dat child  
'I gave money to the child.'
- b. tayhok cku' 'ulaqi'-mi' yumin  
arrive(AF) Loc child-1S.BG Yumin  
'Yumin arrived at my child's place.'

It is evident that as in Paiwan, AF verbs in Atayal are morphosyntactically intransitive but can be semantically transitive.

Interestingly, there are Formosan languages in which AF verbs are ambiguous as to morphosyntactic transitivity. Saisiyat is a case in point. There is no question that AF verbs can be semantically transitive in Saisiyat, as evidenced by the causative AF verb in (31b):

(31) Saisiyat (Yeh 2003:74-75)

- a. 'obay **m-**'in-'itol ila  
 'obay AF-Asp-wake Incpt  
 'obay has waken up.'
- b. 'obay **'-om-**itol hi 'iban  
 'obay wake-AF- Acc 'iban  
 'obay woke up 'iban.'

In the meantime, the object is grammatically inflexible: it can either choose to be the controller, as shown in (32a), or leave the job to the Actor, as shown in (32b):

(32) Saisiyat (Yeh 2003, p.c.)

- a. 'obay **'-om-i'**ih k-om-a:at ka kina:at yakin  
 'obay force-AF write-AF Acc book 1S.Acc  
 'obay forced me to write a book.'
- b. 'obay **'-om-i'**ih pa-ka:at ka kina:at yakin  
 'obay force-AF Cau-write Acc book 1S.Acc  
 'obay forced me such that he caused me to write a book.'

In (32a), the object *yakin* serves as the antecedent of the missing subject in the embedded clause led by the verb *koma'at* 'write'. This indicates that the object *yakin* should surface as a core argument in this case. As in Paiwan, in (32b), the object *yakin* fails to control the reference of the embedded missing subject, which leads to the occurrence of the causative prefix *pa-* and results in Actor-control. In this occasion, *yakin* behaves like an oblique noun phrase. It seems that AF verbs can be morphosyntactically transitive or intransitive in Saisiyat.

Taking the above discussions all into one picture, we can have a scale of antipassive continuum, with Paiwan/Atayal and Seediq on the two extremes and Saisiyat sitting in the middle, as demonstrated in the following table:

Table 1 The antipassive continuum

|                          | Paiwan/Atayal | Saisiyat | Seediq |
|--------------------------|---------------|----------|--------|
| AF verbs as antipassives | Yes           | Yes/No   | No     |
| Object-control           | No            | Yes/No   | Yes    |

Now we are in a good position for answering the first three research questions:

- (A) Are AF verbs antipassive/intransitive?
- (B) Are core and oblique arguments distinguishable?
- (C) Are the voice systems symmetrical or asymmetrical?

It is clear that the answer to the first question depends on which Formosan language is under discussion. The answer is yes for Paiwan and Atayal, no for Seediq, but yes and/or no for Saisiyat. As to the second question, our answer is much more positive and optimistic than Ross' (2002). Syntactic operations such as object-control as well as case marking paradigms can be used to distinguish a core argument from a peripheral argument in the Formosan languages.

The third question must be taken from two angles, one from semantic aspect and the other from grammatical aspects. As suggested above, AF verbs can encode causativity on a par with their NAF counterparts in Paiwan, Seediq, Atayal, and Saisiyat. Accordingly, they can be semantically transitive. In this sense, the voice system is symmetrical in these languages. In grammatical sense, these languages diverge. Grammatically, AF verbs can be also transitive in Seediq and thus the voice system is symmetrical. On the other hand, AF verbs are antipassive and grammatically intransitive in Paiwan and Atayal. The voice systems are thus asymmetrical in these two languages. In Saisiyat, the voice system can be said to either symmetrical or asymmetrical, given that the AF verbs are ambiguous between grammatically transitive and intransitive.

It should be noted that not all Formosan languages observe semantically symmetrical voice system. Unlike Paiwan, Atayal, Seediq, and Saisiyat, Formosan languages such as Tsou and Kavalan normally encode high transitivity (e.g. causation) by means of NAF verbs rather than AF verbs. In this sense, the voice system is asymmetrical in Tsou and Kavalan. Moreover, AF verbs are also antipassive-like in Tsou and Kavalan. In Tsou and Kavalan, patient arguments occur as oblique noun phrases in AF clauses. This is evidenced by two facts. First, as noted by Liao (2002), case markers marking patient arguments can also co-occur with oblique arguments in Kavalan. For example:

(33) Kavalan (Chang 2000:68-69, Liao 2002:151)

- a. q-em-al tu rasung ya sunis  
dig-AF Obl well Nom child  
'The child is digging a well.'
- b. mzaki tu razing a repaw-ku  
close Obl sea Nom house-1S.Gen  
'My house is close to the sea.'
- c. pasawa tu lalusa ta rukian  
fight Obl half Loc hour  
'They fought for half an hour.'

As shown in (33a-c), the case marker *tu* can mark the location *razing* and the time *lalusa ta rukian* as well as the patient *rasung*. Similar case is also found in Tsou, as shown in (34):

(34) Tsou

- a. mi-ta eobak-o ta oko  
AF-3S beat-AF Obl child  
'He beats a child.'
- b. te-'o uh ta pnguu  
Irr-1S go Obl Pnguu  
'I will go to Pnguu.'

Second, patient arguments cannot serve as obligatory controllers in AF clauses in Tsou and Kavalan (Chang and Tsai 2001). For example:

(35) Kavalan

- a. pawRat-iku tu sunis pa-qaynep  
force-1S.Nom Obl child Cau-sleep  
Lit. 'I force the child such that I cause him to sleep.'  
'I force the child to sleep.'
- b.<sup>??</sup> pawRat-iku tu sunis m-aynep  
force-1S.Nom Obl child AF-sleep

(36) Tsou

- a. i-'o ahuy-a pa-bon-ɰ na taini  
NAF-1S force-PF Cau-eat-AF Nom 3S  
Lit. 'I forced him such that I caused him to eat.'  
'I forced him to eat.'
- b.<sup>??</sup> mi-'o ahuy-ɰ ta oko bon-ɰ

As shown in (35-36b), the object noun phrases *sunis* and *oko* cannot serve as obligatory controllers. As shown in (35-36a), to make the sentences acceptable, the causative prefix *pa-* must be added to the embedded verbs, giving rise to constructions with very weird literal meanings<sup>4</sup>. This suggests that AF verbs are grammatical intransitive and the voice systems are asymmetrical in Tsou and Kavalan.

To summarize what we have discussed above, we will have the following picture:

Table 2 The semantic and grammatical contrast between AF and NAF verbs in Formosan languages

|               | Semantically | Grammatically            |
|---------------|--------------|--------------------------|
| Seediq        | Symmetrical  | Symmetrical              |
| Saisiyat      | Symmetrical  | Symmetrical/Asymmetrical |
| Paiwan/Atayal | Symmetrical  | Asymmetrical             |
| Tsou/Kavalan  | Asymmetrical | Asymmetrical             |

#### 4. Focus markers, verbal semantics, and compositionality

Contra to Starosta’s claim, we have shown that AF verbs can be semantically transitive in Pawan, Seediq, Atayal, and Saisiyat. In this section, we will discuss how this is made possible and its impact upon the voice systems.

Not every AF verb can encode causation in these languages. The causation-denoting AF verbs seem to be limited to those who have a root involving change of state. Compare:

(37) Paiwan

- a. ma-pulaw-anga-aken  
AF-drunk-COS-1S.Nom  
‘I am drunk.’
- b. p-en-ulaw-aken tjaimadju  
drunk-AF-1S.Nom 3S.Obl  
‘I got him drunk.’

As shown in (37a-b), the causative and inchoative AF verbs appear in pair, with the AF verbs infixed *-em-* denoting causation and those inflected for *ma-* denoting state.

<sup>4</sup> The readers are referred to Chang and Tsai (2001) for the motivation behind the operation.

They share the root *pulaw* ‘drunk’, referring to a change of state. AF verbs without roots like this do not encode causation, as shown below:

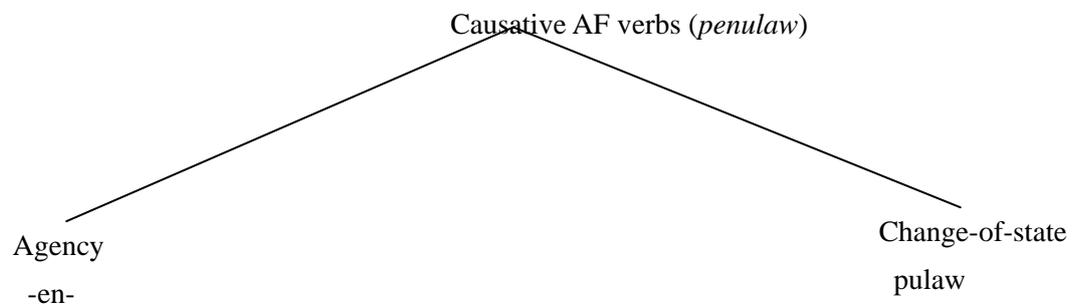
(38) Paiwan

- a. na-t-em-ekel-aken      tua    vava  
     Perf-drink-AF-1S.Nom   Obl   wine  
     ‘I drank wine.’
- b. na-k-em-an-aken      tua    veljevelj  
     Perf-eat-AF-1S.Nom   Obl   banana  
     ‘I ate banana.’

As shown in (38a-b), the AF verbs denote activity rather than accomplishment. Their roots do not involve change of state and they do not entertain the *ma-* alternation.

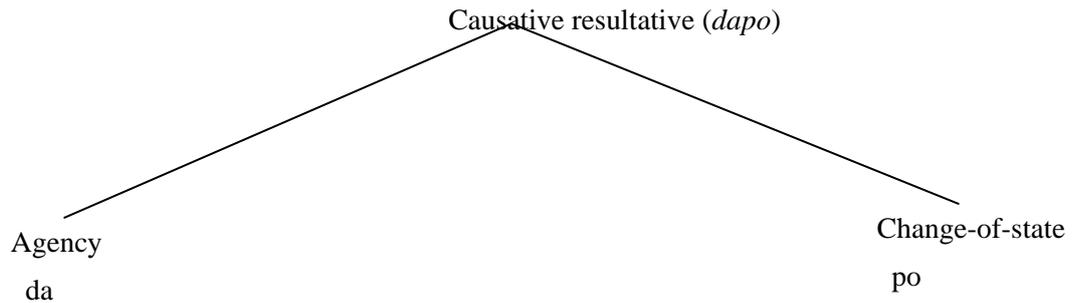
Given the restriction, we assume that the causativity in question is due to the collaboration of the AF infix with the intrinsic semantic property of the verb. Specifically, the AF infix contributes to the verbal complex agency/dynamicity and the verbal root is responsible for change-of-state. The event structure of the causative AF verb can be schematized as follows:

(39) The event structure of the causative AF verb



The combination of agency and change-of-state gives rise to causation. The combination generates a logical structure in which an object undergoes a change of state as a result of some external force. The event structure of the causative AF verb *penulaw* can be likened to that of the causative resultative compound *dapo* ‘to break’ in Mandarin Chinese. Compare:

(40) The event structure of the causative resultative compound



Both of them involve a complex event structure. The complex structure consists of the semantic features *agency* and *change-of-state*. The execution of *agency* on an object entails *the change-of-state* of that object. Both types entertain causative-inchoative alternations, with the causative profiling the external causer and the inchoative profiling the result. Compare (41) with (37):

(41) Chinese

- a. ta dapo-le beizi  
he break-Perf cup  
'He broke the cup.'
- b. beizi po-le  
cup break-Perf  
'The cup broke.'

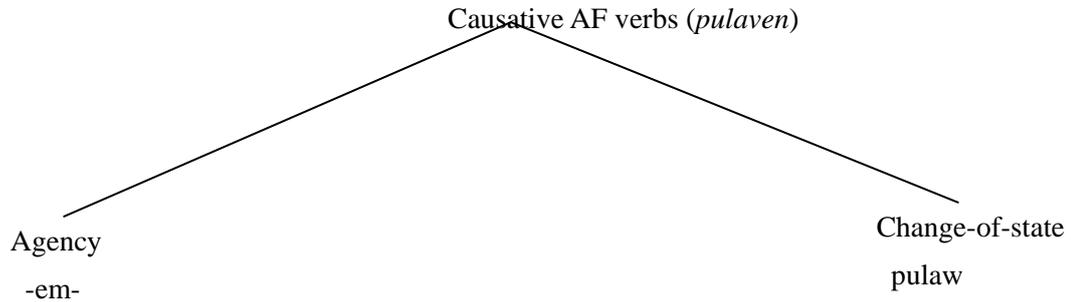
Actually, like the AF morphemes, PF affixes can also combine with the inchoativization-denoting root to derive causation. Compare:

(42) Paiwan

- ku-pulav-en timadju  
1S.Gen-drunk-PF 3S.Nom  
'I got him drunk.'

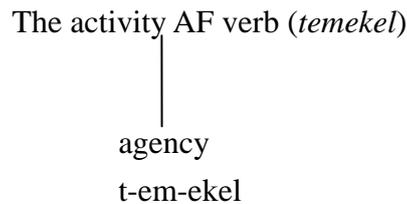
This is in support of our analysis. It is the collaborative effort rather than the AF affix alone that yields the causative reading. Both AF and NAF affixes can contribute agency/dynamicity to the verbal complex. The causative NAF verbs share the same event structure with their AF counterparts, as shown below:

(43) The event structure of the NAF causative verbs



In contrast, the event structure of the activity verbs such as *temekel* ‘drink’ does not branch. The function of the AF infix *-em-* happens to overlap with the semantic property of the verbal root, as shown below:

(44) The event structure of the activity AF verb



It follows that no causativity is attested in the activity AF verbs.

If our analysis is on the right track, we can assume that the function of the AF infix *-em-* is to mark agency/dynamicity. This is consistent with observation made by L. Huang (2000b) that the AF infix *-em-* sits at the highest end of the dynamicity continuum:

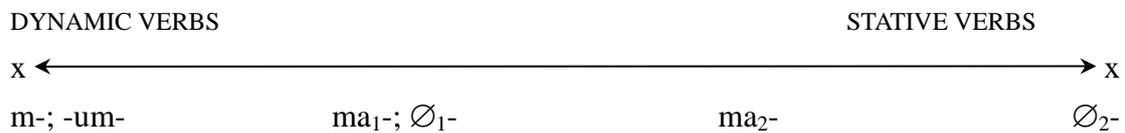


Figure 1 Dynamic-stative Continuum in Mayrinax Atayal (L. Huang 2000b:71)

By contrast, the AF prefixes *m-/ma-* are likely to mark state (Zeitoun and L. Huang 2000). Thus, the *ma*-marked verbs are both grammatically and semantically intransitive in Paiwan.

With the collaborative mechanism, Formosan languages such as Paiwan, Seediq, and Atayal entertain the semantically symmetrical voice systems, that is, AF as well

as NAF can encode transitive concepts. However, as mentioned above, not every Formosan language is open for this option. For those who do not have this option (e.g. Tsou and Kavalan), transitive concepts such as causativity must be encoded either via the causative morpheme or NAF affixes. Their voice systems turn out to be semantically asymmetrical.

## 5. Conclusion

We have seen that Formosan languages are not homogenous as far as the transitivity of AF verbs is concerned. AF verbs are transitive in some Formosan languages but intransitive in others. Previous studies (e.g. Starosta 1997 and Chang 2003) which see Formosan languages as a whole and try to come up with across-the-board rules/generalizations are not realistic. The second half of the ergative hypothesis is too strong a claim. AF verbs are not always antipassive/intransitive in Formosan languages regardless of whether we take grammatical view or semantic view of transitivity. The symmetrical-voice hypothesis does not carry over to all the Formosan languages either. For Formosan languages such as Tsou and Kavalan, the symmetrical-voice hypothesis simply has the wrong prediction.

We are more optimistic than Ross (2002) in that we think syntactic processes like object-control can distinguish between core arguments and peripheral arguments in Formosan languages. Case marking paradigm can be used as a diagnostics, but it cannot be used as the sole ruler, given that it can be devoid of identifying power in some cases. In Tagalog and Tsou, for example, AF patients are case-marked on a par with core arguments like NAF Actors as well as oblique noun phrases such as instrument and location. We can not identify the grammatical status of the AF patients simply on the basis of the case marking paradigm and have to count on something else.

For those Formosan languages (e.g. Paiwan and Atayal) which exhibit causative AF verbs but do not tolerate object-control constructions, semantics-syntax mismatches would arise. The voice systems would be semantically symmetrical but grammatically asymmetrical. This is in support of one of the generative tenets – grammar can depart from its meaning.

If antipassive can function as an indicator of ergativity, then the antipassive continuum mentioned above might reveal the ergative propensity of Formosan languages. Most Formosan languages, such as Paiwan, Tsou, Atayal, and Kavalan, behave like ergative languages in exhibiting antipassive voice. On the other hand, some Formosan languages like Seediq and Saisiyat seem to be evolving into accusative system and thus allow grammatically transitive AF verbs. Our findings

accord with S. Huang's (2002) observation on the basis of the discourse study that Tsou is more ergative than Seediq.

The behavior of AF verbs also reveals that the function of the AF infix *-em-* is different from the AF prefix *ma-*: the former is to mark agency but the latter state. This finding is consistent with L. Huang's (2000b) observation that *-em-* sits higher in the dynamics scale than *ma-*.

This study is our first attempt to figure out the interplay between focus, transitivity, and the grammar in Formosan languages. Due to time constraint, we do not have detailed and extensive study of each Formosan language in this regard. It goes without saying that this study is preliminary and sketchy. Further study of this kind is needed.

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