NEGATION IN KAVALAN[1]

Li-May Sung and Yu-Ting Yeh
Graduate Institute of Linguistics
National Taiwan University
limay@ntu.edu.tw; r91142001@ntu.edu.tw

1. Introduction

One issue in the studies of negation concerns categorizing the negative elements (as in Dahl 1979; Payne 1985; Ouhalla 1990; Kahrel and van den Berg 1994; Haegeman 1995; Mosel 1999 and others). Identifying the syntactic category of a negative element not only explains its syntactic distribution, but also helps to discuss the syntactic structure of the corresponding negative construction.

This paper attempts to examine three hypotheses of the syntactic category of the negator *mai* in Kavalan[2]. We will argue for analyzing *mai* as a negative auxiliary verb.

2. Literature Review

Mosel (1999) mentions that negative elements may belong to a wide range of syntactic categories, such as verbs, auxiliaries, particles, affixes, and so on. Payne (1985) also proposes some criteria for recognizing a negative verb. It is claimed that "a negative verb always has at least some properties of regular verbs, such as occurrence with a verbal complementizer or inflection for mood, tense, aspect, person, or number" (Payne 1985: 207). Payne further divides negative verbs into two major groups: one is a higher verb taking a full sentential complement and the other is "a finite auxiliary verb to the lexical verb, which in turn typically occurs in some non-finite form" (Payne *ibid*: 207).

According to Payne (1985), for a negative marker to be analyzed as a higher verb, two features are required. One is the existence of a sentential boundary between the negative verb and the lexical verb. Take Fijian for example, there is a complementizer *ni* between the negative verb *sega* and the full sentential complement (as shown in (1)).

(1) Fijian (Payne 1985: 210)
*E   sega   [ₛ **ni**   a   yaco mai ena siga Vakaraubuka   ko   Jone]*
PCL Neg   that Past arrive   on   day Friday   ART John
'John didn't arrive on Friday.'

The other feature is that the complement selected by the higher negative verb is generally finite in the sense that it may contain the tense/aspect markings and/or the subject. For example in Tongan, the higher negative verb *'ikai* takes a complement

that obligatorily contains an embedded aspect *ke* and the subject pronoun *ne*, as shown in (2).

(2) Tongan (Payne 1985: 209)
a. *Na'e   'ikai   [ₛ ke   **ne** fai   'a   e   ngauue]*
   Asp   Neg   Asp   he   do   Abs the work
   'He didn't do the work.'
b. * *Na'a   **ne**   'ikai   [ₛ ke   fai   'a   e   ngauue]*
     Asp   he   Neg   Asp   do   Abs the work

As seen in (2b), moving the subject pronoun *ne* out of the embedded complement to the matrix clause results in ungrammaticality.

On the other hand, Payne proposes that, in the purest case, a negator being classified as a negative auxiliary verb is "marked with **all** the basic verbal categories of person, number, tense/aspect and mood (if these are realized in the language concerned), whereas the lexical verb assumes an invariant, participial form. [Moreover,] there will be no evidence, like the presence of complementizers, for a full sentential boundary between the negative verb and the lexical verb…" (Payne 1985: 212). Evenki negator *ə* is such a pure auxiliary verb, as illustrated in (3).

(3) Evenki[3] (Payne 1985: 213)
a. *Nuŋan baka-**ŋkī-n***
   he   find-Past-3Sg
   'He found.'

b. *Nuŋan ə-**ŋkī-n**   baka-ra*
   he   Neg-Past-3Sg   find-PART
   'He didn't find.'

In the affirmative sentence (3a), the tense inflection *-ŋkī* and the person/number agreement are carried by the lexical verb. In the negative counterpart (3b), however, both of these inflections are carried by the negative auxiliary verb *ə*, whereas the lexical verb *baka* takes a participial form suffixed by *-ra* instead. In addition, as seen in (3b), there is no complementizer or other evidence for a full sentential boundary between the negative auxiliary *ə* and the following lexical verb.

mai, the most frequently used negator in Kavalan which is a verb-initial language, appears on initial examination to behave like a verb, since it occurs clause-initially, attracts nominative bound pronouns and carries tense/aspect markers as shown in (4)-(6)[4].

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[3] Evenki is "a member of the northern or Siberian subgroup of the Tungus family" (Payne 1985: 212).

[4] Glossing: AV: Actor Voice; NAV: Non-actor Voice; Ncm: noun-class marker; Pfv: perfective; DM: discourse marker; Neg: negator; Nom: nominative; Obl: oblique; Gen: genitive; Sg: singular; Compl: complementizer; Loc: Locative.

(4) (Occur in clause-initial position)

a. *p-m-ukun*   *tu*   *wasu*   *'nay*   *ci*   *buya*
AV-hit   Obl   dog   that   Ncm   BUYA
'Buya hits that dog.'

b. **mai**   *p-m-ukun*   *tu*   *wasu*   *'nay*   *ci*   *buya*
Neg   AV-hit   Obl   dog   that   Ncm   BUYA
'Buya doesn't hit that dog.'

(5) (Attract bound pronouns)

a. *p-m-ukun-**iku***   *tu*   *wasu*   *'nay*
AV-hit-1Sg.Nom   Obl   dog   that
'I hit that dog.'

b. *mai-**iku***   *p-m-ukun*   *tu*   *wasu*   *'nay*
Neg-1Sg.Nom   AV-hit   Obl   dog   that
'I don't hit that dog.'

(6) (Carry tense/aspect markers)

a. *p-m-ukun-**ti***   *tu*   *wasu*   *'nay*   *ci*   *buya*
AV-hit-Pfv   Obl   dog   that   Ncm   BUYA
'Buya have hit that dog.'

b. *mai-**ti***   *p-m-ukun*   *tu*   *wasu*   *'nay*   *ci*   *buya*
Neg-Pfv   AV-hit   Obl   dog   that   Ncm   BUYA
'Buya doesn't hit that dog anymore.'

This paper therefore attempts to examine the syntactic category of *mai* based on Payne's (1985) proposals. In addition to testing the possibilities of *mai* being a higher verb or an auxiliary verb, we also consider the third possibility: *mai* as an initial main verb (V1) taking a verbal complement as in a serial verb construction. We conclude that *mai* is a negative auxiliary.

The presentation is organized as follow. We at first briefly introduce Kavalan, and then present the examinations of *mai* as an initial main verb in a serial verb construction, a higher verb taking a full sentential complement, or an auxiliary verb to lexical verb. Finally we will give a conclusion.

3. Description of Kavalan

Kavalan is one of the Formosan languages spoken by the aboriginals living in the plains of Eastern Taiwan. The population is about 820 now[5]; however, less than 100 can speak Kavalan fluently (Chang 2000a). In Nov. 2002, Kavalan tribe is legitimately recognized as the 11th Taiwan aboriginal tribe.

Kavalan is a verb-initial language, and the basic word order is VOS in that the grammatical subject in nominative case tends to be placed in the sentence-final position

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[5] The data is cited from the website of the Council of Indigenous Peoples, Executive Yuan, Taiwan. (http://others.apc.gov.tw/popu/9403/aprp5803.htm)

(as discussed in Yeh 2004), as illustrated in (7) and (8)[6].

(7) *p-m-ukun*   *tu*   *wasu*   *'nay*   *(ya)*   *ci*   *buya*
     AV-hit   Obl   dog   that   (Nom)   Ncm   BUYA
     'Buya hits that dog.'

(8) *pukun-an-na$_i$*   *ni*   *buya$_i$*   *(ya)*   *wasu*   *'nay*
     hit-NAV-3Sg.Gen   Gen   BUYA   (Nom)   dog   that
     'Buya hits that dog.'

As can be seen, Kavalan has two voice options, Actor Voice (AV) and Non-actor Voice (NAV). In AV clauses, the actor is selected to be the sentence subject (as in (7)), while in NAV clauses, it is the non-actor (e.g., patient) that is the grammatical subject (as in (8)). The actor in a NAV clause is marked with genitive case (8), and the patient is an AV clause is marked with oblique case (7).

Moreover, there are two types of bound pronouns in Kavalan: nominative bound pronouns (such as *–iku* in (5)) and genitive bound pronouns (such as *–na* in (8)). Chang (1997; 2000a) has argued that these two types of pronouns have different morphological status. The nominative ones are pronominal clitics, while the genitive ones are verbal agreement affixes that only occur in NAV clauses.

In terms of negation, *mai* is the most commonly used negator in Kavalan. It is used to negate sentences with all types of non-nominal predicates (including verbal, adjectival, and locative, as in (9)-(11))[7]. The adding of *mai* to the clause-initial position of the positive counterparts does not change the word order or the form of the main predicates.

(9) (Verbal)
   a. *p-m-ukun*   *tu*   *wasu*   *'nay*   *ci*   *buya*
      AV-hit   Obl   dog   that   Ncm   BUYA
      'Buya hits that dog.'

   b. **mai**   *p-m-ukun*   *tu*   *wasu*   *'nay*   *ci*   *buya*
      Neg   AV-hit   Obl   dog   that   Ncm   BUYA
      'Buya doesn't hit that dog.'

(10) (Adjectival)
   a. *ibabaw*   *ci*   *buya*
      tall   Ncm   BUYA
      'Buya is tall.'

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[6] Based on discourse data, Yeh (2004) argues for a strong tendency of VOS order in Kavalan, contrary to the common observation of word order as VSO in AV clauses as discussed in Lee (1997), Chang (1997, 2000a) and Liao (2004).

[7] In Yeh et al. (1998), negative locative sentences and negative possessive/existential sentences are grouped together. Kavalan is however in a different case. Negative locative sentences, structurally different from negative possessive/existential sentences, are rather parallel to, and therefore should be classified with negative declarative constructions.

b. ***mai***   *ibabaw*   *ci*   *buya*
    Neg   tall   Ncm   BUYA
    'Buya is not tall.'

(11) (Locative)

    a. *ta-nawung-an*   *ci*   *abas*
     Loc-mountain-Loc   Ncm   ABAS
     'Abas is in the mountain.'

    b. ***mai***   *ta-nawung-an*   *ci*   *abas*
     Neg   Loc-mountain-Loc   Ncm   ABAS
     'Abas is not in the mountain.'

4. Syntactic Category of *mai*

We now turn to examine the syntactic category of *mai*. As has been mentioned, *mai* appears to act like a verb due to its clause-initial position and its ability to attract nominative bound pronouns as well as tense/aspect markers (as in (4)-(6)). There are three possibilities of the syntactic category of *mai*. First, *mai* may be the initial main verb (V1) taking a verbal complement as in a serial verb construction. Second, *mai* may be a higher negative verb selecting a full (finite) sentential complement, literally equivalent to 'It is not (true) that ….'. And third, *mai* may act as a finite auxiliary to the following lexical verb. These three possibilities are examined respectively.

4.1 *mai* as V1 in serial verb constructions

We at first test if *mai* functions as a main verb taking a verbal complement as in a serial verb construction. In some respects, Kavalan negative declarative constructions seem to be similar to serial verb constructions, as proposed in Lord (1993), Stewart (2001), and Crowley (2002), where two (or more) verbs share a single subject without a covert connective marker in between. For instance, neither the complementizer *tu* nor the conjunctive *atu* 'and' can occur between two verbs in a serial verb constructions (as in (12)), or between *mai* and the following verb (as in (13)).

(12) *paska*   **tu/*atu*   *q-em-an*   *tu*   *Rak*   *ci*   *abas*
     try   *Compl/*and   AV-eat   Obl   alcohol   Ncm   ABAS
     'Abas tries to drink alcohol.'

(13) *mai*   **tu/*atu*   *q-em-an*   *tu*   *Rak*   *ci*   *abas*
     Neg   *Compl/*and   AV-eat   Obl   alcohol   Ncm   ABAS
     'Abas doesn't drink alcohol.'

Moreover, tense/aspect markers obligatorily attach to *mai* instead of to the following lexical verb in a negative declarative construction (as in (15)), as they do to V1 in a serial verb construction (as in (14)).

(14) a. *paska-**ti***   *q-em-an*   *tu*   *Rak*   *ci*   *abas*
     try-Pfv   AV-eat   Obl   alcohol   Ncm   ABAS
     'Abas has tried to drink alcohol.'
     b. * *paska q-em-an-**ti** tu Rak ci abas*

(15) a. *mai-**ti***   *q-em-an*   *tu*   *Rak*   *ci*   *abas*
     Neg-Pfv   AV-eat   Obl   alcohol   Ncm   ABAS
     'Abas doesn't drink alcohol anymore.'
     b. * *mai q-em-an-**ti** tu Rak ci abas*

However, treating negative declarative sentences as serial verb constructions in which *mai* functions as V1 would face two problems. First, the initial verb (V1) in a serial verb construction must be a lexical verb that names an action, event, process, or state (Sebba 1987; Lord 1993; Stewart 2001). *mai* in (13) and (15) is however not so semantically contentive as *paska* 'try' in (12) and (14); it merely conveys a negative value to the following lexical verb 'eat'.

A more serious problem lies in that the non-initial verb (V2) in a true serial verb construction in Kavalan is strictly restricted to be in AV form, while V2 (i.e., the lexical verb following *mai*) in a negative declarative construction can be in either AV or NAV form. Consider the examples (16) and (17).

(16) a. *paska-iku*   ***q-em-an*** *tu*   *Rak*
     try-1Sg.Nom   AV-eat   Obl   alcohol
     'I try to drink alcohol.'

     b. * *paska*   ***qan-an**-ku*   *tu/(ya)*   *Rak*
        try   eat-NAV-1Sg.Gen   Obl/(Nom)   alcohol

     c.   *paska-an-ku*   ***q-em-an*** *(ya)/*tu*   *Rak*   *'nay*
        try-NAV-1Sg.Gen   AV-eat   (Nom)/*Obl   alcohol   that
        'I try to drink the alcohol.'

     d. * *paska-an-ku*   ***qan-an***   *(ya)*   *Rak*   *'nay*
        try-NAV-1Sg.Gen   eat-NAV   (Nom)   alcohol   that

(17) a. *mai-iku*   ***q-em-an*** *tu*   *Rak*
     Neg-1Sg.Nom AV-eat   Obl   alcohol
     'I don't drink alcohol.'

     b. *mai***qan-an**-ku*   *(ya)/*tu*   *Rak*   *'nay*
       Neg   eat-NAV-1Sg.Gen   (Nom)/Obl   alcohol   that
       'I don't drink the alcohol.'

As can be seen, no matter whether V1 in a true serial verb construction is in AV (as in 16a, b) or NAV (as in 16c, d) form, V2 must be in AV form. But V2 (i.e., the verb following *mai*) in a negative construction can be freely in AV (as in 17a) or NAV (as in 17b) form. In addition, in a true serial verb construction, the case of the theme

argument is assigned by V1 instead of by V2. Therefore, *Rak* 'alcohol' in (16c) takes nominative case (from *paska-an*) instead of oblique case (from *q-em-an*). By contrast, the theme argument of a negative declarative construction gets its case from V2 (i.e., the verb following *mai*). As shown in (17b), *Rak* 'alcohol' takes nominative case (from *qan-an*) rather than oblique case.

      In summary, the evidence above stands against analyzing *mai* as the initial main verb (V1) taking a verbal complement as in a serial verb construction.

4.2 *mai* as a higher verb
Next we examine whether *mai* is a higher verb taking a full sentential complement, literally equivalent to 'It is not true that…'. According to Payne (1985), two features are required for a negative marker to be classified as a higher verb. First, there should be a full sentential boundary, such as a complementizer, between the negative verb and the lexical verb. And second, the sentential complement selected by the higher negative verb is generally finite and contains its own tense/aspect markings and/or the subject.

      Kavalan *sazmaken* 'believe' provides an example of a higher verb taking a finite sentential complement. Consider the examples (18)-(20).

(18) *sazmaken-iku*   *(tu)*   *q-em-an-**ti*** *ci*   *buya*   *tu*   *Rak*
     believe-1Sg.Nom (Compl) AV-eat-Pfv Ncm BUYA Obl alcohol
     'I believe (that) Buya has drunk alcohol.'

(19) *sazmaken-**ti**-iku*   *(tu)*   *q-em-an* *ci*   *buya*   *tu*   *Rak*
     believe-Pfv-1Sg.Nom (Compl) AV-eat   Ncm BUYA Obl   alcohol
     'I have believed (that) Buya drinks alcohol.'

(20) *sazmaken-**ti**-iku*   *(tu)*   *q-em-an-**ti*** *ci*   *buya*   *tu*   *Rak*
     believe-Pfv-1Sg.Nom (Compl) AV-eat-Pfv   Ncm BUYA Obl alcohol
     'I have believed (that) Buya has drunk alcohol.'

The optional complementizer *tu* in (18)-(20) indicates a sentential boundary between *sazmaken* 'believe' as a matrix higher verb and its clausal complement. Moreover, example (18) proves the embedded clause to be finite since it contains its own aspect *-ti* that scopes only over the embedded domain, not over the matrix domain. The aspectual marker can of course attach to the matrix verb *sazmaken* as in (19); but in this case, the aspectual scope is restricted to the matrix clause. Example (20) demonstrates that the matrix and the embedded clauses can have their own aspects at the same time.

      We argue against treating *mai* as a higher verb as *sazmaken* selecting a full sentential complement because negative declarative constructions in Kavalan lack the two features mentioned above. The unacceptability of the occurrence of a complementizer *tu* between *mai* and the following lexical verb is attested in (21).

(21) *mai*   **tu*   *q-em-an* *tu* *Rak*   *ci*   *abas*
     Neg   **Compl AV-eat Obl alcohol Ncm   ABAS
     'Abas doesn't drink alcohol.'

Most crucially, when there is a perfective marker *-ti* or a future marker *-pa*, it obligatorily attaches to *mai* rather than to the following lexical verb, as shown in (22) and (23) below.

(22) a. *mai-**ti***   *q-em-an tu Rak   ci   abas*
      Neg-Pfv   AV-eat   Obl   alcohol   Ncm   ABAS
      'Abas doesn't drink alcohol anymore.'
b. * *mai q-em-an-**ti** tu Rak ci abas*
c. * *mai-**ti** q-em-an-**ti** tu Rak ci abas*

(23) a. *mai-**pa***   *q-em-an tu Rak   ci   abas*
      Neg-Fut   AV-eat   Obl   alcohol   Ncm   ABAS
      'Abas will not drink alcohol.'
b. * *mai qan-**pa** tu Rak ci abas*
c. * *mai-**pa** qan-**pa** tu Rak ci abas*

The ungrammaticality of (22b) and (22c) as well as of (23b) and (23c) demonstrates that *mai* behaves differently from *sazmaken*, which is a true higher (matrix) verb taking a full sentential complement. If the constituents following *mai* were indeed a sentential complement, the tense/aspect markers should be possible to attach to the verbal predicate of the complement, contrary to the fact.

Furthermore, the placement of nominative bound pronouns in negative declarative constructions provides additional evidence against analyzing the constituents following *mai* as finite sentential complement.
Consider example (24).

(24) a. *mai   q-em-an-**iku**   tu   Rak*
      Neg AV-eat-1Sg.Nom   Obl   alcohol
      'I don't drink alcohol.'

     b. *mai-**iku** q-em-an tu Rak*
      'I don't drink alcohol.'

This example demonstrates clitic climbing which is a type of head movement that will be blocked by intervening C, finite Infl, Neg, and clitics (Rosen 1989; Moore 1994; Haegeman 1995; Chang 1997). The fact that the nominative pronominal clitic *-iku* in (24) can undergo clitic climbing suggests that there is not an intervening T'-head between *mai* and the following lexical verb. If the constituents following *mai* were a sentential complement, there would be a finite Infl or C projection which would block clitic climbing, contrary to the fact.

Evidence above proves that *mai* is not a higher negative verb taking a full sentential complement.

4.3 *mai* as an auxiliary verb

Finally, we consider the possibility of *mai* being a negative auxiliary verb to the lexical verb. Previous discussions have revealed that *mai* in Kavalan behaves in many ways like an auxiliary verb. For one thing, the existence of the complementizer *tu* as a full

sentential boundary between *mai* and the following lexical verb is disallowed, as shown in (21).

For the other, the tense/aspect markers *-ti* and *-pa* that originally attach to the lexical verbs in affirmative declarative constructions are obligatorily attracted to *mai* in negative counterparts, as shown in (25) and (26)

(25) a. *q-em-an-**ti***   *tu*   *Rak*   *ci*   *abas*
      AV-eat-Pfv   Obl   alcohol   Ncm   ABAS
      'Abas has drunk alcohol.'

   b. (i) *mai-**ti***   *q-em-an*   *tu*   *Rak*   *ci*   *abas*
      Neg-Pfv   AV-eat   Obl   alcohol   Ncm   ABAS
      'Abas doesn't drink alcohol anymore.'
      (ii) * *mai q-em-an-**ti** tu Rak ci abas*

(26) a. *qan-**pa***   *tu*   *Rak*   *ci*   *abas*
      eat-Fut   Obl   alcohol   Ncm   ABAS
      'Abas will drink alcohol.'

   b. (i) *mai-**pa***   *q-em-an*   *tu*   *Rak*   *ci*   *abas*
      Neg-Fut   AV-eat   Obl   alcohol   Ncm   ABAS
      'Abas will not drink alcohol.'
      (ii) * *mai qan-**pa** tu Rak ci abas*

In addition to tense/aspect markings, *mai* serves as well as an obligatory carrier of the suffix *-pama* 'yet' and of the hedge discourse marker *-ma*, as shown in (27) and (28) respectively.

(27) a. *q-em-an-**pama***   *tu*   *Rak*   *ci*   *abas*
      AV-eat-still   Obl   alcohol   Ncm   ABAS
      'Abas still drinks alcohol.'

   b. (i) *mai-**pama***   *q-em-an*   *tu*   *Rak*   *ci*   *abas*
      Neg-yet   AV-eat   Obl   alcohol   Ncm   ABAS
      'Abas hasn't drunk alcohol yet.'
      (ii) * *mai q-em-an-**pama** tu Rak ci abas*

(28) a. *q-em-an-**ma***   *tu*   *Rak*   *ci*   *abas*
      AV-eat-DM   Obl   alcohol   Ncm   ABAS
      'Abas drinks a little alcohol.'

   b. (i) *mai-**ma***   *q-em-an*   *tu*   *Rak*   *ci*   *abas*
      Neg-DM   AV-eat   Obl   alcohol   Ncm   ABAS
      'Abas doesn't drink much alcohol.'
      (ii) * *mai q-em-an-**ma** tu Rak ci abas*

In view of the evidence above, we would like to propose that *mai* in Kavalan

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negative declarative constructions is more like a negative auxiliary verb. Nevertheless, it is notable that *mai* is not so pure as the case in Evenki (as in (3)) where the negative auxiliary attracts all the verbal inflections, including person/number, tense, aspect and mood. Payne (1985) mentions it is possible that person and/or number distinctions may totally fail to be manifested on the negative auxiliary verb, with the result of compensatory markings on the lexical verb. This is also the case concerning Kavalan genitive bound pronouns which have been argued in Chang (1997) to be verbal agreement affixes, as shown in (29).

(29) a. *mai   pukun-an-__na__ᵢ   ni   buya__ᵢ   ci   abas*
      Neg   hit-NAV-3Sg.Gen   Gen BUYA   Ncm   ABAS
      'Buya doesn't hit Abas.'
   b. * *mai-__na__ᵢ pukun-an __ni buya__ᵢ ci abas*

As can be seen, in negative declarative constructions with NAV lexical verbs, the genitive bound pronouns must attach to the NAV lexical verb (as in (29a)) rather than to the negative auxiliary verb *mai* (as in (29b)). This suggests that *mai* is not a purest auxiliary that can attract all the verbal inflections. If it were, we would find it possible to carry the person/number agreement affixes as the tense auxiliaries *wada* and *maha* do in Seediq, another Formosan language, as illustrated in (30).

(30) Seediq (Chang 1997: 99)
   a. *wada-__ku__ⱼ-__na__ᵢ*   *bube-un   na pawan__ᵢ   ka   yaku__ⱼ*
      Past-1Sg.Nom-3Sg.Gen   beat-NAV   Gen PAWAN Nom   1Sg
      'Pawan beat me.'

   b. *maha-__ku__ⱼ-__na__ᵢ*   *bube-un   na pawan__ᵢ   ka   yaku__ⱼ*
      Fut-1Sg.Nom-3Sg.Gen   beat-NAV   Gen PAWAN Nom1Sg
      'Pawan will beat me.'

In (30), tense auxiliaries in Seediq, unlike the negative auxiliary *mai* in Kavalan, can carry the person/number agreement affixes (i.e., *-ku* and *-na* in this case).

5. Conclusion and implications

In conclusion, we claim that *mai* in Kavalan is not an initial main verb taking a verbal complement as in a serial verb construction or a higher verb selecting a full sentential complement. Instead, *mai* acts as a negative auxiliary verb that attracts most of the verbal inflections except for person/number agreement affixes.

The finding in this study helps to further examine the structural position of *mai* within the framework of Principles-and-Parameters Theory (also known as Government and Binding Theory). Based on the finding, Yeh (2005) claims that *mai* heads a functional negative projection (NegP) between TP and AgrP and functions as a potential intervening head which blocks V-movement (see also Pollock 1989; Ouhalla 1990; Belletti 1990; Haegeman 1995). This phrase structure explains the syntactic distribution of verbal inflections (such as tense/aspect and person/number agreement affixes) in Kavalan negative declarative constructions.

In addition to the declarative constructions as discussed in this paper, *mai* can

also appear in possessive/existential constructions as well. In this respect, Kavalan differs typologically from many other Formosan languages (Amis, Atayal, Bunun, Paiwan, Puyuma, Rukai, Seediq, Tsou, Yami), which use different negators in possessive/existential and declarative constructions, in that its negative possessive/existential are marked by the same negator *mai* though *mai* in these two types of constructions belongs to different syntactic categories. In possessive/existential constructions, *mai* functions as a lexical main verb rather than as a negative auxiliary verb. As shown in (31)-(32), *mai* is the sole verbal predicate and in terms of the case realization of nominal arguments, *mai* in possessive/existential constructions behaves as a (negative) transitive verb which obligatorily assigns only oblique case to the possessed or existed entity.[8] This observation accords with Zeitoun et al. (1999: 40) in which they suggest that in Formosan languages "the constituent usually heading existential, possessive, and locative constructions should be treated as a verb".[9]

(31) *mai* in possessive constructions
a. *mai   *(tu)   wasu   ci   buya*
   Neg   Obl   dog   Ncm   BUYA
   'Buya doesn't have a dog.'

b. *mai-iku   *(tu)   kelisyu*
   Neg-1Sg.Nom   Obl   money
   'I don't have money.'

(32) *mai* in existential constructions
a. *mai   tu/(*ya)   benina   (*'nay)   ta   babaw   na   takan*
   Neg   Obl/(*Nom)   banana   *that   Loc   above   Gen   table
   'There is no banana on the table.'

b. *mai   tu/(*ya)   razat   (*'nay)   ta-repaw-an*
   Neg   Obl/(*Nom)   person   *that   Loc-house-Loc
   'There is nobody home.'

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[8] In possessive constructions, if the possessed is replaced with a nominative case, the meaning will change and the implication of possession does not exist anymore.
(i) *mai   (ya)/*tu   wasu ni   buya*
    Neg   (Nom)/*Obl   dog   Gen   BUYA
    'Buya's dog is gone/dead.'
     * 'Buya doesn't have a dog.'
(ii) *mai   (ya)/*tu   kelisyu-ku*
     Neg   (Nom)/*Obl   money-1Sg.Gen
     'My money is gone (lost).'
      * 'I don't have money.'

[9] This claim is only partially true for the Kavalan data because mai in possessive/existential constructions indeed functions as a verb, mai in locative sentences is syntactically parallel to negative declarative constructions and thus should be treated as a negative auxiliary rather than as a main verb.

c. *mai   tu/(*ya)   sazay   ay   razat   (*'nay)   ta-bawa-an*
  Neg   Obl/(*Nom)   sing   Rel   person   *that   Loc-boat-Loc
  'There is no person who sings on the boat.'

In addition to a preliminary descriptive study in Chang (2000a), this paper provides a categorical analysis of the negator *mai* in Kavalan.   Moreover, the present study also provides a valuable contribution to Formosan typological studies in addition to Yeh et al. (1998) in which negative constructions of Amis, Atayal, Paiwan, Rukai, Saisiyat, and Tsou are examined.

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