2008 Austronesian Workshop
清大南島論壇工作坊

Argument Structure, Causation, and Voice in Paiwan

Li, Chao-Lin
## 2008 Austronesian Workshop

**Clearing Southern Island Symposium Work坊**

**Time:** 2008 年 5 月 10 日 (六)

**Location:** 國立清華大學人文社會學院 C310 室

**Sponsors:** 國立清華大學人類學研究所、國立清華大學語言學研究所

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<td>17:30</td>
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Workshop Protocol

1. Time limit for presentation and comment:
   a. The author has 25 minutes for paper presentation.
   b. The discussants have 10 minutes to comment on each paper.

2. Time limit for question and answer in general discussion
   a. The author has 8 minutes to response to discussants’ comments.
   b. Participants may speak after being acknowledged by the chairperson. People
      who ask question or gives comment are encouraged to provide information
      about their profession and institutional affiliation. Each question/comment is
      limited to 1.5 minutes.
   c. There is a roundtable session at the end of the workshop for general
      comments, questions and responses.

3. Please turn off cellular phone during the session.

Invited speakers

Authors (listed according to the sequence of presentation)

Lamont Lindstrom Department of Anthropology, University of Tulsa
Bill Ayres Department of Anthropology, University of Oregon
Ku, Kun-hui Institute of Anthropology, National Tsing Hua University
Hong, Li-Ju Institute of Anthropology, National Tsing Hua University
James Fox Resource Management in Asia-Pacific Program, Australian National
  University
Paula Radetzky Institute of Linguistics, National Tsing Hua University
Li, Chao-Lin Institute of Linguistics, National Tsing Hua University
Wu, Chun-ming Institute of Linguistics, National Tsing Hua University
Tseng, Chia-Hsing  Institute of Linguistics, National Tsing Hua University

Discussants

James Fox Resource Management in Asia-Pacific Program, Australian National
  University
Lamont Lindstrom Department of Anthropology, University of Tulsa
James Wilkerson Institute of Anthropology, National Tsing Hua University
Yeh, Mei-li Institute of Taiwan languages and Language Education, National Hsinchu
  University of Education

Chairs

James Fox Resource Management in Asia-Pacific Program, Australian National
  University
Elizabeth Zeitoun Institute of Linguistics, Academia Sinica
Argument Structure, Causation, and Voice in Paiwan

Chao-Lin Li
National Tsing Hua University
d938704@oz.nthu.edu.tw

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1. Introduction

Western Austronesian languages are famous for their complex voice [focus] systems. The analysis of the relationship between voice system and grammatical relations has been an attractive and a controversial issue for any linguists (see Blust 2002, Himmelmann 2002 and French 1988 for detailed overview). What is Voice? What is the relationship between four voices and argument structure? The approaches to the interaction between voice and grammatical relation have at least five frameworks: (i) voice is a subject-selection trigger, agreeing with different theta-roles of the Subject DP (Kreoger 1993, H. Y. Chang 1997, M. Y. Chang 2004), (ii) voice is a \([a \text{ EPP}]\) light verb, triggering a DP to move to a closest position relative to \(T^0\) (Aldridge 2004), (iii) voice is a case-feature reflection, a reflexive of case feature of the subject NP (Rackowski 2002, Rockowski and Richards 2005), (iv) Non-Actor Voice refers to O arguments, indicating a abstract Location cognitive domain (Huang 2005), and (v) voice is active-passive morphemes (Bloomfield 1917, Paul 1999).

The goal of this paper is twofold: First, we argue that there exist two types of morphological causative verbs in Paridrayan Paiwan: one is the causative location (incorporation) verb \(p-i\) ‘cause to be at’ and the other is the causative locatum (prefixal) verbs \(p-u\) ‘cause to have’ and \(pa\) ‘cause to have’. All of them are reflexes of PAn causative prefixes \(*pi\), \(*pu\) and \(*pa\) (cf. Blust 2003). As Blust (2003a: 451–454) points out, the PAn causative prefix \(*pi\) ‘the causative of location’ is also observed in a Formosan language Thao and on the other hand, the PAn causative prefix \(*pu\) ‘the causative of motion’ is also
observed in another two Formosan languages Puyuma and Thao. We adopt Hale and Keyser’s (1993, 2002; henceforth H&K) L(lexical)-syntax model to explain three types of morphological causation in Paiwan. We argue that there exist two types of bound verbs, that is, $V_{\text{LOC}} i$- ‘be at’ and $V_{\text{HAVE}} u$- ‘have’ and $\varnothing$ ‘have’ in Paiwan. The former takes a Location NP complement while the latter takes a Theme NP complement. In this way, the causative verb $p-i$- ‘cause to be at’ can only incorporate a Location NP rather than a Theme NP in order not to violate ECP. Similarly, the causative $p-u$- ‘cause to have’ and $pa$- ‘cause to have’ can only attract a Theme NP such that the trace can be properly governed.

Second, we will show how argument structure of the causation constructions is related to voice in Paiwan. It has been observed that the there exists an asymmetrical relationship among Non-Actor Voices (or Undergoer Voices): Locative Voice (LV) and Instrument/Beneficiary Voice (I/BV) functions like applicative heads, promoting a peripheral argument (which is not s-selected and c-selected by the verb) into a core-argument, i.e. Subject argument while the Patient Voice (PV) triggers a s-selected (and may c-selected) argument into Subject argument. Moreover, it is also noted that there exists an agreement mismatch between Undergoer Voices and the theta role of a grammatical Subject. For example, in Atayalic languages and Kimaragan, an Austronesian language outside Taiwan, I/BV triggers a Theme argument as a grammatical Subject in the change-of-location constructions, as illustrated in (1-3).

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1 Teng (2007) points out that Blust (2003) fails to distinguish two types of causative $pu$- in Puyuma. One type is bi-morphemic $p-u$- ‘put/send sth./sb. to go to a place’, which is a counterpart of motion prefix $m-u$- ‘go to N’ and the other type is the mono-morphemic $pu$- ‘put’. In the latter section we will discuss them in a detail.
(1) Mariynax Atayal (Hunag 1995: 59&79)
   a. si-baiq=mu’ cku’ ’ulaqi’ ku’ pila’.
      IF-give=1S.BG DAT.RF child NOM.RF money
      ‘I gave the money to the child.’
   b. si-pa-qaniq ni’ yaya’ cku’ ’ulaqi’ ku’ bung’.
      IF-CAUS-eat GEN mother DAT.RF child NOM.RF sweet:potato
      ‘The sweet potato was fed to the child by Mother.’

(2) Seediq (Holmer 1999: 426)
   a. S-bege -mu Pawan lukus -mu.
      IF-give 1S.GEN Pawan clothes 1S.GEN
      ‘I give Pawan my clothes.’
   b. S-p-iimah -mu Pawan sino nii.
      IF-CAUS-drink 1S.GEN Pawan winethis
      ‘I invite Pawan to drink this wine.’

(3) Kimaragang (Kroger and Johansson 2005: 185)
   a. subaiko i-suwang inoh parai sid kadut.
      should IV-enter that(NOM) rice DAT gunnysack
      ‘You should/must put that rice into a gunnysack.’
   b. I-suwang kuh inoh parai sid kadut.
      IV-enter 1.SG.GEN that(NOM) rice DAT gunnysack
      ‘I will put that rice into the sack.’ (Kroeger 1998)

We will examine the argument structure of voices in the change-of-location verbs (i.e. placement and motion verbs) and change-of-possession verbs (i.e. ditransitive verbs). We show that the change-of-location constructions split into two sub-types: in Type 1 the argument structure of patient voice marks the Goal argument as grammatical Subject while in
Type 2 the argument structure of patient voice marks the Theme argument as grammatical subject. Again, in Type 1 the instrument/beneficiary voice marks out the Theme Subject while in Type 2 the instrument/beneficiary voice marks out a Goal Subject. Moreover, the change-of-possession construction patterns with Type 1 change-of-location construction. The argument structures of causation constructions in Paiwan are summarized in Table 1.

<table>
<thead>
<tr>
<th>Constructions</th>
<th>Type</th>
<th>Voice</th>
<th>Verb Form</th>
<th>Meaning</th>
<th>Case Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Agent</td>
</tr>
<tr>
<td>change-of-location</td>
<td>I</td>
<td>AV</td>
<td>pa-djekec</td>
<td>lodge</td>
<td>NOM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PV</td>
<td>pa-djekec-en</td>
<td></td>
<td>GEN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/BV</td>
<td>si-pa-djekec</td>
<td></td>
<td>GEN</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>AV</td>
<td>l&lt;em&gt;ui</td>
<td>fill</td>
<td>NOM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PV</td>
<td>l&lt;in&gt;ui</td>
<td></td>
<td>GEN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/BV</td>
<td>si-lui</td>
<td></td>
<td>GEN</td>
</tr>
<tr>
<td>change-of-possession</td>
<td></td>
<td>AV</td>
<td>v&lt;en&gt;ai</td>
<td>give</td>
<td>NOM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PV</td>
<td>v&lt;in&gt;ai</td>
<td></td>
<td>GEN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/BV</td>
<td>si-vai</td>
<td></td>
<td>GEN</td>
</tr>
</tbody>
</table>

The organization of this paper is as follows: Section 2 gives a brief overview of the approaches to the interface between argument structure and syntax. Section 3 involves the argument structure of three types of morphological causative verbs in Paiwan. We adopt H&K’s (1993, 2002) L-syntax model to explain why different verbs attract complements with different theta-roles. Moreover, we also give a comparison with other Formosan languages such as Puyuma, Amis, Thao and Pazeh. In Section 4 we examine two verb classes, i.e. change-of-location verbs (including placement verbs and motion verbs) and change-of-possession verbs, and their argument structures of voices. We argue that Type 1 change-of-location verbs and change-of-possession verbs can be decomposed into a CAUSE head and a HAVE head while Type 2 verbs comprise of a CAUSE head and a LOCATE head. In light of such predicate decomposition, we can explain why the Instrument/Beneficiary Voice
also triggers the Location argument to function as the grammatical Subject. In this way, Holmer’s generalization is also kept in Paiwan. In Section 5 we will consider the theoretical implications of object alternations in Paiwan. Finally, Section 6 is the conclusion.

2. An Overview: Interface Between Argument Structure and Syntax

Before we show the morphosyntactic patterns of voices in Paiwan, we will firstly give a brief overview of different approaches to the interface between argument structure and syntax. In Section 2.1 we will first review the lexical Event-Structure-based approach (which is referred to as the Projectionist approach proposed by Rappaport Hovav and Levin (1998) (henceforth RH&L 1998). In Section 2.2 we will look at the syntactic Functional-Category-based approach (which is called the FC Constructional approach) proposed by Borer (2005) and Hale and Keyser (1993)².

2.1 Lexical (Projectionist) Approaches

RH&L (1998: 108-109) argues that verb meaning can be decomposed into two parts: the "structural" and the "idiosyncratic". The former is encoded in terms of constants while the latter is encoded in terms of a small number of lexical-semantic templates, which are referred as event structure template via the combination of predicates (e.g. ACT, CAUSE, BECOME and etc.), modifiers (e.g. MANNER or INSTRUMENT) and variable arguments (i.e. event participants), as illustrated in Table 2.

² Rappaport Hovav and Levin (1998) calls their own lexical approach as projectionist approach and refers the syntactic approaches to constructional ones. However, the latter terminology should be confused with another functional approach, i.e. Construction Grammar. In order to distinguish one from another, the syntactic approaches are referred to as F(unctional)C(ategory)-based constructional approaches.
Table 2: Event structure template

<table>
<thead>
<tr>
<th>EVENT TYPE</th>
<th>TEMPLATE</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>[x ACT&lt;\textsc{manner/instrument}&gt;]</td>
<td>run</td>
</tr>
<tr>
<td>State</td>
<td>[x &lt;\textsc{state/place}&gt;]</td>
<td>clean</td>
</tr>
<tr>
<td>Achievement</td>
<td>[BECOME[x &lt;\textsc{state/place}&gt;]]</td>
<td>arrive</td>
</tr>
<tr>
<td>Accomplishment</td>
<td>[x CAUSE[BECOME[x &lt;\textsc{state/place}&gt;]]]</td>
<td>bloom</td>
</tr>
<tr>
<td></td>
<td>([x ACT&lt;\textsc{manner}&gt;]CAUSE[BECOME[x &lt;\textsc{state/place}&gt;]])</td>
<td>sweep the table</td>
</tr>
<tr>
<td></td>
<td></td>
<td>clean</td>
</tr>
</tbody>
</table>

RH&L (1998: 111-113) proposes a process referred to as Template Augmentation (4a), which allows complex templates to be built on simpler ones, as shown in (4). As shown in (4b), the verb complex swept clean is an accomplishment verb, which is not compatible with the duration adverbial for an hour. However, such a telic verb complex can undergo Template Augmentation process to form a simpler activity verb swept, which can be modified a duration adverbial for an hour, as illustrated in (4c).

(4) a. Template Augmentation

Event structure templates may be freely augmented up to other possible templates in the basic inventory of event structure templates.

b. [x ACT<\textsc{sweep}> y] CAUSE [BECOME [y <\textsc{state}>]]

Phil swept the floor clean (*for an hour).

c. [x ACT<\textsc{sweep}> y]

Phil swept the floor for an hour.

Moreover, RH&L (1998: 112) also proposes two conditions on syntactic realization of arguments, i.e. Subevent Identification Condition (5a) and Argument Realization Condition (5b). The former insures a single verb in the syntax to identify more than one sub-event. The latter, similar with the Theta Criterion, makes sure of the perfect correspondence between
lexical semantics and syntax.

(5)  a.  **Subevent Identification Condition**

    Each subevent in the event structure must be identified by a lexical head (e.g. a V, an A, or a P) in the syntax.

b.  **Argument Realization Condition**

    i  There must be an argument XP in the syntax for each structure participant in the event structure.

    ii  Each argument XP in the syntax must be associated with an identified subevent in the event structure.

2.2  **Syntactic (FC-based Constructional) Approaches**

    Several authors took the view that the notion of event is structurally defined in the syntax. This view is often referred to as the (functional-based) constructional approach. For example, Borer (2005) develops a quiet radical version of such an approach and argues that DP arguments are not arguments of the verb at all but solely arguments of aspectual functional projections. The verb is a modifier of the event structure. Consider the following examples:

(6)  Borer (2005: 92-94)

    a.  Kim stuffed the pillow with the feathers (in two hours).

    a'.  [ep Kim [λe_6 [TP Kim [T [ASP QP [the pillow [λe_6 [L-D [λ_ stuffed [pp with feathers]]]]]]]]]]

    b.  Kim stuffed the feathers into the pillow (in two hours).

    b'.  [ep Kim [λe_6 [TP Kim [T [ASP QP [the feathers [λe_6 [L-D [λ_ stuffed [pp into feathers]]]]]]]]]
Within such an approach, the verb *stuff* in (6a-b) is not categorized into bound change-of-location event. Rather, any verb must receive any kind of eventive interpretation depending on its syntactic context, i.e. the functional category projection. Thus, the verb *stuff* combines with an aspectual [+Q(antifiable)] functional projection AspQ, it will acquire a telic interpretation and the argument in the [Spec, AspQ] will be interpreted as the delimiter participant of the event.

Second, Hale and Keyser (1993, 2002; henceforth H&K) develop a model, in which predicative categories are associated with syntactic structure referred to as L-syntax. H&K’s model proposes that event structures are encoded in the syntax in terms of specifier-head and head complement relations, in which the basic elements are the traditional part-of-speech categories (e.g. V, N, A, P). Based on the parallel between the examples (7a-b), they propose that all English verbs contain more syntax, as illustrated in (7a’-7b’). Based on Larson’s (1988) VP-shell structure, the verb *put* in (7a) can be decomposed into two verbal predicates in the L-structure, i.e. the causative V₁ e and the lexical V₂ put, and it finally surfaces as the verb *put* via head-to-head movement. On the other hand, the location verb *shelved* in (7b) is derived from incorporating a Location complement into a locative P head, then cyclic head-moving into the lexical V₂, causative V₁ and [+ past] T⁰, and finally surfacing as the location verb *shelved*.

(7)  

    a. John put his books on the shelf.

    a’. [vp₁ John [v₁1 [vp₂ his books [v₂ put [rp on the self]]]]]

    b. John shelved his books.

    b’. [vp₁ John [v₁1 shelfe₁ [vp₂ his books [v₂ ti [rp ti ti]]]]]

In this paper, we will adopt H&K’s L-syntax model to explain the differences and similarities
of three types of morphological causative verbs.

3. Argument Structure and Causation

In Section 3.1 we will show three types of morphological causative verbs in Paiwan: Type I is the caused location verb p-i- ‘put’ while Type II and type III are the caused locatum verbs p-u- ‘cause to acquire/have’ and pa- ‘apply to’. In Section 3.2 H&K’s (1993, 2002) L-syntax model is adopted to show different semantic head attract complement with different theta-role. Section 3.3 gives a comparison with other Formosan languages.

3.1 Three Types of Morphological Causation

3.1.1 Type I: p-i- ‘put’

In Paiwan both the location verb i(-) ‘be at’ and the caused location verb p-i(-) ‘put’ can incorporate a Location argument cukui ‘table’ in (5)\(^3\). On the other hand, the Theme argument hung ‘book’ in (5) occurs outside the verb complex i-cukui ‘on the/a table’, and it is marked with an oblique case.

\[(5)\]
\[
a. \quad \text{i-cukui} \quad \text{a} \quad \text{ku-hung.}
\]
\[
\text{AV.be.at-table} \quad \text{NOM 1S.GEN-book}
\]

‘My book is on the/a table.’

b. \quad \text{ku-p<-in>-i-cukui} \quad \text{a} \quad \text{hung.}

\[
\text{1S.GEN-CAUS<-PFV.PV>-be.at-table NOM book}
\]

‘I put the book on the/a table.’

Moreover, the incorporation of a Theme argument will result in (semantic) infelicity, as shown in (6). As shown in (6a-b), the interpretation that the entity cukui ‘table’ is located on

\[^{3}\text{See Change and Wu 2005 for details of incorporation analysis.}\]
another entity *hung* ‘book’ is the only available one. However, the Ground entity *cukui* ‘table’ is hard to be located in the Figure entity *hung* ‘book’ in human cognitive system, thus a semantic infelicity raises (cf. Talmy 2000: 312).

(6) a. ??i-hung a cukui.

   AV.be.at-book NOM table

   ‘??The table is on the book.’; #‘The book is on the table.’

b. ??ku-p<in>-i-hung a cukui.

   1S.GEN-CAUS<-PFV>PV>-be.at-book NOM table

   ‘??I put the table on the book.’; #‘I put the book on the table.’

3.1.2 Type II: *p-u*- ‘cause to acquire’

In contrast to the caused location verb *p-i*- ‘put’, the affixal caused locatum verb *p-u*- ‘cause to acquire/have’ takes a Theme complement and attaches such an argument, as shown in (7). As we can see in (7a), the Theme argument *makalilaw* ‘fabric’ immediately follows the verb and precedes the nominative clitic =aken ‘I’, indicating the bound verb *p-u*- ‘put’ with its complement *makalilaw* ‘fabric’ behaves like a common verb. Moreover, such a verb complex can appear in Patient Voice (PV), with the Location argument as Subject (7b), and occurs in Instrument Voice (IV), with an Instrument (or Theme) argument as a Subject (7c).

(7) a. p-u-makalilaw=aken tua ’ereng-an.

   AV.CAUS-have-fabric=1S.NOM OBL lie-LOC

   ‘I spread a fabric on the bed.’

b. ku-p<in>-u-makalilaw a su-’ereng-an.

   1S.GEN-CAUS<-PFV>PV>-have-fabric NOM 2S.GEN-lie-LOC

   ‘I spread a fabric on you bed.’
Moreover, the caused locatum verb _p-u_- differs from the caused location verb _p-i(-)_ in that (i) the former cannot incorporate any case marker while the latter can, as illustrated by the contrast between (8a) and (8b), and (ii) the Theme argument occurs within the deverbal nominal in the former type while the Theme argument must occurs outside the deverbal nominal in the latter type, as shown in (9). As shown in (9a), the Theme argument _atia_ ‘salt’ serves as a stem of the deverbal nominal _puantian_ ‘salt container’ while the same argument appears outside the deverbal nominal _papizuan_ ‘container of an entity’, as illustrated in (9b).

(8) a. na-p-i-tua-gaku=aken tua su-zidrusia.
   PFV-AV.CAUS-be.at-OBL-school=1S.NOM OBL 2S.GEN-car
   ‘I parked your car in the school.’

b. na-p-u(-*tua*)-makalilaw=aken tua 'ilatj-an.
   PFV-AV.CAUS-have-OBL-fabric=1S.NOM OBL lie-LOC
   ‘I spread a fabric on the chair.’

(9) a. na-pacun=anga=sun tua ku-p-u-atia-(an)?
   PFV-AV.see=COS=1S.NOM OBL 1S.GEN-CAUS-have-salt-NMLZ
   ‘Did you see my salt container?’

b. na-pacun=anga=sun tua ku-pa-p-i-za-(an) tua atia?
   PFV-AV.see=COS=1S.NOM OBL 1S.GEN-RED-CAUS-be.at-there-NMLZ OBL salt
   ‘Did you see my salt container?’
3.1.3 Type III: \textit{pa}- `apply to'

Another type of caused locatum verbs involves \textit{pa}- verbs in Paiwan. This type of verb complex comprises of a general causative head \textit{pa}- and a Theme argument, as shown in (10). This type patterns with the \textit{p-u}- verbs in Paiwan in that (i) in (10a) the verb complex \textit{pukava} `dress' appears in Actor Voice (AV), with the Actor argument as the Subject, (ii) the same verb co-occurs with Patient Voice (PV), with the Goal/Receipt argument as the Subject (10b), and (iii) the verb is inflected by Instrument Voice (IV), with an Instrument (or Theme) argument as a Subject, as shown in (10c).

(10) a. pa-kava=(a)ken tjay camak tua su-kava.
\hspace{1cm} AV.CAUS-cloth=1S.NOM OBL Camak OBL 2S.GEN-cloth
\hspace{1cm} `I dressed Camak with your garment.'

b. ku-pa-kava-in ti camak tua su-kava.
\hspace{1cm} 1S.GEN-CAUS-cloth-PV NOM Camak OBL 2S.GEN-cloth
\hspace{1cm} `I dressed Camak with your garment.'

c. ku-si-pa-kava a su-kava tjay camak.
\hspace{1cm} 1S.GEN-IV-CAUS-cloth NOM 2S.GEN-cloth OBL Camak
\hspace{1cm} `I dressed Camak with your garment.'

3.2 Morphological Structure and L(exical)-syntax

Here we adopt H&K's L-syntax model for two reasons: First, it is not clear in a lexical projectionist approach why only a Location DP argument rather than a Theme DP argument can be incorporated into caused location verb \textit{p-i}- `put' and why only a Theme argument instead of a Location argument, on the other hand, can be attracted onto caused locatum verbs \textit{p-u}- `cause to acquire' and \textit{pa}- `apply to' in Paiwan. For example,
(11) a. ku-p-<in>-i-cukui a hung.

1S.GEN-CAUS-<PFV>PV-be.at-table NOM book

'I put the book on the/a table.'

b. \[[\text{ACT}_{PUT}^>(ku-, hung,i)]\text{CAUSE}\text{BECOME}[\text{BE.AT}(\text{hung,i}, \text{cukui})]]\]

As we can see in (11b), the Theme NP hung ‘book’ and the Location NP cukui ‘table’ are both the semantic arguments of the predicate i- ‘be at’. Only in light of structural hierarchy, one can know that the Location NP is closer to the predicate. In a sense, the verb meaning also has a (semantic/conceptual) structure, as Jackendoff (1990) proposes. One advantage of the L-syntax analysis is that one can explain the distribution via a syntactic constraint: since head movement must obey ECP (cf. Baker 1998), only a complement rather a specifier can move into a head such that the trace can be properly governed. The syntactic derivation of (5b), (7b), and (10b) is shown in (12a-c).

(12) a. \[\text{IP}[^0\text{ku-p-}<\text{in}>-\text{i-cukui} possessions [\text{VOICE}\text{0} <\text{in}> [\text{VP} [\text{PCASU}\text{0} \text{pa-} [\text{VP} [\text{VAT}^0 i-] [\text{NP asukui}] [\text{hung}]] [\text{ku-}]] [\text{hung}]]]\]

b. \[\text{IP}[^0\text{ku-p-}<\text{in}>-\text{u-makalilaw} possessions [\text{VOICE}\text{0} <\text{in}> [\text{VP} [\text{PCASU}\text{0} \text{pa-} [\text{VP} [\text{VOSPE}\text{0} u-] [\text{NP kewalui}] [\text{su-erengan}] [\text{ku-}]] [\text{su-erengan}]]]\]

c. \[\text{IP}[^0\text{ku-pa-kava-in} possessions [\text{VOICE}\text{0} [\text{VP} [\text{PCASU}\text{0} \text{pa-} [\text{VP} [\text{VOSPE}\text{0} \varnothing [\text{NP kava}] [\text{camak}] [\text{ku-}]] [\text{su-kava}]]]\]

Second, we argue that such a derivation is a syntactic operation because this derivation obeys the Head Movement Constraint (HMC), as shown in (13-14). As H&K points out, the derivation of the English locatum verb shelve cannot violate HMC; therefore, the \text{N}^0 \text{shlef} cannot skip the closer head \text{P}^0 to move into the (empty causative) verb, as shown in (13b). Similarly, in (14a) the caused locatum verb \text{p-u-X} ‘cause Y to acquire X’ cannot be followed
by another head \( i - 'be at' \) since this locative head will prevent the lower head \( u - 'have' \) from head-moving into the causative head in Paiwan. In contrast, the caused location verb \( p - i - 'cause Y to be at X' \) can be followed by another locative head \( i - 'be at' \) since both are identical with each other, and it does not violate HMC, as illustrated in (14b).

(13) a. Head Movement Constraint (HMC)

Head movement of X to Y cannot skip an intervening head Z.

b. *John shelved\(i\) his books on \( t_i \).

(14) a. *p-u-\(i\)-makalilaw\(i\)=aken i t_i t_j tua 'ereng-an.

\( \text{AV.CAUS-have-fabric=1S.NOM be.at OBL lie-LOC} \)

'I spread a fabric on the bed.'

b. ku-p-\(<\text{in}>\)-i_\(k\)-tjaladj\(j\) (i)\_k t_i tua kadrung a ineptic.

\( \text{1S.GEN-CAUS-<PFV>-be.at-inside be.at OBL keg NOM pencil} \)

'I put the pencil into the keg.'

Why is such a derivation viewed as L-syntactic process? We argue that this derivation may take place in the lexicon in that it exhibits some characteristic of lexical rules, i.e. phonological idiosyncrasy, as shown in (14).

(14) a. \([pa- + i-] \to [p-i-]\)

b. \([pa- + u-] \to [p-u-]\)

3.3 A Brief comparison with Other Formosan Languages

3.3.1 Puyuma

Teng (2007) argues that there are two types of verbal affix \( pu- \) in Puyuma: One type is attached onto a locative nominal while the other is attached onto a common nominal, as
shown in (15). (The second type is also observed in Paiwan and Thao.) As shown in (15a), the causative verb p-u- ‘put into’ attracts a Location argument Takuban ‘youth house’ while in (15b) the verb attracts a Theme argument bini’ ‘seed’.

(15) Teng (2007)

a. p-u-Takuban Da lalak na ma’iDangan.
   CAUS-MOT-youth.house  ID.OBL  child  DEF.NOM  elder
   ‘The elders sent the children into Takuban.’

b. pu-a-bini’  i uma’  na babayan.
   put-PROG-seed LOC  farm  DEF.NOM  woman
   ‘The woman was sowing the seeds in the farm.’

Teng (2007) argues that the first type, e.g. the verb p-u- ‘sent/put to’ in (15a), is bi-morphemic while the latter type, e.g. the verb pu- ‘put’ in (15b), is mono-morphemic. However, it does not mean that the second type expresses simple event. As we can see in (15a-b), the verb complexes puTakuban ‘sent to youth house’ and puabini’ ‘was sowing’ both involve three event participants, i.e. an Actor role, a Theme role, and a Goal role⁴. (It has been accepted that morphological causatives should be distinguished from lexical causatives (Dixon 2000). That is, the former is analyzed to have maximum fusion of two predicates into one morpheme while the latter refers to causation derived from a non-causative predicate by affixation and therefore presents two morphemes. Here we will leave the morphemic augmentation for future research.)

⁴ Teng (2007) does not offer any evidence to prove the second type is indeed mono-morphemic. Her proposal is analogized with two types of the verbal prefix mu- in Puyuma: one is the bi-morphemic motion prefix m-u- ‘go to’ while the other is the mono-morphemic anti-causative prefix mu- ‘become’. Her only argument is based on their different argument structure.
Here we propose that \((i)\) the caused location verb *pu-* in (15a) consists of a *CAUSE* head with a *MOTION* head and \((ii)\) the caused locatum verb *pu-* in (15a) is decomposed into a *CAUSE* head with a *HAVE* head. Based on L-syntax model, the examples in (15) have the following syntactic representations (16a-b):

(16) a.  

```
...VoiceP
  Voice^0  vP
  NP_ACT
  ma'iDanGan 'elder'
  NP_ACT
  V_CAUSE
  pa-
  V_MOTION
  u-
  NP_LOC
  putakuban 'go to' 'youth house'
  NP_LOC
  VP
  NP_THE
  lalak 'child'
```

b.  

```
...VoiceP
  Voice^0  vP
  NP_CAU
  babayan 'woman'
  NP_ACT
  V_CAUSE
  pa-
  V_HAVE
  u-
  NP_LOC
  bini 'house'
  NP_LOC
  VP
  NP_THE
  'have' 'seed'
```

Finally, Puyuma also has another type of caused locatum *pa-* verbs, as shown in (17). Like Paiwan *pa-* verbs, the caused locatum verbs *pa-* 'cause to acquire' attracts a Theme argument *susu* 'breast'. The syntactic derivation of (17b) is illustrated in (17b).

(17) Huang (2001: 58)

a.  

```
pa-susu=ku Da walak.
CAUS-breast=1S.NOM OBL child
'I breast-fed a child.'
```

b.  

```
[IP [i^0 pa-susu [VOICEP [VOICE] [V_CAUSE] [V_HAVE [NP suscept]] walak]] =aken]] =aken =aken]
```
3.3.2 Amis

In Coastal Amis (Wu 2006) and Sakizaya Amis (Shen 2007) the causative *pa*- verbs can be used to denote a change-of-possession relation, as shown in (18). Wu (2006: 313) points out that when the causative *pa*- is added onto a root which refers to an object, the compositional interpretation can paraphrase as CAUSE TO HAVE. She considers non-referential Theme arguments, e.g. *nanum* ‘water’ in (18a) and *dateng* ‘vegetable’ in (18b), is omitted in such a construction and shares the same meaning with the root form.

(18) Coastal Amis (Wu 2006: 313)

a. Ma-na’ay kaku pa-nanum t-u/i sayta.
   NEUT-reluctant IS.NOM CAU-water DAT-CN/PREP soda
   ‘I don’t want to add water to the soda.’
   *(‘I don’t want to add soda (to something).’)*

b. Pa-dateng kaku t-u lafang.
   CAU-vegetable IS.NOM DAT-CN guest
   ‘I serve the guests dishes.’

(19) a. \[
\text{[...} V_{\text{phz}} \overset{0}{\text{pa-}} [V_{\text{have}} \overset{0}{\text{[NP } \underset{\text{nunum}}{\text{sayta]} } \text{ kaku}}])
\]

b. \[
\text{[...} V_{\text{phz}} \overset{0}{\text{pa-}} [V_{\text{be}} \overset{0}{\text{[PP i sayta} \underset{\text{nunum}}{\text{kaku}}])}
\]

Our L-syntax analysis can explain the non-referential property of the Theme argument and the morphological combination of the *pa*- verb complex: First, under H&K’s L-syntax framework since $D^0$ is a functional category and thus cannot be incorporated into a lexical head, the head-moved nominal element is non-referential. Second, the abstract CAUSE to HAVE & CAUSE TO BE AT alternative interpretation can be easily brought in under such a L-syntactic model: On the one hand, in (18a) when an empty verb ($V_{\text{have}}$) incorporates a Theme
argument, e.g. nanum ‘water’ and then head-moves into a causative head pa-, leaving the Location argument sayta ‘soda’ outside the verb complex pa-nunum ‘add water’, as illustrated in (19a). On the other hand, when a location head is realized as a preposition i and does not move into the higher head, the causative head pa- will attract the Theme argument nanum ‘water’, as illustrated in (19b).

3.3.3 Other Formosan languages

In this section we will compare the morphological causatives in Paiwan with those in other Formosan languages. Due to the limitation of available data, some data do not have any full sentence. We first show a brief comparison, as depicted in the following table.\(^5\)

---

\(^5\) The data sources are as follows: Paiwan data is drawn from our field notes; Puyuma data are drawn from Teng (2007), M. Huang (2001a); Bunun data come from Zeng (2006); Amis data are draw from Wu (2006) and Shen (2007). Pazeh data are drawn from Li and Tsuchida (2001); Thao data come from Blust (2003b); Kavalan data are drawn from Li and Tsuchida (2006).
Table 3: A comparison of morphological causatives in Formosan languages

<table>
<thead>
<tr>
<th></th>
<th>Caused Location (pi- Type)</th>
<th>Caused Locatum (pu- Type)</th>
<th>Caused Locatum (pa- Type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amis</td>
<td>pa-nanum (&lt; nanum) ‘add water’</td>
<td>---</td>
<td>pa-nanum (&lt; nanum) ‘add water’</td>
</tr>
<tr>
<td>Bunun</td>
<td>p-i-tumah (&lt;tumah) ‘put into the house’</td>
<td>p-u-kamasia (&lt; kamasia) ‘put sugar in’</td>
<td>pa-vadi (&lt;vadi) ‘bask in the sun’</td>
</tr>
<tr>
<td></td>
<td>p-u-nyhus (&lt;nyhus) ‘put into mouth’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kavalan</td>
<td>p-i-rubus (&lt; rubus) ‘put into pocket’</td>
<td>p-u-lamsu (&lt;lamsu) ‘pay tax’</td>
<td>pa-kawaR (&lt;kawaR) ‘offer a prize’</td>
</tr>
<tr>
<td></td>
<td>p-u-bubu (&lt; bubu) ‘trap with a basket trap’</td>
<td>p-u-iu (&lt; iu) ‘apply medicine’</td>
<td>pa-nanur-an (&lt;nanur) ‘chief’^6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paiwan</td>
<td>p-i-cukui (&lt; cukui) ‘put on a table’</td>
<td>p-u-atia (&lt; atia) ‘add salt into’</td>
<td>pa-kava (&lt; kava) ‘dress with’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pazeh</td>
<td>---</td>
<td>p-u-batu (&lt; batu) ‘pave with stones’</td>
<td>(pa-duen (&lt; duen) ‘play a gong’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puyuma</td>
<td>(p-u-Takaban ‘send to youth house’)</td>
<td>p-u-bini (&lt; bini) ‘sow (into)’</td>
<td>pa-susu (&lt; susu) ‘breast-feed’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thao</td>
<td>p-i-fafaw (&lt; fafaw) ‘put on top’</td>
<td>p-u-bunâ (&lt; bunâ) ‘put sweet potatoes into’</td>
<td>p-aqaltaha (&lt; aqaltaha) ‘provide with meat’</td>
</tr>
<tr>
<td></td>
<td>p-u-dawaz (&lt; dawaz) ‘put into a fishing net’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Before we close this section, one point deserves careful attention: First, all Formosan languages listed in Table 3 all have pa-Root type verbs; however, not all of these languages have p-u-Root type verbs or p-i-Root verbs. Thus, there seems exists a Morphological Causation Accessibility Hierarchy, as shown in (20). Such a hierarchy also confirms our working hypothesis: the causative prefix pa- is a default one.

(20) If a Formosan language has a pu-type or pi-type causative verb, this language must own a pa-type causative verb.

^6 The nominal pa-nanur-an ‘chief’ can be decomposed into a causative pa-, a nominal stem nanur ‘speech’, and a nominalizer -an in Kavalan. Its combinatory interpretation means the one who gives speech to a crowd at a meeting.
Second, we observe that the \textit{pa}-type causatives and the \textit{pu}-type causatives have two alternative interpretations, i.e. the \textsc{cause to have} and \textsc{cause to be at} interpretations while the \textit{pi}-type causatives only get the \textsc{cause to be at} interpretation. We will leave this asymmetry for future research.

4. Verb Classes, Causation and Voice

In this section we will base on Levin’s (1993) verb classification to take a closer look at the argument structures of voices in the change-of-location verb constructions and the change-of-possession verb constructions in Paiwan. Section 4.1 shows the patterns of change-of-location verbs, including putting verbs and motion verbs. Section 4.2 shows the patterns of change-of-possession verbs, including dative verbs and possessive verbs.

4.1 Change of Location

4.1.1 Putting verbs

It has been assumed that there is a (perfect) correspondence between various voices and the theta role of a Subject DP which is prompted by them (Henry Y. Chang 1997, H. Chang 2001). As shown in (21a-b), the verbs \textit{mekeekl} ‘be running’ \textit{inekel} ‘run’ appear in Actor Voice and Patient Voice, with an Actor and a Patient as grammatical Subject.

(21) Anna H. Chang (2001: 97-100)

a. m-eke-ekl ti kalalu i gaku.

\textsc{av-prog-run} \textsc{nom} Kalalu \textsc{at} school

‘Kalalu is running at school.’
b. in-ekel-anga a zua kamuku ni palang.

PF-run-PERF NOM that event GEN Palang

'I run/entered for that event.'

c. k-in-eLem-an ni palang tjay kalalu a icu a gaku.

hit-PERF-LF GEN Palang OBL Kalalu NOM this LNK school

'Palang hit Kalalu at this school.'

d. s-in-i-ekel ti kalalu ni palang.

IF-PERF-run NOM Kalalu GEN Palang

'Palang run for Kalalu.'

However, there is a mismatch between the theta role of a Subject DP and Non-Actor Voices in Putting Verb Constructions. Such a mismatch can be divided into two types: The first type involves a non-correspondence between the Patient Voice (PV) and a Location Subject, and a mismatch between an Instrument/a Beneficiary Voice (I/BV) and a Theme Subject, as shown in (22). As shown in (22a), the verb padjekedjekec ‘lodge’ appears in Actor Voice, with the correspondent Actor Subject =aken ‘I’. However, as we can see in (22b), the verb padjekecen ‘lodge’ occurs in Patient Voice, but with the Location Subject tjara ‘ring’. Again, the verb sipadjekec ‘lodge’ in (22c) appears in an Instrument/a Beneficiary Voice, however, with a Theme Subject ata ‘lazurite bead’.

(22) Putting verb: Type 1

a. pa-djeke-djekec=aken tua ata ?(p-i) tua tjara.

AV.CAUS-RED-rice⁷=1S.NOM OBL lazurite.bead CAUS-be.at OBL ring

'I am lodging a lazurite bead in a ring.'

⁷ The stem djekec refers to overcook rice, used to paste.
Moreover, we argue that the indicative Locative Voice (LV) (i.e. -an) does not co-occur with putting verbs; rather, (in Paridrayan dialect) a putting verb with the suffix -an actually is a verb with a non-indicative Instrument/Beneficiary Voice projective marker. In Paiwan the suffix -an can function as a projective head, trigger an Instrument or a Beneficiary argument as Subject, as shown in (23). In (24), only the speaker as an illocutionary actor in (24a) can occur in a genitive form; in contrast, the addressee as an illocutionary receiver in (24b) cannot be marked with a genitive marker. Furthermore, the lost of -an ‘indicative locative voice’ parallels with the non-occurrence of a non-indicative Locative Voice projective suffix -ay in Paridrayan dialect, as shown in (24c).

(23) Anna H. Chang (2001: 110)

a. vuci’-an ti palang tua ci’aw!
cut-IMP NOM Palang OBL fish
‘Cut fish for Palang!’

b. vuci’-an tua ciawa zua si’unu!
cut-IMP OBL fish NOM that knife
‘Cut fish with that knife!’
(24) a. ku-pa-djekc-an a ata p-i tua tjara, dri?
   LS.GEN CAUS-rice-BV.PROJ NOM lazurite.bead CAUS-at OBL ring OK
   ‘Let me lodge the lazurite bead in a ring, OK?’

b. pa-djekc-an, (*ni)camak, a ata p-i-tjara
   CAUS-rice-BV.PROJ GEN Camak NOM lazurite.bead CAUS-be.at-ring
   ‘Camak! lodge the lazurite bead in a ring, please!’

c. ku-pa-djekc-aw/*-ay a tjara tua ata, dri?
   LS.GEN CAUS-rice-PV.PROJ/LV.PROJ NOM ring OBL lazurite.bead OK
   ‘Let me lodge a lazurite bead in the ring, OK?’

Again, as we can see in (24a) and (24c), the non-indicative Instrument/Beneficiary Voice projective head -an triggers the Theme argument as ata ‘lazurite bead grammatical Subject and the non-indicative Patient Voice projective head -aw triggers the Location argument tjara ‘ring’ as grammatical Subject. The syntactic patterns in a non-indicative system parallel with those in an indicative system.

The second type involves the case in which an I/BV verb appears with a Location Subject. As shown in (25a), the verb lemu ‘fill’ occurs in Actor Voice, with the Actor argument =aken ‘I’ as Subject. Similarly, the verb linui ‘fill’ in (25b) is inflected by Patient Voice, with the Theme argument zaljum ‘water’ as Subject. Again, in (25c) the verb sinilui ‘fill (with)’ appears in Instrument Voice, with the Instrument argument gungu ‘rubber tube’ as Subject. However, the verb silui ‘fill’ in (25d) also occurs in Instrument Voice, but with the Location argument kadrun ‘keg’ as Subject. Again, the Instrument Voice projective verb luian ‘fill’ also triggers a Location argument kadrun ‘keg’ as Subject. Finally, various voices in Paiwan and their correspondence Subjects are summarized in Table 4.
(25) Putting verb: Type 2

a. l<em>ui=aken tua zaljum p-i-kadrung/ (*tua kadrung).
   fill<AV>=1S.NOM OBL water CAUS-be.at-keg/ OBL keg
   ‘I filled water into a keg.’

b. ku-l<in>ui a zaljum p-i-kadrung/ (??tua kadrung).
   IS.GEN-fill <PV,PV> NOM water CAUS-be.at-keg/ OBL keg
   ‘I filled the water into a keg.’

c. ku-s<in>i-lui tua zaljum p-i-kadrung a gungu.
   IS.GEN-IV<PVF>-fill OBL WATER CAUS-be.at-keg NOM rubber.tube
   ‘I fill water into a keg via the rubber tube.’

d. ku-si-lui tua zaljam a kadrung.
   IS.GEN-IV-fill OBL water NOM keg
   ‘I filled the keg with water.’

e. ku-lui-an tua zaljum a kadrung.
   IS.GEN-fill-IV.PROJ OBJ water NOM keg
   ‘Let me fill the keg with water!'

Table 4: Voice and selected subject in Paiwan

<table>
<thead>
<tr>
<th>Type</th>
<th>Meaning</th>
<th>AV</th>
<th>PV</th>
<th>LV</th>
<th>BV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>fill in</td>
<td>l&lt;em&gt;ui (Actor)</td>
<td>l&lt;in&gt;ui (Theme)</td>
<td>---</td>
<td>si-lui (Goal/Instrument)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pi-tjaldaj (Actor)</td>
<td>p&lt;in&gt;i-tjaldaj (Theme)</td>
<td>---</td>
<td>si-pi-tjaldaj (Instrument)</td>
</tr>
<tr>
<td>Type 2</td>
<td>lodge</td>
<td>pa-djekc (Actor)</td>
<td>pa-tjekc-en (Location)</td>
<td>---</td>
<td>si-pa-tjekc (Theme)</td>
</tr>
<tr>
<td></td>
<td>put</td>
<td>pu-ataia (Actor)</td>
<td>p&lt;in&gt;u-ataia (Location)</td>
<td>---</td>
<td>si-pu-ataia (Theme)</td>
</tr>
<tr>
<td></td>
<td>dress</td>
<td>pa-kava (Actor)</td>
<td>pa-kava-in (Location)</td>
<td>---</td>
<td>si-pa-kava (Theme)</td>
</tr>
</tbody>
</table>
4.1.2 Motion verbs

According to the argument structure of voice, motion verb can be divided into three groups: The Group 1A shows that all voices, except Locative Voice, can trigger a correspondent theta argument as Subject, as shown in (26). In (26a) the verb *mekekelj* ‘run’ is inflected by Actor Voice, with the Actor argument =*aken* ‘I’ as Subject. In (26b) the verb *inekelj* ‘run’ appears with Patient Voice, with the Theme argument *aekeljen* ‘race event’ as Subject. Similarly, the verb *siekelj* ‘run’ in (26c-d) occurs in Beneficiary Voice and Instrument Voice, with the Beneficiary argument =*esun* ‘you’ and the Instrument argument *kucu a tjulgagicil* ‘high-heel shoe’ as grammatical Subject.

(26) Motion verb: Group 1A

a. m-eke-kelj=aken
   AV-RED-run=1S.NOM
   ‘I am running.’

b. ku-in-ekelj=anga a icu a a-ekelj-en.
   1S.GEN-PFV.PV-run=COS NOM this LNK RED-run-NMLZ
   ‘I have run a race.’

c. ku-si-ekelj=esun.
   1S.GEN-IV-run=2S.NOM
   ‘I run for you.’

d. ku-si-ekelj a kucu a tjulgagicil
   1S.GEN-IV-run NOM shoe LNK high.heel
   ‘I run with high-heel shoes’

Again, apart Locative Voice, there exist a neat matching between various voices and grammatical Subject DP in Group 1B motion verbs, as illustrated in (27). In (27a) the verb
complex *ljevavav* ‘climb up’, which is decomposed into a motion prefix *lje-* ‘move toward’ and a local nominal *-vavav* ‘top’, is inflected by Actor Voice, with the Actor argument =aken ‘I’ as Subject. In (27b) the verb *ljevavaven* ‘climb up’ appears with Patient Voice, with the Theme argument *kasiw* ‘tree’ as Subject. Similarly, the verb *siekelj* ‘run’ in (27c-d) occurs in Beneficiary Voice and Instrument Voice, with the Beneficiary argument =esun ‘you’ and the Instrument argument *djaledjal* ‘ladder’ as grammatical Subject.

(27) Motion verb: Group 1B

a. *lje-vavav=aken* tua kasiw.
   move.toward-top=1.S.NOM OBL tree
   ‘I climb up a tree.’

b. *ku-lje-vavav-en* a kasiw.
   1S.GEN-move.toward-top-PV NOM tree

c. *ku-lje-vavav=an=esun* a ki-saviki, dri?
   1S.GEN-move.toward-top-BV.PROJ=2S.NOM LNK get-betel.nut OK
   ‘Let me climb up to get betel nuts for you, OK?’

d. *si-lje-vava-vavav* a icu a djaledjal ni camak.
   IV-move.toward-RED-top NOM this LNK ladder GEN Camak
   ‘Camak climbed up via this ladder.’

The group 1A differs from this group in that (i) the former group expresses the manner of while the latter group figures out the spatial direction of a motion event. Thus, Levin (1993) call the former as manner verbs and the latter inherent direction verbs and (ii) the AV verbs in the former group does not s-select and c-select a Theme argument while the AV verbs in the latter group s-/c-select a Theme argument. The Theme argument and its interpretation could be licensed by the whole PV construction/PV head (cf. Henry Y. Chang 1007).
There exists a mismatch between the theta role of a Subject DP and voices in the second group. As shown in (28a), the verb complex *sem aparidrayan* ‘go to Paridrayan’ appears in Actor Voice, with the correspondent Actor Subject =aken ‘I’. However, as we can see in (28b), the PV motion verb *pas aparidrayanen* ‘cause to go to Paridrayn’ cannot occur without the causative head *pa*; that is, the self-propelled motion verb complex *sap aparidrayanen* ‘go to Paridrayan’ is ungrammatical. Moreover, the verb *sin aparidrayanan* ‘have been to’ in (28c) does not select any argument as Subject. In (28d) the verb *sis aparidrayan* ‘go to Paridrayan’ appears in Instrument Voice, with the correspondent Instrument Subject *utupay* ‘motorcycle’. However, the same verb can also trigger the Theme argument *kakanen* ‘food’ as Subject.

(28) Motion verb: Group 2

a.  s<em>a-paridrayan=aken.
go.to<AV>-Paridrayan=1S.NOM
‘I go to Paridrayn.’

b.  ku-*(pa-)sa-paridrayan-en/-in   a   su-zidrusia.
1S.GEN-CAUS-go.to-Paridrayan-PV/-PV   NOM 2S.GEN-car
‘I drove your car to Paridrayan.’

c.  ku-s<in>a-paridrayan-an   ka   tjelu   a   cavil.
1S.GEN-go.to<PFV>-Paridrayan-ANwhen   three   LNK year.
‘Three years ago, I had been to Paridrayan.’

d.  ku-si-sa-paridrayan   a   utupay.
1S.GEN-IV-go.to-Paridrayan  NOM motorcycle
‘I go to Paridrayan by motorcycle.’

e.  uru=su-si-sa-inu   a   su-k<in>cau   a   ka-kan-en?
IRR=2S.GEN-IV-go.to-where  NOM 2S.GEN-take<PFV.PV>  LNK RED-eat-NMLZ
‘Where will you take your food toward?’
As we can see in (29), almost voices trigger their correspondent theta argument as Subject in the final group, i.e. the AV verb tjemalun ‘arrive’ in (29a) with Actor Subject camak ‘Camak’, the LV verb tjalunan ‘arrive’ with the Location Subject inalan i tjavadran ‘Tjavadran Village’ and the IV verb sitjalun ‘arrive’ with the Instrument Subject zidrusia ‘car’. However, as we can see in (29b), the verb tjalunen ‘arrive’ occurs in Patient Voice, but with a Location argument i-tjukuvul ‘Tjukuvul’ as Subject.

(29) Motion verb: Group 3

a. tj<em>alun=anga ti camak i-tjukuvul.
   arrive<AV>=COS NOM Camak be.at-Tjukuvul
   ‘Camak has arrived in Tjukuvul.’

b. tjalun-en ni camak a i-tjukuvul.
   arrive-PV GEN Camak NOM be.at-Tjukuvul
   ‘Camak arrived in Tjukuvul at the earliest.’

c. ku-tjalar-an a inalan i-tjavadran.
   ls GEN-arrive-LV NOM village be.at-Tjavadran
   ‘I had been to Tjavadran Village.’

d. si-tjalan niamadju a ku-zidrusia tjalu-uma’.
   IV-arrive 3P GEN NOM ls GEN-car arrive-home
   ‘They arrived home by my car.’
Table 5: Voice systems and Subject selection in Paiwan

<table>
<thead>
<tr>
<th>Type</th>
<th>Meaning</th>
<th>AV</th>
<th>PV</th>
<th>LV</th>
<th>BV</th>
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<tbody>
<tr>
<td>Type 1</td>
<td>run</td>
<td>m-ekelj</td>
<td>in-ekelj</td>
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<td>si-ekelj (Instrument</td>
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<td>fly</td>
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<td>si-langui (Instrument</td>
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<td>(Theme)</td>
<td></td>
<td>/Beneficiary)</td>
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<td>climb up</td>
<td>r&lt;em&gt;aiz</td>
<td>r&lt;in&gt;aiz</td>
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<td>si-raiz (Instrument)</td>
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<td>(Theme)</td>
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<td>climb up</td>
<td>lje-vavaw</td>
<td>lje-vavav-en</td>
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<td>si-lje-vava-vavaw (Instrument)</td>
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<td>(Actor)</td>
<td>(Theme)</td>
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<tr>
<td>Type 2</td>
<td>go to</td>
<td>s&lt;em&gt;a-timur</td>
<td>---</td>
<td>---</td>
<td>si-sa-timur (Theme/Instrument)</td>
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<td>(Actor)</td>
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<tr>
<td>Type 3</td>
<td>arrive at</td>
<td>tje&lt;em&gt;alun</td>
<td>tje&lt;in&gt;alun</td>
<td>tjalun-an</td>
<td>si-tjaun (Instrument)</td>
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<td>(Actor)</td>
<td>(Goal)</td>
<td>(Goal)</td>
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Finally, when we compare the situation in Paiwan with that in Tsou (as shown in Table 6), we find some cross-linguistic similarities and differences: First, Paiwan and Tsou both grammatically distinguish manner-of-motion verbs (e.g. run) from path verbs (e.g. go to) such that their argument structure of voice is different. On the other hand, Paiwan groups inherent direction motion verbs with path verbs while Tsou distinguishes the inherent direction verbs from path verbs. Second, the NAV constructions/heads can license an extra non-subcategorized argument of a manner-of-motion verb in Paiwan while the same mechanism seems not to be employed by Tsou.8

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8 It is quiet surprising for me that Instrument/Beneficiary Voice (I/BV) cannot co-occur with manner-of-motion verb root such as run, fly, swim or walk in Tsou. It seems to imply that I/BV does not act as a high applicative head in Tsou.
<table>
<thead>
<tr>
<th>Type</th>
<th>Meaning</th>
<th>AV</th>
<th>PV</th>
<th>LF</th>
<th>BV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>run</td>
<td>peayofU</td>
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<td>fly</td>
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<td>(Actor/Theme)</td>
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<td>Type 2</td>
<td>climb</td>
<td>(co)capo</td>
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<td>cap-i</td>
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<td>(Actor/Theme)</td>
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<td></td>
<td>arrive at</td>
<td>sUc’UhU</td>
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<td>sUc’Uh-i</td>
<td>---</td>
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<td></td>
<td>(Actor/Theme)</td>
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<td></td>
<td>(Goal)</td>
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<tr>
<td>Type 3</td>
<td>go to</td>
<td>uso</td>
<td>us-a</td>
<td>---</td>
<td>us-neni</td>
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<td>(Actor/Theme)</td>
<td>(Goal/Cause)</td>
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<td>(Cause/</td>
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<td>Beneficiary)</td>
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</table>

### 4.2 Change of Possession

Now let us shift our attention away from the patterns of change-of-location verbs to the behaviors of change-of-possession verbs. In Section 2.1 we pay attention to dative verbs such as *give, send, pass* and etc. In Section 2.2 we will show the patterns of a possessive verb *pu-X* ‘have X’ and compare it with the caused locatum verb *p-tu-X* ‘cause Y to have X’. Now we will first discuss dative verbs in full detail.

#### 2.1 Dative verbs

##### 2.1.1 Goal versus theme

In the beginning, we will first review some Barss and Lasnik’s (1986) outstanding observations that the configurational asymmetries of Goal and Theme in the Double Object Constructions (henceforth DOCs) and the Dative Preposition Constructions (henceforth DPCs), as shown in (30-31). In English an anaphora must be bound by its c-commanding antecedent. That is, an antecedent argument must be higher than a reflexive argument. In (30a) the Goal argument *Mary* can bind the Theme argument *herself* while the reverse is not true, as shown in (30b). Thus, Goal must be higher than Theme in English DOCs. In (30c) the Theme argument *Mary* binds the Location argument *herself*; however, the reverse is not true,
as illustrated in (30d). Therefore, Theme is higher than Goal in English DPCs. Similarly, a variable in English must be bound by its c-commanding operator. Thus, in (31a) the Goal argument *worker with a universal operator every can bind the Theme argument paycheck with a pronominal variable his. Again, in (31c) the Theme argument *check with a universal operator every can also bind the Goal argument owner with a variable its.

(30) Reflexives

a. I showed Mary herself. [DOC]
b. *I showed herself Mary.
c. I showed Mary to herself. [DPC]
d. *I showed herself to Mary.

(31) Variable binding

a. I gave every worker, his, paycheck. [DOC]
b. *I gave its, owner every paycheck. [DPC]
c. I gave every check, to its, owner.
d. ??I gave his paycheck, to every owner,.

Larson (1988) takes the Barss-Lasnik observation as evidence that a traditional flat ternary branching structure cannot explain such facts. Instead, he develops a hierarchical structure for VP, which is further split into two layers, that is, a VP-shell structure. Later, in the spirit of Pesetsky’s (1995) proposal, Harley (2002) argues for an alternative analysis. That is, she argues that DOCs and DPCs represent different underlying meanings: the DOCs represent a structure with a causative light verb v_{CAUSE} and a prepositional element P_{HAVE} while the DPCs have a structure decomposed into a causative light verb v_{CAUSE} and a prepositional element P_{LOC}, as illustrated in (32).
With the background knowledge in mind, we will be able to discuss the hierarchical structure of Paiwan Change-of-Possession Verb Constructions. We argue that Change-of-Possession Verb Constructions in Paiwan are similar with English Double Object Constructions; That is, Goal c-commands Theme. Due to the lack of reflexive arguments in Paiwan, we will turn to look at the Pronominal Variable Binding diagnostic. For example,

(33) Variable binding

a. ru=v<en>ai=aken tua ma-citi-citil ninpu tua
  IRR=give<AV>=1S.NOM OBL P-RED-one worker OBL
  k<in>i-tjan-an niamadju.
  get<NMLZ>-money-NMLZ 3P.GEN
  ‘I will give every worker, his, payment.’

b. ??ru=v<en>ai=aken tua k<in>i-tjan-an niamadju tua
  IRR=give<AV>=1S.NOM OBL get<NMLZ>-money-NMLZ 3P.GEN OBL
  ma-citi-citil ninpu
  P-RED-one worker
  ‘*I will give his, payment every worker.’
In (33a) the Goal argument with a universal operator *macitcitch ninpu* ‘every worker’ can bind the Theme with a pronominal variable *kinitjanan niamadju* ‘his paycheck’. Therefore, the Goal argument c-commands the Theme argument and thus occupies a higher position than the Theme argument. In contrast, the permutation of word order will result in semantic infelicity, as we can see in (33b). The syntactic derivation of (33a) is given as (34).

(34)

```
  VP
   \   /  \\
  v  vCAUSE
    \        \\
    vai 'give' \\
       \      \\
      macticirth ninpu 'every worker'

  DPLOC
     \ \\
     DP
       \ \\
       \ \\
       \ \\
       V

  DHAVE
     \ \\
     V

  DP
    \ \\
    DP
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derivation of (35a) is illustrated in (36).

(35) Pronominal binding

a. pa-tavelak=aken tjay camak, tua padung nimadju,.
   CAUS-pass=1S.NOM OBL Camak OBL stick 3S.GEN
   ‘I passed Camak, his/her stick.’

b. pa-tavelak=aken tua padung ni camak, tjay madju,
   CAUS-pass=1S.NOM OBL stick GEN Camak OBL 3S
   ‘I passed him Camak,‘s stick.’

(36)

```
     VoiceP
        ↓
       Voice'
          ↓
         vP
            ↓
          v
            ↓
         VP
            ↓
        V'
            ↓
       vCAUSE
          ↓
      DP_{LOC}
          ↓
        camak
          ↓
        ‘Camak,‘s pass’
            ↓
     DP_{ACT}
        ↓
      =aken 'I'
        ↓
     DP_{ACT}
```

2.1.2 Argument structure of voice

In this section we will show that change-of-possession verbs in Paiwan can be classified into three types: First, DOCs show a mismatch between the theta role of Subject and its (agreement) voice, as shown in (37). In (37a) the prototypical ditransitive verb *venai* ‘give’ appears in Actor Voice, with the correspondent Actor Subject =aken ‘I’. However, the verb

34
vinai ‘give’ appears in Patient Voice, but it selects the Goal [Receipt] argument =sun ‘you’ as Subject. Again, the verb vaiyan ‘give’ occurs in Beneficiary Voice projective form, but with the Theme argument paisu ‘money’ as Subject. Finally, the verb sivai ‘give’ is inflected by Instrument/Beneficiary Voice, but it triggers the Theme argument paisu ‘money’ as Subject.

(37) Change-of-possession verbs: Type 1

a. na-v<en>ai=anga=aken tjanusun tua paisu.

   PFV-CAUS-give/give<AV>=COS=1S.NOM 2S.OBL OBL money

   ‘I gave you money.’

b. ku-v<in>ai=anga=sun tua paisu.

   1S.GEN-give<PFV,PV>=COS=2S.NOM OBL money

   ‘I gave you money.’

c. ku-vai-yan tjanusun a paisu.

   1S.GEN-give-BV.PROJ 2S.OBL NOM money

   ‘I will give you money.’

d. ku-si-vai tjanusun a paisu.

   1S.GEN-IV-give 2S.OBL NOM money

   ‘I gave you money.’

The second type of change-of-possession verbs is not true double object/double complement verbs because in the AV construction the Receipt DP is marked with a genitive marker, as shown in (38). Again, in (38c) the verb pacikelan ‘refund’ is a Locative Voice verb; however, it selects the Theme argument paisu nimadju ‘his money’ as Subject. Similarly, the verb in (38d) appears in Instrument/Beneficiary Voice, but with a Location argument leke’ay ‘Leke’ay’ as Subject.
(38) Change-of-possession verb: Type 2

a. pa-cikel=aken tua paisu ni leke’ay.
   CAUS-return=1S.NOM OBL money GEN Leke’ay
   ‘I refund Leke’ay money.’

b. ku-pa-cikel-in a paisu ni leke’ay,i tjaymadju,i.  
   1S.GEN-CAUS-return-PV NOM money GEN Leke’ay 3S.OBL
   ‘I refund Leke’ay money.’

c. ku-pa-cikel-an a paisu nimadju,i tjay leke’ay,es,i.  
   1S.GEN-CAUS-return-BV.PROJ NOM money 3S.GEN OBL Leke’ay
   ‘I will refund Leke’ay,i his,es,i money.’

d. ku-si-pa-cikel tjay leke’ay,i a paisu nimadju,i.  
   1S.GEN-BV-CAUS-return OBL Leke’ay NOM money 3S.GEN
   ‘I will refund Leke’ay,i his,es,i money.’

Finally, the third type, apart from LV, exhibits a perfect agreement between the Subject DPs and voices, as shown in (39). In (39a) the verb complex veneli ‘buy’ is inflected by Actor Voice, with the Actor argument =aken ‘I’ as Subject. In (39b) the verb vineli ‘buy’ appears with Patient Voice, with the Theme argument vasa ‘taro’ as Subject. Similarly, the verb velian ‘buy’ in (39c) and siveli ‘buy’ each occur in Beneficiary Voice projective and neutral form, both with the Beneficiary argument =esun ‘you’ as Subject.
(39) Change-of-possession verb: Type 3

a. \( v<en>\text{eli}=\text{aken} \quad \text{tua} \quad \text{tjel}u \quad \text{a} \quad \text{vasa} \quad \text{a} \quad k<em>\text{asi} \)

\( \text{buy}<AV>=1S.NOM \quad \text{OBL three} \quad \text{LNK} \quad \text{taro} \quad \text{LNK} \quad \text{come.from}<AV> \)

\( \text{tjay} \quad \text{muakai}. \)

\( \text{OBL} \quad \text{Muakai} \)

‘I bought three taros from Muakai.’

#‘I bought Muakai three taros.’

b. \( \text{ku-v}<in>\text{eli} \quad \text{tjay} \quad \text{muaki} \quad \text{a} \quad \text{tjel}u \quad \text{a} \quad \text{vasa} \).

\( 1S.GEN- \quad \text{buy}<PFV.PV> \quad \text{OBL} \quad \text{Muaki} \quad \text{NOM three} \quad \text{LNK} \quad \text{taro} \)

‘I bought the three taros from Muakai.’

#‘I bought Muakai the three taros.’

c. \( \text{ku-veli-an}=\text{esun} \quad \text{tua} \quad \text{tjel}u \quad \text{a} \quad \text{vasa} \quad (i) \quad \text{tjay} \quad \text{muakai} . \)

\( 1S.GEN- \quad \text{buy-BV.PROJ}=2S.NOM \quad \text{OBL three} \quad \text{LNK} \quad \text{taro} \quad 1 \quad \text{OBL} \quad \text{Muakai} \)

‘Let me buy you three taros from Muakai!’

d. \( \text{ku-si-veli}=\text{sun} \quad \text{tua} \quad \text{tjel}u \quad \text{a} \quad \text{vasa} \quad \text{tjay} \quad \text{muakai} . \)

\( 1S.GEN- \quad \text{BV-buy}=2S.NOM \quad \text{OBL three} \quad \text{LNK} \quad \text{taro} \quad \text{OBL} \quad \text{Muakai} \)

‘I bought you three taros from Muakai.’

2.2 Possessive verbs

In this section, we show that there is a connection between the stative possessive verb \( pu- \) ‘have; full of’ and the caused locatum verb \( p-u- \) ‘cause to have’ in Paiwan. First, we argue that the verb complex \( pu\text{vasa} \) ‘full of taros’ in (40a) is a gradable stative verb since it can be modified by degree modifier \( =\text{avarac} \) ‘very’. The second piece of evidence is that it gets a resultative interpretation when it combines with a Cause oblique NP e.g. ‘\( uma \) ‘field’ in (40a). The same pattern is also observed in another prototypical stative verb \( madrungung \) ‘become curved’ in (40b). Thus, the verb \( pu\text{-vasa} \) ‘full of taros’ in (40a) functions as a stative verb.
(40) a. pu-vasa=men=aravac tua icu a ’uma.
 AV.full.of-taro=1P.NOM=very OBL this LNK field
 ‘We get a bumper taro from this field.’

b. ma-drungung=anga a ’au tua vali.
 AV.STAT-curved=COS NOM bamboo OBL wind
 ‘The bamboo got curved form the wind.’

On the other hand, the verb complex *puvusa* ‘cause to acquire taros; plant taros’ is a causative verb rather than a stative predicate since (*i*) it cannot co-occur with the degree modifier =aravac ‘very’, as shown in (41a) and (ii) this complex predicate, like another caused location verb complex *p-i-tua-’uma* ‘put into field’ in (41b), can contribute a ‘devotion’ interpretation. For these reasons, we treat the verb complex in (41a) is a caused locatum verb. However, it is worth noting that these two verb complexes *puvusa* in (40a) and *puvusa* in (41a) both share a basic function, i.e. a possession interpretation. Their relationship is analogized to the caused motion verb *pa-sa-X* ‘cause Y to X’ and the self-propelled motion verb *pasa-X* ‘go to X’ (cf. Li 2006).

(41) a. ru=p-u-vasa=men(*=aravac) tua ’uma.
 IRR=AV.CAUS-have-taro=1P.NOM=very OBL field
 lit. ‘We put taros into the field.’
 ‘The field is devoted to plant/produce taros.’

b. ru=p-i-tua-’uma=men(*=aravac) tua vasa.
 IRR=AV.CAUS-be.at-OBL-field=1P.NOM=very OBL taro
 ‘=40a.’
Before we turn to the next section, we would like to give brief comparison of Paridrayan Paiwan with other Formosan and other Philippine-style languages: Ross (2006) examines the argument structure of voice in Timur Paiwan (Anna H. Chang 2006; Egli 2002), Puyuma, Tsou (Zeitoun 2005; Huang and Huang to appear) and Kimaragan (Kroeger 1998)\(^9,10,11\). Stacy W. T Huang (2007) investigates the patterns of the \textit{pa}-causative constructions in Yami. Holmer (1999) explores the structural implications of Instrument/Beneficiary voice in Seediq. A comparison is shown Table 7. M. Huang (2001) discusses the syntactic, semantic and pragmatic conditions on voice systems in Mayrinax Atayal.

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\(^9\) In Ross’ (2006) Table 2, he wrongly considers the Locative Voice \textit{-an} (i.e. his Undergoer Voice 2) as a trigger of a recipient argument as Subject. However, his given examples point out that it is non-indicative LV projective head \textit{-ay} that triggers a theme argument as Subject, as shown in (ia). However, the I/BV imperative head \textit{-an} triggers a Theme argument as Subject, as shown in (ib).

\(^{10}\) The correspondence between Ross’ (2006) voice terminology and ours is as follows: AV=AV, UV1=PV, UV2=LV, and UV3=I/BV.

\(^{11}\) Ross (2006) does not give the I/BV form of the ditransitive verb root \textit{si} ‘give’; rather, he show another I/BV form \textit{teaph-neni} ‘give (I/BV)’, which is drawn from Zeitoun (2005: 284). However, Huang and Huang (to appear) shows the I/BV from: \textit{si-i-neni} ‘give (LV+I/BV)’.

\footnotesize

\begin{itemize}
  \item[(i)]
    \begin{itemize}
      \item a. \texttt{tja=pavay-ay ti sa kaDui tua djamaai.}
        \begin{tabular}{llllllll}
          GEN & 1IP & =give-UV2 & HORTATIVE & NOM:PS & RESPECT & Kudui & OBL: vegetables
        \end{tabular}
        ‘Let’s give Kadui some vegetables!’ (Ross 2006, adopted from Egli 2002: 462)
      \item b. \texttt{pavay-an a Paisu tjai tjama.}
        \begin{tabular}{llllllll}
          give-UV3:IMP & NOM & money & OBL:PS & father
        \end{tabular}
        ‘Give the money to father!’ (Ross 2006, adopted from Egli 2002: 462)
    \end{itemize}
\end{itemize}
<table>
<thead>
<tr>
<th>Language</th>
<th>Construction Type</th>
<th>Voice</th>
<th>Verb Form</th>
<th>Root Meaning</th>
<th>Case Marking</th>
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<tr>
<td>Paridrayan Paiwan</td>
<td>CAUSE-MOVE</td>
<td>AV</td>
<td>l&lt;em&gt;ui</td>
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<td>NOM OBL OBL</td>
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<td></td>
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<td>give</td>
<td>NOM OBL OBL</td>
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<td>v&lt;in&gt;ai</td>
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<td>GEN NOM OBL</td>
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<td></td>
<td>GEN OBL NOM</td>
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<tr>
<td>Timur Paiwan</td>
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<td>give</td>
<td>NOM OBL OBL</td>
</tr>
<tr>
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<td></td>
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<td>p&lt;in&gt;avai</td>
<td></td>
<td>GEN NOM OBL</td>
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<td>pavai-an</td>
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<td>GEN OBL NOM</td>
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<tr>
<td></td>
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<td>I/BV</td>
<td>si-pavai</td>
<td></td>
<td>GEN OBL NOM</td>
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<td>PV</td>
<td>saLeTag-aw</td>
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<td>GEN NOM OBL</td>
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<tr>
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<td>mo?cochio</td>
<td>teach</td>
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<td>pa?chovineni</td>
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<td>m-osi</td>
<td>put</td>
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<td>si-a</td>
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<td>si-i</td>
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<td>Mayrinax Atayal</td>
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<td>b-aiq-an</td>
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<td>si-aiq</td>
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<td>GEN ACC NOM</td>
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<tr>
<td>Seediq</td>
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<td>m-bege</td>
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<td>Kimara-gang</td>
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<td>pa-cita</td>
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<td>I/BV</td>
<td>i-pa-cita</td>
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</tbody>
</table>

First, the syntactic patterns of voice in Timur Paiwan are very similar with those in
Paridrayan Paiwan (cf. Anna H. Chang 2006). However, there is slight difference: Timur Paiwan employs a Location Voice projective head -ay, with a Goal argument as Subject. In contrast, such a LV projective head -ay is not permitted in three-place predicate construction; rather, the PV project head -aw is employed to refer to a goal argument. Second, Ross (2006) shows that the Patient Voice and Locative Voice in Puyuma cause-move verbs have a perfect theta-agreement between voice head and grammatical Subject. However, he does not show the situation of Instrument /Beneficiary Voice. Here we cannot arrive any conclusion.

Third, with respect to cause-move type verbs, Tsou has neat correspondence between voice and the theta role of correspondent grammatical Subject; however, such a perfect correspondence does not exist in the cause-receive constructions. The argument structure of voice in the latter constructions behaves as the same as that in Paiwan.

Fourth, as we can see, in Atayalic languages (e.g. Mayrinax Atayal and Seediq) and in a non-Formosan language Kimaragang, the Actor Voice and Locative Voice each triggers an Actor argument and a Location argument as Subject. However, Instrument/Beneficiary Voice is also employed to trigger the Theme argument as Subject, like the situation in Paiwan. The same mismatch pattern is observed in another non-Formosan Austronesian language Yami: the Instrument/Beneficiary Voice is also used to trigger the transported Theme argument as Subject.

To summarize, as we can observe in Table 6, Instrument/Beneficiary Voice triggers a Theme argument as grammatical Subject in all Austronesian languages except Puyuma. However, I/BV can also trigger a Location argument as Subject. Now two questions arise: First, why do I/BV verbs appear with a Theme Subject in most Austronesian three-participant verb constructions? Second, recall that in Type 1 of change-of-location verb constructions, these verbs appear in I/BV, with a Location Subject. Why do I/BV verbs also occur with a Location Subject in Paiwan? In the next section, we will propose two alternative analyses for these two questions. We believe that our findings in Paridrayan Paiwan can extend to other
Austronesian languages and thus makes a contribution to the first long-standing puzzle.

5. Preliminary Analysis

5.1 Holmer’s (1999) Structural Analysis

Seediq shows the same patterns as Paiwan. That is, IV always triggers the Patient/Theme argument of a ditransitive verb to move into the Subject position, as shown in (2a), repeated as (42a). Moreover, he also observe that in a causative construction, the verb appears in IV, but with a Patient/Theme argument rather than a Causee argument as Subject, as illustrated in (2b), repeated as (42b). Given a VP-shell structure, he observes that the syntactic structure of a causative verb parallels with that of a ditransitive verb, as shown in (43).

(42) Holmer (1999: 426)

a. S-bege -mu Pawan lukus -mu.  [Thme as Subject]
   IF-give 1S.GEN Pawan clothes 1S.GEN
   ‘I give Pawan my clothes.’

b. S-p-iimah -mu Pawan sino nii. [Thme as Subject]
   IF-CAUS-drink 1S.GEN Pawan winethis
   ‘I invite Pawan to drink this wine.’

(43) a. Causative  b. Ditransitive

\[
\begin{align*}
\text{V1P} & \\
\text{V1'} & \text{Spec} \\
\text{V1}^0 & \text{AGT} \\
\text{cause} & \\
\text{p-} & \text{V2'} \\
\text{Spec} & \text{CAUSEE} \\
\text{V2}^0 & \text{O} \\
\text{do} & \text{PAT} \\
\end{align*}
\]

\[
\begin{align*}
\text{V1P} & \\
\text{V1'} & \text{Spec} \\
\text{V1}^0 & \text{AGT} \\
\text{V2P} & \\
\text{V2'} & \text{Spec} \\
\text{CAUSEE} & \\
\text{V2}^0 & \text{O} \\
\text{do} & \text{PAT} \\
\end{align*}
\]
In light of such structural parallel, Holmer (1999: 436) has made an interesting conclusion (here we call such a conclusion as Holmer’s generalization), as shown in (44). Holmer (1999: 428) proposes that IV [IF in his terminology] is base-generated in $I^0$ and functions as an agreement head, “reflecting movement to SpecIP of an element which in some relevant way to be considered the “third argument” of the verb”. That is, instrument voice head in $I^0$ cross two arguments to probe into the third argument, i.e. the Patient/Theme argument in the causatives and ditransitives. Even when IV co-occurs with an ordinary two-participant verb, it will skip the Actor argument and the Patient argument and probes onto the peripheral argument, i.e. the Instrument or Beneficiary argument, which he considers to be base-generated under VP.

(44) Holmer’s generalization

For both causatives and ditransitives, PF/LF is used to show that a non-Agent has been made clause subject. IF is used for further optional specification, i.e., that the patient of $V^2_0$ has become subject.

Keeping this in mind, now let’s turn to the situations in Paiwan. Recall that in Type 2 of change-of-location verbs (e.g. *silui* ‘fill’), I/BV of these verbs can triggers the choice of a Location Subject, as shown in (25d), repeated in (45a). At first glance, Holmer’s generalization seems to be language-specific observation. However, if we take a closer look at change-of-location verbs in Paiwan in the light of two different $V^0$, i.e. $V_{\text{LOC}}$ and $V_{\text{HAVE}}$, we find that Holmer’s generalization is still held in Paiwan data. The syntactic structures of (45a-b) are represented in (46a-b). As we can see in (46a-b), I/BV *si-* crosses two arguments to probe onto the lower arguments *kadrung* ‘keg’ and *ata* ‘lazurite bead’. Here the structural insight is still kept.
(45) a. ku-si-lui tua zaljam a kadrung.
   1S GEN-IV-fill OBL water NOM keg
   'I filled the keg with water.'

b. ku-si-pa-djekec a at a tua tjara.
   1S GEN-IV-CAUS-rice NOM lazurite.bead OBL ring
   'I lodge the lazurite bead in a ring.'

(46) a. Putting Verb: lemui 'fill'  b. Putting Verb: padjekec 'lodge'

Finally, some comments are worth noting: Although Holmer’s observation is insightful, he does not offer any further explain why IV will attract the deeper embedded argument onto the [Spec, IP] position. The first puzzle does not get a satisfactory solution yet. Moreover, he tries to unify the function of IV: It attracts the THIRD (low) argument, that is, the Theme argument of three-participant verbs and the Oblique (i.e. Instrument or Beneficiary) argument of two participant verbs. However, it is odd that an Instrument argument or a Beneficiary argument base-generates within and under VP. As we shown, I/BV can co-occur with a unergative verb such mekelj ‘run’, which does not own any internal argument. Thus, it should
be generated outside and higher than VP (cf. Pylkkänen 2002). In the following we will try to offer two alternative analyses of the puzzle of argument realization of I/BV in Paiwan.

5.2 *Two Alternative Analyses*

In this section we will take a closer look at two alternative analyses of the argument realization puzzle. We will examine the advantage and disadvantage of these two approaches. One is the Base-generation approach where an Instrument argument is generated in the Spec position of Instrument Voice and binds the lower Patient/Theme argument in three-participant verbs. Under this analysis, a narrow Θ-agreement approach can be still kept.

The alternative approach is the Movement approach where the lower Patient/Theme or Location argument undergoes the Spec position of Instrument Voice head to check the un-interpretable (generalized) NAV feature. Within such an approach the Instrument Voice is viewed as a causative light verb, demoting the second argument as an adjunct. In this way, the lowest argument is the only candidate for checking the NAV feature. Thus, a generalized Θ-agreement is proposed.

5.2.1 Binding puzzle

Before we enter the detail of each analysis, we will point out a binding puzzle, as shown in (47). As we can see in (47a), the Goal argument *kakedrian* ‘child’ is higher than the Theme argument *kava* ‘clothes’ in the AV construction since the operator *lemitalit* ‘each one’ can bind its pronominal variable *niamdju* ‘their’. However, in (47b) the Goal argument, however, cannot bind the Theme argument in the IV construction.
(47) a. pa-Ø-kava=(a)ken tua l<em>ita-lita a kakedrian, tua 
CAUS-have-clothes=1S.NOM OBL RED<AV>-each.one LNK child OBL 
kava niamadju,. 
clothes 3P.GEN 
‘I addressed each child the garment which is fit for him.’

b. *ku-si-pa-Ø-kava a s<in>itjalrepam niamadju/a kava 
1S.GEN-IV-CAUS-have-clothes NOM <PFV,PV>fit 3P.GEN LNK clothes 
tua l<em>ita-lita a kakedrian,. 
OBL RED<AV>-each.one LNK child 
‘I addressed each child the garment which is fit for him.’

One may suggest that because in the IV construction the Theme NP which contains the pronominal variable occupies the Subject position, which is higher than the Goal NP, the operator cannot c-command the operator and in turn results in ungrammaticality. However, if we take reconstruction effect into consideration, a question arises: why cannot the Theme NP be reconstructed back into its original position? Or if the Theme argument is reconstructable, why cannot the operator lemitalit bind the pronominal variable niamadju?

Here we argue that the Theme Subject can be reconstructed back to its original position. Consider the following example:

(48) a. pa-tavelak=aken tjay camak, tua padung nimadju,ŋ. 
AV.CAUS-receive=1S.NOM OBL Camak OBL stick 3S.GEN 
‘I passed Camak, his,ŋ stick.’

b. pa-tavelak=aken tua padung nimadju,ŋ tjay camak,. 
AV.CAUS-receive=1S.NOM OBL stick 3S.GEN OBL Camak 
‘I passed Camak, his,ŋ stick.’

46
c. ku-si-pa-tavelak a padung ni camak tjaymadju nj.  
1S.GEN-IV-CAUS-receive NOM stick GEN Camak 3S.OBL  
‘I passed him Camak’s stick.’

d. ku-si-pa-tavelak tjay camak a padung nimadju nj.  
1S.GEN-IV-CAUS-receive OBL Camak NOM stick 3S.GEN  
‘I passed Camak his stick.’

As we can see in (48a), the AV verb patavelak ‘pass’ is a CAUSE-TO-HAVE verb since the Goal argument camak ‘Camak’ occupies a higher position than the Theme argument padung nimadju ‘his stick’ and therefore the pronoun can co-index with the Goal argument. The example (48b) indicates such a co-indexation is irrelevant with word sequence: when the Theme argument precedes the Goal argument, we get the same interpretation. This argumentation gets support when we consider the example (48c). If a pronoun must follow its antecedent, we cannot explain why the pronoun tjaymadju ‘he’ in (48c) cannot co-index with its antecedent camak ‘Camak’. On the contrary, given that the IV construction also shows the reconstruction effect, the ungrammaticality of the co-indexation gets a natural explanation: the Theme Subject padung ni camak ‘Camak’s stick’ is reconstructed back into the lowest position and bound by the Goal argument tjaymadju ‘he’, which in turn violates the Binding Principle C. On the other hand, the Theme subject padung nimadju ‘his stick’ is reconstructed back into the lowest position and bound by the Goal argument camak ‘Camak’, which in turn satisfies the Binding Principle B.

Given that the reconstruction effect is permitted in the IV constructions, as we have shown, now a question may arise: in (47b) why cannot the operator lemitalit bind the pronominal variable niamdju even when the Theme argument has been reconstructed back?
5.2.2 Base-generation analysis

Now we will examine whether the Base-generation analysis can explain such a binding puzzle. Henry Y. Chang (p.c.) suggests that the Instrument/Beneficiary Voice-Theme Subject mismatch may get a explanation when an Instrument/a Beneficiary argument is base-generated in the Spec position of Instrument/Beneficiary Voice head and co-index with a small pro in the lowest position, as shown in (49).

(49)

As shown in (49), the “subject-choice-mismatch” puzzle seems to get an answer: since the semantic role of the Subject DP is actually an Instrument role or a Beneficiary role and the superficial Theme interpretation is via co-indexing the small pro, no mismatch puzzle exists. Under such an approach, semantic re-interpretation arises naturally, as shown in (50), repeated from (25d). In (50) the Subject DP seems get two theta-roles: one is the Location role, which is assigned by V_{LOC}, while the other is the Instrument role, which is assigned by the Instrument Voice head.

48
(50) Semantic reinterpretation

ku-si-lui tua zaljam a kadrung.
IS.GEN-IV-fill OBL water NOM keg

‘I filled the keg with water.’

However, this approach will get an incorrect interpretation: If the Subject DP kadrung ‘keg’ indeed acts an instrument, this implies that this Subject DP is a kind of Cause or Means, which makes the Theme argument zaljam ‘water’ undergo certain change-of-state/change-of-location. But as we know, the Subject DP kadrung ‘keg’ as a Goal argument implies an endpoint, that is, a resultant. It is quiet odd that Cause and Resultant is the same in an external force cognitive model. Moreover, it is not clear how such an analysis predicts the interpretation of the pronoun nimadju ‘his’ within the Subject DP in (49). Since the Subject DP is base-generated in the highest position and it cannot place back to the lowest position, it will be a myth how the co-indexation of the pronoun with the lower Location argument camak ‘Camak’ arises.

5.2.3 Movement analysis

As we have shown, the Movement analysis can get support from the reconstruction evidence. But now how do we solve the binding puzzle? Here we propose that such binding puzzle arises from the demotion of the second lower argument; that is, the Goal argument in (47b) functions like an adjunct. Therefore, it cannot bind any variable with the lowest Theme argument. There is an analogy between the causative and ditransitive constructions in Formosan languages and the causative FP constructions (51) in French. As shown in (51), the Causee in causative FI construction as a true argument can binds the anaphor while the Causee in causative FP construction as an adjunct cannot.
(51) *Faire-infinitif (FI) and faire-par (FP) construction in French (Guasti 1996: 205)

a. Ho fatto riparare la propria macchina a Gianni. (FI)
   (I) have made repair the own car to Gianni
   ‘I made Gianni repair his own car.’

b. *Ho fatto riparare la propria macchina da Gianni... (FP)
   (I) have made repair the own car by Mario
   ‘I made Gianni repair his own car.’

Similarly, the Causee in the Paiwan I/BV causative constructions exhibits the same pattern as the Causee in French FP constructions, as we can see in (52). As illustrated in (52), the Goal argument with a universal operator nukana-situ ‘every student’ cannot bind the Theme argument with a pronominal variable and therefore must be omitted.

(52) ku-si-pa-pacun a tjara-niamadju-madju a sasin
     1SG.GEN-IV-CAUS-see NOM DISTR-3P.GEN-RED LNK picture
     (*tua nukana-situ).
     OBL every/all-student
     ‘I show every student his picture.’

Guasti (1996) argues for an Incorporation approach to the causative FP constructions, as shown in (53). She argues that fare is a causative incorporating head, taking a Causer argument ho ‘I’ and an Event argument. The Event is represented by the incorporated verb riparare ‘repair’, with a demoted adjunct Causee Gianni and a Theme argument machine ‘car’. The syntactic structure is illustrated in (53b).
(53) a. Ho fatto riparare la macchina da Gianni.

(I) have made repair the car by Gianni

‘I had the car repaired by Gianni.’

b. Guasti 1996: Derivation of FP

faret\textsubscript{2} <causer, event>
riparare <theme>\textsuperscript{12}

\begin{array}{c}
\text{VP}_1 \\
\text{NP} \\
\text{V}_1 \\
\text{V}_2 \\
\text{VP}_2 \\
\text{PP} \\
\text{NP}
\end{array}

\begin{array}{c}
\text{Ho} \\
\text{fatto} \\
\text{riparare} \\
\text{la macchina da} \\
\text{Gianni}
\end{array}

‘I have’ ‘made’ ‘repair’ ‘the car’ ‘by’ ‘Gianni’

In the spirit of Guasti (1996), we view the I/BV head as a causative light verb, triggers the second (low) argument to be demoted as an adjunct. Thus, the higher Causer argument and the lowest Theme argument are the only two true arguments in the tree-participant verb constructions in Paiwan. Under the generalized Θ-agreement approach, an IV head attracts the only Non-Actor argument to check his un-interpretable [NAV] feature. This is why the “subject-choice-mismatch” puzzle arises.

6. Conclusion

In this paper we argue that there exist two bound verbs, i.e. \( V_{LOC} \) and \( V_{HAVE} \), each of

\textsuperscript{12} The argument structure is derived from \textit{reparare} <agent, theme> by lexical operation.
which is realized as the incorporation verb *i*- and the affixal and zero-form verbs *u-* and *∅* in Paiwan. Moreover, we also propose a Morphological Causative Accessibility Hierarchy in Formosan languages. Furthermore, we argue that Holmer’s insightful observation also applies to Paiwan situation. However, unlike Holmer (199), we argue that in I/BV causation constructions, the second (low) argument has been demoted as an adjunct and therefore raises a binding puzzle. Such a binding puzzle is a touchstone for two alternative analyses (i.e. the Base-generative Approach and the Movement Approach). We argue that the latter approach can resolve the binding puzzle. Moreover, an incorporation analysis also helps us to explain why the subject-choice-mismatch arises.

Reference


[In Chinese]


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