A Case Study of Denominal Verbs in Paiwan

Wu, Chun-ming

時　間：2008年5月10日
地　點：國立清華大學人文社會學院 C310室
主辦單位：國立清華大學語言學研究所、國立清華大學人類學研究所
協辦單位：國立清華大學人文社會研究中心、國立清華大學人文社會學院、教育部世界南島學術研究交流專案
## 2008 Austronesian Workshop

清大南島論壇工作坊

時間：2008年5月10日（六）
地點：國立清華大學人文社會學院 C310室
主辦單位：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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</tr>
<tr>
<td>17:30</td>
<td>Closing</td>
</tr>
</tbody>
</table>
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
A Case Study of Denominal Verbs in Paiwan

Chunming Wu
National Tsing-Hua University

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1. Introduction

In English or Chinese, there are many lexical items which function both as verbs and nouns. In English they are ‘walk’, ‘talk’, ‘answer’, ‘nail’ and ‘water’, etc. In Chinese, they include suo ‘lock/to lock’, bing ‘to be sick/sickness’, xiwang ‘hope/to hope’, mingling ‘to order/order’ and so on. The traditional grammar has tended to treat one lexical function as more basic than the other, and use the basic form to derive the other one. This kind of derivational process that changes categories without overt morphological marking has been called ‘zero derivation’ (Lyons 1977, Sander 1988). The derivational process is based on the analogy of deriving nouns from verbs. That is, based on the analogy of deriving the noun ‘creation’ from the verb ‘create’, the verb ‘(to) answer’ is also used as the noun ‘answer’ (cf. “overt analogue criterion” by Sander 1988: 156).

In English, zero derivation is also adopted to derive verbs from nouns. Words denoting concrete objects like ‘nail’, ‘water’, ‘shampoo’ can also be used as verbs ‘to nail’, ‘to water’, ‘to shampoo’ to report events associated with the corresponding concrete objects. These verbs have been referred to as denominal verbs (Jespersen 1942, McCawley 1971, Green 1974, Clark and Clark 1979, Tai 1997). On the ground of observations of denominal verbs in English, Hopper and Thompson (1984) suggest in their generalizations of “implicational universals” that denominal processes may be productive cross-linguistically.
"Languages tend to have special nominalizing morphology, but no special verbalizing morphology." "If a language has category-deriving morphology at all, what we find is that it is noun-deriving, but not verb-deriving process. (Hopper and Thompson 1984: 745)"

The generalization points out a morphological asymmetry between nominalized forms and verbalized form. In English, nominalization involves rather overt (marked) morphology (e.g. excite → excitement), but verbalization mainly involves zero (unmarked) derivation (e.g. water → (to) water). Nevertheless, Tai's (1997) research on denominal verbs in Chinese and other languages refutes their claim. Contrary to their observations based on English, Tai points out that the most productive rule of nominalization in Chinese is accomplished through zero derivation while verbalization is through suffixation. This can also be seen in the examples of verbalization from French, Spanish, German, Turkish, Indonesian and Japanese, where rich verbal morphology is attested.

As far as Formosan languages are concerned, Starosta (1982) and Ross (1995) claim that NAF construction can be originated from the nominal forms historically. This implies that verbs are derived from nouns but not the other way around in Austronesian languages. The claim also suggests that denominalizing processes may be productive in these languages. Other Austronesian linguists argue for the opposite direction in which the nominalizations were derived from their NAF forms (Pawley and Reid 1980). In Formosan languages processes of nominalization have been widely reported and the processes may involve focus derivation (Tang (2002) on
Paiwan nominalization). Nevertheless, the research on relevant verbalizing processes have long been neglected and details of denominal verbs and have not been fully probed.

This chapter primarily focuses on the investigation of 'denominal verbs' in Paiwan. We would like to address the following questions. How are denominal verbs formed in Paiwan? Can we denominalize all the nouns in Paiwan? If not, what are the constraints on these processes? Are these verbalizing processes productive in comparison with the corresponding nominalizing processes? In this study, we clarify each type of their denominal uses (as verbs) in terms of word-formation rules; we exemplify how these verbs are similar to or different from 'denominal verbs', and how they are different from other verbs that are derived from nouns via non-focus affixation in Paiwan. In terms of classification of nominal terms, we attempt to explore how human thought and cognition influence these denominalizing processes—what are the conceptual constraints on these processes? We also briefly discuss what mechanisms trigger these denominalizing processes from a pragmatic point of view. Compared with processes of nominalization, we examine the productivity of these denominal verbs and reveal the nature of unmarkedness in processes of denominalization in Paiwan.

2. Classification of Nouns

Like the category of verbs, the category of nouns is considered to be a universal category by most linguists. In Paiwan, a noun should be accompanied by an

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1 Huang (2000:389) has proposed that denominal dynamic and state verbs in Mayrinax Atayal are formed by adding the AF affixes *m-/-um-/Ø* to the stem, as in (1)

(1) Mayrinax Atayal (Huang 2000:389)
   a. *m-situing* 'wear clothes'
   b. *h-um-anaang* 'make sound'
   c. *Ø-na'akis* 'old'
appropriate case marker when it occurs in argument position in a sentence (see examples in 2.3).

This is an obvious property that separates nouns from verbs. To facilitate our analysis, we categorize a variety of nominal concepts into groups and then test the denominal use of each items. In the literature, the concepts of nouns have different types of classification. Schwartz (1979) argues for two-way distinction of nominal concepts: natural kinds and nominal kinds (see also Smith (1989) for relevant study). Tai (2003, p.c.) proposes the four-way distinction of nominal terms:

**Natural kinds:**
Nominal terms denoting a variety of natural objects or organisms on earth

**Artifact:**
Nominal terms denoting all kinds of man-made objects such as instruments, tools and food, etc.

**Nominal kinds**
Terms that are perceived only by definition or proper names, like ‘history’, ‘iconicity’, ‘Taiwan’, ‘Tom’, etc.

**Kinship terms**
Nominal terms describing kinship relationships

Based on Tai’s classification, we classify and demonstrate several nominal terms in Paiwan as follows:

(a) **Natural kinds**

*Landscapes:*

*gadean* ‘mountain ridge’, *pana* ‘river’, *ceva* ‘cliff’, etc.

*Natural phenomena/objects:*

uval 'hair', ruce 'tear', ecilu 'egg', etc.

**Plants:**

kasiv 'tree', *hana* 'flower', *vuraci* 'sweet potato', *patay* 'rice', *camel* 'grass'

**Animal:**

vatu 'dog', acang 'pig', etc.

(b) **Artifact (man-made)**

**Food**

tjamaiy 'cooked food', *si'aw* 'soup', *avay* 'a kind of rice cake', *culuk* 'a kind of rice cake', *lavilu* 'taro cake', *'atia* 'salt'

**Man-made tools**

cukui 'desk', takit 'knife', calis 'rope', zuka 'paint', kupu 'cup', pana 'arrow', etc.

**Clothes/Decoration**

lakaraw 'flower loop', kava 'clothes' kucu 'shoes', laljang 'traditional clothes'

(c) **Nominal kinds**

milimilivan 'history', Suimun 'location name', Palang 'person name'

(d) **Kinship terms:**

kama 'father', kina 'mother', vuvu 'grandfather/grandmother', kaka 'brother/sister'

3. **Verbalization in Paiwan**

3.1 **Focus system in Paiwan**

Verbs in Paiwan are always inflected for focus markers when they are used in the clauses (see 2.2 for details). Focus exhibits its inflectional property in the same way as the third person singular marker '–s (–es)' in English. Moreover, focus "'-in-'" originally provides perfective reading for the clause. This behaves somehow similarly
to the past tense marker ‘-ed’ and perfective marker ‘-en’ in English. Focus markers are also known to be characterized by derivational properties in that: (i) Focus may change subcategorization frame—it may transitiivize the predicate, as in (2):

(2) Paiwan

a. ma-pulaw ti palang
   AF-drunk Nom Palang
   ‘Palang gets drunk.’

b. p-en-ulaw ti palang tjay kalalu
drunk-AF Nom Palang Obl Kalalu
   ‘Palang causes Kalalu to get drunk.’

The sentence (2a) in AF (ma-) form represents non-transitivity in syntax. The use of another agent focus marker –em- on verb pulaw in (2b) will introduce an oblique argument kalalu and transitiivize the clause. (ii) Focus may shift argument structure. As in (1b-c), the addition of the locative focus -an may introduce a nominative locative argument ‘school’ for the entire clause (see also Y.-L. Chang 1995, 2002, Sells 1997). (iii) Focus will change and add meanings, as in (3)

(3) Paiwan (Tang 2002: 286)

a. pacengceng a ’apedang-an nua siaw
   AF-appropriate Nom salty-AN Gen soup
   ‘The saltiness of the soup is appropriate.’

b. k-in-a-meLava-an
   KA-IN-wide-AN
   ‘width’

LF marker –an- and perfective/PF marker -in- may function as nominalizers which
derive nouns from verbs (Tang 2002).

3.2 Paiwan Denominal Verbs vs. English Denominal Verbs

According to Clark and Clark (1979: 768-69), denominal verbs in English have the following properties:

(a) Each verb had to have a non-metaphorical concrete use as far as possible.

(b) The parent noun of each verb had to denote a palpable object or property of such an object, as in sack, knee and author—but not climax, function and question.

(c) Each verb had to be formed from its parent noun without affixation.

(d) Each verb had to be useable as a genuine finite verb.

Denominal verbs in Paiwan are derived from nouns by adding focus markers to the noun stems, as in (4).

(4) Paiwan

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Verbs</th>
</tr>
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<tbody>
<tr>
<td>'erepus ‘cloud’</td>
<td>'em-'erepus ‘to become cloudy’</td>
</tr>
<tr>
<td>zaljum ‘water’</td>
<td>z-em-aljum ‘to flood’</td>
</tr>
<tr>
<td>cengelaw ‘sunshine’</td>
<td>c-em-engelaw ‘to shine, to light up’</td>
</tr>
<tr>
<td>zuka ‘paint’</td>
<td>z-in-uka ‘to paint/ to produce the painting’</td>
</tr>
<tr>
<td>kava ‘clothes’</td>
<td>si-kava ‘to put on clothes’</td>
</tr>
</tbody>
</table>

Paiwan denominal verbs are subject to criteria (a) and (b). However, these verbs seem to violate criterion (c) and (d). In comparison, the similarities that both types of denominal verbs share are: First, both types of denominal verbs report an event associated with the parent noun. Second, both of them show typical verbal
properties—both are typically associated with verb-specific grammatical categories: tense/aspect, and agreement. Paiwan nominal verbs are associated with a set of focus markers (that provide aspect and agreement information).

The violation of (c) and (d) can be ascribed to typological difference. In English nominal verbs is zero-derived from object nouns and may contrast with tense or agreement. Noun ‘water’ can surface as finite/non finite verb in bare noun root form, as in (5a, d).

(5) English
   a. I *water* the flowers everyday.
   b. John *watered* the flowers yesterday.
   c. John *waters* the flowers everday
   d. John wants to *water* the flowers.

Paiwan nominal verbs are derived via focus affixation, and it remains controversial whether verbs in Paiwan make a distinction between finiteness and non-finiteness. In Paiwan, nouns may surface as verbs in a sentence only by adding focus markers to the noun roots (by default), as in (6).

(6) Paiwan
   a. z-em-aljum-anga a ku-uma’
      water-AF-Asp Nom 1S. Gen-house
      ‘My house is in water.’
   b. v-en-urasi-anga a ku-inuman
      sweet potato-AF-Asp Nom 1S. Gen-field
      ‘Sweet potato has grown up in my field.’
   c. ’in-erepus a gade
      Asp.PF-clouds Nom mountain
‘The mountain was covered by clouds.’

d. ku-c-in-uluk a vasa
1S. Gen-taro cake-PF Nom taro
‘I have made the taro a taro cake.’

e. *cukui-amen
desk-2PL. Nom
‘We feast.’

f. uri-s-em-a-gaku-amen a c-em-ukui/*cukui
Irr-go to-AF-school-1Pl.Nom Lnk desk-AF/*desk
‘We will go to school to feast.’

Focus markers on the noun roots exemplify the fact that the nouns are used as verbs and may at the same time provide the events with grammatical functions like agreement in (6a) and perfective reading in (6d). (Note that appearance of the patient focus ‘-in-’ on denominal verbs not only point out the nominative patient argument but also indicate the perfective aspect for the entire clause.) Focus marking is inevitable for the expression of all kinds of Paiwan denominal verbs in the clauses. The omission of focus markers will be ungrammatical, as in (6e-f). The default usage parallels to genuine English verb is in AF form. (e.g. to water vs. a c-em-ukui ‘to feast’). As aforementioned, focus markers cannot be considered fully identical to tense or agreement markers in English because the former indicates only grammatical information, while the latter indicates both derivational and grammatical information.

3.3 Focus Verbalization vs. Non-focus Verbalization

3.3.1 Verbalization via focus affixation
If we compare a denominal verb with an action verb in Paiwan, we may find that each of them are prototypical verbs and must be inflected for focus markers in the clauses.

(7) Action verb
   a. k-em-an-aken tua kinsa
      eat-AF-1S.Nom Obl cooked food
      ‘I eat the meal.’
   b. *kan-aken tua kinsa

(8) Denominal verb
   a. c-em-ukui-amen i-gaku
      desk-AF-2PL.Nom in-school
      ‘We feast at school.’
   b. *cukui-amen i-gaku

As we can see in (7) and (8), the bare verb stem form is not allowed for each of them in the expression. Based on analogy with the verb root *kan which is obligatorily inflected for focus in the clause, we here posit that the noun *cukui underlingly converts to the verb root *cukui in terms of zero derivation, and then is in turn inflected for focus marking to become the denominal verb *c-em-ukui ‘to feast’. The morphological process can be depicted as V[[nX→vX]+Focus Affixation].

Here we demonstrate glosses about denominal verbs which are derived via different types of focus affixation, as in (9-12).

**AF Affixation**

(9) Verbalization via *ma-affixation

<table>
<thead>
<tr>
<th>Nouns ([natural kinds])</th>
<th>Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nouns (a-h: [natural kinds])</td>
<td>Verbs</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td><strong>i-x: [artifacts]</strong></td>
<td></td>
</tr>
<tr>
<td>a. gadean ‘mountain ridge’</td>
<td>g-em-agdean ‘to walk along the mountain ridge’</td>
</tr>
<tr>
<td>b. 'erepus ‘cloud’</td>
<td>'em-erepus ‘to become cloudy’</td>
</tr>
<tr>
<td>c. zaljum ‘water’</td>
<td>z-em-aljum ‘to be flooded’</td>
</tr>
<tr>
<td>d. cengelaw ‘sunshine’</td>
<td>c-em-engelaw ‘to shine, to light up’</td>
</tr>
<tr>
<td>e. patay ‘rice’</td>
<td>p-en-atay ‘rice grows/ to seed rice’</td>
</tr>
<tr>
<td>f. vuraci ‘sweet potato’</td>
<td>v-em-uraci ‘sweet potato grows’</td>
</tr>
<tr>
<td>g. cemel ‘grass’</td>
<td>c-em-emel ‘grass grows’</td>
</tr>
<tr>
<td>h. 'uval ‘hair’</td>
<td>'em-uval ‘hair grows’</td>
</tr>
<tr>
<td>i. siaw ‘soup’</td>
<td>s-em-iaw ‘to drink the soup’</td>
</tr>
<tr>
<td>j. ‘avay’rice cake’</td>
<td>‘em-avay ‘to make/cook rice cake’</td>
</tr>
<tr>
<td>k. lavilu ‘taro cake’</td>
<td>l-em-avilu ‘to make/cook taro cake’</td>
</tr>
<tr>
<td>l. ‘aliv ‘roof’</td>
<td>‘em-aliv ‘to build the roof’</td>
</tr>
<tr>
<td>m. zuka ‘paint’</td>
<td>z-em-uka ‘to paint/ to produce the painting’</td>
</tr>
<tr>
<td>n. kava ‘clothes’</td>
<td>k-em-ava ‘to put on clothes’</td>
</tr>
<tr>
<td>o. kucu ‘shoes’</td>
<td>k-em-ucu ‘to put on shoes’</td>
</tr>
<tr>
<td>p. takit ‘knife’</td>
<td>t-em-akit ‘to put on/to wear the knife’</td>
</tr>
<tr>
<td>q. lakaraw ‘floral hoop’</td>
<td>l-em-akaraw ‘to wear the floral hoop’</td>
</tr>
<tr>
<td>r. tjara ‘ring’</td>
<td>tj-em-ara ‘to put on the ring’</td>
</tr>
<tr>
<td>s. cukui ‘desk’</td>
<td>c-em-ukui ‘(to use the desk) to feast’</td>
</tr>
<tr>
<td>t. ‘acilay’ ‘stone’</td>
<td>‘em-acilay ‘to use the stone (to build)’</td>
</tr>
<tr>
<td>u. calis ‘rope’</td>
<td>c-em-alis ‘to tie up’</td>
</tr>
</tbody>
</table>

(10) Verbalization via ‘-em-' affixation
v. kupu ‘cup’  
k-em-upu ‘to use the cup to fill’

x. pinsiang ‘refrigerator’  
p-en-insiang ‘to use the refrigerator to freeze…’

**NAF affixation**

(11) Verbalization via *-in-* affixation

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>'erepus ‘cloud’</td>
<td>'in-erepus ‘to have been covered by clouds’</td>
</tr>
<tr>
<td>'avai ‘rice cake’</td>
<td>'in-avai ‘to have made/cook rice cake’</td>
</tr>
<tr>
<td>lavilu ‘taro cake’</td>
<td>l-in-avilu ‘to have made/cook taro cake’</td>
</tr>
<tr>
<td>'aliv ‘roof’</td>
<td>'in-aliv ‘to have built the roof’</td>
</tr>
<tr>
<td>zuka ‘paint’</td>
<td>z-in-uka ‘to have painted something’</td>
</tr>
<tr>
<td>kava ‘clothes’</td>
<td>k-in-ava ‘to have put on clothes’</td>
</tr>
<tr>
<td>kucu ‘shoes’</td>
<td>k-in-ucu ‘to have put on shoes’</td>
</tr>
</tbody>
</table>

(12) Verbalization via *si-* affixation

<table>
<thead>
<tr>
<th>Noun</th>
<th>Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>vali ‘wind’</td>
<td>si-vali ‘to (have been) be blown away’</td>
</tr>
<tr>
<td>kava ‘clothes’</td>
<td>si-kava ‘to (have put) put on clothes’</td>
</tr>
<tr>
<td>siaw ‘soup’</td>
<td>si-siaw ‘to (have drunk) drink the soup’</td>
</tr>
</tbody>
</table>

Based on the data above, word-formation rules for denominal verbs in Paiwan can be generalized as follows (based on Tai 1997: 454):

(13) Word-formation rules in Paiwan: Denominalization

**Rule A.** [nX]  >  V[ *ma-* affixation + [nX→vX] ]

Semantics: to express a stative event associated with the object denoted by X.

**Rule B.** [nX]  >  V[ [nX→vX]+ -em/-en- affixation]

Morphophonological processes:
‘-em-’ > ‘-en-’ / when it infixes to a noun beginning with a labial.

Semantics: to perform an activity associated with the object

Rule C \([nX] \rightarrow V[nX \rightarrow vX]+-in-\text{affixation}\)

Semantics: to perform a telic activity associated with the object denoted by X.

Rule D. \([nX] \rightarrow V[si-\text{affixation}+[nX \rightarrow vX] ]\)

Semantics: to perform an activity associated with the object denoted by X.

(14) vali ‘wind’

a. ma-vali timadju

AF-wind 3S. Nom

‘He catches a cold (because of wind)’.

b. v-en-ali-anga

wind-AF-Asp

‘It has become windy’.

c. v-in-ali a ku-uma’ nua vali

wind-PF(Asp) Nom my-house Gen wind

‘The wind has damaged my house.’

d. si-vali-anga timadju

BF-wind-Asp 3S. Nom

‘He was blown away.’

(15) avay ‘rice cake’

a. *ma-avay

b. ’em-avay timadju

AF-rice cake 3S. Nom

‘He makes the rice cake.’
c. ku-in-avay a icu a patay
   1S.Gen-PF-rice cake Nom this Lnk rice
   ‘I have made the rice cake out of the rice.’

d. ku-s-(in)-i-avai a icu a patay
   1S.Gen-BF-(Asp)-rice cake Nom this Lnk rice
   ‘I (have) made the rice cake out of the rice’.

(16) patay ‘rice’

   a. *ma-patay

   b. p-en-atay-anga
      rice-AF-Asp
      ‘The rice grows.’

   b’. P-en-atay-aken
      rice-AF-1S. Nom
      ‘I seed the rice.’

   c. *p-in-atay

   d. *si-patay

These rules in (13) are derived according to focus variations with different types of focus affixes. Semantically, the application of these denominalizing processes can generate verbs that denote events with regards to their parent nouns. However, there is a difference. In (14), the application of rule A, B, C and D will result in different types of denominal verbs which meanings are associated with the single noun vali ‘wind’, while each event that the denominal verb reports is quite different. The same is not
true for the denominal verbs generated by the noun *avay* ‘rice cake’ as in (15). The application of rule B, C and D can generate denominal verbs regarding their parent noun *avay*, and their semantic interpretations are more similar in contrast to (14). Grammatically, the argument valency that each denominal verb (derived from the same noun by applying different rules) takes is different. As in (14) and (15), the verbs *v-in-ali* and *in-avay* can take up to two arguments in a clause, while *ma-vali* and *'em-avai* can only take one.

These denominal rules are not equally productive in Paiwan. For the noun *vali*, rule A, B, C, and D can all apply to it and derive different types of denominal verbs, as in (14). As for the noun *avay*, the application of rule A is prohibited. In (16), only Rule B is acceptable for the noun *patay* ‘rice’.

3.3.2 Verbalization via non-focus affixation

Paiwan has many verbal derivational (non-focus) morphemes, such as *ki-*, *sa-*, *matu-*, *pu- + -an, san-*, etc., which may convert a noun to a verb (Ferrell 1982, Chang 2000). According to Ferrell’s (1982) investigation, there are up to fifteen prefixes of the kind. Here we only demonstrate some of the verbalization processes:

(17)

a. *san*-affixation: *san* + N ([artifact]) ‘to build/construct N’

*san-uma* ‘to build house’

*san-takit* ‘to make knife’

*san-vava* ‘to make wine’

*san-zaljum* ‘to produce water’

b. *sa*-affixation: *sa* + N ([location]) ‘to go to N’

*sa-gaku* ‘to go to school’

*sa-gade* ‘to go to the mountain’

15
*sa-vatu ‘to go to the dog’

c. matu-affixation: matu + N ([+animate]) ‘to be like N’

matu-kakeDian ‘to be like a child’

matu-acang ‘to be like a pig’

*matu-kava ‘to be like clothes’

*matu-tjamay ‘to be like cooked food’

3.3.3 Summary

Focus verbalization differs from non-focus verbalization in two aspects: first, focus affixes on verbs may trigger verbal agreement, while non-focus ones may not. That is, focus exhibits grammatical properties while non-focus doesn’t. Non-focus affixes transform the noun into a verb, which in turn must be inflected for Focus, as in (18c). The omission of the focus -in- in (18c) will lead to a ungrammatical result even though the non-focus affix pu- has changed the noun vuraci to the verb pu-vuraci.

(18) Paiwan

a. v-in-alia ku-uma nua icu a vali

   wind-PF Nom my-house Gen this Lnk wind

   ‘This wind has damaged my house.’

b. ku-p-in-u-vuraci a kinsa

   I-put-PF-sweet potato Nom cooked rice

   ‘I have put sweet potato into cooked rice.’

c. *ku-pu-vuraci a kinsa

Second, focus affixations are more productive than non-focus affixation. For example, -em-affixation can widely apply to nouns from the main class of [natural kinds] to the
main class of [artifacts] while *matu*-affixation applies restrictedly to only the subclass [+animate], *sa*-affixation to [+location] (subclass of [nominal terms]) and *san*-affixation to the main class “[artifact]”. Based on the observation of the productivity of both verbalizing processes, focus verbalization tends to be syntactically derived because it is richer in productivity while non-focus verbalization lexically derived because it is restricted in productivity (cf. Chomsky 1970).

4 Denominal Verbs and Thoughts

4.1 Constraints on denominalization

As has been mentioned in above, the denominalization processes are not equally productive for the category of nouns in Paiwan. That means that not all the nouns in Paiwan can be denominalized as verbs. Even a denominalizable noun can not necessarily undergo all the word-formation rules listed in (13). This phenomenon calls for explanation. Can human thought and cognition have to do with the denominalizing constraints in Paiwan?
Table 1. Application of denominalizing rules

<table>
<thead>
<tr>
<th>Rules of verbalization</th>
<th>Classification of nouns</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Natural kinds</td>
<td>Artifact</td>
<td>Nominal kinds</td>
<td>Kinship terms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ls</td>
<td>NP/NI</td>
<td>PI</td>
<td>Anim</td>
<td>Man-made</td>
<td>Food</td>
</tr>
<tr>
<td>A: ma-affixation</td>
<td>+/-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: -em- affixation</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: -in- affixation</td>
<td>+/-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: si- affixation</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*: all nominal items in the class apply rules  +/-: only some in the class apply rules
(19)

a. [natural kinds]—[-animate]

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipu 'dust'</td>
<td>ma-ipu ‘to get dusty’</td>
</tr>
<tr>
<td>gadean 'Mountain ridge'</td>
<td>g-em-agean/<em>NAF</em> ‘to walk along the Mt. ridge’</td>
</tr>
<tr>
<td>'erepus 'cloud'</td>
<td>'em-erepus / 'in-erepus ‘to become cloudy’</td>
</tr>
<tr>
<td>zaljum 'water'</td>
<td>z-em-aljun / z-in-aljun ‘to flood’</td>
</tr>
<tr>
<td>cengelaw 'sunshine'</td>
<td>c-em-engelaw / c-in-engelaw ‘to shine, to light up’</td>
</tr>
<tr>
<td>patay 'rice'</td>
<td>p-en-atay/<em>NAF</em> ‘rice grows’</td>
</tr>
<tr>
<td>vuraci 'sweet potato'</td>
<td>v-en-uraci/<em>NAF</em> ‘sweet potato grows’</td>
</tr>
<tr>
<td>cemel 'grass'</td>
<td>c-em-emel/<em>NAF</em> ‘grass grows’</td>
</tr>
<tr>
<td>'uval 'hair'</td>
<td>'em-uval/<em>NAF</em> ‘hair grows’</td>
</tr>
</tbody>
</table>

b. [natural kinds]—[+animate]

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Verbs (*AF/*NAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>vatu 'dog'</td>
<td>*v-en-atu/*v-in-atu</td>
</tr>
<tr>
<td>'acang 'pig'</td>
<td><em>'em-acang/</em>'in-acang</td>
</tr>
<tr>
<td>'adjuvi 'snake'</td>
<td>*'em-adjuvi/*in-adjuvi</td>
</tr>
</tbody>
</table>

c. [artifacts]

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Verbs (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>siaw 'soup'</td>
<td>s-em-iaw ‘to drink the soup’</td>
</tr>
<tr>
<td>'avay 'rice cake'</td>
<td>'em-avai ‘to make/cook rice cake’</td>
</tr>
<tr>
<td>lavilu 'taro cake'</td>
<td>l-em-avilu ‘to make/cook taro cake’</td>
</tr>
<tr>
<td>'aliv 'roof'</td>
<td>'em-aliv ‘to build the roof’</td>
</tr>
<tr>
<td>zuka 'painting'</td>
<td>z-em-uka ‘to paint/ to produce the painting’</td>
</tr>
<tr>
<td>Nouns</td>
<td>Verbs (NAF)</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>kava ‘clothes’</td>
<td>k-em-ava ‘to put on clothes’</td>
</tr>
<tr>
<td>kucu ‘shoes’</td>
<td>k-em-ucu ‘to put on shoes’</td>
</tr>
<tr>
<td>takit ‘knife’</td>
<td>t-em-akit ‘to put on/to wear knife’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Verbs (NAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>'avay ‘rice cake’</td>
<td>'in-avay/si- ’avay ‘to have made/cook rice cake’</td>
</tr>
<tr>
<td>lavilu ‘taro cake’</td>
<td>l-in-avilu/si-lavilu ‘to have made/cook taro cake’</td>
</tr>
<tr>
<td>'aliv ‘roof’</td>
<td>'in-aliv/si- ’aliv ‘to have built the roof’</td>
</tr>
<tr>
<td>zuka ‘paint’</td>
<td>z-in-uka/si-zuka ‘to have painted’</td>
</tr>
<tr>
<td>kava ‘clothes’</td>
<td>k-in-ava/si-kava ‘to have put on clothes’</td>
</tr>
<tr>
<td>kucu ‘shoes’</td>
<td>k-in-ucu/si-kucu ‘to have put on shoes’</td>
</tr>
<tr>
<td>kava ‘clothes’</td>
<td>k-in-ava/si-kava ‘to (have put) put on clothes’</td>
</tr>
<tr>
<td>siaw ‘soup’</td>
<td>s-in-iaw/si-siaw ‘to (have drunk) drink the soup’</td>
</tr>
</tbody>
</table>

d. [nominal terms]

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Verbs (*AF/*NAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>suimun ‘location name’</td>
<td>*s-em-uimun/*s-in-uimun</td>
</tr>
<tr>
<td>camak ‘person name’</td>
<td>*c-em-amak/*c-in-amak</td>
</tr>
</tbody>
</table>

e. [kinship terms]

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Verbs (*AF/*NAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>kama ‘father’</td>
<td>*k-em-ama/*k-in-ama</td>
</tr>
</tbody>
</table>

Table 22 represents accessibility of denominalizing rules for nominal terms in Paiwan. Glosses with examples are illustrated in (19). According the classification in 7.2, we mainly classify Paiwan nominal terms into four groups, in which the classes of
[natural kinds] and [artifacts] are subdivided into subgroups, as shown in Table 22. There exists a morphological asymmetry among denominalizing processes in Paiwan, as summarized in (20).

(20)

[Natural kinds]: Rule B; (Rule A/C/D for some terms)

[Artifacts]: Rule B; Rule C; Rule D

[Nominal kinds]: none

[Kinship terms]: none

It indicates that the class of [artifact] can accepts all types of denominalizing rules. As a whole, the class of [natural kinds] seems to accept as many rules as the class of [artifacts]. However, the application of rule A/C/D is limited to several lexical items in the class of [natural kinds], as in Table 22. For example, rule A ‘ma-affixation’ applies only to the two items vali ‘wind’ and ipu ‘dust’ in terms of the investigation. Both the classes of [nominal kinds] and [kinship terms] accept none of these rules. Our observation also indicates that Rule B -em- affixation’, which largely applies to the classes of [natural kinds] and [artifacts], is the most productive rule of denominalization in Paiwan. In a word, denominal verbs can be derived from the classes of [natural kinds] and [artifacts] but cannot be derived from [nominal terms] and [kinship terms]. Both AF and NAF denominal verbs are found in the class of [artifacts]. AF denominal verbs can be rich in the class of [natural kinds], especially in subclasses of [+plant] and [+natural object], while denominal verbs are absent in the subclass of [+animal]. What is the explanation or implication for the asymmetry?

Take a look at the class of [artifact] with examples in (19c). Nouns of this class are most easily denominalized as both AF and NAF verbs. That is because in human cognition ‘function’ and ‘predication’ are closely related (Miller 1996):
Function and Predication

“It is true that for many human-made artifacts known directly through manipulation—spoon, ball, comb, hammer, food—the function is an intrinsic part of the relevant action system.” “From a lexical point of view, to characterize the function of some category of objects is to indicate the class of verbs that can be predicated of that object (Miller 1996: 169)”

Man-made artifacts are designed for different purposes and assigned various functions by human beings. The expression of the function of an artifact has to do with the verbal expression associated with it.

Fig. 1 Function and Predication of ‘Spoon’

\[
\begin{array}{c}
\text{Spoon (n)} \\
\downarrow \\
\text{The function of spoon:} \\
\text{‘to use the spoon to get the soup’} \\
\downarrow \\
\text{Spoon (v)} \\
\text{‘to spoon the soup’}
\end{array}
\]

Take ‘spoon’ in Fig. 6 for example. When it comes to the artifact object ‘spoon’, we may be easily associated with the spoon’s function in cognition. In order to express the function of spoon ‘to use the spoon to get the soup’, the verbs ‘use’ and ‘get’ must be associated in utterance. Due to the economic tendency in languages, the noun \textit{spoon} that denotes a salient object tends to be directly used as verb to replace the longer expression ‘use the spoon to get’. Therefore, it is not surprising that the nouns representing [artifacts] are associated with the corresponding denominal uses. That is
why we see a large number of denominal verbs from this nominal class.

Why can’t nouns surface as verbs? In the class of [natural kinds], inanimate nouns can be verbalized via AF/NAF affixation while animate nouns can not. Miller also offers an explanation.

“For natural objects, some have been assigned familiar functions—apple are eaten, horses are ridden, tree provide shade—but others—atoms, clouds, mountains—have not (Miller 1996: 169)”.

In Paiwan’s version, conventionally, there is a tendency that inanimate objects or entities can be assigned familiar functions while animate ones (animal) can not. That is why parts of denominal verbs (e.g. [+animate]) do not occur in the class of [natural kinds]. Parts of nouns of “[nominal kinds]” name abstract concepts instead of concrete entities. Although some proper nouns denote persons or locations, they are not assigned specific functions in Paiwan. Nouns of “[kinship terms]” denote animate entities (persons) and therefore they are not assigned particular functions. Accordingly, denominal verbs are absent in these two classes.

Consequently, we arrive at a generalization that may predict the occurrence of denominal verbs in Paiwan: A noun can be denominalized as a verb only when first, the noun denotes an entity or object, and second, the entity or object has been conventionally or conceptually assigned a specific (or familiar) function. In other words, Paiwan denominal verbs come from nouns which denote conceptually salient inanimate objects that have been assigned functions in Paiwan.

4.2 A Pragmatic Perspective

Clark and Clark (1979) have argued that denominal verbs in English should be treated as contextual expression rather than denotational or indexical expressions
(Jespersen 1942, McCawley 1971, Green 1974). Hence, they propose a denominal verb convention to account for the phenomenon of denominal verbs in English. This convention is stated as below:

(21) The Innovative Denominal Verb Convention (IDVC) (Clark and Clark 1979:787)

In using an innovative denominal verb sincerely, the speaker means to denote
(a) the kind of situation
(b) that he has good reason to believe
(c) that on this occasion the listener can readily compute
(d) uniquely
(e) on the basis of their mutual knowledge
(f) in such a way that the parent noun denotes one role in the situation, and the remaining surface arguments of the denominal verb denote other roles in the situation.

When introducing an innovative denominal verb, the speaker intends the listener to come to a unique interpretation of what he has said, not only from the meanings of the words alone, but also from the context as well on the basis of what they mutually know (Tai 1997). In theory, innovative denominal verbs can have a large number of meanings. In Paiwan, the meaning extends in terms of different focus variation, as the word *vali* ‘wind’ which has been seen in (14) above. Once an innovative denominal verb appears, it may become fully established. Alternatively, it may become established for some speakers but not for others in a speech community (Tai 1997).
(22) Innovative Denominal Verbs in Paiwan

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. <em>kupu</em> ‘cup’</td>
<td><em>k-em-upu</em> ‘to use the cup’</td>
</tr>
<tr>
<td>b. <em>pinsiang</em> ‘refrigerator’</td>
<td><em>p-en-insiang</em> ‘to use the refrigerator to freeze’</td>
</tr>
<tr>
<td>c. <em>tinnaw</em> ‘computer’</td>
<td><em>t-em-innaw</em> ‘to use the computer’</td>
</tr>
</tbody>
</table>

Nouns in (22) belong to loan words borrowed from Japanese and Mandarin. The denominal verb *k-em-upu* in (22a) (its parental noun is borrowed from Japanese) is established and widely acceptable, while the use the verbs in (22b) and (22c) (from Mandarin) is innovative and only restricted to the younger generation in a speech community. Based on the IDVC, Tai further proposes that such a language with ample denominal verbs should exhibit the following four characteristics (Tai 1997: 444):

(23)

a. Native speakers are allowed to create denominal verbs from concrete nouns liberally.

b. The meaning of an innovative denominal verb cannot be computed by compositional rules from the denotation of its parental noun.

c. Established denominal verbs can have multiple uses created through different historical and social contexts.

d. Nouns are continuously called into service as verbs, though as verbs they are acceptable to some other speakers.

5. Nominalization vs. Verbalization

In the generalizations of ‘Implicational Universals’, Hopper and Thompson (1984) proposed a morphological asymmetry between nominalized forms and verbalized forms based on English data. In English nominalization involve rather
overt (marked) morphology, but verbalization primarily involves zero (unmarked) derivation. However, according to Tai’s (1997) observations, the morphological asymmetry in English is not supported by empirical evidence from Chinese and other languages. Based on the observation of morphological marking on both processes, so far we have seen two competing theories: in English verbalization is much more productive than nominalization, but Chinese exhibits the opposite direction, as shown in Table 23.

Table 23. Nominalization vs. Verbalization in English and Chinese

<table>
<thead>
<tr>
<th>Languages</th>
<th>English</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category shift</td>
<td><strong>Productive/unmarked</strong>&lt;br&gt;water→ (to) water&lt;br&gt;skin→ (to) skin</td>
<td>都市→都市化&lt;br&gt;機械→機械化</td>
</tr>
<tr>
<td>Verbalization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominalization</td>
<td>create→creation&lt;br&gt;propose→proposal</td>
<td><strong>Productive/unmarked</strong>&lt;br&gt;建議 (v)→建議 (n)&lt;br&gt;命令 (v)→命令 (n)</td>
</tr>
</tbody>
</table>

In this section, we attempt to decide whether Paiwan behaves more like English or more like Chinese. Which process is more productive and relatively unmarked in morphology?

### 5.1 Nominalization

According to Tang (2002), Paiwan exhibits two kinds of nominalization in deriving result nouns: the first takes place at the morphological level, the second at the syntactic level. Lexical nominalization involves the following word-formation processes that generate nominals with different meanings:
(24) 

a. The degree/gesture/shape/result of X-ness:
   
   **R1**: the affixation of $X-an$ (X=state verb [-vision])
   
   **R2**: the affixation of $k-in-a-X-an$ (X=state verb [+vision])
   
   **R3**: the affixation of $-in-X-an$ (X=action verb)
   
   b. X-er/X-ee/place regarding X

   **R4**: $Ca Red-X-an$ (X=state/action verb)

Syntactic nominalization has the following derivational processes that derive nominals:

(25) 

The X part:

   **R5**: reduplication of verb X (AF) (X=state verb [+individual level])

   **R6**: $na-X$ (AF) (X=state verb [+stage level])

The sound of X/The manner of X:

   **R7**: the affixation of $si-X-an$ (X=action verb)

Note the focus marker -$in-$, -$an$, -$si-$, etc. here functions as nominalizers that derive the nominal term from the verb X. According to our investigation, the lexical nominalizing processes are inconsistent in productivity. The meaning relation between the derived nominal and the base (verbs) is not regular. The application of nominalizing rules is specified to a subclass of verbs. R1 and R2 primarily apply to state verbs and R3 apply to action verbs, and R4 apply both to state and action verbs, as in (26).
(26) R1 (Tang 2002:288)

a. ‘apendang ‘salty’ → ‘apedang-an ‘saltiness’

b. vucljel ‘cold’ → vucljel-an ‘coldness’

c. ‘aca ‘tall’ → *’aca-an ‘tallness’

(27) R2 (Tang 2002:288-89)

a. ‘aca ‘tall’ → k-in-a-‘aca-an ‘tallness’

b. meljava ‘wide’ → k-in-a-meljava-an ‘width’

c. udilil ‘red’ → k-in-a-udilil-an ‘redness’

d. ma-culu ‘hot’ → *k-in-a-culu-an ‘hotness’

(28) R3

a. ‘em-alup ‘hunt’ → ‘in-alup-an ‘the result of hunting’

a’. na-makuta a su-‘in-alup-an

Asp-how (AF) Nom 2S.Gen-In-hunt-An

‘How is your hunting result?’

b. m-ekel ‘run’ → ‘in-ekel-an ‘the result of hunting’

b’ na-makuta a su-‘in-ekel-an

Asp-how (AF) Nom 2S.Gen-In-run-An

‘How about the result of your running?’

c. vucljel ‘cold’ → *v-in-uceljel-an

d. ‘aca ‘tall’ → *‘in-aca-an

(29) R4

a. vuLuvuLung ‘old’ → va-vuLung-an ‘old man’

b. s-em-ekaul ‘enslave’ → sa-sekaul-an ‘servant’

28
c. k-em-an ‘eat’ → ka-kan-an ‘place for eating’
d. m-ekel ‘run’ → ‘a-ekel-an ‘place for running’
e. ‘aca ‘tall’ → *’a-aca-an
f. meljava ‘wide’ → *ma-meljava-an

As shown in (26), Note that R1 (-an affixation) must apply more specifically to the subclass of state verbs which have the property [-vision]. That means that the property of the predicate cannot be seen (Tang 2002). R2 (with k-in-a-prefixation) is used on the state verbs that have the semantic property [+vision], which means the property of the predicate can only be seen.

By contrast, nominals derived in terms of R5, R6 and R7 are claimed to be syntactically-derived nominals because in these nominal structure temporals or aspect markers may be located between the nominalized predicate and the arguments.

(30) (Tang 2002)
R5
a. ‘aLem’em ‘sweet’ → ‘aLem’em-‘em ‘the sweet part’
a’. i tua vecekadan a ['aLem’em-’em-anga (ka-tiaw) tua ‘udis]
in Obl center Nom sweet (AF)-Red-Asp yesterday Obl peach
‘lit. The sweet part (yesterday) of the peach was the center.’

(31) (Tang 2002)
R6
b. ma-lekuya ‘break’ → na-ma-lekuya ‘the broken part’
b’. a [na-ma-lekuya (katiaw) tua ‘utubay] i tua tukutuku
Nom Asp-AF-break yesterday Obl motorcycle in Obl tire
‘lit. The broken part (yesterday) of the motorcycle was the tire.’
5.2 Unmarkedness and Productivity in Focus verbalization

As shown in (13), (24) and (25), both default nominalization and verbalization involve focus affixation. According to our observations, there exists an asymmetry between nominalized forms and verbalized forms with regards to morphological markedness.

Table 2. Asymmetry in focus marking in Paiwan

<table>
<thead>
<tr>
<th>Category</th>
<th>Nominalization</th>
<th>Denominalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift</td>
<td>R1  R2  R3  R4  R5  R6  R7</td>
<td>RA  RB  RC  RD</td>
</tr>
<tr>
<td>Morphological</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AF marking</td>
<td>√   √</td>
<td>√    √</td>
</tr>
<tr>
<td>PF marking</td>
<td>√   √</td>
<td></td>
</tr>
<tr>
<td>BF marking</td>
<td>√   √  √</td>
<td></td>
</tr>
<tr>
<td>LF marking</td>
<td>√   √  √  √</td>
<td></td>
</tr>
<tr>
<td>Reduplication</td>
<td>√   √</td>
<td></td>
</tr>
<tr>
<td>Aspect marking</td>
<td></td>
<td>√</td>
</tr>
</tbody>
</table>

Nominalization is often associated with more than one elaborate marker on the base, while verbalization primarily with one focus marker. This asymmetry suggests that the process of focus verbalization is morphologically unmarked. Moreover, the asymmetry also can be found on the grammatical status of focus markers on both processes.
Table 3. Grammatical status of focus marking

<table>
<thead>
<tr>
<th>Derivational Properties</th>
<th>Focus on Nominalized Nouns</th>
<th>Focus on Denominal verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change of category</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Change of meaning</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Change of subcategorization frame</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Inflectional Properties</td>
<td>Agreement</td>
<td>✓</td>
</tr>
<tr>
<td>Aspect</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

As aforementioned, the focus marker -in- and -an on the nominal function as nominalizers which change meaning and category. The focus markers on denominal verbs may exhibit both properties, however, more inflectional and less derivational. In contrast, the fact suggests focus nominalization tends to be lexically-derived (marked), and focus verbalization syntactically-derived (unmarked). This distinction can be reflected on the productivity of both processes (Chomsky 1970). For example, verbalizing Rule B: -em- affixation can apply to most of nouns that denote concrete objects in Paiwn. However, the application of Rule 1 for corresponding nominalization is restricted to [-vision] state verbs in lexicon.
<table>
<thead>
<tr>
<th>Category shift</th>
<th>English</th>
<th>Chinese</th>
<th>Paiwan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbalization</td>
<td>Productive/unmarked</td>
<td>城市→城市化</td>
<td>Productive/unmarked</td>
</tr>
<tr>
<td></td>
<td>water→(to) water</td>
<td>城市化→機械化</td>
<td>vali ‘wind’→v-en-ali</td>
</tr>
<tr>
<td></td>
<td>skin→(to) skin</td>
<td></td>
<td>kava ‘clothes’→si-kava</td>
</tr>
<tr>
<td>Nominalization</td>
<td>create→creation</td>
<td>Productive/unmarked</td>
<td>meLava ‘wide’</td>
</tr>
<tr>
<td></td>
<td>propose→proposal</td>
<td></td>
<td>→k-in-a-meLava-an</td>
</tr>
<tr>
<td></td>
<td>建議 (v)→建議 (n)</td>
<td></td>
<td>k-em-an ‘eat’</td>
</tr>
<tr>
<td></td>
<td>命令 (v)→命令 (n)</td>
<td></td>
<td>→si-kan-an</td>
</tr>
</tbody>
</table>

Based on the observation of morphological marking on both nominalization and verbalization, we conclude that in Paiwan the process of verbalization is unmarked and more productive.

**Selected References:**


張秀娟 2000  <<排灣語參考語法>> 台北：遠流出版事業有限公司