

Denominalization in Northern Paiwan*

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Abstract

This paper investigates processes of denominalization in Northern Paiwan. In Northern Paiwan denominal verbs are derived from root nouns by affixing either single or double focus markers to the noun stems. The study has the following implications: (i) Accessibility of denominalizing processes can be cognition-driven. In Northern Paiwan a majority of denominal verbs come from the nominal class of [-animate] and [+artifact]. The phenomenon accounts for the fact that in human cognition the notions of function and predication are closely related. (ii) In addition to inherent denominal verbs, innovative ones borrowed from Japanese and Mandarin Chinese are pervasive. (iii) In Northern Paiwan, in contrast to nominalization, denominalization is morphologically unmarked and relatively more productive. The result verifies the productivity asymmetry in category shift, which are attested in English and Mandarin.

Keywords: denominalization, denominal verb, focus markers, nominalization, category shift

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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’, *ping* ‘ice/to ice’, *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 & 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 cross-linguistically verbalizing processes may be morphologically more unmarked than nominalizing processes.

“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 & 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 verbalization¹ 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

¹ ‘Verbalization’ I use here is a cover term. Denominalization is one type of verbalization.

verbalization from French, Spanish, German, Turkish, Indonesian and Japanese, where rich verbal morphology is attested.

As far as Formosan languages are concerned, Starosta et al. (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 are derived from their NAF forms (Pawley & Reid, 1980). In Formosan languages processes of nominalization have been widely reported and the processes may involve focus derivation (Chang, 2002; Tang, 2002). Nevertheless, researches on relevant denominalizing processes and details of denominal verbs have not been fully probed.²

This paper primarily focuses on the investigation of ‘denominal verbs’ in Northern Paiwan.³ We would like to address the following issues. (i.) How are denominal verbs formed in Paiwan? Can we denominalize all the nouns in Paiwan? If not, what are the constraints on these processes? (ii.) Are these verbalizing processes productive in comparison with the corresponding nominalizing processes? In this study, we clarify each type of denominal uses (as verbs) of nouns in terms of word-formation rules; we exemplify how these denominal verbs derived from focus

² Huang (2000: 389) has proposed that denominal dynamic and state verbs in Mayrinax Atayal are formed by adding the AF affixes *m-/um-/∅* to the roots, as in (1)

(1) Mayrinax Atayal (Huang 2000:389)

- a. *m-situing* ‘wear clothes’
- b. *h-um-anaang* ‘make sound’
- c. *∅-na’akis* ‘old’

Zeitoun (2007) also indicates that in Mantauran Rukai stative verbs are formed by affixing *ma-* to the noun roots or stems, as in (2).

(2) Mantauran Rukai (Zeitoun, 2007: 229, 231)

- a. *ma-valrovalro-nga* lalake-li ’avai.
Stat.Fin-young woman-already child-1S.Gen female
‘My daughter is already a young woman.’
- b. *ma-lroolai-na* ’ina lalake-’o ’atoloro paori-ina-ina
Stat.Fin-child-still this child-2S.Gen so stick to-Red-mother

‘Your child is still small so he clings to (his) mother.’

³ The Paiwan language is spoken in the mountainous areas and the foothills in Pintung and Taitung counties. According to Ferrell (1969), Formosan languages are divided into three major subgroups: Tsouic, Atayalic and Paiwanic. Paiwan is the main member of Paiwanic family. Based on phonological evidence, Blust (1999) advocates that Paiwan is one subgroup out of 9 major Austronesian branches in Taiwan. Based on morpho-syntactic evidence, Ross (2009) proposes that Paiwan is the member of Nuclear Formosan languages (other than Tsou, Puyuma and Rukai, those of which are subgrouped in higher levels). According to Ho (1978), Paiwan can be further divided into two main dialect groups: the North-Western dialects and the South-Eastern dialects. The Tjavalan dialect, which is spoken in the mountain in northern Pintung, is the data-base for this study. In Dialectology, it belongs to North-Western dialect group.

affixation are similar to ‘canonical verbs’, and how they are different from other verbs that are derived from 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 the conceptual constraints are 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 appropriate case marker when it occurs in argument position in a sentence (see examples in (1)).

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 item. 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. He claims that nominal-kind terms differ natural-kind terms in that the extension of a nominal kind term is not gathered by an underlying trait. Nature kind terms can be organized in tighter taxonomies and prototype structures while nominal kind terms cannot. Although natural-kind and artifact kind concepts share some similarities (i.e. both are characterized by taxonomic and prototype structures), Smith (1989) further indicates the distinction between natural-kind and artifact concepts: natural-kind concepts may support more inductive inferences about invisible properties than do artifact concepts (Gelman & O’Reilly, 1988). Tai (2003, p.c.) summarizes the nominal classification discussed above and points out that ‘kinship terms’ should be independent out of other nominal categories. He proposes the four-way distinction of nominal terms:⁴

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.

⁴ The nominal categorization we talk about here is on a cognitive basis rather than morphosyntactic one.

Nominal kinds

Terms that are perceived only by definition or proper names, like ‘history’, ‘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:

(I)

Natural kinds**Landscapes:**

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

Natural phenomena:

’utjalat ‘rain’, *vali* ‘wind’, *cengelaw* ‘sunshine’, *zaljum* ‘water’, *kuli* ‘ice’, *sapuy* ‘fire’, *’erepus* ‘clouds’, *kerepaw* ‘fog’.

Natural objects:

ipu ‘dust’, *’acilay* ‘stone’, *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.

(II)

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’.

(III)

Nominal kinds

milimilivan ‘history’, *Suimun* ‘location name’, *Palang* ‘person name’.

(IV)

Kinship terms:

kama ‘father’, *kina* ‘mother’, *vuvu* ‘grandfather/grandmother’, *kaka* ‘brother/sister’.

3. Denominalization in Northern Paiwan

3.1 Focus system in Northern Paiwan

Verbs in Paiwan are always inflected for focus when they are used in the clauses. Focus exhibits its inflectional property in the same way as the third person singular marker *-s* (*/-es*) in English. Focus affixes occur on a verb, indicating the thematic agreement of the verb with the argument in the subject position. For example, Actor focus marker */<en>* on verb will agree with a nominative agent, as in (1a). Patient focus marker *<in>/-in/-en*, locative focus marker *-an* and benefactive/instrumental focus marker *si-* agree with the nominative patient argument, the locative argument and the beneficiary/instrumental argument respectively, as in (1b-d).

(1) Paiwan

- a. tekel ti _____ palang tua vava
 drink<AF>⁵ NOM Palang OBL wine
 ‘Palang drinks some wines.’
- b. t<in>ekel a _____ zua a _____ vava ni palang
 drink<PERF.PF> NOM that LNK wine GEN Palang
 ‘Palang has drunk that wine.’

⁵ Abbreviations used in this paper are listed as follows:

1	first person	IMP	imperative
2	second person	IRR	irrealis marker
3	third person	LNK	Linker
AF	agent focus marker	LOC	locative nouns
ASP	aspectual marker	NOM	nominative case
COS	change-of-state marker	OBL	oblique case marker
GEN	genitive case	PERF	perfective
		PF	patient focus marker
		PL	plural
		Q	question particle
		RED	reduplication
		S	singular

- c. t<in>ekel-**an** ni palang tjay vava a icu a gaku
 drink<PERF>-LF GEN Palang OBL wine NOM this LNK school
 ‘Palang has drunk wines right in this school.’
- d. ku-**si**-tekkel tua siaw a kizing
 1S.Gen-BF-drink OBL soup NOM spoon
 ‘I used the spoon to get soup.’

Moreover, focus markers are also known to be characterized by derivational properties in that: (i) Focus may change subcategorization frame—it may transitive the predicate, as in (2):

(2) Paiwan

- a. ma-pulaw ti palang
 AF-drunk NOM Palang
 ‘Palang gets drunk.’
- b. p<in>ulaw ni palang ti kalalu
 drunk<PERF.PF> GEN Palang NOM Kalalu
 ‘Palang causes Kalalu to get drunk.’

The sentence (2a) in AF (*ma-*) form represents non-transitivity. The use of patient focus marker <in> on verb *pulaw* in (2b) will introduce a nominative argument *kalalu* and transitive 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 (Chang 1995, 2002; Sells 1997). (iii) Focus will change category 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**’

In (3a-b), 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

Nouns

'*erepus* 'cloud'

zaljum 'water'

cengelaw 'sunshine'

zuka 'paint'

kava 'clothes'

Verbs

'<*em*>*erepus* 'to become cloudy'

z<*em*>*aljum* 'to flood'

c<*em*>*engelaw* 'to shine, to light up'

z<*in*>*uka* 'to paint/ to produce the painting'

si-*kava* 'to put on clothes'

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 denominal 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 denominal verbs are 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 everyday.

- d. John wants to *water* the flowers.

Paiwan denominal 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. zaljum-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-COS NOM 1S.GEN-field
'Sweet potato has grown up in my field.'
- c. '<in>erepus a gade
clouds<PERF.PF> NOM mountain
'The mountain was covered by clouds.'
- d. ku-c<in>uluk a vasa
1S.GEN-taro cake< PERF.PF> NOM taro
'I have made the taro a taro cake.'
- e. *cukui-amen
table-1PL. NOM
'We feast.'
- f. uri-sa-gaku-amen a cukui/*cukui
IRR-go to-AF-school-1PL.NOM LNK table<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 cukui* '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 Denominalization (Focus Verbalization) vs. Non-focus Verbalization

3.3.1 Denominalization via single 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) Paiwan [Action verb]

a. k*an*-aken tua kinsa
eat<AF>1S.NOM OBL cooked food

‘I eat the meal.’

b. *kan-aken tua kinsa
eat-1S.NOM OBL cooked food

(8) Paiwan [Denominal verb]

a. c*ukui*-amen i-gaku
table<AF>-1PL.NOM in-school

‘We feast at school.’

b. *cukui-amen i-gaku
table-1PL.NOM in-school

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* underlyingly 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*ukui** ‘to feast’. The morphological process can be depicted as $V[[nX \rightarrow vX] + \text{Focus Affixation}]$. In this formulation, *nX* represents a noun root and *vX* a verb root. A Paiwan denominal verb may be in the first place derived from a noun root via zero-derivation and then undergoes focus affixation. As both *kan* ‘eat’ and *cukui* ‘table’ have to be inflected obligatorily for focus in the clause as in (7a) and (8a), does such obligatoriness indicate that roots in Paiwan are nominal grammatically? If the answer yes, it can be concluded that all the verbs in Paiwan are derived from denominalization. However, if we take a closer look at the grammatical distribution of both noun roots and verb roots, we may find that it is not the case. Paiwan does make a categorical distinction between nouns and verbs. For example, the noun root *cukui* can occur in case-marked

position. As shown in (9), *cukui* is marked by the oblique case marker *tua*.

- (9) Paiwan
- | | | |
|------------------|-----|-------|
| tjengelay-aken | tua | cukui |
| like (AF)-1S.NOM | OBL | table |
- ‘I like the table.’

By contrast, the verb root *kan* never occurs in case-marked position. The sentence in (10) is ungrammatical.

- (10) Paiwan
- | | | |
|------------------|-----|-----|
| * tjengelay-aken | tua | kan |
| like (AF)-1S.NOM | OBL | eat |
- ‘I like eating.’

The fact indicates that the verb root *kan* is a verb in nature and is unlikely to be derived from denominalization.

Here we demonstrate glosses about denominal verbs which are derived by means of different types of focus affixation, as in (11-15).

AF Affixation

- (11) Denominalization via *ma*-affixation

Nouns ([natural kinds])	Verbs
<i>vali</i> ‘wind’	<i>ma-vali</i> ‘to catch a cold (because of wind)’
<i>ipu</i> ‘dust’	<i>ma-ipu</i> ‘to get dusty (because of dust)’

- (12) Denominalization via <*em*> affixation

Nouns (a-h: [natural kinds]; i-x: Verbs [artifacts])	
a. <i>gadean</i> ‘mountain ridge’	<i>gagdean</i> ‘to walk along the mountain ridge’
b. <i>'erepus</i> ‘cloud’	<i>'erepus</i> ‘to become cloudy’
c. <i>zaljum</i> ‘water’	<i>zaljum</i> ‘to be flooded’
d. <i>cengelaw</i> ‘sunshine’	<i>cengelaw</i> ‘to shine, to light up’
e. <i>patay</i> ‘rice’	<i>patay</i> ‘rice grows/ to seed rice’

f. <i>vuraci</i> ‘sweet potato’	<i>v<en>uraci</i> ‘sweet potato grows’
g. <i>cemel</i> ‘grass’	<i>cemel</i> ‘grass grows’
h. <i>'uval</i> ‘hair’	<i>'uval</i> ‘hair grows’
i. <i>siaw</i> ‘soup’	<i>siaw</i> ‘to drink the soup’
j. <i>'avay</i> ‘rice cake’	<i>'avay</i> ‘to make/cook rice cake’
k. <i>lavilu</i> ‘taro cake’	<i>lavilu</i> ‘to make/cook taro cake’
l. <i>'aliv</i> ‘roof’	<i>'aliv</i> ‘to build the roof’
m. <i>zuka</i> ‘paint’	<i>zuka</i> ‘to paint/ to produce the painting’
n. <i>kava</i> ‘clothes’	<i>kava</i> ‘to put on clothes’
o. <i>kucu</i> ‘shoes’	<i>kucu</i> ‘to put on shoes’
p. <i>takit</i> ‘knife’	<i>takit</i> ‘to put on/to wear the knife’
q. <i>lakaraw</i> ‘floral hoop’	<i>lakaraw</i> ‘to wear the floral hoop’
r. <i>tjara</i> ‘ring’	<i>tjara</i> ‘to put on the ring’
s. <i>cukui</i> ‘desk’	<i>cukui</i> ‘(to use the desk) to feast’
t. <i>'acilay</i> ‘stone’	<i>'acilay</i> ‘to use the stone (to build)’
u. <i>calis</i> ‘rope’	<i>calis</i> ‘to tie up’
v. <i>kupu</i> ‘cup’	<i>kupu</i> ‘to use the cup to fill’
x. <i>pinsiang</i> ‘refrigerator’	<i>p<en>insiang</i> ‘to use the refrigerator to freeze...’

NAF affixation(13) Denominalization via *<in>* affixation

Noun	Verbs
<i>'erepus</i> ‘clouds’	<i>'<in>erepus</i> ‘to have been covered by clouds’
<i>'avai</i> ‘rice cake’	<i>'<in>avai</i> ‘to have made/cook rice cake’
<i>lavilu</i> ‘taro cake’	<i>l<in>avilu</i> ‘to have made/cook taro cake’
<i>'aliv</i> ‘roof’	<i>'<in>aliv</i> ‘to have built the roof’
<i>zuka</i> ‘paint’	<i>z<in>uka</i> ‘to have painted something’
<i>kava</i> ‘clothes’	<i>k<in>ava</i> ‘to have put on clothes’
<i>kucu</i> ‘shoes’	<i>k<in>ucu</i> ‘to have put on shoes’

(14) Denominalization via *si-* affixation

Noun	Verbs
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<i>vali</i> ‘wind’	<i>si-vali</i> ‘to (have been) be blown away’
<i>kava</i> ‘clothes’	<i>si-kava</i> ‘to (have) put on clothes’
<i>siaw</i> ‘soup’	<i>si-siaw</i> ‘to (have) drink the soup’

(15) Denominalization via *-an* affixation

Noun	Verbs
<i>'utjal</i> ‘rain’	<i>'utjaal-an</i> ‘to (have) rain’
<i>tjara</i> ‘ring’	<i>tjara-an</i> ‘to (have) put on the ring’
<i>'acilay</i> ‘stone’	<i>'acilay-an</i> ‘to (have) use the stone to build’

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

(16) Word-formation rules in Paiwan: Denominalization

Rule A. $[nX] \rightarrow V[ma\text{-}affixation + [nX \rightarrow vX]]$

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

Rule B. $[nX] \rightarrow V[[nX \rightarrow vX] + \langle em \rangle / \langle en \rangle affixation]$

Morphophonological processes:

‘**’ \rightarrow “*<en>*” / when it infixes to a noun beginning with a labial.

Semantics: to perform a stative event or activity associated with the object denoted by X.

Rule C. $[nX] \rightarrow V[[nX \rightarrow vX] + \langle in \rangle affixation]$

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.

Rule E. $[nX] \rightarrow V[[nX \rightarrow vX] + \text{-}an\text{ affixation}]$

Semantics: to perform a stative event or activity associated with the object denoted by X.

These rules in (16) will derive denominal verbs 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 (17), the rules A, B, C, D and E will result in different types of denominal verbs which are associated with the single noun *vali* ‘wind’; however, each event that the denominal verb *vali* reports is quite different. The same is not true for the denominal verb generated by the noun ‘*avay* ‘rice cake’ as in (18).

- (17) Paiwan [*vali* ‘wind’]
- a. ma-*vali* timadju
AF-wind 3S.NOM
‘He catches a cold (because of wind).’
- b. v<en>ali-anga
wind-AF-COS
‘It has become windy.’
- c. v<in>ali a ku-uma’ nua vali
wind<PERF.PF> Nom 1S.GEN-house GEN wind
‘The wind has damaged my house.’
- d. si-*vali*-anga timadju nua vali
BF-wind-COS 3S.NOM GEN wind
‘He was blown away by the wind.’
- e. vali-an-anga a icu a gade
wind-LF-COS NOM this LNK mountain
‘It becomes windy in this mountain.’
- (18) Paiwan [‘*avay* ‘rice cake’]
- a. *ma-*avay*
AF-rice cake
- b. ’avay timadju
rice cake<AF> 3S. NOM
‘He makes the rice cake.’
- c. ku-’<in>avay a icu a patay
1S.GEN<PERF.PF>rice cake NOM this LNK rice
‘I have made the rice cake out of the rice.’
- d. ku-si-’avay a icu a patay
1S.Gen-BF-rice cake NOM this LNK rice
‘I (have) made the rice cake out of the rice.’
- e. ku-’avay-an ti kina
1S.GEN-rice cake-LF NOM mother
‘I made rice cakes for Mother.’

The application of rule B, C, D and E can generate denominal verbs regarding their parent noun *'avay*, and their semantic interpretations are more similar in contrast to (17). Grammatically, the argument valency that each denominal verb (derived from the same noun by applying different rules) takes is different. As in (17c) and (18c), the verbs *v<in>ali* and *'<in>avay* can take up to two arguments in a clause, while *ma-vali* and *'avai* can only take one. These denominal rules are not equally productive in Paiwan. For the noun *vali*, rule A, B, C, D and E can all apply to it and derive different types of denominal verbs, as in (17). As for the noun *'avay*, the application of rule A is prohibited. In (19), only Rule B is acceptable for the noun *patay* 'rice'.

- (19) Paiwan [patay 'rice']
- a. *ma-patay
AF-rice
 - b. p<en>atay-anga
rice<AF>-COS
'The rice has grown up.'
 - b'. p<en>atay-aken
rice<AF>-1S. NOM
'I seed the rice.'
 - c. *p<in>atay
rice<PERF>
 - d. *si-patay
BV-rice

3.3.2 Denominalization via Double Focus Affixation

In other cases, denominal verbs may take up to two focus markers and report relevant events associated with their parent nominals. Some nominal terms out of [natural kinds] and [nominal terms] can derive denominal verbs via *--an* Affixation. The meanings of resulting verbs are less predictable as in example (20).

Rule F: *--an* Affixation

- (20) Paiwan
- a. ka-v<en>ali-an=angata Di
KA-wind<AV>-LF=really Q
'How come the wind is so strong?'

- b. ka-’utjal-an=angata Di
KA-rain<AF>-LF=really Q
‘How come the rain is so strong?’
- c. na-gade-an-aken
PERF-mountain<AF>-LF-1S.NOM
‘I walked along the mountain ridge.’
- d. uru-p<en>ana’-an-aken tua icu a pana’
IRR-river<AF>-LF-1S.NOM OBL this LNK river
‘I will walk along the riverside.’
- e. na-tjimur-an-aken
PERF-Tjimur<AF>-LF-1S.NOM
‘I spoke in Tjimur accent.’
Lit. ‘I followed Tjimur accent to speak.’

In (20a-b) the resulting events are related to affected degree of natural phenomena like rain and wind, while in (20c-d) the resulting events express meanings of ‘to follow a trace or trail of a natural object.’ By analogy of (20c-d), --an Affixation can productively apply to place names and express meanings of ‘to speak in a place’s accent’, as in (20e). Similar examples can be observed Japanese and Southern-Min loanwords, as in (21a-b).

(21) Paiwan

- a. taihuk-an timadju
Taipei<AF>-LF 3S.NOM
‘He speaks in Taipei’s accent.’
- b. kisang-an-aken
Chisan<AF>-LF-1S.NOM
‘I speak in Chisan’s accent.’

Most of members of [artifact] undergo <in>-an affixation to derive denominal verbs, as in (22).

Rule G: <in>-an affixation

(22) Paiwan

- a. ku-k<in>ava-an-anga (a icu a kava)
1S.GEN-clothes<PERF.PF>-LF-COS NOM this LNK clothes
‘I have already dressed up.’

- b. ku-’<in>acilay-an-anga a ku-uma’
 1S.GEN-stone<PERF.PF>-LF-COS NOM 1S.GEN-house
 ‘I have used stones to build my house.’

3.3.3 Denominalization vs. non-focus affixation

Paiwan has many verbal derivational (non-focus) morphemes, such as *ki-*, *sa-*, *matu-*, *pu-*, *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:

(23) a.

<i>san</i> -affixation: <i>san</i> + N ([artifact]) ‘to build/construct N’
<i>san-uma</i> ‘to build house’
<i>san-takit</i> ‘to make knife’
<i>san-vava</i> ‘to make wine’
* <i>san-zaljum</i> ‘to produce water’

b.

<i>sa</i> -affixation: <i>sa</i> + N ([location]) ‘to go to N’
<i>sa-gaku</i> ‘to go to school’
<i>sa-gade</i> ‘to go to the mountain’
* <i>sa-vatu</i> ‘to go to the dog’

c.

<i>matu</i> -affixation: <i>matu</i> + N ([+animate]) ‘to be like N’
<i>matu-kakeDian</i> ‘to be like a child’
<i>matu-’acang</i> ‘to be like a pig’
* <i>matu-kava</i> ‘to be like clothes’
* <i>matu-tjamay</i> ‘to be like cooked food’

Denominalization (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 a noun into a verb, which in turn must be inflected for Focus, as in (24c). The omission of the focus <in> in (24c) will lead to an ungrammatical result even though the non-focus affix *pu-* has changed the noun *vuraci* to the verb *pu-vuraci*.

(24) Paiwan

- a. v<in>ali a ku-uma' nua icu a vali
 wind<PERF.PF> NOM 1S.GEN-house GEN this LNK wind
 'This wind has damaged my house.'
- b. ku-p<in>u-vurasi a kinsa
 1S.Gen-put<PERF.PF>-sweet potato NOM cooked rice
 I have put sweet potato into cooked rice.'
- c. *ku-pu-vurasi a kinsa
 1S.Gen-put-sweet potato NOM cooked rice

Second, focus affixations are more productive than non-focus affixation. For example, 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, Denominalization should be syntactically derived because it is richer in productivity while non-focus verbalization should be 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, 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 (15). This phenomenon calls for explanation. Do human thought and cognition have to do with the denominalizing constraints in Paiwan? Table 1 represents accessibility of denominalizing rules for nominal terms in Paiwan.

Table 1. Application of Denominalizing Rules⁶

Denominal Processes	Classification of nouns									
	Natural kinds				Artifact			Nominal kinds		Kinship terms
	Ls	NP/NB	Pl	Anim	Man-made Food	Tools	Clothing/decoration	Person name	Place name	
A: <i>ma</i> -affixation		(√)								
B: < <i>em</i> > affixation		(√)	(√)		√	√	√			
C: < <i>in</i> >/- <i>in</i> /- <i>en</i> Affixation		(√)			√	√	√			
D: - <i>an</i> affixation		(√)			√	√	√			
E: <i>si</i> - affixation		(√)			√	√	√			
F: < <i>em</i> >- <i>an</i> Affixation	(√)	(√)							√	
G: < <i>in</i> >- <i>an</i> Affixation						√	√			

Note: (√) indicates that rules do not fully apply to all the nominal members in the category.

Glosses with examples are illustrated in example (25).

⁶ My reviewers indicate that there seem to be co-occurrence restrictions between the roots (or stems) and the focus markers in the process of denominalization. Although this might be due to the semantic differences of the roots, it could be possible that the focus markers also carry semantic distinctions that make them incompatible with certain roots. For example, the stative AF marker *ma*- may pattern with nouns of natural kinds (natural objects/phenomena), but hardly pattern with artifact nouns that can be easily interpreted as dynamic verbs. The issue can be crucial and I will leave it open for further study.

(25)

a. [natural kinds]—[-animate]

Nouns**Verbs***ipu* ‘dust’*ma-ipu* ‘to get dusty’*'erepus* ‘cloud’*'erepus* / *'<in>erepus* ‘to become cloudy’*zaljum* ‘water’*zaljum* / *z<in>aljum* ‘to flood’*cengelaw* ‘sunshine’*cengelaw* / *c<in>engelaw* ‘to shine, to light up’*patay* ‘rice’*p<en>atay* / (*NAF) ‘rice grows’*vuraci* ‘sweet potato’*v<en>uraci* / (*NAF) ‘sweet potato grows’*cemel* ‘grass’*cemel* / (*NAF) ‘grass grows’*'uval* ‘hair’*'uval* / (*NAF) ‘hair grows’

b. [natural kinds]—[+animate]

Nouns**Verbs (*AF/*NAF)***vatu* ‘dog’**v<en>atu* / **v<in>atu**'acang* ‘pig’**'acang* / **'<in>acang**'adjuvi* ‘snake’**'adjuvi* / **'<in>adjuvi*

c. [artifacts]

Nouns**Verbs (AF)***siaw* ‘soup’*siaw* ‘to drink the soup’*'avay* ‘rice cake’*'avay* ‘to make/cook rice cake’*lavilu* ‘taro cake’*lavilu* ‘to make/cook taro cake’*'aliv* ‘roof’*'aliv* ‘to build the roof’*zuka* ‘painting’*zuka* ‘to paint/ to produce the painting’*kava* ‘clothes’*kava* ‘to put on clothes’*kucu* ‘shoes’*kucu* ‘to put on shoes’*takit* ‘knife’*takit* ‘to put on/to wear knife’**Nouns****Verbs (NAF)**

' <i>avay</i> 'rice cake'	'<in> <i>avay/si-</i> ' <i>avay</i> /' <i>avay-an</i> 'to have made/cook rice cake'
<i>lavilu</i> 'taro cake'	<i>l</i> <in> <i>avilu/si-lavilu/lavilu-an</i> 'to have made/cook taro cake'
' <i>aliv</i> 'roof'	'<in> <i>aliv/si-</i> ' <i>aliv</i> /' <i>aliv-an</i> 'to have built the roof'
<i>zuka</i> 'paint'	<i>z</i> <in> <i>uka/si-zuka/zuka-an</i> 'to have painted'
<i>kava</i> 'clothes'	<i>k</i> <in> <i>ava/si-kava/kava-an</i> 'to have put on clothes'
<i>kucu</i> 'shoes'	<i>k</i> <in> <i>ucu/si-kucu/kucu-an</i> 'to have put on shoes'
<i>siaw</i> 'soup'	<i>s</i> <in> <i>iaw/si-siaw/siav-an</i> 'to (have) drink/make the soup'

d. [nominal terms]

Nouns**Verbs (*AF/*NAF)**

<i>suimun</i> 'location name'	<i>s</i> <i>uimun-an</i> /* <i>s</i> <in> <i>uimun</i>
<i>camak</i> 'person name'	* <i>c</i> <i>amak</i> /* <i>c</i> <in> <i>amak</i>

e. [kinship terms]

Nouns**Verbs (*AF/*NAF)**

<i>kama</i> 'father'	* <i>k</i> <i>ama</i> /* <i>k</i> <in> <i>ama</i>
----------------------	--

According to the classification in section 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 1. There exists a morphological asymmetry among denominalizing processes in Paiwan, as summarized in (26).

(26) [Natural kinds]:

Landscapes: Rule F (Members partially undergo the rule)

Natural phenomena/Natural objects: Rule A; Rule B; Rule C; Rule D; Rule E;
Rule F (Members partially undergo these rules)

Plants: Rule B (Members partially undergo the rule)

Animals: none

[Artifacts]:

Man-made Food: Rule B; Rule C; Rule D; Rule E

Tools: Rule B; Rule C; Rule D; Rule E; Rule G

hing/Decoration: Rule B; Rule C; Rule D; Rule E; Rule G

[Nominal kinds]:

Place Names: Rule F

Person Names: none

[Kinship terms]: none

It indicates that the class of [artifact] can accept 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 rules is limited only to several lexical items in the class of [natural kinds], as in Table 1. Denominalizing rules from A to F seem quite accessible for members out of natural phenomena and objects. Nevertheless, only Rule F is workable in the members of landscapes and Rule B in the members of plants. Rule A “*ma*-affixation” applies only to the two items *vali* ‘wind’ and *ipu* ‘dust’ in terms of the investigation. In the class of [nominal kinds], the subclass ‘place names’ widely accept Rule F, whereas the subclass ‘person names’ accept none of the rules. Nominal members of [kinship terms] cannot be denominalized. Our observation also indicates that Rule B “** 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], [artifacts] and [place names] but cannot be derived from [person names] 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?

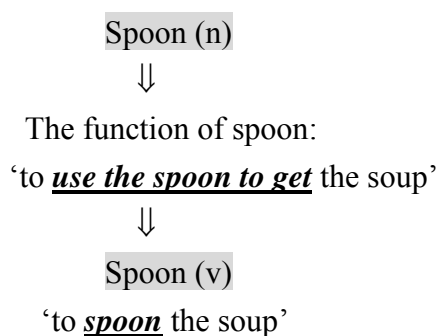
Take a look at the class of [artifact] with examples in (25c). Nouns of this class are most easily denominalized as both AF and NAF verbs. That is because in human cognition ‘function’ and ‘predication’ are closely related (Miller, 1996):

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. Take ‘spoon’ in Fig. 1 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 *spoon* that denotes a salient object tends to be directly used as a verb to replace the longer expression ‘*use the spoon to get*’.

Fig. 1 Function and Predication of ‘Spoon’



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 English some natural objects like stones, cliffs or mountains are not associated with human activities or particular functions. These nominal terms hardly surface as denominal verbs. In Paiwan the situation is slightly different from English. Natural objects like stones, clouds and mountains are highly related to human activities and may be assigned functions. 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. Proper nouns denote persons or locations. Only the place names [-animate] are assigned specific functions in Paiwan while person names [+animate] are not. 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, in Paiwan denominal verbs come from nouns which denote conceptually salient inanimate objects that have been assigned functions.

4.2 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 the Innovative Denominal Verb Convention to account for the phenomenon of denominal verbs in English. In using an innovative denominal verb sincerely, the speaker means to denote situations stated as below:

- (27) The Innovative Denominal Verb Convention (IDVC) (Clark & Clark, 1979: 787)
- 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.

Along the line of thoughts in IDVC, Tai (1997) further elaborates that denominal verbs can be generated on a pragmatic basis. 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. 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 (17) 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). Consider the following examples.

(28) Innovative Denominal Verbs in Paiwan

Nouns

a. *kupu* ‘cup’

b. *cukui* ‘table’

c. *kucu* ‘shoes’

d. *pinsiang* ‘refrigerator’

e. *tinnaw* ‘computer’

Verbs

kupu ‘to use the cup’

cukui ‘to feast’

kucu ‘to put on shoes’

p<en>insiang ‘to use the refrigerator to freeze’

tinnaw ‘to use the computer’

Nouns in (28) belong to loan words borrowed from Japanese and Mandarin. The denominal verbs *kupu* in (28a), *kucu* in (28b) and *cukui* in (28c), whose parental nouns are borrowed from Japanese are established and widely acceptable, while the use the verbs in (28d) and (28e) 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):

(29)

- 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 denomianl 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.

The innovative use of Paiwan denominal verbs as in (28a-e) at least accounts for the properties in (29a), (29b) and (29d). First, the denominal verbs derived from Japanese and Mandarin loan nominals indicates that Paiwan speakers are allowed to liberally create denominal verbs from new-introduced concrete nouns. Second, these denominal verbs may exhibit properties of lexical idiosyncrasy. The meaning of a denominal verb may hardly be predicted from its parental noun. For example, in (28b) the innovative denominal verb *cemukui* means ‘to feast’ rather than ‘to use the table to

eat or to write’, in contrast to (28a), (28d) and (28e). Third, the denominalization process is pervasive and continuous in Paiwan. However, the acceptability of these innovative denominal verbs varies from speaker to speaker. Denominal verbs derived from Japanese nouns are well-established and widely acceptable while those derived from Mandarin nouns are relatively new and less acceptable.

5. Nominalization v.s. Denominalization

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 denominalization 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 denominalization is much more productive than nominalization, but Chinese exhibits the opposite direction, as shown in Table 2.

Table 2. Nominalization vs. denominalization in English and Chinese

Languages	English	Chinese
Category shift		
Denominalization	<u>Productive/unmarked</u> water→(to) water skin→(to) skin	都市→都市化 機械→機械化
Nominalization	create→ <i>creation</i> propose→ <i>proposal</i>	<u>Productive/unmarked</u> 建議 (v)→建議 (n) 命令 (v)→命令 (n)

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 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:

(30)

- 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:

(31)

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 markers *<in>*, *-an*, *si-*, etc. here function 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 (32).

(32) Paiwan (Tang, 2002: 288)

R1

- a. 'apendang 'salty' → 'apedang-*an* 'saltiness'
- b. vuceljel 'cold' → vuceljel-*an* 'coldness'
- c. 'aca 'tall' → *'aca-*an* 'tallness'

(33) Paiwan (Tang, 2002: 288-89)

R2

- 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'

(34) Paiwan

R3

- a. 'em-alup 'hunt' → '<in>alup-*an* 'the result of hunting'
- a'. na-makuta a su- '<in>alup-*an*
PERF-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*
PERF-how (AF) NOM 2S.GEN-<IN>run-AN
'How about the result of your running?'
- c. vuceljel 'cold' → *v<in>uceljel-*an*
- d. 'aca 'tall' → *' <in>aca-*an*

(35) Paiwan

R4

- a. vuLuvuLung 'old' → *va-*vuLung-*an* 'old man'
- b. sekaul 'enslave' → *sa-*sekaul-*an* 'servant'
- c. kan '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 (32-35), 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, as in (36-37).

(36) Paiwan

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-COS yesterday OBL
 peach
 'lit. The sweet part (yesterday) of the peach was the center.'

(37) Paiwan

R6

- b. ma-lekuya 'break' → *na*-ma-lekuya 'the broken part'
 b'. a [*na*-ma-lekuya (**katiaw**) tua 'utubay] i tua tukutuku
 NOM PERF-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 Denominalization

As shown in the previous sections, both default nominalization and denominalization involve focus affixation. According to our observations, there exists an asymmetry between nominalized forms and verbalized forms with regards to morphological markedness, as in Table 3.

Table 3. Nominalization vs. Denominalization

Category Shift Morphological Marking	Nominalization (Tang 2002)							Denominalization						
	R1	R2	R3	R4	R5	R6	R7	RA	RB	RC	RD	RE	RF	RG
AF marking					√	√		√	√				√	
PF marking		√	√							√				√
BF marking							√				√			
LF marking	√	√	√	√			√					√	√	√
Reduplication				√	√									
Aspect marking						√								

Here reduplication and aspect marking are not taken into account with respect to the markedness of denominalization due to the reason that they are not the necessary processes for denominalization. In other words, if a noun bears only reduplication or aspectual marking without focus markers, denominalization can never be made, as in

(38a-b).

(38) Paiwan

- a. *cukui-kui-amen
table-RED-1PL.NOM
'We are feasting.'
- b. *na-cukui-amen
PERF-table-1PL.NOM
'We have feasted.'
- c. cukui-kui-amen
table-RED-1PL.NOM
We are feasting.'
- d. na-cukui-amen
PERF-table-1PL.NOM
'We have feasted.'

By contrast, reduplication and aspectual marking are crucial and obligatory in some nominalizing processes as shown in R4, R5 in (30) and R6 in (31).

Nominalization is often associated with more than one elaborate marker on the base, while denominalization primarily with one focus marker except RF and RG. This asymmetry suggests that the process of denominalization is morphologically unmarked. Moreover, the asymmetry also can be found on the grammatical status of focus markers on both processes, as in Table 4.

Table 4. Grammatical status of focus marking

		Focus marking on Nominalized Nouns	Focus marking on Denominal verbs
Derivational Properties	Change of category	Yes	No
	Change of meaning	Yes	No
	Change of subcategorization frame	No	Yes
Inflectional Properties	Agreement	No	Yes
	Aspect	No	Yes

As aforementioned, the focus markers <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 denominalization syntactically-derived (unmarked). This distinction can be reflected on the productivity of both processes (Chomsky, 1970). For example, verbalizing Rule B: affixation can apply to most of nouns that denote concrete objects in Paiwan. However, the application of Rule1 for corresponding nominalization is restricted to [-vision] state verbs in lexicon. Based on the observation of morphological marking on both nominalization and denominalization, we conclude that in Paiwan the process of denominalization is unmarked and more productive.

6. Conclusion

By means of manipulation of focus system, an abstract event can be treated as an entity and then a verb becomes a noun in nominalization. In the meantime, a noun that denotes an entity can surface as a verb to name the associated event of the noun. The familiarity and richness of the connection between nouns and verbs make it possible that the two categories can act as source categories when it comes to describing the more abstract relationship. Our study on denominalization reveals that Paiwan is a language which is abundant with denominal verbs. These verbs are derived from their parent nouns in terms of a set of focus affixation rules. We also exemplify how human cognition affects denominalization processes—constraints on human cognition and thought can lead to constraints on grammar. Given the earlier studies on nominalization processes in Paiwan by Tang (2002), in comparison, we further reveal that category shift in Paiwan exhibits a morphological asymmetry between nominalized forms and verbalized forms like English, but unlike Chinese, as in Table 5.

Table 5. Cross-languages Comparison

Languages Category shift	English	Chinese	Paiwan
Denominalization	Productive/unmarked water→(to) water skin→(to) skin	都市→都市化 機械→機械化	Productive/unmarked vali ‘wind’ → v<en>ali kava ‘clothes’ → si-kava
Nominalization	create→creation propose→proposal	Productive/unmarked 建議 (v)→建議 (n) 命令 (v)→命令 (n)	meLava ‘wide’→k<in>a-meLava-an kan ‘eat’ →si-kan-an

Such markedness comparison between English, Chinese and Paiwan may exhibit that the productivity asymmetry in category shift are attested cross-linguistically. In addition, the comparison can bear a correlation with regards to morphological typology.⁷ Chinese is an example of a language that has a highly analytical structure. Affixes are hardly used to compose words. English is a relatively synthetic language. Derivational affixes are largely found to derive nouns from verbs. Paiwan is more like an agglutinating language where focus markers are employed both in denominalization and nominalization.

⁷ I here thank the reviewers for providing me with this insightful suggestion. Typological difference in morphology between languages should be carefully examined and is worth further study.

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北排灣語去名詞化現象探討

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摘要

本文旨在調查及探討北排灣語中去名詞化現象。北排灣語去名詞性動詞由名詞詞幹直接加上單一或雙焦點詞綴而形成。本文主要有下列三點發現：(一) 去名詞化的運用與限制與人類認知運作有關，大量的去名詞性動詞來自[-有生]及[+人造物]的名詞類別。(二) 除了固有的去名詞性動詞外，來自日語及漢語借詞的創新詞彙亦非常多見。(三) 相對於名物化，北排灣語中去名詞化現象在構詞上相對無標且較為多產。在對比英語與漢語之下，此結果說明了多產性不對稱現象存在於普遍語言詞類轉換之中。

關鍵字：去名詞化、去名詞性動詞、焦點詞綴、名物化、詞類轉換

