

Case Marking, Reference and DP Structure: A Comparative Study of Paiwan, Atayal and Chamorro*

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While Formosan languages like Paiwan and Atayal do not exhibit overt determiners, they have overt case markers. In these languages, regardless of whether such markers are obligatorily required or are inherently marked with referential features, the presence of empty DP may be allowed in subject position. By comparing with some relevant facts in other languages like Chamorro, Chinese and English, it is shown in this paper that functional categories like case markers may license nominal subjects with empty determiners (cf. Longobardi 1994). In addition, for human or non-human nouns, Paiwan has two kinds of case markers, each marked with distinct referential features (cf. Huang et al. 1998 and Chuang 2002).

Key words: case marking, reference, determiner, empty category, noun phrase structure

1. Introduction

Within the theory of phrase structure two important issues concerning the study of the noun phrase are how the functional categories of a nominal argument may be projected and how the reference of a nominal argument may be licensed and identified. Longobardi (1994), for instance, claims that a nominal expression is an argument only if it is introduced by a category D and the occurrence of an empty D needs to be constrained.¹ To give an example, according to Longobardi, conditions as in (1a-b) below hold for the licensing of empty determiners in languages like Italian.

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¹ Among others, see Li (1998), Cheng & Sybesma (1999) and Tang (2005) for a claim that in languages like Chinese not all types of nominal arguments need to project to DP.

Italian (Longobardi 1994)

- (1) Empty determiners may occur at S-structure in Italian only under the following conditions:
 - a. They are restricted to plural and mass head nouns like several other determiners.
 - b. They are subject to a lexical government requirement like other empty heads.

In view of Longobardi's claims about the functional projection of an Italian nominal argument, one question arises with respect to languages like Paiwan, in which while case markers are overt and obligatory, determiners and articles are covert. That is, in Paiwan-type languages may overt case markers that are generally considered as functional rather than lexical license empty determiners of nominal arguments? Another relevant question has to do with the referential properties of case markers. That is, in Paiwan-type languages may case markers be intrinsically specified with different kinds of referential features?

To answer these two and other relevant questions, other Austronesian languages like Atayal and Chamorro are examined against Paiwan. Though Paiwan, Atayal and Chamorro are all of Austronesian languages, they differ from one another in several non-trivial ways. Unlike the determinerless/articleless Paiwan and Atayal, for example, Chamorro is claimed in Chung (1998) to exhibit an overt definite, not indefinite, determiner. To give another example, while Paiwan, Atayal and Chamorro all have overt case markers, according to Huang (1993, 2000a) and Huang et al. (1998), (Mayrinax) C'uli' Atayal and (Wulai) Squliq Atayal observe two distinct types of case marking. In Mayrinax case markers are obligatory and specified with [+/- referential] features; by contrast, in Wulai case markers are optional and bear no referential specification. By comparison, both Chinese, a language without overt determiners, and English, a language with overt definite and indefinite determiners, do not have overt case markers like nominative, accusative, etc.²

It is shown in this paper that in languages like Paiwan and Atayal, not Chamorro, case markers may license nominal subjects with empty determiners (cf. Longobardi 1994). In addition, as discussed in Tang et al. (1998) and Tang (2006b), Paiwan has two kinds of case markers, one with the referential specification as [- definite] or non-referential and the other with the referential specification as neutral (cf. Huang et al. 1998 and Chuang 2002). If our analysis is on the right track, it suggests that licensors of empty functional categories within the functional projection of noun need not be lexical governors. It also suggests that with respect to the (non-)referential marking of case

² See Tang (1990, 1993, 2005) for a discussion of the lack of the Chinese counterpart of English genitive 's (cf. Li 1985, 1990, Simpson 2001).

markers there appear three types of case marking system in Formosan languages. While all the case markers in languages like Mayrinax Atayal are referentially distinguished, and those in languages like Wulai Atayal referentially undistinguished, some, not all, case markers in Paiwan are specified with the intrinsic [- definite] or non-referential features. Languages like Paiwan thus may reflect how the cognition of Formosan people may be grammatically marked.

2. Atayal vs. Chamorro

Though different kinds of word order may be found with Austronesian languages, Paiwan, Atayal and Chamorro all exhibit the pattern of the predicate-initial word order. In the case of Atayal, there appear two sub-types, C'uli' Atayal and Squiliq Atayal. In Huang et al. (1998) and Huang (2000a) Mayrinax is claimed to be of C'uli' Atayal and observe case markers with the inherent [+/- referential] features. Compare, for instance, the nominal subjects in cases like (2) with the nominal objects in those like (3).

Mayrinax C'uli' Atayal (Huang 2000a)

- (2) a. ma-siaq 'i' ba'ay.
 AV-laugh Nom.Per ba'ay
 'Ba'ay is laughing.'
- b. ma-nbahaag a' kabahniq.
 AV-fly Nom.Nref bird
 'Birds can fly.'
- c. m-in-ingilis ku' nabakis.
 AV-Perf-cry Nom.Ref old-man
 'That old man cried.'
- (3) a. h-um-ihip 'i' yaya' 'i' yaba'.
 AV-kiss Acc.Per Mother Nom.Per Father
 'Father kisses Mother.'
- b. pa-'agaal cu' pila' ku' 'ulaqi'.
 Fut-AV-take Acc.Nref money Nom.Ref kid
 'The kid wants money.'
- c. pa-'agaal cku' pila' ku' 'ulaqi'.
 Fut-AV-take Acc.Ref money Nom.Ref kid
 'The kid wants the money.'

In (2a-c) and (3a-c) above the nominal subjects and objects under consideration all occur in the form of a bare noun preceded by a case marker. The bare nouns in (2a) and

(3a) are proper names (like *Ba'ay*) or proper name-like elements (like *yaya* 'Mother'); those in (2b) and (3b) are common nouns (like *kabahniq* 'bird' and *pila* 'money'); and those in (2c) and (3c) are also common nouns (like *nabakis* 'old man' and *pila* 'money'). According to Huang, these bare nominals, subject or object, are marked with distinct case markers that carry the intrinsic [+/- referential] features. Case markers like nominative 'i' in (2a) and accusative 'i' in (3a) need to appear with referential person proper names; those like nominative *a*' in (2b) and accusative *cu*' in (3b) need to appear with non-referential common nouns; and those like nominative *ku*' in (2c) and accusative *cku*' in (3c) need to appear with referential common nouns.³

It should be pointed out here that, as shown in the absence of a subject-object asymmetry in the (non-)referential interpretation between (2b-c) and (3b-c), in Mayrinax common nouns in argument position only need to be subject to the just-mentioned co-occurrence restrictions with case markers, it does not matter whether they are in the form of bare nouns or non-bare nouns. Compare, for example, (4)-(5), with non-bare noun subjects, with (2), with bare noun subjects, on the one hand, as well as (6)-(7), with non-bare noun objects, with (3), with bare noun objects, on the other hand.

Mayrinax C'uli' Atayal (Huang 2000a)

- (4) a. ungi'-i ku' kanairil ka' haca.
 forget-I Nom.Ref woman KA' that
 'Forget that woman!'
- b. kia' 'i' maquwas ku' 'ulaqi=mu.
 Prog 'I' AV-sing Nom.Ref son=my
 'My son is singing.'
- (5) a. ukas a' 'ulaqi'=mu.
 not-exist Nom.Nref kid=my
 'My kid does not exist/I have no kid.'
- b. ukas a' ngiyaw ka' rahuwal. (Zeitoun et al. 1999)
 not-exist Nom.Nref cat KA' big.
 'Big cats do not exist./There is no big cat.'
- (6) yakaat=cu m-in-anii cku' qulih ka' hani.
 not=I AV-Perf-eat Acc.Ref fish KA' this
 'I never ate this kind of fish.'
- (7) ta'avas cu' uwaw na' cuqulih ru' m-inuqil la.
 AV-steal Acc.Nref thing Gen.Nref man and AV-die Part
 'He will steal others' things and die in the end.'

³ Mayrinax examples like (2b), to be compared with (2c), seem to suggest that in Mayrinax generic noun phrases are treated as non-referential rather than referential expressions.

These observations about Mayrinax (2)-(7), thus, seem to indicate that unlike languages like Chinese, for example, Mayrinax does not exhibit a subject-object asymmetry in the interpretation of (bare) nouns, a fact that is also found with English-type languages.⁴ Chinese-type languages pattern with English in the absence of overt case markers but they differ from English in the presence of overt determiners and articles. Mayrinax, by contrast, has overt case markers though not overt determiners. An important question then may be raised here as to how to derive the presence/absence of a subject-object asymmetry in the interpretation of bare nouns among languages like Mayrinax, with covert determiners and overt case markers, Chinese, with covert determiners and covert case markers, and English, with overt determiners and covert case markers.

As for Sqliq Atayal, Huang (1993) and Huang et al. (1998) state that it differs from (Mayrinax) C'uli' Atayal in the system of case marking. That is, in Sqliq Atayal case markers are optional and unspecified for the [+/- referential] features. Compare, for instance, Wulai Sqliq cases like (8a), (9a), (10a), with bare noun subjects, with those like (11a), (12a-c), with non-bare noun subjects, on the one hand, as well as those like (8b), (9b), (10b), with bare noun objects, with those like (11b), (12d), with non-bare noun objects, on the other hand.⁵

Wulai Sqliq Atayal (Huang 1993)

- (8) a. cyux m-ita? sayun tali.
 Asp M-watch Sayun Tali
 'Tali is watching Sayun.'
 b. cyux m-ita? tali sayun.
 Asp M-watch Tali Sayun
 'Sayun is watching Tali.'

⁴ Among others, see Li (1998), Cheng & Sybesma (1999) and Tang (2005) for different accounts of the mentioned subject-object asymmetry in the interpretation of Chinese (bare) nominals. In particular, Tang (2005) proposes that quantifiers like *mei* 'every' and *na* 'which', demonstratives like *zhe* 'this' and *na* 'that', quantifiers like numerals and *xuduo* 'many' and classifiers like *ge* and *xiang* 'box' may each be generated under the maximal projections of different functional categories like D, F, Num and Cl, respectively, and that in accordance with the feature specification of these functional heads some, not all, empty nominal heads may be licensed by elements like modifiers.

⁵ As stated in Huang (1993), in Wulai Sqliq Atayal the word order is VOS for predicates marked with AV affixes and VSO for those marked with NAV affixes. As for Mayrinax C'uli' Atayal, Huang (2000a) claims that it is a VOS language regardless of the AV/NAV marking of the predicate.

- (9) a. t-m-tu tali qhuniq.
 =M=crush Tali tree
 ‘A tree crushed Tali.’
 b. cyux t-m-tu squliq turi.
 Asp =M=crush person auto
 ‘A car ran over a person.’
- (10) a. t?-an qhuniq tali.
 crush-AN tree Tali
 ‘The tree crushed Tali.’
 b. s-?agan-mu qulih sqari? qani.
 S-take-1S.G fish net this
 ‘I used this net to catch the fish.’
- (11) a. s-?agan-mu qulih sqari? qani.
 S-take-1S.G fish net this
 ‘I used this net to catch the fish.’
 b. n-ulu-saku? kopu? qani hira?.
 Past-find-1S.BN cup this yesterday
 ‘I found this cup yesterday.’
- (12) a. m-qwas qutux knerin.
 M-sing one woman
 ‘A woman is singing.’
 b. pm-on-mu qutux laqi?.
 wash-UN-1S.G one child
 ‘I am going to wash a child.’
 c. kta-n-mu qutux bzyug mhyun.
 see-AN-1S.G one pig mountain
 ‘I saw a pig mountain.’
 d. s-qwas tali qutux qwas sayun.
 S-sing Tali one song Sayun
 ‘Tali sang a song for Sayun.’

In all the instances of Wulai Squliq (8)-(12) above the nominal arguments, bare or non-bare as well as subject or non-subject, are preceded neither by overt case markers nor by overt determiners like English *the* or *a(n)*. They are however all grammatical: in (8a-b) they are interpreted as definite, in (9a-b) as indefinite, in (10a-b) as definite, in (11a-b) as deictic, and in (12a-b) as indefinite.⁶

⁶ Like Mayrinax cases like (5a-b), Wulai cases like (i) seem to also indicate that in Atayal not all subjects need to be specific in reference.

Examine also Taoshan Squliq examples like (13a-d) below, in which overt case markers like nominative *quw* and genitive *na* may be present or absent and their presence or absence does not affect the grammaticality and interpretation of the nominal arguments.

Taoshan Squliq Atayal (Su 2004)

- (13) a. *s-in-zqih-an-maku'* (*quw*) *yumin*.
 Perf-hurt-AN-1S.G Nom Yumin
 'I hurt Yumin.'
- b. *'tayal* (*quw*) *knayril qaniy*.
 Atayal Nom woman this
 'This woman is Atayal.'
- c. *wa-su'* *kbrus-un* (*quw*) *squliq la?*
 how-2S.G cheat-UN Nom man Part
 'How did you cheat the man?'
- d. *wa-su'* *kbrus-un* (*na*) *squliq la?*
 how-2S.BN cheat-UN Gen man Part
 'How are you cheated by the man?'

Wulai Squliq Atayal (Huang 1993)

- (i) a. *i9at pila?*
 not.exist money
 'There is no money.'
- b. *u9at laqi?-nya?*
 not.exist child-3S.G
 'He has no child.'

For more discussion of the syntactic and semantic behavior of positive and negative existential constructions in Atayal and other Formosan languages, see section 4.

Note that, as shown in Mandarin (ii) and Paiwan (iii) below, non-specific subjects may also be found in languages like Chinese and Paiwan.

Mandarin (Li 1998)

- (ii) *sanzhi gunzi gou ni da ta ma?*
 three+CL sticks enough you hit him Q
 'Are three sticks enough for you to hit him (with)?'

Paiwan

- (iii) a. *makaya a si-ka-sengseng tu Dusa a kun a ita a makaLilaw.*
 can A SI-KA-make Obl two A skirt Nom one A cloth
 'One piece of cloth can make two skirts.'
- b. *makaya a k-em-an tu telu a vasa a macidil a caucau.*
 can A eat-AV Obl three A taro Nom one A man
 'One man can eat three taros.'

And, as shown in Jianshi Squliq (14) and (15) below, in Squliq Atayal case markers are not specified with the inherent [+/- referential] features.⁷

Jianshi Squliq Atayal (Liu 2004)

- (14) a. p-pmy-on na? tali? squ? slaq qu? pagay.
Irr-plant-PV Obl Tali Loc paddy-field Nom rice
'Rice will be planted by Tali in the pagay field.'
- b. siy-on na? watan qu? krahu? na? hozil.
like-PV Obl Watan Nom big NA? dog
'Big dogs are liked by Watan.'
- (15) a. s-m-oya sayun qu? tali?.
AV-like Sayun Nom Tali
'Tali likes Sayun.'
- b. niq-un na? tali? qu? qulih qasa.
eat-PV Obl Tali Nom fish that
'That fish is eaten by Tali.'

If our discussion so far is on the right track, it seems that in both C'uli' and Squliq Atayal overt case markers may license the occurrence of nominal arguments with empty determiners, regardless of whether these case markers are obligatory or optional and whether these case markers are specified or unspecified with the inherent [+/- referential] features.⁸ In other words, while case markers are generally not treated as lexical governors, they may act as internal licensors of empty determiners in Atayal-type languages (see also footnote 3). Under this analysis the so-called lexical government condition as given in (1b) needs to be viewed as requirement on the governor for an empty D from outside, not inside, of the functional projection of the noun phrase.⁹

⁷ According to Su (2004) and Liu (2004), the Taoshan and Jianshi dialects of Squliq Atayal are both of the word order of VOS, an observation that is different from the Wulai dialect.

⁸ See Tang (2006a) for a discussion of the functional projection of the nominal and modifier in Formosan Austronesian languages.

⁹ One important question that may be raised here is whether there may appear Formosan languages that, like Chinese, do not exhibit overt determiners and nominative markers for common nouns and that, unlike Chinese, do not exhibit a subject-object asymmetry in the interpretation of (bare) nouns. According to Huang et al. (1998), for instance, Formosan languages like Mayrinax Atayal, Wulai Atayal, Saisiyat, Amis, Paiwan, Tsou, Puyuma, Budai Rukai and Tona Rukai all have overt nominative markers. In Wulai Atayal, with referentially unmarked nominative, and Saisiyat, with referentially marked nominative, such markers may be present or absent at S-structure. Also, as stated in Huang (2000b), Chang (2000a, b), respectively, other Formosan languages like Thao, Kavalan and Seediq also have referentially

Tang (2005), for instance, also points out that, as shown in the grammaticality contrasts among various types of sentences like (16)-(21), in Mandarin modifiers may serve as internal licensors and identify an empty F though not an empty D.

Mandarin (Tang 2005)

- (16) a. *qianmian lai-le na (yi) ge nühai.
 front come-LE that one CL girl
 b. *qianmian lai-le [hen piaoliang]-de (yi) ge nühai.
 front come-LE very pretty-DE one CL girl
 c. qianmian lai-le (yi) ge [hen piaoliang]-de nühai.
 front come-LE one CL very pretty-DE girl
 ‘From the front came a very pretty girl.’
 d. qianmian lai-le (yi) ge nühai.
 front come-LE one CL girl
 ‘From the front came a girl.’
- (17) a. *you zhe liang ben shu zai zuozhi-shang.
 have this two CL book on desk-top
 b. *you [Zhangsan xie]-de liang ben shu zai zuozhi-shang.
 have Zhangsan write-DE two CL book on desk-top

unmarked overt nominative markers that need not appear at S-structure. If Longobardi’s (1994) postulations about Italian (1a-b) are to be viewed as cross-linguistically valid, the possibility of the absence of nominative markers in languages like Wulai Atayal, Saisiyat, Thao, Kavalan and Seediq may all be treated as PF phenomenon. Alternatively, one may claim that Longobardi’s account may be incorrect and approach the issue under consideration from the hypothesis of whether a nominal (subject) may remain in the indefinite, existential scope of vP or VP (cf. Kim 2004 and Chung 2005, among others). Due to the limited data accessible now, we will leave the answer to this question open and for further research; it, however, should be pointed out that, as stated in Huang et al., Isbukun Bunun and Mantauran Rukai seem to observe no nominative marker. But, as shown in Zeitoun (2000), Isbukun Bunun is claimed to exhibit referentially unmarked overt case markers like nominative ‘a’ and oblique *mas*, the occurrence of which is yet optional. Compare, for example, (i) and (ii) below.

Isbukun Bunun (Huang et al. 1998)

- (i) na-malansan-ik (mas) iesu.
 Fut-follow-1S.Nom Obl Jesus
 ‘I will follow Jesus.’

Isbukun Bunun (Zeitoun 2000)

- (ii) bunun (‘a’) ‘alang.
 Bunun Nom ‘alang
 ‘‘alang is Bunun.’

- c. you liang ben [Zhangsan xie]-de shu zai zuozi-shang.
 have two CL Zhangsan write-DE book on desk-top
 ‘There are two books that Zhansang wrote on the desk.’
- d. you liang ben shu zai zuozi-shang.
 have two CL book on desk-top
 ‘There are two books on the desk.’
- (18) a. *ta mai-le na (yi) zhong yao hen youxiao.
 he buy-LE that one CL medicine very effective
- b. *ta mai-le [zui gui]-de yi zhong yao hen youxiao.
 he buy-LE most expensive-DE one CL medicine very effective
- c. ta mai-le yi zhong [zui gui]-de yao hen youxiao.
 he buy-LE one CL most expensive-DE medicine very effective
 ‘(lit) He bought a most expensive kind of medicine that is very effective.’
- d. ta mai-le yi zhong yao hen youxiao.
 he buy-LE one zhong medicine very effective
 ‘(lit) He bought one kind of medicine that is very effective.’
- (19) a. (*you) [xin]-de yi zhong yao maiwan-le.
 have new-DE one CL medicine sell-LE
 ‘The new kind of medicine already sold out.’
- b. *(you) yi zhong [xin]-de yao maiwan-le.
 have one CL new-DE medicine sell-LE
 ‘(lit) A new kind of medicine already sold out.’
- (20) a. we chi-le (*you) [ni chang tuijian]-de san dao cai.
 I eat-LE have you often recommend-DE three CL vegetable
 ‘I ate the three dishes that you often recommend.’
- b. wo chi-le (*you) san dao [ni chang tuijian]-de cai.
 I eat-LE have three CL you often recommend-DE vegetable
 ‘I ate three dishes that you often recommend.’
- (21) a. wo zhao-bu-dao (*you) qita-de liang ge xuesheng.
 I find-not-arrive have the-other-DE two CL student
 ‘I cannot find the other two students.’
- b. *wo zhao-bu-dao liang ge qita-de xuesheng.
 I find-not-arrive two CL the-other-DE student
- c. (*you) qita-de liang ge xuesheng bu ken lai.
 have the-other-DE two CL student not willing come
 ‘The other two students are not willing to come.’

The facts about (16)-(21) suggest that in Mandarin while the presence of a modifier

before the (demonstrative-)numeral-classifier sequence may make the nominal referential, that of a modifier after the (demonstrative-)numeral-classifier sequence may not, hence the presence/absence of the referentiality or specificity effect, as in (16)-(18), the presence/absence of the subject-object asymmetry in the occurrence of *you* ‘have’, as in (19)-(20), and the intransportability of modifiers, as in (21). By referential elements, Tang means among other things nominals with overt or covert demonstratives that may be deictic, anaphoric or indefinite specific in use. Based on the co-occurrence restrictions between different types of quantifiers and numerals, Tang suggests that in Mandarin demonstratives are generated under the functional projection of F rather than D and that an empty F may be licensed by internal licensors like modifiers or external licensors like lexical governors.

Longobardi (1994), to give another example, also points out that in languages like Italian, in which overt determiners are observed, the presence of a modifier may license or identify an overt D. In Italian (22b) below, according to Longobardi, the presence of an overt D is still obligatory when there appears a modifier in the nominal predicate, a fact that is however not found in (22a), without a modifier.

Italian (Longobardi 1994)

- (22) a. Gianni e (un) medico.
 Gianni is a doctor
 b. Ritengo Mario *(un) bravo medico.
 I believe Mario a good doctor

To sum up, so far it seems that at S-structure nominal arguments with empty functional categories may be licensed either by lexical governors from outside of the functional projection of the nominal or by case markers or modifiers from inside of the functional projection of the nominal (see also footnotes 9 and 10).¹⁰ Languages like Chamorro, in which the discussed subject-object asymmetry in the occurrence or

¹⁰ We assume here that the maximal projection of case markers may be considered as part of the nominal functional projection of N rather than as separate lexical projection of preposition. For a discussion of the distinction between the case marker and the preposition in Formosan languages like Paiwan, see Tang et al. (1998), Tang (1999, 2002a) and Wu (2004), among others. Note that while nominal arguments with empty functional categories may be subject to licensing conditions like being c-commanded by the projection of lexical categories, case markers, modifiers, etc., the identification of the interpretation of nominal arguments with empty categories may require more than such ‘local’ licensors. In Formosan and Chinese languages, for instance, clause-internal factors like the type, mood, voice and grammatical function of the verb as well as clause-external factors like pragmatics, etc. will all contribute to the (non-)referential reading of a (bare) noun.

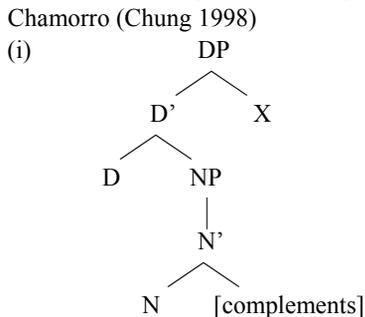
interpretation of bare noun arguments is claimed in Chung (1998) to appear, seem to further support an analysis along this line of thought.

According to Chung (1998), in Chamorro nominal subjects that may serve as external arguments must be specific.¹¹ They include pronouns, proper names, definite noun phrases headed by the definite article or a demonstrative, and indefinite noun phrases headed by a numeral or the weak quantifier *palu* ‘some’. By contrast, noun phrases headed by quantifiers like *kada* ‘each’ are not specific, nor are indefinite noun phrases headed by the null indefinite article. What concerns our discussion here is that, as shown in the grammaticality contrasts between (24a) and (23a-c), (24b-c), on the one hand, as well as between (24a) and (25a-c), on the other hand, in Chamorro a bare noun can appear as object but not subject.¹²

Chamorro (Chung 1998)

- (23) a. Para agupa’ i fandangu.
 Fut tomorrow the wedding
 ‘The wedding is going to be tomorrow.’
 b. Ha-konni’ si Orasima’ i haggan.
 agr-take Orasima the turtle
 ‘Orasima took the turtle.’
 c. Kulan um-a’apatti i dos.
 kind.of agr-divide.w.ea.other.Prog the two
 ‘The two were kind of dividing something.’

¹¹ In Chung (1998) nominals in Chamorro are projected as in (i) below, in which elements like determiners, demonstratives, quantifiers and numerals are all realized as D (cf. Kahnemuyipour and Massam 2004, Tang 2006a, among others).



And, according to Chung, the demonstratives and the quantifier *todu* ‘all’ can select NP or a definite DP as complement.

¹² As stated in Chung (1998), the pragmatically neutral word order of Chamorro is VOS and it may alternate with VSO.

- (24) a. *Kumekuentus taotao.
agr.speak.Prog person
b. Mang-uekuentus kuaru na famalao'an.
agr-speak.Prog four L women
'Four girls were talking.'
c. Pues lumi'uf un lotdu' na hasuli esta i fondu ya
so agr.dive a stout L eel until the bottom and
ha-sohgui i nganga'.
agr-bail the duck
'Then a stout eel dived to the bottom and fished out the duck.'
- (25) a. Ginin hayi na un-risibi katta?
from who? Comp agr-receive letter
'From whom did you receive a letter?'
b. Ti hu-bisita ni un taotao.
not agr-visit not a person
'I didn't visit even one person.'
c. Kala ma-pupunu un dikiki na haggan.
almost agr-kill.Prog a little L turtle
'They were almost killing a little turtle.'

As already pointed out before, both Chamorro and Atayal do not observe overt indefinite determiners, though Chamorro, not Atayal, has an overt definite determiner. Another difference between them is that, as indicated in Atayal (26)-(27) and Chamorro (28)-(30) below, in Chamorro, not Atayal, (bare) common noun subjects are not marked with any overt nominative case.

Mayrinax C'uli' Atayal (Huang 2000a)

(26)		Nom	Acc	Obl	Neu
a.	[+pro, +per]:	'i'	'i'	'i'	'i'
b.	[+com, +nr]:	a'	cu'	---	---
c.	[+com, +rf]:	ku'	cku'	cku'	---
(27)		Loc	Gen	Ben	Inst
a.	[+pro, +per]:	ki'	ni'	ni'	---
b.	[+com, +nr]:	i'	na'	---	na'
c.	[+com, +rf]:	cku'	nku'	nku'	nku'

Chamorro (Chung 1998)

- | | | | | |
|------|-----------------|-----|-----|------|
| (28) | | UM | Obl | Loc |
| | a. Common Noun: | --- | ni | gi |
| | b. Proper Name: | si | as | gias |
| | c. Pronoun: | --- | nu | giya |
- (29) a. The case markers typically fuse with the definite article *i* (*ni + i > ni* and *gi + i > gi*).
- b. They are not realized when adjacent to the null indefinite article or to the nominal negative *ni* ‘not’.
- (30) Noun phrases which are subjects, direct objects or possessors at phonetic form occur in the unmarked case.

Assuming that in Chamorro pronouns are projected as DP and the specifier of I is not lexically governed, it then follows from our analysis that Chamorro cases like (24a), with a bare noun subject unmarked for any overt case marker and determiner, are ungrammatical, and those like (25a) are not, with a bare noun object.

Another piece of evidence from languages like Chamorro may be found in the absence of the grammaticality contrast between cases like (31a) and (31b), with a bare noun subject and object modified by a modifier.

Chamorro (Chung 1998)

- (31) a. Kumahulu’ dangkulu na haggan.
agr.rise big L turtle
‘A large turtle rose up.’
- b. Ti ha-songgi dangkulu na hayu.
not agr-burn big L wood
‘He didn’t burn any big log.’

As also pointed out before, in languages like Chinese, in which overt determiners are not observed, the presence of a modifier may license or identify nominal arguments with empty functional categories. It seems that, as opposed to the ungrammatical Chamorro (24a), with a bare noun subject, and the grammatical Chamorro (25a), with a bare noun object, a licensing pattern similar to Mandarin (16)-(21) may also be observed in the well-formedness of both Chamorro (31a) and (31b).¹³

¹³ Note that according to Longobardi’s (1994) claims about Italian (1a-b) and (22a-b), the functional projection of nominal arguments may be different from that of nominal non-arguments. In Chamorro cases like (ia-c) below, for instance, nominal non-arguments like *Agupa* ‘tomorrow’ and *Haga-n Antonio* ‘Antonio’s daughter’ may appear without the definite

determiner *i*, whereas nominal arguments like *i kumplianos-na i Impiradot* ‘the Emperor’s birthday’ and *i gima’ Maria* ‘Maria’s house’ need to co-occur with *i*.

Chamorro (Chung 1998)

- (i) a. Agupa’ i kumplianos-na i Impiradot.
tomorrow the birthday-agr the Emperor
‘Tomorrow is the Emperor’s birthday.’
b. i gima’ Maria gi halum tanu’
the house-agr Maria Loc inside and
‘Maria’s house in the forest’
c. Haga-n Antonio yu’.
daughter-L Antonio I
‘I am Antonio’s daughter.’

Similarly, in languages like Wulai Squiliq Atayal nominal predicates, identifying or non-identifying, appear without the presence of case markers.

Wulai Squiliq Atayal (Su 2004)

- (ii) a. sayun-saku?.
Sayun-1S.BN
‘I am Sayun.’
b. tayan yabu.
Atayal Yabu
‘Yabu is Atayal.’
c. isya tali?
doctor Tali
‘Is Tali a doctor?’

By contrast, Huang et al. (1998) and Huang (2000a) claim that in Mayrinax Atayal nominal predicates in the form of person proper names need to be marked with a neutral case marker *’i*. Compare, for instance, the presence of *’i* in (iiiia) and the absence of *’i* in (iiiib-d).

Mayrinax C’uli’ Atayal (Huang 2000a)

- (iii) a. ’i’ kuing ku’ tawqi’.
Neu I Nom.Ref chief
‘The chief is me.’
b. tawqi’ ’i’ yumin.
chief Nom.Per Yumin
‘Yumin is a chief.’
c. itaal ku’ kanairil.
Atayal Nom.Ref woman
‘The woman is Atayal.’
d. sinsi ’i’ yaba’.
teacher Nom.Per Father
‘Father is a teacher.’

However, as also discussed in Tang et al. (1998), it remains unclear that Formosan languages like Amis and Mayrinax may observe the so-called neutral case markers for certain, if not all, nominal predicates. In the case of Mayrinax, for example, as indicated in Huang’s (2000a)

3. Paiwan Oblique *t(u)a* vs. *tu*

Before turning to the discussion of Paiwan oblique markers like *t(u)a* and *tu*, a sketch of the basic syntax of Paiwan is needed here. Paiwan is a predicate-initial language, with the possibility of both VSO and VOS word orders, as shown in (32)-(34).

Paiwan (Tang et al. 1998)

- (32) a. ti kui timadu.
TI Kui he
'He is Kui.'
b. kakeDian timadu.
kid he
'He is a kid.'
- (33) a. na-v-en-eLi ti kai tua kun.
Perf-buy-AV Nom Kai Obl skirt
'Kai bought a skirt.'
b. na-v-en-eLi tua kun ti kai.
Perf-buy-AV Obl skirt Nom Kai
'Kai bought a skirt.'
- (34) a. v-in-eLi a kun ni kai.
buy-PV Nom skirt Gen Kai
'The skirt was bought by Kai.'
b. v-in-eLi ni kai a kun.
buy-PV Gen Kai Nom skirt
'The skirt was bought by Kai.'

Case markers precede the case-marked noun phrases and cannot be deleted. Examples like (35)-(37) are of this sort.

(26)-(27), *i'* is found in every overt case marker of person proper names. One possible way to account for this observation may be that Mayrinax case markers for person proper names may be diachronically derived from some phonological process of case markers and person proper name markers, in a way that may be similar to the fusion/deletion process as stated in Chamorro (29a-b) or in Tang et al. (1998) for the formation of Paiwan nominative markers of person proper names (cf. the relevant discussion of Niuean in Massam 2005 and that of Tongan in Otsuka 2005).

Paiwan (Tang et al. 1998)

- (35) a. ti kui *(ti)madu.
 TI Kui he
 ‘He is Kui.’
 b. kakeDian *(ti)madu.
 kid he
 ‘He is a kid.’
- (36) a. na-v-en-eLi *(ti) kai *(tua) kun.
 Perf-buy-AV Nom Kai Obl skirt
 ‘Kai bought a skirt.’
 b. na-v-en-eLi *(tua) kun *(ti) kai.
 Perf-buy-AV Obl skirt Nom Kai
 ‘Kai bought a skirt.’
- (37) a. v-in-eLi *(a) kun *(ni) kai.
 buy-PV Nom skirt Gen Kai
 ‘The skirt was bought by Kai.’
 b. v-in-eLi *(ni) kai *(a) kun.
 buy-PV Gen Kai Nom skirt
 ‘The skirt was bought by Kai.’

As for the system of case marking in Paiwan, it has been pointed out in Huang et al. (1998) that Paiwan case markers are as in (38) below (cf. Tang et al. 1998 and Chuang 2002, among others).

Paiwan (Huang et al. 1998)

(38) Cases	Nom	Acc	Gen
Nouns			
Common	a	tua ta tu	nua na
Proper Sg		ti	tjay ni
Pl		tya	tya nya

Except for the case markers for person proper names, according to Huang et al., others like nominative *a*, accusative *t(u)a* and genitive *n(u)a* are all referentially unmarked, though the distribution of accusative *tu* is more limited. For them, it may only precede a

noun phrase with a numeral or a demonstrative, as (39) demonstrates.

Paiwan (Huang et al. 1998)

- (39) a. na-v<en>eli-aken tu dusa a hana.
 Prf-buy<AF>buy-1S.Nom Acc two Lin flower
 ‘I bought two flowers.’
 b. ?iladj-i tu icu a ?iladjan.
 sit-Imp Acc this Lin chair
 ‘Let’s sit on this chair.’

Tang et al. (1998) also claim that in Paiwan if there appears no [- common noun] prefix, oblique marking shows up as either *tua* or *ta*, as cases like (40) below exemplify.¹⁴

Paiwan (Tang et al. 1998)

- (40) na-v-en-eLi ti kai tua/ ta ita/ telu a kun.
 Perf-buy-AV Nom Kai Obl Obl one three A skirt
 ‘Kai bought one/three skirt(s).’

And in (40), with a numeral modifying the noun, *tua* and *ta* may also be replaced by *tu*.

Paiwan (Tang et al. 1998)

- (41) na-v-en-eLi ti kai tu ita/ telu a kun.
 Perf-buy-AV Nom Kai Obl one three A skirt
 ‘Kai bought one/three skirt(s).’

In view of sentences like (40) and (41), one might treat *tua*, *ta* and *tu* as three free variants of oblique marker.¹⁵ However, Tang et al. point out further that a closer examination of the distribution of *tu* suggests that replacement of *tua/ta* by *tu* in cases like (40) is permitted only when there exists a numeral (or a quantifier). Compare, for instance, grammatical (41) with ungrammatical (42), on the one hand, as well as ungrammatical (42) with grammatical (43), on the other hand.

¹⁴ In Tang et al. (1998) case markers like *t(u)a* and *tu* are treated as accusative markers. With more data accessible later, they are now regarded as oblique markers. Those like *tua/ta* and *nua/na* bear no syntactic difference, though they may be marked with some pragmatic variation.

¹⁵ Among others, analyses like Huang et al.’s (1998) and Chuang’s (2002) both treat them as referentially unmarked variants of oblique case.

Paiwan (Tang et al. 1998)

- (42) a. *na-v-en-eLi ti kai tu kun.
 Perf-buy-AV Nom Kai Obl skirt
- b. *na-v-en-eLi ti kai tu [ni kui] a kun.
 Perf-buy-AV Nom Kai Obl Poss Kui A skirt
- c. *na-v-en-eLi ti kai tu va?uan a kun.
 Perf-buy-AV Nom Kai Obl new A skirt
- d. *na-v-en-eLi ti kai tu [k-in-a-senseng ni kui] a kun.
 Perf-buy-AV Nom Kai Obl KA-PV-make Gen Kui A skirt
- (43) a. na-v-en-eLi ti kai t(u)a kun.
 Perf-buy-AV Nom Kai Obl skirt
 ‘Kai bought a skirt.’
- b. na-v-en-eLi ti kai t(u)a [ni kui] a kun.
 Perf-buy-AV Nom Kai Obl Poss Kui A skirt
 ‘Kai bought Kui’s skirt.’
- c. na-v-en-eLi ti kai t(u)a va?uan a kun.
 Perf-buy-AV Nom Kai Obl new A skirt
 ‘Kai bought new skirts.’
- d. na-v-en-eLi ti kai t(u)a [k-in-a-senseng ni kui] a kun.
 Perf-buy-AV Nom Kai Obl KA-PV-make Gen Kui A skirt
 ‘Kai bought the skirt that Kui made.’

In addition, as opposed to Huang et al.’s claim about the grammaticality of (39b), *tu* in fact cannot appear with noun phrases definite in reference, as given in the ill-formedness of (44b), to be compared with well-formed (44a).

Paiwan (Tang et al. 1998)

- (44) a. na-v-en-eLi ti kai tua/ta zua/icu (a kun).
 Perf-buy-AV Nom Kai Obl Obl that this A skirt
 ‘Kai bought that/this (skirt).’
- b. *na-v-en-eLi ti kai tu zua/icu (a kun).
 Perf-buy-AV Nom Kai Obl that this A skirt

Given the grammaticality contrasts among (40)-(44), Tang et al. propose that in Paiwan *tu* marks a partitive reading of oblique noun phrases containing a numeral expression. Generally speaking, noun phrases marked by a partitive case differ from those marked by a non-partitive case in the interpretation of their reference. In the former case, the noun phrase must receive an indefinite non-specific reading, but the same does not

hold for the noun phrase in the latter case.

Note here that, as also pointed out in Tang et al., when Paiwan *tu* is marked to an object noun phrase, it may appear in two distinct ways. Consider, for instance, the following sentences.

Paiwan (Tang et al. 1998)

- (45) a. na-v-en-eLi ti kai tu telu a kun.
Perf-buy-AV Nom Kai Obl three A skirt
'Kai bought three skirts.'
- b. na-v-en-eLi ti kai tua kun tu telu.
Perf-buy-AV Nom Kai Obl skirt Obl three
'Kai bought three skirts.'

(45a) has one oblique marker whereas (45b) has two. There are three reasons to believe that *tu telu a kun* in (45a) forms one constituent but *tu telu* and *tua kun* in (45b) are of two separate constituents. First, *tu* in (45a), not (45b), can be replaced by *tua*.

Paiwan (Tang et al. 1998)

- (46) a. na-v-en-eLi ti kai tua telu a kun.
Perf-buy-AV Nom Kai Obl three A skirt
'Kai bought three skirts.'
- b. *na-v-en-eLi ti kai tua kun tua telu.
Perf-buy-AV Nom Kai Obl skirt Obl three

Second, *tua* in (45b) cannot be changed into *tu*.

Paiwan (Tang et al. 1998)

- (47) *na-v-en-eLi ti kai tu kun tu telu.
Perf-buy-AV Nom Kai Obl skirt Obl three

Third, *tu telu* in (45b), not (45a), may have distributional freedom.

Paiwan (Tang et al. 1998)

- (48) a. *na-v-en-eLi tu telu ti kai a kun.
Perf-buy-AV Obl three Nom Kai A skirt
- b. *na-v-en-eLi a kun ti kai tu telu.
Perf-buy-AV A skirt Nom Kai Obl three

- (49) a. na-v-en-eLi ti kai tu telu tua kun.
 Perf-buy-AV Nom Kai Obl three Obl skirt
 ‘Kai bought three skirts.’
- b. na-v-en-eLi tu telu ti kai tua kun.
 Perf-buy-AV Obl three Nom Kai Obl skirt
 ‘Kai bought three skirts.’
- c. na-v-en-eLi tua kun ti kai tu telu.
 Perf-buy-AV Obl skirt Nom Kai Obl three
 ‘Kai bought three skirts.’

Based on the fact that *telu* and *kun* in (45b) do not form a constituent as well as the fact that *telu* in (45b) must be non-specific in reference, it is believed that while *telu* in (45a) modifies *kun*, *telu* in (45b) is predicated of *kun*. This distinction between modification and predication concerning numeral expressions has also been found in other languages. Tang (1996), for instance, shows that in Mandarin (50a) *shi zhi* ‘ten CL’ forms a constituent with the modifiee *bi* ‘pen’, but in (50b) *shi zhi* is predicated of *bi* and they are of two distinct constituents.¹⁶

Mandarin (Tang 1996)

- (50) a. ta mai-le shi zhi bi.
 he buy-LE ten CL pen
 ‘He bought ten pens.’
- b. ta mai-le bi shi zhi.
 he buy-LE pen ten CL
 ‘(lit.) He bought pens ten.’

Under this (non-)predication analysis, it is expected that, like their Mandarin counterparts discussed in Tang (1996), Paiwan cases like (51b) are grammatical but those like (51a) are not.

¹⁶ Here we assume with Tang (1996) that in (45b) *telu* may be projected as the innermost argument of *na-v-en-eLi* and is predicated of the object noun phrase *kun*. In contrast, in (45a) *telu a kun* altogether is projected as the innermost argument of *na-v-en-eLi*. As a result, (45b) permits the occurrence of two accusative cases but (45a) does not.

Paiwan (Tang et al. 1998)

- (51) a. *na-v-en-eLi ti kai tua icu a mareka a kun tu telu.
Perf-buy-AV Nom Kai Obl this A some A skirt Obl three
b. na-v-en-eLi ti kai tua na-ma(i)tucu a kun tu telu.
Perf-buy-AV Nom Kai Obl this-kind A skirt Obl three
'Kai bought three of this kind of skirt.'

Similarly, a subject-object asymmetry between ungrammatical (52a) and grammatical (52b) is also found concerning the occurrence of a predicative numeral.

Paiwan (Tang et al. 1998)

- (52) a. *v-in-eLi ni kai a kun t(u)a/tu telu.
buy-PV Gen Kai Nom skirt Obl Obl three
b. na-v-en-eLi ti kai t(u)a/*tu kun *t(u)a/tu telu.
Perf-buy-AV Nom Kai Obl Obl skirt Obl Obl three
'Kai bought three skirts.'

While Chuang (2002) agrees with Tang et al.'s claim about the ill-formedness of Huang et al.'s (39b), with the co-occurrence of *tu* and a demonstrative, she points out that sentences like (53) are however grammatical, with the co-occurrence of *tu* and a referential nominal. Hence, like Huang et al., she states that both *t(u)a* and *tu* should be listed as referentially unmarked in Paiwan.

Paiwan (Chuang 2002)

- (53) a. p-en-engeDuq-ngeDuq-aken tu sa qau.
cut-AV-Red-I Obl SA bamboo
'I am cutting this bamboo.'
b. na-c-em-aqis-anga-aken tu tevet ni muni.
Perf-sew-AV-ANGA-I Obl belt Gen Muni
'I already sewed Muni's belt.'

There appear nevertheless several problems with Chuang's postulation. First, in Paiwan the possessive expression may precede or follow the noun, as in (43b) and (53b), respectively. And, like Chinese and unlike English, it may appear with demonstratives. While the pre-nominal and post-nominal possessive expressions in Paiwan differ in form and generation, their distinction in ordering does not affect the interpretation of

the whole noun phrase (cf. Kahnemuyipour and Massam 2004).¹⁷ An interesting observation thus is that while Chuang's (53b) is grammatical, Tang et al.'s (43b) is not, both with the co-occurrence of *tu* and a noun with the possessive phrase. But the informants that both we and Jun-ming Wu (personal communication, 2006) have checked with all regard cases like (43b) and (53b) as ungrammatical.

Second, as pointed out in Tang (2006a), while *tu* may appear with a noun preceded by *sa* as in (53a), of sentences like (54a-b) (54b) may be used only when both the speaker and the hearer know who the kid is.

¹⁷ Below are some Paiwan examples of this kind.

Paiwan

- (i) a. *tengeLai ti kui tua icu/zua a ku/ su-kun.*
like Nom Kui Obl thisthat A my your skirt
'(lit) Kui likes this/that skirt of mine/yours.'
- b. *tengeLai ti kui tua icu/zua a [ni kai] a kun.*
like Nom Kui Obl thisthat A NI kai A skirt
'(lit) Kui likes this/that skirt of Kai's.'
- c. *tengeLai ti kui tua icu/zua a kun ni kai.*
like Nom Kui Obl thisthat A skirt Gen Kai
'(lit) Kui likes this/that skirt of Kai's.'
- (ii) a. *izua a ku/ su-paisu.*
exist Nom my your money
'I/You have money.'
- b. *izua a [ni kui] a paisu.*
exist Nom NI Kui A money
'Kui has money.'
- c. *izua a paisu ni kui.*
exist Nom money Gen Kui
'Kui has money.'
- (iii) a. *neka nu ku/ su-paisu.*
not-exist Nom my your money
'I/You have no money.'
- b. *neka nu [ni kui] a paisu.*
not-exist Nom NI Kui A money
'Kui has no money.'
- c. *neka nu paisu ni kui.*
not-exist Nom money Gen Kui
'Kui has no money.'

Among others, see Ihsane (2003) for a discussion of the typology of possessive modifiers, and Tang (2006a) for that of the functional projection of the Paiwan possessive phrase. See also section 4 and footnote 21 for more discussion of the reference of the possessive expression in Paiwan and other Austronesian languages like Mayrinax C'uli' Atayal and Chamorro.

Paiwan (Tang 2006a)

- (54) a. na-pacun-aken tua zua/icu a kakeDian.
Perf-see-I Obl that this A kid
'I saw that/this kid.'
- b. na-pacun-aken tu sa (a) kakeDian.
Perf-see-I Obl SA A kid
'I saw a kid.'

This difference in interpretation is also grammatically marked for replacement of *tua* by *tu* in (54a), with demonstratives like *zua* 'that' and *icu* 'this', and that of *tu* by *tua* in (54b), with *sa*, will result in the ill-formedness of both sentences. The same may be said about the subject position.

Paiwan (Tang 2006a)

- (55) a. v-in-eLi ni kai *(a) zua/icu a kun.
buy-PV Gen Kai Nom that this A skirt
'Kai bought that/this skirt.'
- b. v-in-eLi ni kai (*a) sa (a) kun.
buy-PV Gen Kai Nom SA A skirt
'Kai bought a skirt.'

They may also take different lexical items.

Paiwan (Tang 2006a)

- (56) a. tengeLay ti kui tua zua/icu a timadu/*tiza.
like Nom Kui Obl that this A man man
'Kui likes that/this man.'
- b. tengeLay ti kui tu sa (a) *timadu/tiza.
like Nom Kui Obl SA A man man
'Kui likes a man.'

In other words, the just-given grammaticality contrasts between *sa* and demonstratives like *icu* and *zua* all seem to indicate that while *sa* may denote the referential reading of a noun phrase, its semantics differs from *icu* and *zua* and its case marking in subject and object positions also differs from them. Note that, as already pointed out, object nouns with *sa* and those with the numeral expression are not case marked with the same oblique marker. That is, while the former must be marked with *tu*, the latter may be marked with *t(u)a* or *tu*, as in (40)-(41). Similarly, in subject position *sa* cannot appear

with nominative *a*, as in (55b), but the numeral expression must appear with *a*, as shown in (57) below.

Paiwan

- (57) v-in-eLi ni kai *(a) telu a kun.
 buy-PF Gen Kai Nom three A skirt
 ‘Kai bought three skirts.’

Third, if, as claimed in Huang et al. and Chuang, among others, all case markers in Paiwan are referentially unmarked, why is it that various kinds of co-occurrence restrictions should be found between *sa* and *icu/zua*, on the one hand, as well as between *sa* and the numeral, on the other hand? Also, why is it that nouns with *sa* may be overtly case marked in object position but not in subject position?

To account for these observations in a principled way, we suggest that in Paiwan while case markers like *a* and *t(u)a* are specified with the [α definite] feature, those like *tu* are specified with the [- definite] feature.¹⁸ In addition, in Paiwan while nouns with the non-predicative numeral may be interpreted as definite or indefinite, those with *sa* must be interpreted as indefinite specific,¹⁹ hence the grammaticality of the *a/t(u)a/tu-*

¹⁸ As already pointed out in footnote 6, in Paiwan subjects need not be specific in reference. Below are two more examples of this sort.

Paiwan

- (i) a. izua a Dusa a kun i suibay.
 exist Nom two A skirt in store
 ‘There are two skirts in the store.’
 b. tengeLai tua watu a kakeDian.
 like Obl dog Nom kid
 ‘Kids like dogs.’

¹⁹ Note that, as stated in Tang et al. (1998) and Tang (2006a), like *sa* Paiwan demonstratives like *zua* and *icu* may also be non-deictic or indefinite specific in interpretation since they may appear with restrictive relative clauses (cf. Bernstein 1997).

Paiwan (Tang et al. 1998)

- (i) a. na-pacun ti kui tua/*tai zua a ti kai a pu-’ulu.
 Perf-see Nom Kui Obl Obl that A TI Kai A smart
 ‘Kui saw that Kai who is smart.’
 b. na-pacun ti kui *tua/tai (*zua a) ti kai a pu-’ulu.
 Perf-see Nom Kui Obl Obl that A TI Kai A smart
 ‘Kui saw Kai, who is smart.’
 c. na-pacun ti kui *tua/*tai/ tu sa a ti kai a pu-’ulu. (Tang 2006a)
 Perf-see Nom Kui Obl Obl Obl SA A TI Kai A smart
 ‘Kui saw a Kai who is smart.’

marked numeral arguments and the ungrammaticality of the *a/t(u)a*-marked *sa*-arguments.²⁰ And in Paiwan, like in other languages, the predicative numeral expression

-
- (ii) a. na-pacun ti kui tua/*tai zua a pu-'ulu a ti kai.
 Perf-see Nom Kui Obl Obl that A smart A TI Kai
 'Kui saw that Kai who is smart.'
- b. *na-pacun ti kui tai pu-'ulu a ti kai.
 Perf-see Nom Kui Obl smart A TI Kai
- c. na-pacun ti kui *tua/*tai/ tu sa a pu-'ulu a ti kai. (Tang 2006a)
 Perf-see Nom Kui Obl Obl SA A smart A TI Kai
 'Kui saw a Kai who is smart.'

²⁰ Tang et al. (1998) propose that the so-called separate case markers for person proper nouns in Paiwan (i) below may be treated as resulting from the application of phonological rules like (ii) to the juxtaposition of case markers for [- personal name] nouns and the noun classification prefixes attached to person proper nouns.

Paiwan (Tang et al. 1998)

(i)	Cases	Nom	Obl	Gen	
Nouns					

	[- personal name]	a	tua	nua	
			ta	na	
		nu	tu		
=====					
	[+ personal name]				
	Sg	ti	tai	ni	
	Pl	tia	taia	nia	
(ii)	Nom: <u>a</u> + ti	→	∅ + ti	→	ti
	<u>a</u> + tia	→	∅ + tia	→	tia
	Obl: ta + <u>ti</u>	→	ta + i	→	tai
	ta + <u>tia</u>	→	ta + ia	→	taia
	Obl: <u>tua</u> + <u>ti</u>	→	ta + i	→	tai
	<u>tua</u> + <u>tia</u>	→	ta + ia	→	taia
	Gen: <u>na</u> + <u>ti</u>	→	n + i	→	ni
	<u>na</u> + <u>tia</u>	→	n + ia	→	nia
	Gen: <u>nua</u> + <u>ti</u>	→	n + i	→	ni
	<u>nua</u> + <u>tia</u>	→	n + ia	→	nia

And, as stated in Tang et al., if the above analysis is on the right track, it seems that the difference in case system between Formosan languages like Paiwan and those like Kavalan in Chang (2000a) and Favorlang in Li (2005), for instance, is not that Paiwan has two or three unrelated sets of case markers whereas Kavalan has only one set. Instead, the surface structure case marking distinction between them may in fact result from the kinds of [- common noun] prefix, case marker and phonological rule that each language may have (see also Chung 1998). Along this line of thought, the surface non-overt nominative marking of *sa*-marked subjects in Paiwan may be viewed as resulting from the phonological processes of 'a + sa → ∅ + sa → sa',

needs to be interpreted as indefinite non-specific, hence the impossibility of co-occurring with *t(u)a* and the possibility of occurring with *tu*.

An analysis along this line of thought may be further evidenced by sentences like (58), in which the ordering between the numeral and the relative clause will affect the choice of oblique marking in question.

Paiwan (Tang 2005)

- (58) a. na-v-en-eLi ti kai tua/*tu [k-in-a-sengseng ni palang]
 Perf-buy-AV Nom Kai Obl Obl make-PV Gen Palang
 a telu a kun.
 A three A skirt
 ‘Kai bought the three skirts that were made by Palang.’
- b. na-v-en-eLi ti kai tua/tu telu a [k-in-a-sengseng ni
 Perf-buy-AV Nom Kai Obl Obl three A make-PV Gen
 palang] a kun.
 Palang A skirt
 ‘Kai bought three of the skirts that were made by Palang.’

In (58a), with the relative clause preceding the numeral, *t(u)a* needs to be present; by contrast, in (58b), with the relative clause following the numeral, *t(u)a* or *tu* may appear. This grammaticality contrast seems to indicate that (58a) is definite or more referential than (58b), in addition to the observation that *t(u)a* and *tu* may be referentially distinguished (see also the relevant discussion of Mandarin (16)–(21) in section 2).

4. Paiwan Nominative *a* vs. *nu*

It has been pointed out in section 2 that in Mayrinax Atayal case markers are specified with various kinds of referential features. It has also been stated in footnote 10 that in Formosan languages there may appear a selectional relation between verb types and case types. These two aspects of Mayrinax syntax and semantics may be exemplified

in ways that are similar to the derivation of nominative *ti* and *tia*. Under this kind of analysis, then, both *sa* and *zualicu* may be all treated as being able to be case marked with *a* or *t(u)a*, the difference being that an *a*-deletion rule may be applied to the juxtaposition of these case markers and *sa* but not *zualicu*. While we will leave this possibility open and for further research, if it should be the case that the deletion account is more plausible than the non-deletion account, it does not affect our claim that oblique *tu* in Paiwan is marked with the [- definite] feature. In other words, Chuang’s (2002) cases with *sa* should not be considered as counter-examples to Tang et al.’s (1998) analysis of Paiwan case marking.

by the presence of a difference in nominative marking between positive existential/possessive constructions and negative existential/possessive constructions, on the one hand, as well as the absence of a difference in nominative marking between positive and negative locative constructions, on the other hand.

Consider, for instance, cases like Mayrinax positive existential (59), possessive (60) and locative (61) below.

Mayrinax C'uli' Atayal (Huang 2000a)

- (59) a. *kia' ku' qutux ka' kahuniq.*
 exist Nom.Ref one Lin tree
 'There is a tree.'
- b. *kia' a' ruwas cku' naniqan.*
 exist Nom.Nref book Loc.Ref desk
 'There is a book on the desk.'
- (60) a. *kia' ku' qutux imuwaag=mu.* (Zeitoun et al. 1999)
 exist Nom.Ref one house.1S.G
 'I have a house.'
- b. *kia' a' pila' ni yaba'.*
 exist Nom.Nref money Gen.Per Father
 'Father has money.'
- (61) a. *kia' cku' naniqan ku' ruwas.*
 exist Loc.Ref desk Nom.Ref book
 'The book is on the desk.'
- b. *hani'an i' runi' 'i' yumin.*
 exist in here Nom.Per Yumin
 'Yumin is here.'

Two things need to be noted about these three types of Mayrinax positive constructions. First, according to Zeitoun et al. (1999) and Huang (2000a), the same verb *kia'* 'exist' is used for the positive existential, possessive and locative constructions. Second, while the interpretation of the subjects in positive existential (59a-b) and positive possessive (60a-b) may be referential or non-referential, that of the subjects in positive locative (61a-b) is referential.

In their negative counterparts, as shown in (62)-(64), a difference in nominative marking is found with negative existential (62) and negative possessive (63), but not negative locative (64). That is, while the reference of the subjects in negative locative (64a-b) remain marked as referential, that of the subjects in negative existential (62a-b) and negative possessive (63a-b) need to become non-referential. And this variation in

nominative marking seems to have nothing to do with whether the subject noun is in the form of a bare noun.

Mayrinax C'uli' Atayal (Huang 2000a)

- (62) a. ukas a' ngiyaw ka' rahuwal. (Zeitoun et al. 1999)
 not-exist Nom.Nref cat Lin cat
 'There is no big cat.'
- b. ukas' a' pila'.
 not-exist Nom.Nref money
 'There is no money.'
- (63) a. ukas a' pila' nku' nabakis.
 not-exist Nom.Nref money Gen.Ref old-man
 'The old man has no money.'
- b. ukas a' 'ulaqi'=mu.
 not-exist Nom.Nref kid-1S.G
 'I have no kid.'
- (64) a. ukas 'i' yumin.
 not-exist Nom.Per Yumin
 'Yumin is not here.'
- b. ukas ku' 'ulaqi'=mu.
 not-exist Nom.Ref kid-1S.g
 'My kid is not at home.'

Like Mayrinax Atayal, Puyuma is also claimed in Huang et al. (1998) to exhibit referential and non-referential case marking. Similarly, while the relevant arguments in negative existential (65a) and negative possessive (65b) need to be marked as non-referential, that in negative locative (65c) may be marked as referential.

Puyuma (Huang 2000c)

- (65) a. unian a kuraw i kaLi.
 not-exist Nom.Nref fish in river
 'There is no fish in the river.'
- b. unian=ku Da paysu.
 not-exist=1.SN Obl.Nref money
 'I do not have money.'
- c. unian i kaLi i pilay.
 not-exist in river Nom.Per Pilay
 'Pilay is not in the river.'

If the discussion so far is on the right track, it seems to suggest that in languages like Mayrinax Atayal and Puyuma, in which case markers may be referentially distinguished, negative existential and possessive verbs may require their relevant arguments to be interpreted as non-referential. In other words, cognitively speaking, for referentially case distinguished languages like Mayrinax Atayal and Puyuma, people or things that do not exist or are not possessed may be viewed as non-referential or non-existent.²¹ An analysis along this line of thought then explains in a principled way why

²¹ In Ihsane (2003) possessive expressions may be typologically classified into three different types in accordance with the (im)possibility of co-occurrence with articles, etc. Those that may appear with articles are adjectival possessives, not determiner possessives, and may be interpreted as indefinite. As pointed out in footnote 17, in Paiwan the possessive phrase may appear with demonstratives and, as stated in Tang et al. (1998) and Tang (2006a), it may also act as modifier.

Note that further evidence for our claim that in some, if not all, Formosan languages nouns with the possessive expression need not be interpreted as definite or referential may be found with Mayrinax examples like positive non-possessive (4b) and negative possessive (5a), repeated below as (ia-b). That is, while the subject noun phrase *'ulaqi=mu* 'my son' is marked with referential nominative marker in positive non-possessive (ia), it is marked with non-referential nominative marker in negative possessive (ib).

Mayrinax C'uli' Atayal (Huang 2000a)

- (i) a. *kia' 'i' maquwas ku' 'ulaqi=mu.*
 Prog 'I' AV-sing Nom.Ref son=my
 'My son is singing.'
- b. *ukas a' 'ulaqi'=mu.*
 not-exist Nom.Nref kid=my
 'My kid does not exist/I have no kid.'

Note also that according to Chung (1998) the possessive expression in Chamorro may also appear with the determiner, as in (iia-d), and the whole noun phrase may be interpreted as definite, as in (iic), or indefinite, as in (iia, b, d).

Chamorro (Chung 1998)

- (ii) a. *paine-nna si Carmen*
 comb Carmen
 'a comb of Carmen's'
- b. *tres na famagu'on-na si Dolores*
 three L children-agr Dolores
 'three children of Dolores's'
- c. *i lahi-mu pro*
 the son-agr
 'your son/(lit) the son of yours'
- d. *kada nilachi-na si Mary*
 each error-agr Mary
 'each mistake of Mary's'

such a distinction in nominative marking may not be observed in Mayrinax and Puyuma negative locative constructions that need to presuppose the existence of the located people or things.

In fact, based on the difference in nominative marking between examples like negative possessive (66) and those like positive possessive (67), it is already pointed out in Tang et al. (1998) that in Paiwan there exists another intrinsically non-referential case marker; it is the nominative marker *nu*.

Paiwan (Tang et al. 1998)

- (66) a. neka nu / *a paisu ni kai.
 not-exist Nom Nom money Gen Kai
 ‘Kai has no money.’
- b. neka nu / *a alak ni kui.
 not-exist Nom Nom child Gen Kui
 ‘Kui has no children.’
- (67) a. izua a / *nu paisu ni kai.
 exist Nom Nom money Gen Kai
 ‘Kai has money.’
- b. izua a / *nu alak ni kui.
 exist Nom Nom child Gen Kui
 ‘Kui has children.’

Semantically, *neka* in (66) and *izua* in (67), respectively, assert the emptiness and non-emptiness of the set defined by the noun phrase marked with *nu* and *a*. Thus, the set that is asserted to be empty is non-referential in reference. In view of this interpretation and the fact that *nu* changes into *a* in cases like (67), Tang et al. suggest that *nu* may act as non-referential nominative marker.

It is further pointed out in Tang et al. that in addition to possessive constructions, the same type of difference in nominative marking is also found between positive existential constructions like (68) and negative existential constructions like (69).

Paiwan (Tang et al. 1998)

- (68) izua a / *nu kun i maza.
 exist Nom Nom skirt in here
 ‘There is a skirt here.’
- (69) neka *a / nu paisu i siubay.
 not-exist Nom Nom money in store
 ‘There is no money in the store.’

By contrast, as shown in (70) and (71), *izua* and *neka* in locative constructions behave very differently from those in existential and possessive constructions in that *nu* cannot be present in both positive (70) and negative (71).

Paiwan (Tang et al. 1998)

(70) *izua a / *nu zua a caucau i maza.*
exist Nom Nom that A man in here
'That man is here.'

(71) *neka a / *nu zua a caucau i maza.*
not-exist Nom Nom that A man in here
'That man is not here.'

And, as stated in Tang (2002b), unlike ungrammatical possessive and existential constructions like (72a-b), *ini-ka* can appear in grammatical locative constructions like (72c-d).

Paiwan (Tang 2002b)

- (72) a. **ini-ka a ku-paisu.*
INI-KA Nom my-money
b. **ini-ka a kun.*
INI-KA Nom skirt
c. *ini-ka i maza ti kai.*
INI-KA in here Nom Kai
'Kai is not here.'
d. *ini-ka ti kai i siubay.*
INI-KA Nom Kai in store
'Kai is not in the store'

In addition, while *izua* and *neka* in possessive and existential constructions must be present, as in (73a-b) and (74a-b), those in locative constructions may be present or absent, as in (73c) and (74c).

Paiwan (Tang 2002b)

(73) a. **(izua) a ku-paisu.*
exist Nom my-money
'I have money.'

- b. *(izua) a kun i maza.
 exist Nom skirt in here
 ‘There is a skirt here.’
- c. (izua) i maza ti kai.
 exist in here Nom Kai
 ‘Kai is here.’
- (74) a. *(neka) nu ku-paisu.
 not-exist Nom my-money
 ‘I have no money.’
- b. *(neka) nu kun i maza.
 not-exist Nom skirt in here
 ‘There is no skirt here.’
- c. (neka) i maza ti kai.
 not-exist in here Nom Kai
 ‘Kai is (not) here.’

Based on these various kinds of contrasts discussed so far between possessive/existential and locative constructions in Paiwan, Tang (2002b) proposes two distinct phrase structure representations for them. Note that of these relevant facts the ones about the asymmetry in the occurrence of Paiwan non-referential *nu* parallel exactly to those found with the possessive/existential and locative constructions in Mayrinax Atayal and Puyuma, in which the nominative markers have been claimed to be referentially distinguished.

Note also that as non-referential *nu* differs from indefinite *tu* in that the former, not the latter, presupposes the non-existence of the argument in question, it follows that in existential constructions like (75a) below *nu* may co-occur with neither *zua/icu* nor *sa*, both of which may denote the existence of the referring argument.

Paiwan (Tang 2006b)

- (75) a. *neka nu zua/icu/ sa a kakeDian i maza.
 not-exist Nom that this SA A kid in here
- b. neka a zua/a icu/ sa a kakeDian i maza.
 not-exist Nom that Nom this SA A kid in here
 ‘That/This/A certain kid is not here.’

And the meaning of grammatical (76b) below is ‘there is no one by the name of Kai’ rather than ‘*there is no Kai.’

Paiwan (Tang 2006b)

- (76) a. neka ti kai.
not-exist Nom Kai.
'Kai is not here.'
- b. neka nu ti-kai.
not-exist Nom TI-Kai
'There is no one by the name of Kai.'

This kind of grammatical marking of the cognition of whether a referent is existent or non-existent in the real world may be also seen in the syntactic and semantic behavior of non-identifying nominal predicates in Paiwan.

Paiwan (Tang 2006c)

- (77) a. rakac timadu.
hunter he
'He is a hunter.'
- b. ti kui timadu.
TI Kui he
'He is Kui.'
- (78) a. (*si-ka-)rakac timadu.
SI-KA-hunter he
'He is a hunter.'
- b. ngaLungaLu a *(si-ka-)rakac timadu.
brave A SI-KA-hunter he
'He is a brave hunter.'
- (79) a. ngaLungaLu a zua a (*si-ka-)rakac.
brave Nom that A SI-KA-hunter
'That hunter is brave.'
- b. na-pacun-aken tua zua a ngaLungaLu a (*si-ka-)rakac katiau.
Perf-see-I Obl that A brave A SI-KA-hunter yesterday
'I saw that brave hunter yesterday.'

In (77a) and (77b) *rakac* 'hunter' and *ti-kui* 'Kui' act as non-identifying and identifying nominal predicates, respectively. The above-mentioned non-referential/referential or non-existent/existent distinction between these two types of nominal predicates may be also marked in Paiwan by the presence or absence of *si-ka-* in examples like (78a-b), with

non-referential nominal predicates, and (79a-b), with referential nominal arguments.²²

5. Paiwan genitive *n(u)a* vs. *nu*

In Formosan languages it is not uncommon that the same case form may be used for different kinds of case marking. For instance, according to Huang (2000c), in Puyuma *i* may be used for nominative and locative marking. To give another example, there seems to also exist evidence that in Paiwan non-referential *nu* may be used as genitive marker, in addition to nominative marker.

As pointed out in Tang et al. (1998), in Paiwan the suffix *-an* may express the meaning of ‘kind’, ‘style’, etc. To modify nouns affixed by *-an*, *nu*, not *a* nor *n(u)a*, may be present. Sentences like (80b) are of this sort, to be compared with (80a).

²² Chuang (2002), however, claims that in Paiwan nominative *nu* cannot be specified with any inherent non-referential feature in that *ku-aljay* ‘my kid’ in (ib) is definite in reference.

Paiwan (Chuang 2002)

- (i) a. neka nu cawcaw i casaw.
not-have NU man in outside
‘There is no man outside.’
b. neka-anga nu ku-aljak.
not-have NU my-kid
‘I have no kid. (He was dead.)’
c. neka nu ka ita a qacang a c-in-ulju nimadu.
not-have NU KA one A pig A kill-PV his
‘(lit) He did not kill even one pig.’

Though the non-referential interpretation of subject nominals in sentences like Chuang’s negative possessive (ib) is already shown in the above discussion, it should be pointed out here that in cases like (ic) there also appears one peculiarity that seems to indicate the non-referential or non-existent marking of nominative *nu* in Paiwan. That is, similar to the presence of *ka* in cases like (78b) above in the *nu*-marked (ic) and (iii) the absence of *ka* will make the resulting sentences ungrammatical. By contrast, in the non-*nu*-marked (ii) *ka* may not be present.

Paiwan (Tang et al. 1998, Tang 2004)

- (ii) (*ka) ma-telu a [(na-)vaik a v-en-eLi tua luwang a caucau].
KA MA-three A Perf-go A AV-buy Obl cow Nom person
‘The number of the people that went to buy cows is three.’
(iii) neka nu *(ka) macidil a kakeDian a d-in-ukuL nimadu.
not-exist Nom KA one A kid A hit-PV his
‘(lit) He did not even hit one kid.’

Paiwan (Tang et al. 1998)

- (80) a. na-v-en-eLi ti kai tua na-ma-tucu a/*n(u)a/*nu watu.
Perf- buy-AV Nom Kai Obl this-kind A Gen Gen dog
'Kai bought this kind of dog.'
- b. na-v-en-eLi ti kai tua na-ma-tucu *a/*n(u)a/nu watu-an.
Perf-buy-AV Nom Kai Obl this-kind A Gen Gen dog-kind
'Kai bought this kind of dog.'

The same restriction is also found when the noun phrase containing the *an*-suffixed abstract noun occurs in predicate position.

Paiwan (Tang et al. 1998)

- (81) a. anema nu kun-an a icu?
what Gen skirt-kind Nom this
'What kind of style is this skirt?'
- b. anema nu watu-an a zua?
what Gen dog-kind Nom that
'What kind of dog is that?'

If abstract nouns in the form of N-*an* may be considered as non-referential in the relevant sense, the contrast in the presence of *nu* between (80a) and (80b) may be accounted for.

The claim that in (80b) and (81a-b) *nu* marks genitive rather than nominative may be further evidenced by the distinction in the choice of genitive markers among cases like (82a), with a genitive person proper noun, (83a), with a genitive common noun, and (84a), with a genitive abstract noun (cf. Chuang 2002).

Paiwan

- (82) a. Question: [anema ni kai] timadu?²³
what Gen Kai he
'(lit) He is Kai's what?'

²³ Two things need to be noted about the nominal predicates under discussion. First, in addition to *anema* interrogative expressions like *na-ma-kuda* 'what kind' may also be used. Second, in (82)-(84) the genitive phrase in the nominal predicate may precede or follow the nominative subject, an observation that, according to Chung (1998), is also found with other Austronesian languages like Chamorro. For nominal arguments, as stated in Tang (2006a) and Chung, the post-nominal genitive phrase in Paiwan, not Chamorro, needs to be adjacent to the head noun. See Tang (2006b) for more discussion of the (im)possibility of this kind of word order variation.

- b. Answer: [alak ni kai] timadu.
 kid Gen Kai he
 ‘He is Kai’s kid.’
- (83) a. Question: [anema nua watu] a zua?
 what Gen dog Nom that
 ‘(lit) That is a dog’s what?’
- b. Answer: [alis nua watu] a zua.
 tooth Gen dog Nom that
 ‘That is a dog’s tooth.’
- (84) a. Question: [anema nu ’atuvi-an] a icu?
 what Gen snake-kind Nom this
 ‘(lit) This is snake kind’s what?’
- b. Answer: [ma-ka-zalualum a/*nu ’atuvi(*-an)] a icu.
 MA-KA-water.Red A Gen snake-kind Nom this
 ‘This is a water snake.’

As shown in (i) of footnote 20, repeated below as (85), there appears a gap for the non-referential marking of genitive in Paiwan.

Paiwan (Tang et al. 1998)

(85)	Cases	Nom	Obl	Gen
Nouns				

	[- personal name]	a	tua	nua
			ta	na
		nu	tu	

Under the analysis assumed here (85) then may be revised as (86).

Paiwan	Cases	Nom	Obl	Gen
(86)				
Nouns				

	[- personal name]	a	tua	nua
			ta	na
		nu	tu	nu

6. Conclusion

It is first shown in this paper that in languages like Paiwan and Atayal, not Chamorro, case markers may license nominal subjects with empty determiners (cf. Longobardi 1994). The presence or absence of this kind of licenser in a language seems to have nothing to do with whether the nominative marker may be specified with the [+/- referential] feature and whether the nominative marker may be optional at PF. What is relevant is there must appear at S-structure an overt nominative marker if an overt determiner or article should be missing.

In addition, it is also demonstrated that, as discussed in Tang et al. (1998) and Tang (2006b), Paiwan exhibits two kinds of case markers, one with the referential specification as [- definite] or non-referential and the other with the referential specification as neutral (cf. Huang et al. 1998 and Chuang 2002, among others). These two types of case system may be found with the marking of nominative, oblique and genitive in Paiwan.

If our analysis is on the right track, it suggests that licensors of empty functional categories within the functional projection of noun need not be lexical governors. It also suggests that with respect to the (non-)referential marking of case markers there appear three types of case marking system in Formosan languages. While all the case markers in languages like Mayrinax Atayal are referentially distinguished, and those in languages like Wulai Atayal referentially undistinguished, some, not all, case markers in Paiwan are specified with the intrinsic [- definite] or non-referential features. Languages like Paiwan thus may reflect how the cognition of Formosan people towards the interpretation of an argument may be grammatically marked.

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