

Argument Structure and Linear Order in Balinese Binding

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0. Introduction

This paper argues for the significance of argument structure and linear order in the binding conditions of Balinese (an Austronesian language with about 3,000,000 speakers, primarily on the islands of Bali and western Lombok, Indonesia). Our analysis employs the theory of prominence due to Bresnan (1995a,b). We show that linear order, thematic prominence, and the term/oblique distinction are crucial to Balinese binding, while other aspects of syntactic rank (e.g. SUBJ versus OBJ) play little or no role. We propose to define binding at a level of argument structure incorporating the term/oblique distinction (following Manning 1994).

1. Voice-marking and argumenthood

Two voice markers are important for Balinese transitive verbs: (i). Objective Voice (OV) which is morphologically unmarked as in (1a); and (ii) the Active Voice (AV) which has a homorganic nasal prefix as in (1b) (*ng-* [ŋ] is the form for a vowel-initial stem). In section 3 we will present evidence that Balinese canonically has SVO order, so that the preverbal NPs in (1) are the SUBJ(ects) and the postverbal ones are OBJ(ects).¹

(1) High register

a. Bawi adol ida.
 pig OV.sell 3SG
 ‘(s)he sold a pig’

b. Ida ng-adol bawi.
 3SG AV-sell pig

Two important points are in order. First, voice marking does not change the argumenthood status of the agent *ida* ‘(s)he’ and the theme *bawi* ‘pig’. In either case, the non-SUBJ argument is a term and is not an adjunct or demoted oblique: it is obligatorily present; it is an NP (Balinese obliques are PPs); it launches floating quantifiers (a property of terms in Balinese); and it must be adjacent to V (see Wechsler and Arka in progress). Second, given the fact that in the zero form (i.e. the morphologically unmarked form) the theme is the SUBJ, we may speak of Balinese as basically syntactically ergative, although it allows syntactically accusative (AV) clauses as well (Artawa 1994).

2. Subject

We will not review all the evidence to support the claim that the preverbal NP, which normally expresses the sole argument of an intransitive predicate, is the subject (Artawa 1994, Wechsler and Arka 1996). Instead, we just mention one classic diagnostic test, namely the possibility of being an equi target. In languages having SUBJ, it is this grammatically privileged NP which is an eligible equi target. Thus the controlled structures in (2a) and (2c) are acceptable whereas the one in (2b) is not.

¹Balinese has two registers (speech levels), *kasar* or ‘low’ register and *alus* or ‘high’ register. They differ in various ways, including lexical forms. Register is indicated on most examples.

- (2) Low register
- a. Iang dot [___ ng-adeꞑ celeng] (SUBJ= equi target)
 1SG want AV-sell pig
 'I want to sell a pig'
- b. * Iang dot [celeng adeꞑ ___] (* OBJ=equi target)
 1SG want pig OV-sell
 'I want to sell a pig'
- c. Iang dot [___ periksa dokter] (SUBJ= equi target)
 1SG want OV-examine doctor
 'I want to be examined by a doctor'

Raising and relativization also support this result; see Artawa 1994 and Wechsler and Arka 1996.

3. Word order

Balinese word order is strictly SVO if the arguments of the transitive verb are indefinite. Thus the indefinite subject *nasi* 'rice' in the OV construction (3) must come preverbally (see (3b)), while definite subjects can sometimes be extraposed (4).

- (3) Low register
- a. Nasi amah cicing (SVO)
 rice OV.eat dog
 'A dog ate rice'
- b. *Amah cicing nasi (VOS)
 OV.eat dog rice
- (4) Amah cicing nasi-ne (VOS) (low register)
 eat dog rice-DEF
 'A dog ate the rice.'

We will not discuss extraposition further in this paper.

4. Objects and Definiteness.

The OV agent complement must take one of three forms: an indefinite common noun phrase; a personal pronoun; or a third person singular pronominal clitic, optionally doubled with a PP. We consider these in turn:

(i) A common NP; it must be indefinite, as shown by the contrast in (5a) and (5b).

- (5) a. ia alih polisi (low register)
 1sg OV-find police
 'The police looked for him/her.'
- b. *Ia alih polisi-ne
 1sg OV-find police-DEF
 'The policeman looked for him/her.'

(ii) A personal pronoun such as (*t*)iang 'I' or *cai* 'you', as in (6):

- (6) Ia tingalin iang/cai busan. (low register)
 3sg OV.see 1sg/2sg just now
 'I/you saw him/her just now.'

(iii) a pronominal clitic $=(n)a$ (low register only) as in (7a). ($-na$ is used when the host ends in a vowel.) This clitic can be doubled by a PP headed by *teken*, as in (7b).

- (7) a. Buku-ne jemak=a. (low register)
 book-DEF take=3sg
 '(s)he took the book.'
- b. Buku-ne jemak=a teken I Wayan.
 book-DEF take=3sg by I Wayan
 'The book was taken by I Wayan.'

An agent complement NP (though not the *teken*-PP as in (7b)) must immediately follow the verb. Hence the following structures are not acceptable because the adverbial *ibi* 'yesterday' intervenes.

- (8) a. *Nasi-ne amah ibi cicing. (low register)
 rice-DEF OV-eat yesterday dog
 'A dog ate the rice yesterday.'
- b. *Ia tingalin ibi iang ditu
 3sg OV-see yesterday 1sg there
 'I saw him/her there yesterday'

The range of allowable agent complements outlined above interacts with an independent constraint on ditransitive verbs: the first of the two NP complements must be definite. This is illustrated with an AV verb in (12b,c) below. For an OV example, we use the benefactive applied form of the transitive *alih* 'find', the ditransitive *alihang* 'find ... for ...':

- (9) a. *Ia alih-ang polisi saksi. (low register)
 3sg OV.find-APPL police witness
 'A policeman found a witness for him'
- b. *Ia alih-ang polisine saksi
 3sg OV.find-APPL police-DEF witness
 'The policeman found a witness for him'
- c. Ia alih-ang iang saksi
 3sg OV.find-APPL 1sg witness
 'I found a witness for him.'

As noted above, the OV agent is always adjacent to the verb, hence it must be the first object. Since a common NP OV agent must be indefinite, but the first object of a ditransitive must be definite, it follows that the OV agent of a ditransitive cannot be a common NP. This is illustrated in (9a) and (9b). As a consequence the agent object of a ditransitive verb must be a personal pronoun: it is not subject to the OV-agent constraint and it satisfies the ditransitive one, since pronouns are definite.

In contrast to the OV verb, the (monotransitive) AV verb places no definiteness restriction on its object (10a). The OBJ can also be a free pronoun (10b), but not a clitic (10c).

- (10) a. Cicing ngamah nasi(-ne). (low register)
 dog AV.eat rice(-DEF)
 'A dog ate (the) rice'
- b. Iang ningalin ia
 1sg AV.see 3sg
 'I saw her/him'
- c. *Iang ningalin=a
 1sg AV.see=3sg
 'I saw her/him'

For OV ditransitives, either one of the non-actor arguments (i.e. rec(ipient) or th(eme) argument as in *baang* 'give') can be subject:

- (11) a. Wayan baang iang nasi (S[rec] V O[ag] O[th]) (low register)
 Wayan OV.give 1sg rice
 'I gave Wayan rice'
- b. Nasi baang iang Wayan (S[th] V O[ag] O[rec])
 rice OV.give 1sg Wayan
 'I gave Wayan rice'

In the corresponding AV construction, however, the actor must be SUBJ, and the complement order is fixed: the recipient precedes the theme (as in English).

- (12) a. Iang nge-maang Wayan nasi
 1sg AV.give Wayan rice
 'I gave Wayan rice'
- b. ??Iang nge-maang nasi Wayan.
 1sg AV.give rice Wayan

For the same reason, if the non-actors are both animate/human and therefore both appropriate for either recipient or theme, then the first one is assumed to be recipient and the second one is the theme:

- c. Iang ngemaang Wayan anak luh ento
 1sg AV.give Wayan person female that
 'I gave Wayan the girl', not 'I gave the girl Wayan'

5. Balinese Binding: basic facts

Binding constraints in Balinese cannot be accounted for in terms of syntactic rank. Syntactic rank of SUBJ>OBJ>OBL, according to Bresnan (1995a, b), blocks the binding of an anaphor by an item that it outranks (e.g. SUBJ cannot be bound by OBJ in many languages). However, consider the contrast in (13). Changing the voice markers affects the argument to grammatical-function linking patterns: the (complex) reflexive *ragan idane*, which is a theme, is linked to OBJ in the AV-construction (13a) but it is linked to SUBJ in the OV-construction (13b). In each case, the agent can bind a theme (and not vice versa), irrespective of grammatical function.

(13) High register

- a. Ida nyingakin ragan idane
3sg AV-see self
'(s)he saw himself/herself'
- b. Ragan idane cingakin ida
self OV-see 3SG
'(s)he saw himself/herself'

However, a pure thematic hierarchy approach, in which a thematically higher binds lower but not the reverse, cannot account for binding either. For example, a goal/exp is normally higher than a theme, but in (14) it is the theme which can bind the goal and not vice versa. Crucially, the goal *I Wayan* is expressed as a PP (headed by *sig* 'to'), hence it is an oblique.

- (14) a. Iang ngedengang pipis-e sig I Wayan-ne. (low register)
1sg AV.show money-DEF to I Wayan-DEF
'I showed the money to I Wayan.'
- b. *Iang ngedengang awakne sig I Wayan-ne.
1sg AV.show self to I Wayan-DEF
'I showed himself to I Wayan.'
- c. Iang ngedengang I Wayan sig awakne
1sg AV.show I Wayan to self
'I showed Wayan_i to himself_i.'

This shows that the distinction between TERM ('direct') and NONTERM ('oblique') is crucial for binding. Non-terms are lower on the hierarchy than terms (see Section 6 below). Hence (14b) violates both Principle A (the anaphor is not bound) and Principle C (the (proper) name *I Wayan* is improperly bound).

When the Goal *I Wayan* is a TERM as in the ditransitive verb *ngedengin* 'show' (15), then it can bind the theme reflexive:

- (15) Iang ngedengin I Wayan awakne.
1sg AV.show I Wayan self
'I showed I Wayan himself.'

6. Prominence Relations and Binding theory

The architecture of Bresnan's (1995a,b) theory of prominence (also Mohanan 1990) consists of several parallel structures, each structure modeling some set of properties or dimensions. Bresnan distinguishes three prominence relations (Bresnan 1995a, pp. 19ff):

- (i) Syntactic rank: grammatical relations/functions (SUBJ>OBJ>OBL>COMPL>...), associated with f-structure.
- (ii) Linear order: surface linear precedence of lexical expression; it is associated with c-structure but it is also defined in terms of f-structure correspondence (hence f-precedence).
- (iii) Thematic prominence: prominence in terms of thematic hierarchy, associated with arguments in the same argument structure.

A unifying Prominence Principle states that a binder excludes from its binding domain any elements more prominent than it (the domain of the binder is the minimal f-structure

containing it). Languages vary, however, in what combination of syntactic, linear order, and thematic prominence is operative, and how strongly each applies.

We have seen that Balinese binding is not adequately described in terms of either syntactic rank or thematic prominence ((13b) violates the former while (14c) violates the latter). We will see more evidence for this below. Instead we propose that binding must be defined in terms of the prominence in a level of argument structure which includes the term/oblique distinction (similar to the feature [+/-r] of Lexical Mapping Theory). Following Manning (1994) we assume a version of a-structure where arguments are ordered in terms of termhood:

TERMS > NONTERMS (i.e terms outrank obliques).

Within each group, the prominence of the arguments generally reflects thematic prominence, at least for root forms (derivations such as applicativisation can lead to minor deviations; see applied locative, ex. (27) below). Our a-structure for *ngedengang* ‘show’ (14) looks roughly like (16). It says that the a-str consists of three arguments: two terms (agent and theme) and one oblique (goal).

(16) *ngedengang* << ag, th> <go >> ‘show’

This a-str is largely predictable from the semantics of the verb: as noted above, within the group of terms, the arguments are ordered by a thematic hierarchy (Bresnan and Kanerva 1989 among others) or some alternative (e.g. Wechsler 1995, Davis 1996). The term/non-term distinction is partly stipulated, although it is constrained by the availability of an appropriate preposition or other oblique marker in the particular language. In short, the a-structure has two sides: thematic and syntactic.

In Balinese, terms map to subjects and objects, and there can be only one subject. It follows that the single argument of an intransitive verb (which is by definition the only TERM) is linked to SUBJ irrespective of its semantic properties (e.g. whether it is thematically an agent or a theme). The two voices OV and AV constrain the subject selection for a mono- or ditransitive verb; the highest item in a-structure will be called the ‘a-subject’:

(17) Balinese subject selection for transitive verbs.

a. AV-verb: SUBJ is the a-subject.

b. OV-verb: SUBJ is any term except the a-subject.

Any remaining terms are mapped onto NP complements, while obliques are realized as PPs.

The AV verb links the a-subject to SUBJ (resulting in syntactically accusative pattern) whereas the OV-verb links one of the non-a-subject TERMS to SUBJ (resulting in syntactically ergative pattern). One important point is that with an OV-verb the a-subject is still a TERM and more prominent in the a-str than the SUBJ; the agent is not ‘demoted’. In other words, the OV and AV verbs share the prominence in a-structure and differ only in the gf-linking. Since binding is defined in terms of a-str, we explain why alternation of gf-linking as exemplified in sentence (13) does not alter the binding. This is because they share the same a-structure where the reflexive anaphor *ragan idane* ‘self’ is bound by its a-commander *ida* ‘3sg’.

7. Derived verbs

Derivational processes such as causativisation, applicativisation and passivisation affect a-structures, so we expect that such processes may affect the binding relation between argument items as well.

7.1 Causatives

Causativisation yields a new predicate with an agent causer added. We will not discuss the details of the causative formation (see e.g. Alsina 1992). We are only interested in the gf-str and a-str of the base and the derived causative. Causativisation of intransitive and transitive bases are discussed in turn.

Causativisation of the one-place predicate *sakit* ‘ill’ (18a), yields a transitive verb *sakitang* (18b).

- (18) a. Adin cai-ne sakit (low register)
 younger-sibling your ill
 ‘Your younger sister/brother is ill.’
- b. Adin cai-ne sakit-ang cai.
 younger sibling your OV.ill-cause 2sg
 ‘You hurt your younger sister/brother’

Let us assume that causativisation adds a Causer argument at the left of the a-structure list. Example (18b) shows that the old SUBJ (i.e. *adin caine* ‘your younger sibling’) becomes surface SUBJ (causee) in the derived (OV) causative verb. It is still a term however but is now no longer an a-subject. The a-subject is now the causer *cai*, which is an OBJ in the OV verb. Given the a-str in which the causer and the causee are both terms and the causer a-commands the causee, two predictions follow.

First, either the causer or the causee will be (surface) SUBJ depending on the voice marker. Thus, instead of (18b) we can also have the AV form:

- c. Cai nyakitang adin caine.
 2sg AV-ill-cause younger sibling your

Second, the causee can be bound by the causer, not vice versa.

- (19) a. Cai nyakitang awak cai-ne (low register)
 2sg AV.ill-cause yourself
 ‘You hurt yourself.’
- b. *Awak caine nyakitang cai.
 yourself AV.ill-cause 2sg
 Lit. ‘Yourself hurt you.’
- c. Awak caine sakit-ang cai.
 yourself OV.ill-cause 2sg
 ‘You hurt yourself.’
- d. *cai sakit-ang awak caine.
 2sg OV.ill-cause yourself
 Lit. ‘Yourself hurt you’

If the base verb is a transitive verb, the derived causative is a three-place predicate. One possibility is that, with the *-ang* suffix, the causee is the second TERM argument and the lower patient becomes OBL. Consider:

- (20) Tiang ngugutang lalipine sig Nyoman-ne S O OBL
 1SG AV-bite-CAUS snake-DEF at Nyoman-DEF <<causer,causee> <bitten>>
 ‘I made the snake bite Nyoman.’

In the derived causative form *ngugutang* ‘AV-bite-CAUS’, the causee *lalipi-ne* ‘the snake’ is the second argument and what used to be the base object (i.e the bitten *Nyoman*) now becomes an oblique marked by *sig* ‘at’. Given the configuration of the derived causative, we predict that the reflexive oblique can be bound by the causee OBJ, not vice versa. This is confirmed (21a-b). We also predict the reflexive oblique can be bound by the a-subject. This is true (21c).

- (21) a. Tiang ngugutang lalipine sig awakne (low register)
 1SG AV-bite-CAUS snake-DEF at self
 ‘I made the snake bite itself.’
- b. *Tiang ngugutang awakne sig lalipi-ne
 1SG AV-bite-CAUS self at snake-DEF
 ‘I made the snake bite itself’
- c. Ia_i ngugutang lalipine_j sig awakne_{i/j}
 3sg AV-bite-cause snake-DEF at self
 ‘He_i made the snake_j bite himself_i/itself_j’

More evidence comes from binding by a quantified NP (QNP):

- (22) Sabilang lalipi gugutang tiang sig ikut-ne
 Every snake OV-bite-CAUS 1sg at tail-3POSS
 ‘I made every snake_i bite its_i tail’

In this example, the QNP containing the operator *sabilang* ‘every’ is the causee (second argument) linked to SUBJ (due to the OV-verb). The QNP must a-command the NP which dominates (or perhaps f-commands) the possessive pronominal *-ne* which it binds.

Another type of causative is formed with the *-in* suffix. It yields a different a-str configuration. From the transitive base *suun* ‘carry something on the head’, for instance, we can derive a ditransitive *suun-in*. In this (double object) derived causative, the causee (i.e the base a-subject) becomes the second argument and the lower theme becomes the third argument in the a-str.

- (23) Iang nyuun-in Ni Luh Wayan banten
 1sg AV-bear.on.head-CAUS Ni Luh Wayan offering
 ‘I made Ni Luh Wayan carry offering’

Since the theme *banten* ‘offering’ is the last argument, it is a-commanded by the agent causer (a-subj) *iang* ‘1sg’ and by the causee (second argument) *Ni Luh Wayan*. We predict therefore that binding of the pronominal in the third argument from either of these arguments is possible. This is confirmed (24a-b). Likewise binding from the a-subject to the second argument is fine (24c).

(24) Low register

- a. Sabilang jlema_i nyuunin Ni Luh Wayan banten-ne_i
 every person AV-bear.on.head-CAUS Ni Luh Wayan offering-3POSS
 ‘Every person_i made Ni Luh Wayan carry his/her_i offering’
- b. Sabilang tukang_i banten suunin iang banten-ne_i
 every maker offering OV-bear.on.head-CAUS 1sg offering-3POSS
 ‘I had every offering-maker_i carry his/her_i offering.’

- c. Sabilang jlema_i nyuunin pianak-ne_i banten.
 every person AV-bear.on.head-CAUS child-3POSS offering
 ‘Every person_i made his/her_i child carry offering on the head’

What is not possible however is binding from the third argument to the argument that a-commands it. Thus, the following is bad despite the fact that third argument is the (surface) SUBJ. (Consider the contrast between (24b) and (24d).)

- d. ?*Sabilang banten_i suunin iang tukang banten-ne_i.
 every offering OV-bear.on.head-CAUS 1sg maker offering-3POSS
 ‘I had every offering_i carried by its_i offering maker.’

7.2 Applicatives

Balinese has two applicative suffixes which signal that a term argument has been added to the argument structure. Each suffix is added to a range of semantic types for the added role:

-in: Locative or Source/Goal roles

-ang: Theme, Instrumental, Benefactives, or Recipient roles

A stem can appear in either *-in* or *-ang* form, with different meaning. The following is an example with an intransitive base *teka* ‘come’. Sentences (25a) and (25b) use the non-applied forms. The locative *umah-ne* ‘his/her house’ or the (comitative) theme *polisi* ‘police’ is not an argument of the verb *teka* (represented as being within brackets). Sentence (26a) and (26b) are the applied form in Objective Voice. The applied arguments here are the subjects.

- (25) a. Iang teka (ka umah-ne). (low register)
 1sg come (to house-POSS)
 ‘I came to his/her house.’
- b. Iang teka (ngajak polisi)
 1sg come (AV.accompany police)
 ‘I came with a policeman.’
- (26) a. Umah-ne teka-in iang. (low register)
 house-POSS OV.come-APPL 1sg
 ‘I came to his/her house’
- b. Polisi teka-ang iang.
 police OV.come-APPL 1sg
 ‘I came with a policeman’

We analyse applicativisation as an operation that adds a term argument in the second place in the a-str, that is, immediately following the a-subject:

Base verb: a-str << [1], ...> <...>>

Applied verb: a-str <<[1], [2]applied,...> <...>>

The evidence that the applied argument occupies the second position comes from applied locative with a transitive base. Locatives are generally assumed to fall below Theme on the thematic hierarchy. Crucially, an applied locative argument can bind into a theme, but not vice versa:

(27) (low register)

- a. Sabilang toko anggeh-in=*a* baas-ne ane paling luunga
every shop OV.charge-APPL=3sg rice-POSS best
'In every shop_i (s)he bought its_i best rice on credit.'
- b. Sabilang bodang jang-in=*a* sate-ne
every basket OV.put-APPL satay-POSS
'In every basket_i (s)he put its_i satay'
- c. *Sabilang sate jang-in-*a* bodang-ne
every satay OV.put-APPL basket-POSS
'(S)he put every satay_i in its_i basket'

Being an applied role, the locative falls into the second position in ARG-S, above the theme. It is clear now that applicativization can lead to an ARG-S ordering which is not strictly based on thematic ordering. That is, assuming that Themes are ordered above Locatives on the thematic hierarchy (or whatever other means is used to determine its basic ordering), then applicativisation can lead to an ordering which does not strictly reflect thematic ordering.

7.3 Passives

Passive verbs in Balinese are marked by the prefix *ka-*. The agent appears as an optional PP headed by *teken* (low register) or *antuk* (high register):

- (28) Ida ka-tumbas-ang motor anyar (antuk ajin ida-ne) (high register)
3sg PASS-buy-APPL motor-bike new (by father 3sg-DEF)
'A new motor bike was bought for him by his father'
(Lit. 'He was bought a new motor bike by his father.')

We analyse passivisation as an operation on a-structure which changes the status of the agent. It is no longer an a-subject but instead becomes an adjunct-like oblique and therefore at the right side of a-str. Note that applicativization feeds passivization.

Our analysis is supported by the contrasting binding behavior of the agent in OV and passive clauses. Consider:

- (29) a. Iang edengin=*a* awakne di potrekan-e. (low register)
1sg OV.show=3 self at picture-DEF
'(s)he showed me himself/herself in the picture'
- b. ?*Tiang ka-edengin ragane ring potrekan-e antuk ida. (high register)
1sg PASS-show self at picture-DEF by 3sg
'(I was shown himself/herself by him/her in the picture')

If, as we have claimed, binding is constrained by prominence in a-str, the acceptability contrast in (29) is explained. The a-subject in (29a) is the agent clitic =*a* '3sg' which a-commands the reflexive, satisfying the Prominence Principle. Hence the sentence is acceptable. The *ka-* passive however prevents the agent from being the a-subject, making it an adjunct-like oblique. As an oblique it does not a-command the reflexive object. Thus, the only a-commander for the reflexive *ragane* in (29b) is the Exp *tiang* '1sg'. But it is not a suitable binder, so the sentence is ruled out. If the goal SUBJ is a third person, we expect it can bind the reflexive *ragane*. This is confirmed:

- c. Ida ka-edengin ragane ring potreka-ne antuk ajin ida-ne. (high register)
 3sg PASS-show self at picture-DEF by father 3-DEF
 ‘(S)he was shown himself/herself in the picture by his/her father’

Passivisation in (29b-c) was applied to a ditransitive base yielding a transitive output where the reflexive has an a-commander. In contrast, passivisation of a transitive base yields an intransitive verb, as in (30). As a consequence the anaphor *is* the a-subject in the derived passive. According to the theory of Pollard and Sag 1994, it is therefore exempt from local binding conditions (their Principle A) and subject only to discourse conditions. We predict that it could be bound by the PP agent, because nothing prevents it. This is confirmed:

- (30) Ragane tan ka-runguang antuk ida (high register)
 self NEG PASS-care by 3sg
 ‘(s)he does not take care of himself/herself’

The acceptability of (30), at first blush, appears to resemble binding by the ‘logical subject’ (or ‘initial 1’) in languages such as Russian, as described by Perlmutter 1984. Manning and Sag 1995 formalize Perlmutter’s account within HPSG as an ‘existential’ interpretation of the binding principles: the anaphor must be a-commanded on some a-structure list, including the list associated with the verb root (‘before’ passivization), where the agent is the a-subject. While this may be right for Russian, the contrast between (30) and (29b) suggests that the analysis is not correct for Balinese. We also predict that in the absence of the PP agent, the a-subject anaphor can be discourse-bound via context. This is also borne out:

- (31) Ida inceg pisan ng-runguang sisian ida-ne. (high register)
 3sg busy very AV.care student 3sg-DEF

Ragan idane tan ka-runguang.
 self 3 NEG PASS-care

‘(S)he was very busy taking care of his/her students.
 (S)he does not take care of him/herself.’
 (Lit. ‘...Himself/herself is not taken care of.’)

8. Binding and Linear Order

Balinese allows backward binding of reflexives; see, e.g., (13b) above, where the anaphor precedes its binder. This is not always possible however. An indefinite agent-OBJ common NP does not allow backward binding (32a). When the antecedent precedes the reflexive as in (32b), binding is successful.

- (32) a. *Awakne gugut cicing
 self OV-bite dog
 ‘A dog bit itself’

- b. Cicing ngugut awakne
 dog AV-bite self
 ‘A dog bit itself.’

Backwards binding by QNP’s is also strongly resisted, suggesting a linear order constraint (Bresnan 1995b, Choi 1995). Consider the pair of OV sentences in (33). Both sentences share the same a-structure where the pronominal in [3] is a-commanded by the QNP which binds it ([2]). They differ only in the linear order of the binder and the bindee (and the

grammatical functions associated with them): the goal is selected as subject in (33a) while the theme is selected in (33b) (recall that either non-a-subject can be subject of an OV verb). Only when the binder precedes the bindee is the binding possible (33a), otherwise the sentence is bad (33b). In short, a-str (i.e a-command) and linear order are relevant constraints here.

(33) Low register

- a. [2]Sabilang jlema edengin [1]iang [3]potrekan-ne O S O
 every person OV-show 1sg picture-3POSS <[1]ag, [2]go, [3]th>
 'I showed every person his/her picture'
- b. ?*[3]Potrekan-ne edengin [1]iang [2]sabilang jlema. O O S
 picture-3POSS OV-show 1sg every person <[1]ag, [2]go, [3]th>
 'I showed every person his/her picture.'

One might suspect that the badness of (33b) is not absolutely due to surface linear order because, unlike (33a), (33b) has its pronominal (in [3]) linked to (surface) SUBJ and therefore syntactically outranks the operator/quantified NP ([2]) which is an OBJ. A better example will be the one that eliminates surface GF superiority and isolates the word-order effect. Consider the double oblique constructions with the verb *matakan* 'ask' in (34): the person asked (i.e goal role) is marked by *sig* 'to/at' and the thing asked (i.e theme) is marked by *unduk* 'about'. Note that there is no linear order restriction between these two obliques. The sentences with different orders of the obliques are both acceptable:

- (34) a. Iang matakan sig Nyoman-e unduk I Wayan-e. (low register)
 1sg ask to Nyoman-DEF about I Wayan-DEF
 'I asked (to) Nyoman about I Wyan.'
- b. Iang matakan unduk I Wayan-e sig Nyoman-e
 1sg ask about I Wayan-DEF to Nyoman-DEF
 'I asked Nyoman about I Wyan.'
 (Lit. 'I asked about I Wayan to Nyoman.')

Assuming that the goal item is more prominent in the a-str than the theme argument, we expect that we can only have operator binding from the *sigPP* to *undukPP* in that (surface) order, not vice versa. This is confirmed (35). But (35b) is bad because the pronominal precedes the operator that binds it.

(35) Low register

- a. Iang matakan sig sabilang anak-e_i ane teka unduk umah-ne_i
 1sg ask to every person-DEF REL come about house-3POSS
 'I asked (to) every person_i who came about his/her_i house.'
- b. *Iang matakan unduk umah-ne_i sig sabilang anak-e_i ane teka.
 1sg ask about house-3POSS to every person-DEF REL come
 *'I asked about his/her_i house (to) every person_i who came.'

To conclude, linear order in Balinese confirms the constraint roughly stated in (36) (cp. Langacker 1966, Barss and Lasnik 1986, Bresnan 1995b, Choi 1995, inter alia).

(36) Linear order condition: A pronominal cannot precede a non-pronominal that binds it.

Note that this correctly allows cases of backwards binding by pronominals, like (13b).

9. Conclusions

The following points about Balinese emerge from this study:

(i) If we assume that terms are more prominent than obliques at a-structure, then A-str prominence and linear order are relevant dimensions for constraints in Balinese binding, while surface grammatical relations (i.e. gf-str) play no role.

(ii) 'Principle A' (the Prominence Principle applied to anaphors) must be formulated in terms of a-str: an anaphor which has an a-commander must be coindexed with an a-commander. Similarly, for binding of a pronoun by a QNP, the QNP must a-command the argument containing the pronoun.

(iii) The following linear order condition applies: a non-pronominal cannot bind a pronominal that precedes it.

(iv) Voice marking constrains gf-linking (i.e mapping the a-str onto gf-str), reflecting ergative / accusative patterns. Given the points in (i) and (ii), binding is defined at a-structure, and for a given set of argument roles, binding is therefore unaffected by voice alternations.

(v) Applicativisation and passivisation, on the other hand, are processes that alter a-structure. Therefore these alternations affect binding.

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