

# Neutralization in Balinese Subjects by Structure Removal

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## Abstract

Levin (2015) provides an account of restrictions on Subjects in Balinese object voice constructions, based on postsyntactic case licensing, local dislocation and KP-shell removal. We argue that a more formalized version of Structure Removal based on a  $D_0$  removal feature (Müller 2017) can derive the data without further assumptions. The ban on definite subjects is explained as a neutralization effect on LF, whereas adjacency requirements follow from *c*-command requirements on the reintegration of syntactic structure. The NP-status of these subjects at a later point of the derivation accounts for their inability to undergo any category-specific DP-movement, thus deriving the independently observed symmetry property of the Balinese voice system (Wechsler & Arka 1998).

## 1. Introduction

The DP/NP distinction constitutes a frequently used explanandum in accounts of *Differential Object Marking* and (*Pseudo-*)*noun Incorporation* (Massam 2001, Dayal 2011, López 2012). Less prominently discussed are subjects/agents which can show similar restrictions in certain scenarios, one of which is the Balinese object voice construction (Levin 2015). Definite subjects are banned from subject in-situ positions in object voice, whereas pronouns, proper names and indefinite noun phrases are licensed, although they cannot extract from such positions. Additionally, weak quantifiers and adverbials trigger adjacency effects, as they are not allowed to appear between in-situ subjects and verbs.

We argue against the post-syntactic approach, proposed in Levin (2015), that derives the cluster of properties by *local dislocation* (Embick & Noyer 2001). Besides post-syntactic case licensing and *Distinctness* (Richards 2010), Levin employs structure removal of a KP-shell as a last resort operation. In contrast

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to Levin, our proposal will make structure removal single-handedly derive almost all the Balinese in-situ properties.

We assume a structure removal feature targeting the D heads of in-situ subjects, which enters the derivation by object voice heads. These subjects can be selected as DPs in the vP cycle, but any later operation, e.g. raising to pivot, will treat them as NPs. This also leads to a neutralization of definite and indefinite DPs towards indefinite interpretations. The semantics of proper nouns and pronouns are left intact, as their D heads are not contentful.

The rest of this paper will be structured as follows. Section 2 will introduce data on Balinese noun phrases and object voice. It will also state the crucial empirical generalizations that need to be derived. Section 3 will present the approach in Levin (2015) and point out several problems. These will be solved in our approach, presented in section 4, divided into a syntactic and a semantic part, following the general introduction of the structure removal operation. We will conclude in section 5.

## 2. Empirical Generalizations

Like many Western Austronesian languages, Balinese exhibits a voice system in which one argument, called the pivot, is privileged in some way. The Balinese voice marking system is symmetrical. Both object voice and subject voice require two arguments, where the order subject-object is reversed in object voice. Subject voice is marked with a prefix *ng-* whereas object voice is morphologically unmarked.

(1) Arka (2003:106,45)

- |    |  |                      |
|----|--|----------------------|
| a. | Nyoman ejuk      polisi<br>Nyoman ov.arrest police<br>'A policeman arrested Nyoman.' | <i>object voice</i>  |
| b. | Polisi ng-ejuk    Nyoman<br>police AV-arrest name<br>'A policeman arrested Nyoman.'  | <i>subject voice</i> |

## 2.1. Definiteness in Balinese Noun Phrases

Definiteness in Balinese is marked by the suffix *-ne* which can additionally occur with the postnominal determiners *ene* and *ento* (cf. 36a). Both can co-occur with possessors, shown in (2b).

## (2) Arka (2003:105)

- a. Celeng-e ene  
 pig-DEF this  
 'this pig'
- b. Celeng tiang-e ene  
 pig I-DEF this  
 '(Lit. this my pig)/this pig of mine'

Modifiers like PPs and adjectives usually follow the noun they modify, cf. (3a) and (3b). Not much is known about the distribution of quantifiers in Balinese. Arka (2003) describes three universal quantifiers *onya*, *makejang*, and *sami* (= all), uniformly occurring to the right of a noun, as in the examples given in (3a) and (3b) for *onya*.

## (3) Arka (2003:106)

- a. Dagang celeng uli Badung ento onya  
 trader pig from Badung that all  
 'All of the pig traders from Badung'
- b. ?\*Dagang celeng uli Badung onya ento  
 trader pig from Badung all that  
 intended: 'All of the pig traders from Badung'

They, furthermore, select for a definite noun phrase (Arka 2003:45,48), cf. (4a) vs. (4b), while also being able to float (5). These quantifiers are, thus, much in line with what has been reported about quantifier *all* cross-linguistically, see Giusti (1990) for German, Sportiche (1988) for French, McCloskey (2000) for Irish, or Shlonsky (1991) for Hebrew, among many others. Arka (2003:107) concludes from the distributional properties that *onya*, *makejang*, and *sami* are merged in a rightward specifier of DP.

(4) Arka (2003:45)

- a. ?\* [Jaja makejang] jemak=a  
 cake all ov.take=3  
 ?'(S)he took all cake.'
- b. Jaja-ne makejang jemak=a  
 cake-DEF all ov.take=3  
 '(S)he took all the cake.'

(5) Arka (2003:46)

- Cerik-cerik-e meli jaja-ne ibi onya.  
 child-child-DEF AV.buy cake-DEF yesterday all  
 ~> The children bought all of the cake.  
 ~> All the children bought cake.

Levin (2015) provides data with respect to weak (adjectival) quantifiers. He discusses *liu* (=many) which, according to his fieldwork, can occur to the right or to the left of the head nouns. Whereas all examples in Arka (2003:16-17,183-184) show *liu* following the noun, Levin (2015) provides examples where *liu* precedes the noun (6).

(6) Levin (2015:76)

- a. (Liu) cicing (lui) ngugut Nyoman.  
 many dog many sv.bite Nyoman  
 'Many dogs bit Nyoman.'
- b. Cicing-e ngugut (liu) anak cerik (liu)  
 dog-DEF sv.bite many person small many  
 'The dog bit many children.'

Unfortunately, the data on these weak quantifiers are very limited, we do not know e.g. about the definiteness values that are possible with prenominal weak quantifiers. We also have no data on the possibility of quantifier float with weak quantifiers.

## 2.2. Object voice in-situ subjects

In Balinese object voice constructions, non-pivot definite DP subjects are banned, cf. the example in (8a). This contrasts with indefinite noun phrases, pronouns and proper names, as shown in (8b) and (8c).<sup>1</sup>

(8) Levin (2015:77)

- a. \*I Wayan gugut cicing-e (ento). *definite*  
 ART Wayan ov.bite dog-DEF that  
 'That dog bit Wayan.'
- b. Be-e daar ida/Nyoman. *pronoun/proper name*  
 fish-DEF ov.eat 3/Nyoman  
 '(S)he/Nyoman ate the fish.'
- c. Nyoman sing gugut cicing. *indefinite*  
 Nyoman NEG ov.bite dog  
 'A dog didn't bite Nyoman.'

Additionally, two further restrictions apply to these subjects. According to Levin (2015), weakly quantifying determiners as well as adverbs cannot intervene between the in-situ subjects and the verb, cf. (9a) and (9b).

(9) Levin (2015:76)

- a. Nyoman gugut (\*liu) cicing (liu).  
 Nyoman ov.bite many dog many  
 'Many dogs bit Nyoman.'

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<sup>1</sup>This set of noun types is completely unexpected from a functional perspective (Bossong 1991, Aissen 2003). An account which is e.g. based on definiteness scales will be difficult to argue for, as indefinites, pronouns, and proper names do not form a natural class to the exclusion of definite arguments.

(7) Definiteness scale according to Aissen (2003:437)  
 PRO > PN > DEF > INDEF SPEC > INDEF NON-SPEC

- b. (Sanget-sanget) gamelan-e (sanget-sanget) depak  
 very-very gamelan-DEF very-very ov.hit  
 (\*sanget-sanget) ia (sanget-sanget).  
 very-very 3 very-very  
 '(S)he was hitting the gamelan really hard.'

Moreover, they cannot be dislocated from the post-verbal position: (12a) shows that non-pivot subjects cannot extrapose, (12b) shows that they cannot undergo topicalization either.<sup>2</sup>

(12) Levin (2015:71-73)

- a. Siap-e uber (cicing) ke jalan-e (\*cicing)  
 chicken-DEF ov.chase dog into street-DEF dog  
 'A dog chased a chicken into the street.' *extraposition*
- b. \*Cicing<sub>i</sub> ia uber t<sub>i</sub>.  
 dog 3 ov.chase  
 'A dog, it chased him/her.' *topicalization*

<sup>2</sup>Levin also provides an example for illicit *wh*-movement, given in (10). It should be noted that this is a complex, ex-situ *wh*-phrase in object voice. The grammatical *wh*-in-situ counterpart is missing from his descriptions. A simplex *wh*-in-situ object voice sentence is given instead, cf. (11).

(10) Levin (2015:75)

- \*[Anak cerik cen]<sub>i</sub> be-e daar t<sub>i</sub>? *wh-movement*  
 person small which fish-DEF ov.eat  
 'Which boy ate the fish?'

(11) Levin (2015:73)

- ?Montor anyar beli nyen? *wh in-situ*  
 car new OV.buy who  
 'Who bought a new car?'

There seems to be a general dispreference for *wh*-phrases in object voice sentences in-situ as well as ex-situ (Mike Berger, p.c.). As will become clear in the following sections, our account is able to derive the general ungrammaticality of *wh*-phrases in object voice sentences. Assuming that the *wh*-feature is situated on the D head (i.a. Ouhalla 1996), removal of D will lead either to neutralization with non-*wh* pronouns or to a crash at the interfaces. We will, however, not consider *wh*-phrases for our analysis any further.

### 3. Against local dislocation of Balinese in-situ subjects

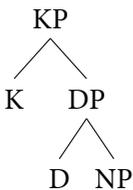
Recent theories of Differential Object Marking (DOM) and Pseudo-noun Incorporation (PNI) operate under the assumption that certain types of arguments have to be exceptionally case-licensed by establishing a syntactic (Kalin 2014, 2018, Tyler 2018, Levin 2019) or post-syntactic (Levin 2015, van Urk 2019) dependency with another licenser in the clause. Levin (2015) provides a uniform analysis for object PNI in Sakha, Tamil, and Niuean as well as for in-situ subjects in Balinese and Malagasy. By situating the case licenser on the argument itself in form of a K head and allowing arguments to enter the derivation either as KPs or structurally reduced DPs/NPs, Levin creates scenarios in which non-KP arguments need to be licensed by local dislocation with V, a PF-operation that requires linear adjacency with V. This section will discuss his case-licensing approach and its application to Balinese in-situ subjects.

#### 3.1. The post-syntactic account

The main empirical observation Levin wants to capture is that the highest nominal projection within an in-situ subject in object voice seems to require surface adjacency with the lexical verb. While Balinese generally displays free word order, in situ subjects in object voice must be postverbal and linearly adjacent to the verb, recall the data set in section 2.2. Levin redefines the case filter as a restriction on size rather than a restriction on feature valuation. All categories must be part of a complete extended projection which in case of noun phrases is a KP.

- (13) *Levin's case filter* (Levin 2015:46)  
Noun phrases must be KPs.

- (14) *Structure of the noun phrase:*



If noun phrases are merged as anything less than a KP, say a DP or an NP, then the head of the highest nominal projection must get licensed by forming a complex head with the lexical verb via adjunction as part of post-syntactic local dislocation. This step obviates the case filter since the nominal becomes part of the verbal projection. Non-KPs have to be linearly adjacent to V, as this is the only configuration where local dislocation is permitted.

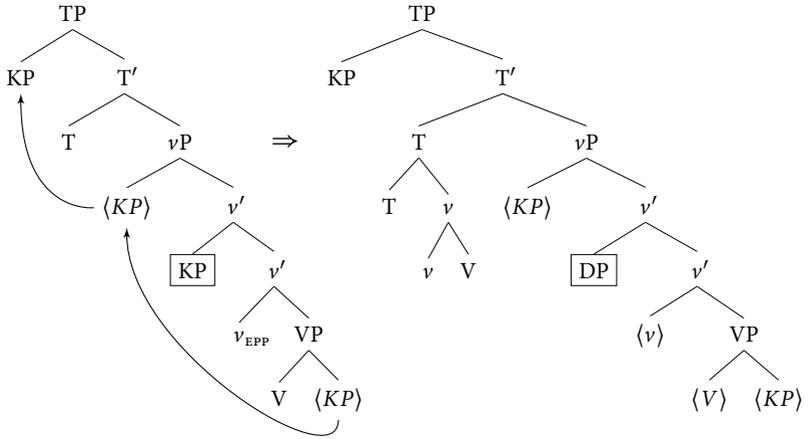
While the reduction of objects to NP-size in PNI languages is the result of idiosyncratic c-selectional properties of PNI-verbs in Sakha and Tamil, reduction to DP-size for in-situ subjects in Malagasy and Balinese is triggered by a *Distinctness* violation of the form <KP,KP> within the  $\nu$ P phase. Following Richards (2010), this requirement on syntactic structures prohibits the occurrence of identical categories too close to each other.

(15) *Distinctness* (Richards 2010:5)

If a linearization statement  $\langle \alpha, \alpha \rangle$  is generated, the derivation crashes.

Although Levin does not formalize it, he proposes that a distinctness violation is remedied by removing the subject's KP-layer (Levin 2015:132), compare the boxed nodes in (16). The DP status requires subjects to stay merged in their in-situ positions so that they can get case-licensed by local dislocation on PF. This PF-operation is a type of adjunction which is only licit between two elements if they are linearly adjacent (Embick & Noyer 2001), see (17) where • encodes immediate precedence. Further operations to consider in (16) are the obligatory promotion of the object in object voice and the roll-up head movement (whose derivational timing is not made explicit).

(16) *Removal of KP-layer for Balinese subjects* (Levin 2015:132)



(17) *Local dislocation of the highest nominal head in Balinese* (Levin 2015:104)  
 $[_{T^o} T+..+V] \bullet [_{DP} D^o(\bullet NP)] \rightarrow [_{T^o} T+..+V+D]$

The ban on displacement, shown in (12), and intervention of adverbs (9b) follow directly from the linear adjacency requirement. In order to derive the class of nominals which are licensed as in-situ subjects, Levin has to introduce an additional assumption.

(18) *Distributional Constraint on non-KP nominals* (Levin 2015:47)

The highest overt head in the extended nominal projection, whatever it is, must be linearly adjacent to the verb.

Levin treats weak quantifiers like adjectives, presumably because they can occur pre- or post-nominally. Thus, a prenominal weak quantifier is blocked in (9a) since N as the highest overt head is not linearly adjacent to V. Definite subjects in (8a) are not licensed since the highest nominal head D is not adjacent to V due to NPs interference. Pronouns and proper names in (8b) are analyzed as (monovalent) D heads, thereby obeying linear adjacency. Finally, indefinites are licensed because, by assumption, empty D heads are invisible to the application of local dislocation.

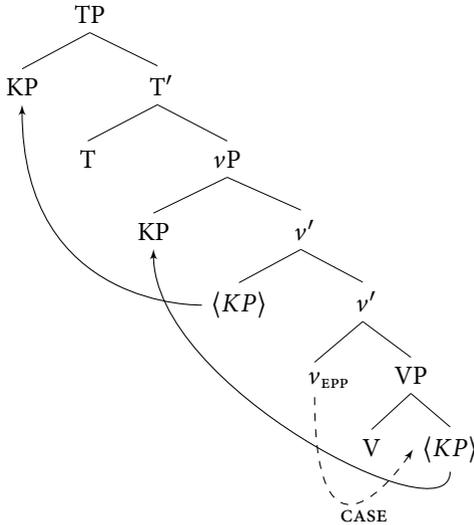
## 3.2. The problems

In this section, we will point out some conceptual problems with the post-syntactic removal of a KP-layer. Contra Richards (2010), Levin has to assume that distinctness takes unpronounced lower copies into account – a move that is highly counter-intuitive for a constraint that was originally motivated to avoid contradictory linearization statements. This step is unavoidable for Levin, however, since the pivot needs to move to pivot position which is necessarily outside of the local domain where it was first merged as an argument. Moreover, lower copies cannot be visible at the point when local dislocation applies, as the intermediate copy would count as an intervener between the in-situ subject and V in (16). Consequently, Levin must assume that lower copies are visible for some PF operations but not for others.

The second issue concerns the argument choice. It seems coincidental that it has to be the subject whose KP-shell gets removed. Levin (2015:140) addresses this issue and suggests there might be an advantage of removing an unvalued case feature over a valued one, suggesting that the object in object voice is assigned case by a head within in *vP*. This is not in line with how he derives the pivot properties in Balinese object voice in Levin (2014b:298) where he assumes that the object's case feature remains unvalued until T enters the derivation. He uses this assumption as a trigger for movement into pivot position, i.e. movement to Spec,TP. Since both external and internal argument are unvalued for case, there is no reason to pick one KP over another to circumvent Distinctness.

According to Levin (2014b:300), the subject voice head does assign case to the internal argument, leaving the external argument without case. The T head, therefore, attracts the subject to pivot position, as it is the only argument without case at this point in the derivation. For the sake of completeness, we show the underlying structure for subject voice clauses in (19). Note that we extrapolate here from Levin's assumptions in Levin (2014a) and Levin (2015) since he does not discuss subject voice with respect to KPs in Levin (2015). Again, it is not obvious to us how the distinctness filter is not also violated in subject voice clauses.

(19) *Movement to pivot position in subject voice*



For the rest of this paper, we will develop an idea that makes Levin’s trigger for surface adjacency, i.e. removal of a nominal shell, the key component of the analysis. We dispense with Distinctness and encode structure removal via a feature on the object voice head. Thus, no effects are expected in subject voice clauses. In-situ properties of the subject in object voice fall out from removal of a DP-layer, hence no reference to post-syntactic case licensing under linear adjacency with V is needed. The choice of targeting the subject over the object for structure removal follows from locality considerations.

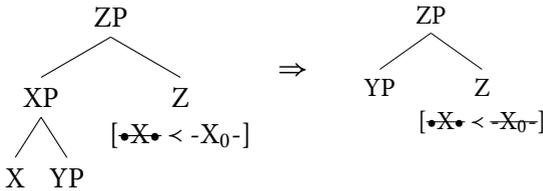
**4. Structure Removal Analysis**

Structure removal, as introduced in Müller (2017), is an operation that removes structure in a syntactic derivation. It is triggered by designated [-F-] features on syntactic heads. These features come in two flavours, phrasal removal features [-F<sub>2</sub>-] and head removal features [-F<sub>0</sub>-]. We will only be concerned with the latter, more specifically in our case the little *v* head in Balinese object voice constructions will bear a [-D<sub>0</sub>-] feature, i.e. a structure removal feature for a D head.

We will follow Müller (2009, 2010, 2011) in assuming that features on heads are ordered. This crucially means that a head can merge with a specifier and

later remove part of this specifier. An example of such a structure removal derivation is schematically shown in (20). A head Z is merged with a complex specifier consisting of an XP dominating a YP. Merge is triggered by [ $\bullet X \bullet$ ] on Z and subsequently gets discharged. The next feature in the stack is [ $-X_0-$ ], which can only be discharged by removal of X. Here structure removal takes place and removes X, thereby taking the XP-shell with it. This step affects YP in so far as it is now the highest node contained within the specifier position of ZP.

(20) *Structure removal*



Structure removal has been applied to analyses of German complex prefields (?) and passives (Müller this volume); sluicing in English, German, and Serbo-Croatian (Murphy & Müller 2016), tough-movement in English and German (Schwarzer this volume), DP-NP reanalysis in Serbo-Croatian (Puškar 2015), restructuring in Russian (Dschaak 2017), clausal determiners in Gã (Korsah & Murphy 2017), applicative constructions in German (Müller 2017) and Restructuring in German (Müller 2016a). Similar approaches have been pursued under the name of Exfoliation (Pesetsky 2016, Stojković this volume) and Tree Pruning (Ross 1967, Embick 2010).

#### 4.1. The syntactic side of structure removal

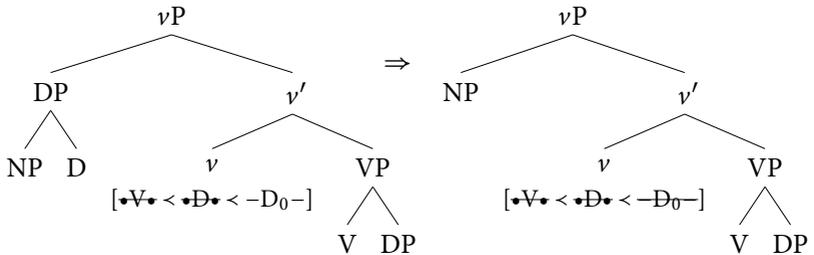
We claim that the Balinese data can be derived straightforwardly, under the assumption that object voice  $\nu$  heads bear a [ $-D_0-$ ] feature which removes the DP shell of their first merged specifiers. This naturally leads to a neutralization of definite and indefinite subjects in object voice since the distinction between them is overtly encoded by the D head. Thus, the ban on definite subjects in object voice clauses, as shown in (8a), is only apparent since they are permitted in principle but exhibit a *short life cycle*, i.e. they are only accessible to other operations within a narrow time window of the derivation.

We illustrate our proposal in (22). For the derivation of an object voice sentence, a  $\nu$ P is built by first merging an object voice  $\nu$  head with VP that includes an object DP and then merging a DP in the specifier of the  $\nu$ P. The next feature on  $\nu$ 's feature stack is the removal feature  $[-D_0-]$ . Removing the DP shell of a head's specifier is a strictly local application. No other D head can be found in a sufficiently local domain. This operation only applies to object voice constructions since only the object  $\nu$  head bears a removal feature. Other  $\nu$  heads do not bear such a feature. We make this assumption explicit in (21).

(21) *Feature stacks for voice heads*

- a.  $\nu_{\text{object voice}} [\bullet V \bullet < \bullet D \bullet < -D_0 -]$
- b.  $\nu_{\text{elsewhere}} [\bullet V \bullet < \bullet D \bullet]$

(22) *Syntactic tree structures before and after  $D_0$ -removal*



Crucially, the remove feature can only be discharged by removing the D head of the *external* argument. This is ensured by the Strict Cycle Condition (SCC), given in (23). Removing the D head of the internal argument would violate the SCC since syntactic operations cannot affect a proper subdomain of the  $\nu$ P created by merging a specifier. In other words, the D head to be removed in that operation is inside the VP which is itself inside the maximal projection at that point, i.e. the  $\nu$ P. Removing the D head of the external argument, on the other hand, is not a problem since the specifier is not included inside any other XP but the maximal  $\nu$ P, which is the highest phrase at that point of the derivation.

(23) *Strict Cycle Condition* (Müller 2017)

Within the current XP  $\alpha$ , a syntactic operation may not exclusively target some item  $\delta$  in the domain of another XP  $\beta$  if  $\beta$  is in the domain of  $\alpha$ .

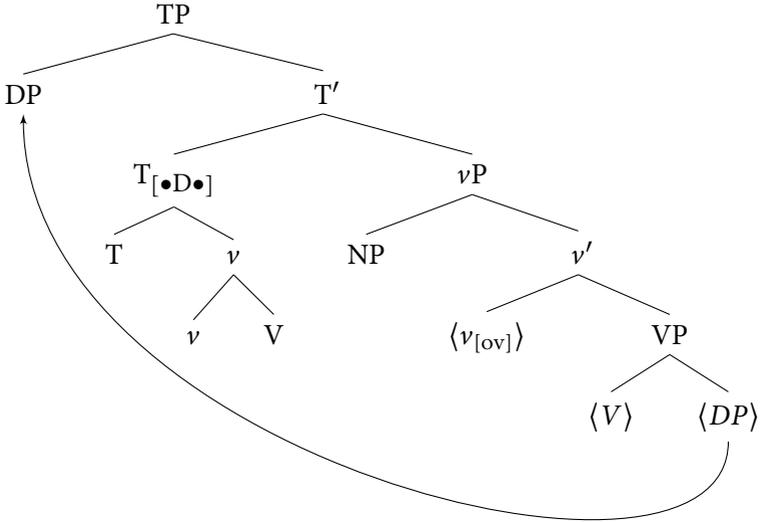
Interestingly, this approach captures the intuitive similarity between a regular passive voice and Balinese object voice. Müller (2016*b*) and Müller (2017) derive the German passive by a  $[-D_2-]$  on the little  $v$  head. The difference can thus be reduced to the feature on the little  $v$  head. Regular passive is triggered by structure removal of a whole phrase, i.e. a DP, whereas Balinese object voice properties result from the removal of only a D head. In both cases the external argument is demoted and thus less prominent syntactically. In Balinese this is manifested as a restriction on possible argument types and a ban on movement. For regular passive, the external argument is completely banned from its base position. It should be noted, however, that Balinese still has a regular passive voice. This is expected in our approach, since some other voice heads could still bear a  $[-D_2-]$  feature, thereby exactly mirroring Müller's approach.

As an interesting side effect, our proposal also simplifies the movement to pivot position within the Balinese voice system. Pivot properties in Austronesian voice systems have been proposed to follow either by base generating the pivot in pivot position (Spec,TP or Spec,CP depending on the account) with a co-indexed empty operator in the argument position (Pearson 2005) or by moving the pivot from argument position to the phase edge of  $vP$  over potential non-pivots, thereby making it accessible for further movement into pivot position (Rackowski 2002, Aldridge 2004, Rackowski & Richards 2005, van Urk 2015).

We derive the pivot vs. non-pivot asymmetry via the categorical distinction DP/NP. DP-movement is often argued to be derived by a categorical feature  $[\bullet D \bullet]$ , be it for scrambling generally or for EPP-movement and object shift specifically (Chomsky 1995, Kitahara 1997, Epstein et al. 1998, Alexiadou & Anagnostopoulou 1998, Kishimoto 2000, Bailyn 2003, Müller 2010). In our account, the subject has lost its DP shell, therefore only one argument DP is left. Hence, the object DP can easily be targeted for movement to Spec,TP, bypassing the subject NP. Movement into pivot position is schematically shown in (24), constituting the underlying structure for (1a). We assume with Levin (2015:104) that head movement of V via  $v$  to T ensures that the verb precedes the in-situ subject. DP-movement requires a DP, but at the point where the movement-inducing feature enters the derivation, the highest accessible argument, i.e. the in-situ subject, is not a DP anymore. There are two possibilities to explain the dislocated structures in (12). Either topicalization/extraposition is triggered in the same fashion as movement to pivot position or the operations are triggered

by a category neutral feature which nevertheless targets the closest argument, which again is the pivot in (24).

(24) *Movement to pivot position in object voice clause*



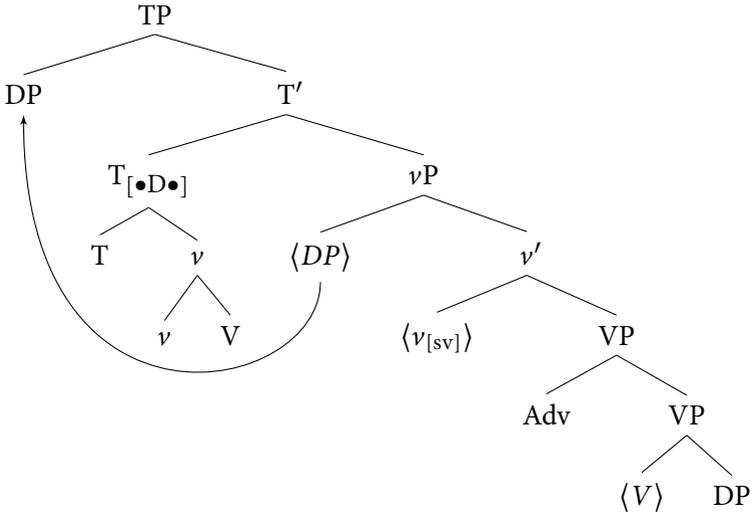
Moving on to adverb placement, recall that Levin (2014a, 2015) uses adverbial distribution, shown in (9b), as one piece of evidence in favour of the surface adjacency requirement between the in-situ subject and the verb. Furthermore, he argues that this intervention is related to the voice head as there is no such ban observable for subject voice, see (25).

- (25) Wechsler & Arka (1998:394)  
 (Sanget-sanget) ia (sanget-sanget) nepak (sanget-sanget)  
 very-very 3 very-very sv.hit very-very  
 gamelan-e (sanget-sanget).  
 gamelan-DEF very-very  
 '(S)he was hitting the gamelan really hard.'

Since we dispensed with a requirement for surface adjacency, our theory overgenerates with respect to adverb placement at this point. Hence, we account for the contrast between (25) and (9b) by an assumption about the adjunction site of (low manner) adverbs. If we prohibit low manner adverbs from adjoining

to  $vP$ , there is no position within an object voice clause such as the one in (24) to which adverbs can adjoin and occur between the verb and the in-situ subject.<sup>3</sup> In subject voice clauses, however, the voice head does not come with a removal feature, leaving the subject intact, i.e. a full DP. Since [ $\bullet D \bullet$ ] on T attracts the locally closest DP, it triggers internal merge of the subject in spec,TP. This derivation leaves enough space for the adverb to occur between the verb and the subject as an adjunct to VP, see (28).

(28) *Movement to pivot position in subject voice clause (& adverb adjunction)*



<sup>3</sup>This might be an idiosyncratic property of some Austronesian languages. Whereas adverbs act as interveners between in-situ subjects and verbs in object voice in Balinese and Malagasy, they do not do so in Squaliq Atayal and Tagalog, see (26) and (27) for the latter. We thank Mike Berger for bringing these examples to our attention.

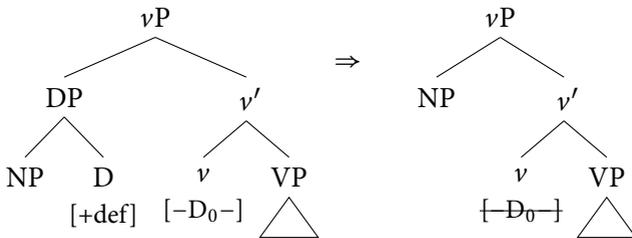
- (26) Levin (2015:85) *Squaliq Atayal*  
 Wal=saku            kt-an    hera        ne    Tali.  
 AUX.PST=1SG.NOM see-PV    yesterday    GEN Tali  
 'Tali saw me yesterday.'

- (27) Kroeger (1991:111) *Tagalog*  
 Binisita        sa=palasyo    ni=Juan    ang=hari.  
 visit-perf.ov    DAT=palace    GEN=Juan    NOM=king  
 'Juan visited the king in the palace.'

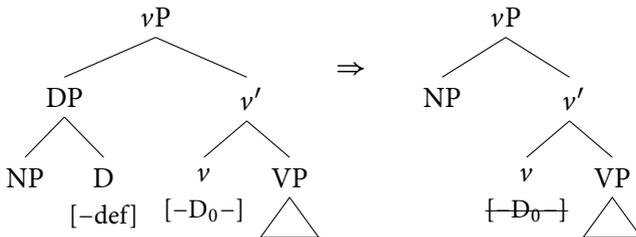
With respect to the class of nominals licensed as in-situ subjects in object voice, we claim that the presence of  $[-D_0-]$  on the object voice head leads to neutralization of definite and indefinite subjects. Under the assumptions that definiteness is encoded as the morphosyntactic feature  $[\pm def]$  on D, this distinguishing feature gets deleted within subjects of object voice heads. As shown in (29), deletion of the D head with a  $[\pm def]$  feature neutralizes the definiteness distinction such that the structure and featural content of a definite and an indefinite DP are identical. We assume that this neutralization always leads to an indefinite interpretation, see section 4.2 for more details. Removal of D and subsequent neutralization explains why (i) definite noun phrases can never occur as non-pivots in object voice and (ii) indefinite nominals are licensed, recall (8a) and (8c).

(29) *Neutralization of definite and indefinite subjects in object voice*

a. Definite noun phrases



b. Indefinite noun phrases



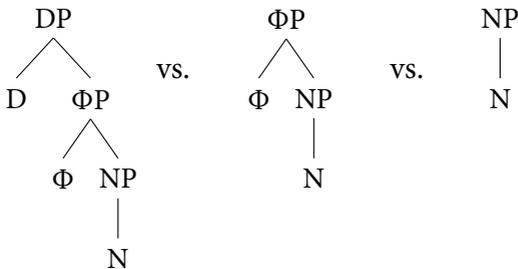
In order to extend the analysis to proper names and pronouns, we will follow Abney (1987), Szabolcsi (1987), Longobardi (1994), and many others in assuming that all arguments constitute DPs. The DP status of proper names is supported by

the fact that many languages show either optional or obligatory co-occurrence of definite determiners with proper names.

- (30) Longobardi (1994:651) *Optional D in Italian*  
 (Il) Gianni mi ha telefonato.  
 the Gianni me has called  
 ‘Gianni called me up.’
- (31) Longobardi (1994:653) *Optional D in German*  
 (Der) Hans ist angekommen.  
 the Hans is arrived  
 ‘Hans has arrived.’
- (32) Marinis (2003:71) *Obligatory D in Greek*  
 \*(O) Nikos chtizi spiti sti Myknono.  
 the Nikos builds house in.the Mykonos  
 ‘Nikos is building a house in Mykonos.’

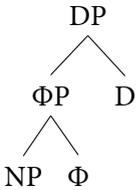
In line with Longobardi (1994:650), we treat the determiner co-occurring with proper names as an “expletive” article, suggesting that it contributes no semantic content. This D head is different from the D heads shown in (29), in that it does not change the type of the embedded NP. The same D head will also introduce pronouns. Déchaine & Wiltschko (2002) propose that there is no uniform syntactic category for pronouns across languages. They can be of different sizes, either DP,  $\phi$ P, or NP where the projections encode semantic entailment relations.

- (33) *Pronoun types* (Déchaine & Wiltschko 2002:410)



While we do not follow Déchaine & Wiltschko (2002) in allowing for different types of pronouns in Balinese, we nevertheless adopt the elaborate nominal structure. Balinese pronouns constitute full DPs, see (34). Importantly, phi-features are encoded below the DP by  $\phi$ P. Removal of the D head, thus, keeps the  $\phi$ -feature structure intact.<sup>4</sup>

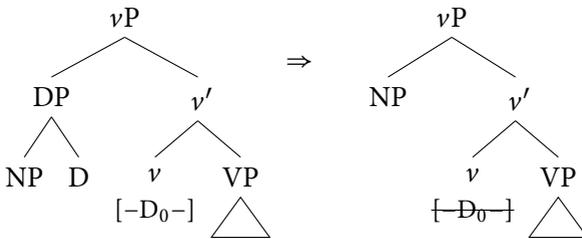
(34) *Balinese pronouns:*



Just like proper names pronouns are equipped with expletive D. Hence, they start out with a D head, but removal of this head does not actually alter the semantic interpretation. For the sake of completion, we show the structure removal derivation in (35).

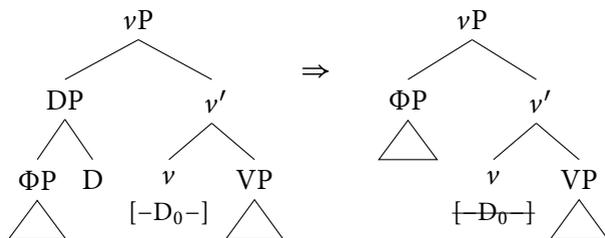
(35) *Expletive D removal in object voice constructions*

a. Proper names



<sup>4</sup>According to Arka (2003:166)  $\phi$ -features on Balinese pronouns include person and status, but not number. Gender can only be encoded on second person pronouns.

## b. Pronouns



We provide the vocabulary items for the D heads in (36). While  $D_{[+def]}$  is realized overtly,  $D_{[-def]}$  and  $D$  are spelled out by an elsewhere zero exponent. D markers compete for realization via the Subset Principle (Kiparsky 1973), thus (36a) wins over (36b) in  $[+def]$  contexts, i.e. for definite noun phrases like in (8a).<sup>5</sup>

## (36) Vocabulary entries

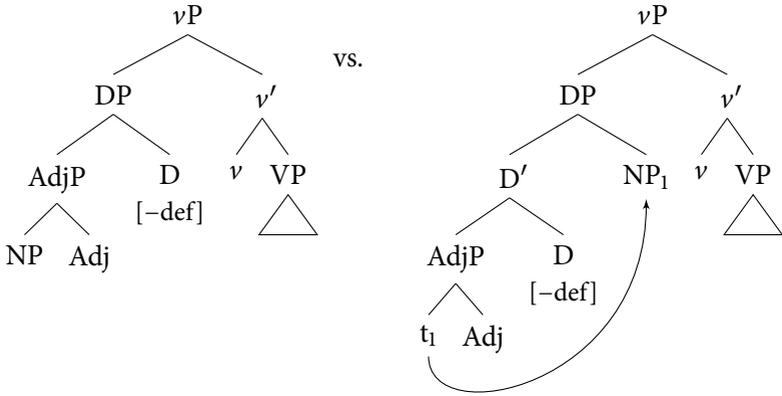
- a. /ento/  $\leftrightarrow$  [D,+def]
- b. / $\emptyset$ /  $\leftrightarrow$  [D]

Finally, let us address the ban on prenominal weak quantifiers in object voice structures, recall (9a). Levin assumes weak quantifiers to be adjectives which lets them adjoin to the left or to the right of the NP in (6), the former is blocked in object voice since it prevents the NP from undergoing local dislocation with V. We also analyze weak quantifiers as adjectives, although we take adjectives to constitute heads participating in the functional projection of the nominal spine. Following the observations in Arka (2003), where modifiers as well as the overt D head *ento* consistently occur to the right of the head noun, we take the nominal domain to be head-final. Prenominal modifiers, then, result from DP-internal movement of NP to Spec,DP.<sup>6</sup> In (37) we show the two possible underlying structures, deriving the different surface positions of *liu* in (6).

<sup>5</sup>From the descriptions in Arka (2003) it seems that both the overt determiners and/or the suffix *-e* can mark definiteness. Since neither Arka (2003) nor Levin (2015) are explicit about the syntactic conditions and consequences, we will assume that the overt determiners instantiate the D heads and the suffix *-e* is a syntactic reflex of definiteness.

<sup>6</sup>We leave the question about the trigger of this movement open for now.

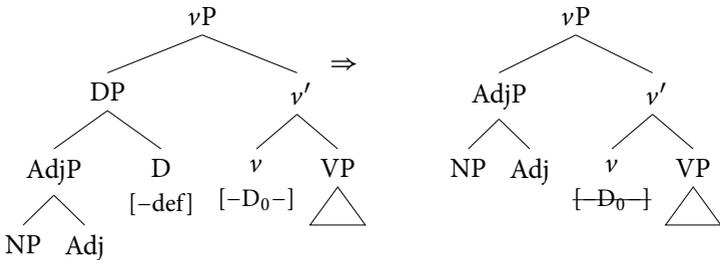
(37) *Postnominal vs. prenominal weak quantifiers in subject voice constructions*



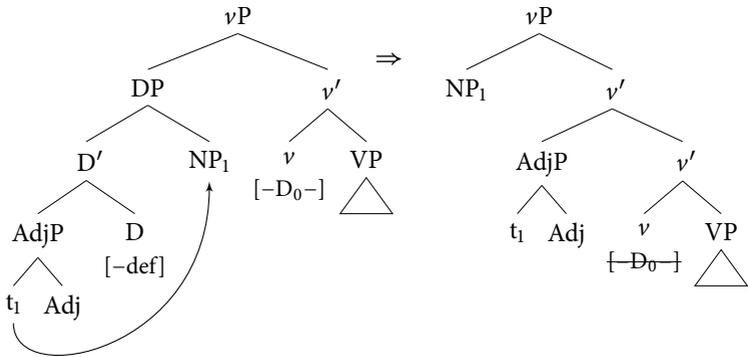
The DP-internal movement step leads to reassociation of more than one DP-internal constituent, after structure removal has applied. In such cases, constituents need to (i) reassociate within the projection of the head that caused the removal and (ii) respect the pre-Remove c-command relations while doing so (Müller 2017:6-7). The relevant derivational steps are shown in (38).

(38) *No prenominal weak quantifiers in object voice constructions*

a. Postnominal weak quantifiers



## b. Prenominal weak quantifiers



Since the NP moves out of AdjP and thereby asymmetrically c-commands AdjP, it gets reassociated as an outer specifier of  $\nu$ P while the remnant AdjP is reassociated as an inner specifier. DP-internal movement can, in this sense, be “undone” via structure removal. This is a natural consequence for languages which allow for rightward specifiers inside the nominal domain and the removal of nominal heads.

## 4.2. The semantic side of structure removal

As already hinted at in the previous section, the absence of the expletive D head does not affect the semantic interpretation for pronouns and proper names. Neither does its presence. We model expletive D as an identity function from entities to entities, given in (39). The removal operation in this case targets nodes which are semantically recoverable.

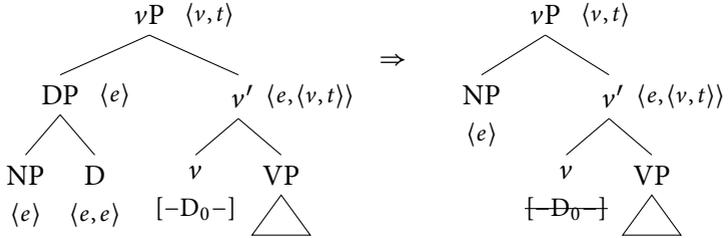
- (39) *Determiner for proper names* (following Longobardi 1994:650)  
 $[[D]] = \lambda x_e [x]$

Pronouns denote indices and proper names individuals. Hence, they both provide the right input for D. We sketch the semantic composition for the relevant removal contexts in (40). In line with Kratzer (1996, 2000), we assume that a verb denotes a relation between an event and their internal argument while the external argument, introduced by the functional head  $\nu$ , is related to the verb indirectly by its  $\theta$ -role. Verbal projections denote predicates of

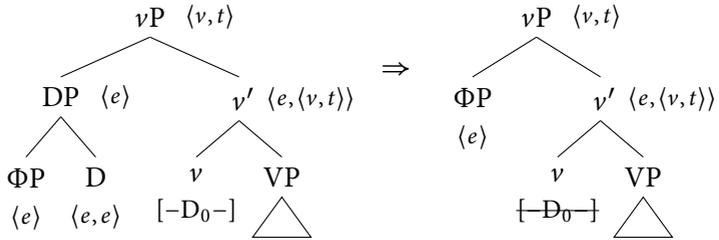
events until the event variable  $\langle v \rangle$  is existentially closed off. Sentences are thus propositions based on existential claims about events.

(40) *Expletive D removal does not affect semantic composition*

a. Proper names



b. Pronouns



As is apparent from the derivations in (40), structure removal can apply without any semantic consequences if in situ subjects are pronouns or proper names as in (8b). We will now turn to the more interesting definite/indefinite cases.

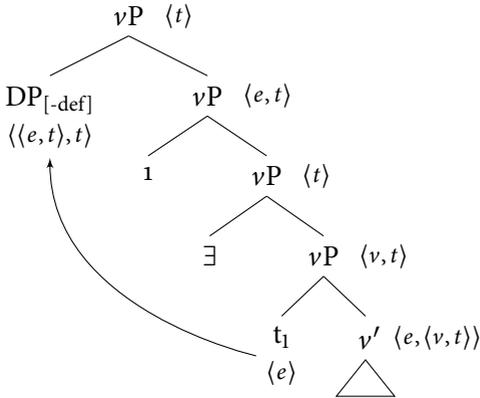
$D_{[+def]}$  and  $D_{[-def]}$ , in contrast to expletive D, are crucial in ensuring argumenthood. While the former constitutes a function from properties to individuals and is only defined for singleton properties, the latter takes a property as an argument and returns an existential quantifier. The denotations are given in (41).

(41) *Definite and indefinite determiner*

- a.  $\llbracket D_{[+def]} \rrbracket = \lambda P_{\langle e,t \rangle} : \exists ! x [P(x)]. \iota x [P(x)]$
- b.  $\llbracket D_{[-def]} \rrbracket = \lambda Q_{\langle e,t \rangle} \lambda P_{\langle e,t \rangle} . \exists x [Q(x) \wedge P(x)]$

In contrast to (41b), the definite determiner in (41a) outputs a semantic object of type  $\langle e \rangle$ , making the subject directly composable with  $v'$ . Following a proposal from Landman (2000), we assume that quantifiers, which are derived with (41b), move out of the event domain in order to get interpreted. This is schematically shown in (42).

(42) *Quantifiers QR out of the event domain* (Landman 2000:52–53)



Now let us consider the cases where structure removal takes place. Both  $D_{[+def]}$  and  $D_{[-def]}$  take NPs of type  $\langle e, t \rangle$  as arguments. If these heads are removed, we end up with a semantic incompatibility between the NP subject and  $v'$ . This type clash cannot be circumvented by the movement in (42). We therefore propose that the type clash can be avoided by a type shifting operation of the *A*-kind (Partee 1986a,b), see (43). Together with *THE* and *BE*, (43) is argued to be a natural type shifting operation, often expected to be lexicalised across languages.

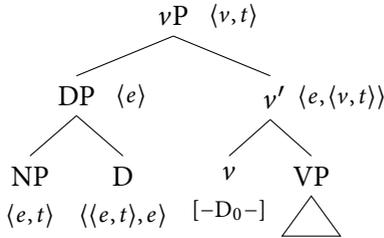
(43) *A-type shift* (Partee 1986a:358)  
 $Q_{\langle e, t \rangle} \Rightarrow \lambda P_{\langle e, t \rangle} . \exists x [Q(x) \wedge P(x)]$

Compare (43) to (41b): The result of NP undergoing *A*-type shift is equivalent with the result of NP taken as an argument of  $D_{[-def]}$ . Thus, structure removal of  $D_{[+def]}$  as well as  $D_{[-def]}$  results in an indefinite interpretation. Proper names and pronouns do not have to type shift, as they are already of the right type

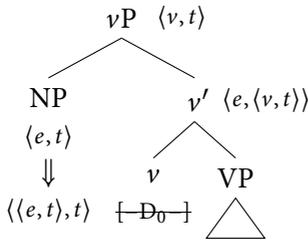
to serve as an argument. The structure removal denotations for  $DP_{[+def]}$  and  $DP_{[-def]}$  subjects are given in (44) and (45), respectively.

(44) *Neutralization of definite subjects in object voice constructions*

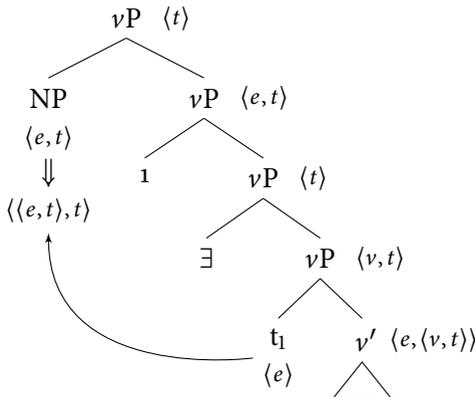
a. Merge of  $DP_{[+def]}$



b. Structure removal and A-type shift

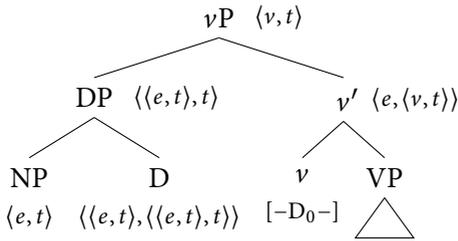


c. QR out of event domain

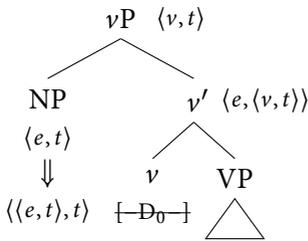


(45) Neutralization of indefinite subjects in object voice constructions

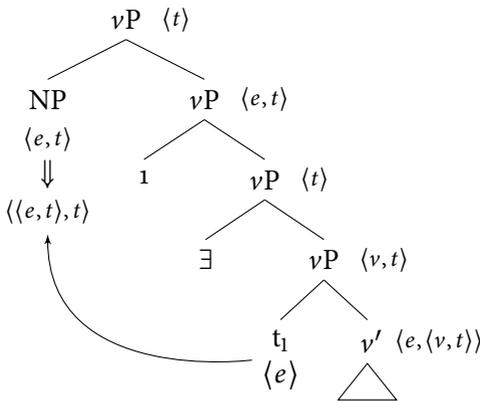
a. Merge of DP<sub>[-def]</sub>



b. Structure removal and A-type shift



c. QR out of event domain



Since semantic objects of type  $\langle\langle e, t \rangle, t\rangle$  have to undergo QR in order to get interpreted, we expect in-situ subjects to take flexible scope with respect to other operators. This prediction is borne out. Levin (2015) reports for (8c),

repeated here in (46), that the indefinite can take scope above or below negation. Under the assumption that negation applies not lower than existential closure (von Stechow 1993, Zeijlstra 2004, Chung & Ladusaw 2004, Zimmermann 2007, Penka 2010, Swart 2016), we can derive both readings by QR targeting a position either above or below negation.

- (46) Levin (2015:77)  
 Nyoman sing gugut cicing.  $\exists \neg, \neg \exists$   
 Nyoman NEG OV.bite dog  
 'A dog didn't bite Nyoman.'

One remaining question concerns the availability of type shifting. We argue that structure removal can trigger *A*-type shift to ensure successful semantic composition. We can ask ourselves now why it has to be *A* and not e.g. *THE* which creates an argument. The latter would result in definite interpretations of in-situ subjects, contrary to fact. We argue that *THE* (or *iota* for that matter) is not permitted due to Chierchia's *Blocking Principle* (1998).

- (47) *Blocking Principle* (Chierchia 1998:360)  
 For any type shifting operation  $\tau$  and any  $X$ :  
 $*\tau(X)$   
 if there is a determiner  $D$  such that for any set  $X$  in its domain,  
 $D(X) = \tau(X)$

Chierchia proposes (47) in order to account for the fact that English bare arguments receive a kind interpretation not a definite or indefinite one, whereas Russian bare arguments allow for all three interpretations. The reason is that English exhibits overt lexical entries in the form of *the* and *a/an*, in contrast to Russian. Overt lexicalised determiners win over covert type shift operations. We can paraphrase the Blocking Principle along the lines of *Don't do covertly what you can do overtly*.

Now if we turn to the determiner system of Balinese, we immediately see why in-situ subjects can never be definite (unless they are pronouns or proper names). Any covert type shift that could create definite readings is blocked due the presence of the overt  $D_{[+def]}$  head, given in (36a). Overt definiteness, on the other hand, is blocked due to the structure removal feature on the object voice head.<sup>7</sup>

<sup>7</sup>The approach presented here is similar in its syntactic assumptions to the structure removal

## 5. Conclusion

We have presented a structure removal approach for in-situ subjects in Balinese object voice constructions. Removal of the DP shell through a  $[-D_0-]$  feature on object voice heads neutralizes the distinction between definites and indefinites, but leaves pronouns and proper names intact. Expletive D heads on pronouns and proper names are semantically vacuous. Their removal thus does not influence the semantic derivation. For nominals, we argued that noun phrases, whose DP shell has been removed, type-shift to an indefinite meaning at LF. Type-shifting to a definite meaning is blocked, since Balinese lexicalises on an overt definiteness marker.

The core of our criticism of Levin (2015)'s approach is the number of assumptions needed: if you assume an explicit formulation of structure removal as a regular syntactic operation, the other facts follow. In contrast, Levin's approach with KP removal as a last-resort operation is based on further assumptions, e.g. the visibility of unpronounced copies to some post-syntactic processes but not to other. Similarly, the choice of the argument that undergoes KP removal is largely stipulated. In our approach, these facts follow from the strict cycle condition.

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account of pseudo-noun incorporation, put forward in Müller (2018). He posits a structure removal feature for D heads  $[-D_0-]$  on V, in order to derive constructions where internal arguments show mixed properties of NPs and DPs. The main difference to our analysis is the position of the structure removal feature and the argument it affects. In our approach the removal feature is located on  $v$  and affects the external argument, whereas in Müller (2018) it is located on V and affects the internal argument. It is worthwhile pointing out that the semantic repair operation argued for in this section does not extend to PNI languages in general. Since PNI is mostly characterized by a correlation between scope inertness and a morphosyntactic defect such as case loss or immobility, the data in (46) strongly point against diagnosing in-situ subjects as pseudo-incorporated. Another reason to doubt the PNI status comes from the fact that in-situ subjects nevertheless are able to act as binders for Principle A (Wechsler & Arka 1998:406), in contrast to what has been claimed for PNI-ed objects in Spanish (Leonetti 2004, López 2012) as well as PNI-ed subjects and objects in Turkish (Öztürk 2005, 2009), see also Driemel (subm.) for a cross-linguistic overview of binding and scope capabilities within PNI languages. Hence, we conclude that while the DP/NP distinction triggered by structure removal is a resourceful tool to derive many of the properties we see with in-situ subjects in Balinese object voice, it does not extend to scope inertness and lack of binding, as it is commonly observed with PNI languages.

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