Two types of binding: Evidence from Tswefap pronominals*

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1 Introduction

Traditional accounts of semantic binding have relied on operators that bind individual variables (Heim, 1998; Heim and Kratzer, 1998). However, proposals motivated by e-type anaphora and similar phenomena have analyzed pronominals as containing situation variables which are instead bound by a class of sigma operators (Büring, 2004; Elbourne, 2001, 2005, 2013). In this paper, I will argue that situation binding is indeed necessary to account for certain binding phenomena crosslinguistically, but that binding of individual variables plays a crucial role as well. That is, binding of situation variables complements, but does not fully replace, binding of individual variables (Heim, 1990; Büring, 2004; Schwarz, 2009; Patel-Grosz and Grosz, 2017).

In support of this claim, I present novel data from Tswefap, a Narrow Grassfields Bantoid language of Cameroon. There are two third person singular subject pronouns in Tswefap, *zheuk* and *yi*, which differ in their distribution. Among other things, *yi* can act as a bound variable under the scope of a quantifier, while *zheuk* cannot, and *zheuk* can locally bind a reflexive, while *yi* cannot. Following recent work that attributes crosslinguistic variation in pronoun distribution to internal structural differences (Déchaine and Wiltschko, 2002; Patel-Grosz and Grosz, 2017), I argue that these distributional differences result from different internal structures in a way that draws on two distinct binding mechanisms. Specifically, following Patel-Grosz and Grosz's (2017) account of German personal and demonstrative pronouns, I propose that *zheuk* contains an individual variable (an index) and a situation variable, while *yi* contains only a situation variable. The presence of both types of variables within the structure of *zheuk* allows it to participate in both situation and individual binding. On the other hand, *yi* can participate only in situation binding. I also argue that the licensing of β operators needed to bind individual variables (Büring, 2004) is restricted in Tswefap to *zheuk* and definites, resulting in the unacceptability of *yi* with reflexives. These data thus suggest that both individual binding and situation binding are available crosslinguistically, and that the licensing of binding operators ranging over individuals (β) may be more restricted than has previously been claimed.

In §2 I discuss the inventory of Tswefap pronouns and the relevance of traditional binding conditions to the language. In §3 I illustrate the differences between the two third person singular subject pronouns of Tswefap, including how they differ with respect to binding. I propose an analysis of the two pronouns that relies on the assumption that they differ in the amount of internal structure they contain in §4, and I discuss the interpretation

of the situation variables contained within the pronouns, following Elbourne (2005, 2013). Finally, in §5 I discuss the important role of individual variables and the operators that bind them, and in §6 I offer concluding remarks.

2 Tswefap pronouns and binding conditions

The pronoun inventory of Tswefap includes, among other things, free subject pronouns, object pronouns that are enclitics on the verb, free possessive pronouns, and a series of enclitics that cliticize to the noun *nyi* 'self' to form reflexives. These forms are given in (1).[1]

(1)   *Tswefap pronoun inventory*

	Subject	Possessive	Object	Reflexive
1SG	mohk	yey	=a	=a
2SG	wu	yu	=o	=o
3SG	**zheuk/yi**	**zhe**	**=ey**	**=ey**
1PL	poh	yoh	=woh	=yoh
2PL	peuk	zheuge	=weuge	=zheuge
3PL	wop	zhup	=wup	=zhup

This paper will be mainly concerned with the third person singular pronouns of Tswefap, and especially the contrast between the two subject pronouns, *zheuk* and *yi*, which differ in their binding behavior.

Upon first glance, Tswefap appears to conform straightforwardly to the traditional binding conditions, as formulated by Chomsky (1981, 1986). Tswefap has well-behaved simplex reflexives, which are subject to Condition A. Reflexives must be bound within the domain of a clause, as demonstrated in (2), where the reflexive can be bound only by the subject of its own clause, and not by the matrix subject.[2]

(2)   zheuk$_i$ n-gop   nge   foh$_j$ a   tchap **nyi=ey**$_{*i/j}$
        3SG   TAM-say COMP chief FACT hit   self=3SG

        'He$_i$ said that the chief$_j$ hit **himself**$_{*i/j}$.'

This locality condition on anaphors holds even if there is no animate intervener (Pollard and Sag, 1992), as demonstrated in (3).

(3)   zheuk$_i$ n-kwohghoh nge   lohghoh a   khoh' {**=ey**$_i$ / ***nyi=ey**$_i$}
        3SG   TAM-think   COMP rock   FACT cut   =3SG   / self=3SG

        'He$_i$ thinks that the rock cut **him**$_i$.'

Tswefap pronominals are subject to Condition B, and must be free in the clausal domain, as seen for the object pronoun in (4), which can only be bound by the subject of the matrix clause and not by the subject of the embedded clause. Subject pronouns must also

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[1]The following abbreviations are used in this paper: 1 = first person, 2 = second person, 3 = third person, COMP = complementizer, FACT = factative aspect, PL = plural, POSS = possessive, SG = singular, TAM = tense/aspect/mood.

[2]Tswefap third person pronouns do not encode gender. For ease of presentation, male pronouns are used in translations throughout.

be locally free, but can be bound by elements outside of their clause, as seen in (5), where the embedded subject is bound by the matrix subject.

(4) Chimi$_i$ n-gop   nge foh$_j$ a   tchap=**ey**$_{i/*j}$
     Chimi TAM-say COMP chief FACT hit=3SG
     'Chimi$_i$ said that the chief$_j$ hit **him**$_{i/*j}$.'

(5) Chimi$_i$ n-gop   nge **zheuk**$_{i/j}$ a   khoh
     Chimi TAM-say COMP 3SG   FACT cough
     'Chimi$_i$ said that **he**$_{i/j}$ coughed.'

Finally, Condition C holds in Tswefap. R-expressions must be free; they cannot be bound by other R-expressions, as seen in (6), or by pronouns, as shown in (7).

(6) * Chimi$_i$ a   kwohk **Chimi**$_i$
     Chimi FACT like   Chimi
     Intended: 'Chimi$_i$ likes **Chimi**$_i$.'

(7) * {zheuk$_i$ / yi$_i$} n-gop   nge **Chimi**$_i$ a   khoh
     3SG   TAM-say COMP Chimi   FACT cough
     Intended: He$_i$ said that **Chimi**$_i$ coughed.'

While the emerging picture appears to straightforwardly conform to previous observations about binding in the literature, things become more complicated when the behavior of Tswefap's two third person singular subject pronouns, *zheuk* and *yi*, is considered more closely. I discuss the differences between these two pronouns in the following section.

3   Two kinds of pronominals: *zheuk* vs. *yi*

Tswefap's two third person singular subject pronouns, *zheuk* and *yi*, differ in many respects, but most striking is the difference in their binding behavior. First of all, *yi* can be bound by a quantifier, as in (8a), while *zheuk* cannot, as seen in (8b), which is grammatical but lacks a bound reading.

(8) a. [mbey weloh]$_i$ n-gop   nge **yi**$_{i/j}$ a   khoh
         every one   TAM-say COMP 3SG FACT cough
         '[Every person]$_i$ said that **he**$_{i/j}$ coughed.'
     b. [mbey weloh]$_i$ n-gop   nge **zheuk**$_{*i/j}$ a   khoh
         every one   TAM-say COMP 3SG   FACT cough
         '[Every person]$_i$ said that **he**$_{*i/j}$ coughed.'

The second crucial difference between the pronouns is that *zheuk* can bind a simplex reflexive, but *yi* cannot.[3] This is demonstrated in (9).[4]

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[3]The facts for complex reflexives are somewhat different and are discussed in §5.
[4]Both pronouns can occur as matrix subjects, and (16) shows *yi* in this capacity.

(9) {**zheuk**$_i$ / ***yi**$_i$} a   kwohk nyi=ey$_i$
    3SG   FACT like   self=3SG

    '**He**$_i$ likes himself$_i$.'

These differences in the binding possibilities associated with these two pronouns coexist with other distributional differences that have been argued in previous work to result from variation in the internal structure of pronominals (Déchaine and Wiltschko, 2002; Patel-Grosz and Grosz, 2017). These include the fact that *zheuk* can appear with or without an overt NP complement, while *yi* is unacceptable with an overt complement, as shown in (10).

(10) Chimi pu [{**zheuk** / ***yi**} foh] n-kwohk mbeh
     Chimi and 3SG   chief TAM-like meat

     'Chimi and [**he** chief] like meat.'

Additionally, *zheuk* can be used without an antecedent when the referent has been made sufficiently salient by the physical context (i.e. it can be used deictically.) *Yi*, on the other hand, cannot be used without an overt linguistic antecedent, as shown in (11).

(11) *Context: A man walks into the room and you point to him and say:*

     {**zheuk** / ***yi**} a   sey
     3SG   FACT be.tall

     'He is tall.'

The differences between these two pronouns are summarized in (12).

(12) *Distribution of* 3SG *pronouns*

	yi	*zheuk*
Can take overt NP complement	✗	✓
Can be used deictically	✗	✓
Can be bound by quantifiers	✓	✗
Can bind reflexives	✗	✓

Given that the first two differences, exemplified by (10) and (11), plausibly result from internal differences in structure, I will adopt the hypothesis that these two pronouns differ in the amount of structure they contain, and I will argue that these differences are also able to account for the binding behavior of the two pronouns.

4   Situation variables, indices, and the structure of pronouns

Following Elbourne (2005, 2013), I assume that pronouns are definite descriptions, which minimally consist of a definite determiner (*the*), a situation pronoun (s_i), and an NP. I follow the proposal of Patel-Grosz and Grosz (2017) for German by assuming that pronouns can differ in whether they contain an index. I propose that *zheuk* contains an index, while *yi* lacks one. The proposed structures for *yi* and *zheuk* are given in (13) and (14), following Patel-Grosz and Grosz's (2017) account of German personal and demonstrative pronouns, respectively.

(13) *Structure of* yi *(cf. German* er*)*

DP
├ the
├ s_i
└ NP
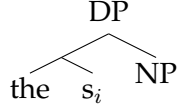
(14) *Structure of* zheuk *(cf. German* der*)*

DP
├ 1
└ the s_i NP
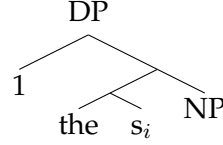
In these structures, the NP complement of the determiner within the pronoun may be deleted via NP ellipsis under identity with an antecedent NP.[5] This ellipsis process is obligatory for *yi*, but optional for *zheuk*, accounting for *zheuk*'s ability to appear with an overt complement.

The crucial difference between *zheuk* and *yi* in the two structures in (13) and (14) is that *zheuk* additionally contains an index, while *yi* does not. Given that *zheuk*'s index must compose semantically with the rest of the elements of the pronoun, I assume that the denotations of the definite determiners contained within each of the two pronouns differ. Specifically, I assume that the determiner in *yi* has the denotation of Schwarz's weak definite (2009: 81), while the determiner in *zheuk* has the denotation of Schwarz's strong definite (2009: 135). These denotations are given in (15).

(15) a. $[\![\text{the}_{weak}]\!]^g = \lambda s.\lambda P : [\exists! x\ P(x)(s)] . \iota x\ [P(x)(s)]$

 b. $[\![\text{the}_{strong}]\!]^g = \lambda s.\lambda P.\lambda y : [\exists! x\ P(x)(s) \wedge x = y] . \iota x\ [P(x)(s) \wedge x = y]$

The additional individual argument of the anaphoric definite will be saturated by the individual variable in *zheuk*, its index. It is the presence of this index on *zheuk* and lack of index on *yi* which causes these two pronouns to pattern differently with respect to binding behavior. In particular, only *zheuk* is able to participate in the binding of individual variables, given that only this pronoun contains an index. Since both *zheuk* and *yi* contain situation variables, however, both may participate in situation binding.

4.1   Interpretation of yi

The referent of *yi* is established via the binding of its situation pronoun by one of a class of sigma operators (Schwarz, 2012; Elbourne, 2013).[6] This can happen in a few different ways. First of all, the situation pronoun of *yi* can be bound to form a predicate that holds of the topic situation. This is the case for examples such as (16) where there is not a local binder within the sentence, but where there is a topical antecedent in the discourse. A simplified LF structure and interpretation for (16) is shown in (17).

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[5]Elbourne (2005) discusses why this account of NP-deletion must be further developed to account for the full range of English data. Some of the issues he raises must be addressed for Tswefap as well.

[6]I assume the three rules of Situation Binding given in Elbourne (2013: 33-34), shown below in (i).

(i) a. Situation Binding I:

 For all indices i and assignments g, $[\![\varsigma_i\ a]\!]^g = \lambda s.[\![a]\!]^{g^{s/i}}(s)$

 b. Situation Binding II:

 For all indices i and assignments g, $[\![\Sigma_i\ a]\!]^g = \lambda s.\lambda s'.[\![a]\!]^{g^{s'/i}}(s)(s')$

 c. Situation Binding III:

 For all indices i and assignments g, $[\![\sigma_i\ a]\!]^g = \lambda x.\lambda s.\lambda s'.[\![a]\!]^{g^{s'/i}}(x)(s)(s')$

(16)   *Context: 'A man arrived at my house...'*

yi   a   khoh
3SG FACT cough
'He coughed.'

(17)   a. $[\varsigma_1 \; [[[\text{the } s_1] \text{ man}] \text{ coughed}]]$
       b. $\lambda s : [\exists ! x \; x \text{ is a man in } s] . \iota x \; [x \text{ is a man in } s] \text{ coughed in } s$

Due to the mechanics of the situation binding of *yi*, the sentence in (16) will be felicitous only if there is a unique man in the topic situation.

In addition to being able to be bound to combine with a topic situation, the situation pronoun within *yi* can also be bound to achieve an interpretation that covaries with a higher situation pronoun. I follow Elbourne (2005, 2013) in assuming that, like determiners, quantifiers introduce situation pronouns, thus quantifying over situations. When a situation pronoun occurs in the scope of a quantifier phrase, as in (18), it can therefore be bound to achieve a covarying interpretation. This is shown in the simplified LF representation in (19).[7]

(18)   [mbey weloh]$_i$ n-gop   nge   yi$_i$ a   khoh
         every one   TAM-say COMP 3SG FACT cough
         '[Every person]$_i$ said that he$_i$ coughed.'

(19) $[[[\text{every } s_1] \text{ person}] \; [\sigma_3 \; [Q \; [\text{said } [[[\text{the } s_3] \text{ person}] \text{ coughed}]]]]]$

In (19), the situation pronoun introduced by *yi*, s_3, will be bound by the sigma operator σ_3. This will then allow s_3 to covary with the situation pronoun introduced by the quantifier, s_1. This achieves a reading where every individual who is a person in s', the set of situations introduced by s_1, said that he coughed in s'', the covarying situation introduced by the bound situation pronoun s_3.

4.2   Interpretation of *zheuk*

As with *yi*, the situation pronoun contained within the structure of *zheuk* can be bound; nothing prevents a sigma operator from binding it. However, the index on *zheuk* must also be mapped to an individual via an assignment function. Therefore, *zheuk* will pick out the unique individual in the situation picked out by its situation pronoun that both meets the descriptive content of the NP contained within the pronominal (either overt or elided) and is the same individual denoted by the assignment function applied to its index. Note that the presence of the index immediately explains the availability of deictic uses for *zheuk*, on the plausible assumption that pointing constrains assignments to the index.

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[7]I adopt Elbourne's (2013: 35) Q morpheme based on Büring's (2004) $\leq$ morpheme, which allows quantifier phrases to compose with VPs. Q has the denotation in (ii).

(ii) $[\![Q]\!] = \lambda f_{<e,st>}.\lambda x.\lambda s.\lambda s'.\exists s'' \; [s' \leq s'' \; \wedge \; s'' \leq s \; \wedge \; f(x)(s'') = 1]$

It is the presence of an index on *zheuk* that rules out covarying interpretations, since (unless it is bound by a β operator) the index is mapped to only one individual in the world. Recall that in sentences like (20), a bound interpretation of *zheuk* is unavailable.

(20) [mbey weloh]$_i$ n-gop   nge   **zheuk**$_{*i/j}$ a   khoh
      every   one   TAM-say COMP 3SG   FACT cough
      '[Every person]$_i$ said that **he**$_{*i/j}$ coughed.'

If we assume a simplified LF structure as in (21), we can make sense of this restriction.

(21) [[[every s$_1$] person] [σ_3 [Q [said [[2 [[the s$_3$] person]] coughed]]]]]

In (21), a bound reading for *zheuk* is not possible due to its index. In this structure, *zheuk* will pick out every individual who is a person in s′ and who said that he coughed in s″ only if that individual is also equal to the individual denoted by the assignment function applied to the index 2. If our assignment function includes the mapping [2 → Chimi], *zheuk* in (20) will refer only to Chimi rather than covarying. This is the desired outcome, since *zheuk* is possible with a disjoint interpretation in (20), but cannot receive a bound interpretation.

5   Individual binding and the licensing of β operators

While the different internal structures of *zheuk* and *yi* account for the differences in how they can be bound, this proposal does not yet account for the difference in what they can bind. Of particular interest is the inability of *yi* to bind simplex reflexives.

Given the existence of both individual and situation variables, we must first ask which type of variables reflexives contain. Binding by quantifiers allows us to test this. Given that quantifiers can bind *yi*, but not *zheuk*, I proposed in §4 that binding by quantifiers is achieved through situation binding. We now see that quantifiers cannot bind simplex reflexives, as demonstrated in (22).[8] This suggests that such reflexives do not contain only situation pronouns, which could be bound by a sigma operator.

(22) ?? **[mbey weloh]**$_i$ a   yoh **nyi=ey**$_i$
      every   one   FACT see self=3SG
      '**[Every person]**$_i$ saw **himself**$_i$.'

Instead, reflexives contain individual variables, and I argue that they must therefore participate in local A-binding. Following Büring (2004), I assume that binding through a-command (c-command from an A-position) can be achieved via a β operator, adjoined at LF directly below a DP in an A-position. This β operator will serve to bind any individual variables that a DP a-commands. Like *zheuk*, reflexives contain an index (an individual variable); this variable must be locally bound by a β operator within the clause.

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[8]The simplex reflexive in Tswefap is homophonous with the word for 'body', and was likely historically derived from this source. However, synchronically, the reflexive is subject to Condition A, while a possessor of 'body' is not. The fact that some sentences involving the binding of a reflexive by a quantifier are not categorically rejected seems to arise from a tendency to accommodate the reflexive due to the simultaneous availability of the grammatical 'body' reading. Sentences that are less compatible with a 'body' reading yield more categorical judgments of ungrammaticality.

I depart from Büring (2004) in arguing that the LF adjunction of β operators is not freely licensed by all DPs in A-positions. Instead, only certain types of DPs can license β adjunction. In Tswefap, it is specifically *zheuk* and bare definites which are able to license β operators. This allows them to bind simplex reflexives, as seen in (23) for *zheuk* and (24) for the bare definite *foh* 'the chief'.

(23) **zheuk**$_i$ a   kwohk **nyi=ey**$_i$
      3SG   FACT like   self=3SG
      '**He**$_i$ likes **himself**$_i$.'

(24) **foh**$_i$ a   yoh **nyi=ey**$_i$
      chief FACT see self=3SG
      '**[The chief]**$_i$ saw **himself**$_i$.'

This contrasts with the behavior of *yi*, which is unable to bind simplex reflexives, as shown again in (25).

(25) * **yi**$_i$ a   kwohk **nyi=ey**$_i$
      3SG FACT like   self=3SG
      '**He**$_i$ likes **himself**$_i$.'

The ungrammaticality of (22) and (25) can be accounted for by assuming that, unlike *zheuk* and bare definites, Tswefap *yi* and quantificational DPs (QDPs) cannot license β operator adjunction. This fact is also able to account for why QDPs cannot bind the index on *zheuk* to achieve covarying interpretations. If QDPs were able to license β operators, we would expect these operators to be able to bind *zheuk*'s index to allow *zheuk* to receive a bound interpretation under the scope of a QDP. We have seen in §3 that such covarying readings are unavailable for *zheuk*.

Here, however, we find an important difference between *zheuk* and simplex reflexives. As discussed in §2, Tswefap simplex reflexives are fully subject to Condition A (Chomsky, 1981, 1986): the individual variable in a reflexive must be locally bound by a β operator in the clause, and so reflexives are ungrammatical in any structure where the necessary operator cannot be licensed. This makes a reflexive ungrammatical with any quantifier as its binder, either universal, as seen previously, or existential, as shown in (26).

(26) ?? **[ta' foh]**$_i$ a   yoh **nyi=ey**$_i$
      a   chief FACT see self=3SG
      '**[A chief]**$_i$ saw **himself**$_i$.'

In contrast, *zheuk* is a pronoun subject to Condition B, which must be locally free. Like other pronouns, it can even be free within the entire utterance if it refers to a discourse antecedent or is used deictically. The incompatibility of *zheuk* with quantifiers arises from the fact that a covarying interpretation cannot be achieved through the binding of only its situation pronoun if its individual variable remains free and is mapped to only one individual via an assignment. This predicts that *zheuk* should be acceptable with an "antecedent" existential quantifier, on the condition that its index is mapped to the same individual that witnesses the existential quantification. This is, in fact, the pattern we find, as shown in (27).

(27)   **[ta' foh]**$_i$ n-gop   nge   **zheuk**$_{i/j}$ a   khoh
          a   chief TAM-say COMP 3SG   FACT cough
          '[**A chief**]$_i$ said that **he**$_{i/j}$ coughed.'

The acceptability of a coreferential reading here, in contrast to what we see with reflexives in (26), demonstrates that reflexives, though they contain individual variables like *zheuk*, differ from pronominals in requiring local binders. Because the individual variables in Tswefap reflexives require local A-binding, reflexives can receive neither a bound nor even a coreferential reading under QDPs, which cannot license the necessary β binding operators. Since *zheuk* is not subject to Condition A, it is ungrammatical in variable binding contexts but is compatible with QDPs that do not require a covarying reading, given the availability of a coreferential reading in the absence of a β operator.

To express reflexive meaning with a QDP, an intensifier *zhe ntswe nyi* 'he himself' (or 'she herself') is used instead of a simplex reflexive, as seen in (28) with a universal quantifier and (29) with an existential quantifier.

(28)   **[mbey weloh]**$_i$ a   yoh {**??nyi=ey**$_i$ / **zhe**$_i$ **n-tswe nyi**}
          every one   FACT see {self=3SG   / 3SG.POSS PL-head body}
          '[**Every person**]$_i$ saw **himself**$_i$.'

(29)   **[ta' foh]**$_i$ a   yoh {**??nyi=ey**$_i$ / **zhe**$_i$ **n-tswe nyi**}
          a   chief FACT see {self=3SG   / 3SG.POSS PL-head body}
          '[**A chief**]$_i$ saw **himself**$_i$.'

In this intensifier, I propose that the possessive pronoun *zhe* 'his' (or 'her'), as a type of determiner, introduces a situation pronoun which can be bound by a sigma operator to covary. Crucially, this possessive differs from a simplex reflexive in that it does not introduce an individual variable that must be bound.

A context that has not yet been considered is one in which a bound pronoun occurs under the scope of a quantifier but must itself bind a reflexive. In such contexts, we expect that *yi* will be used as the pronoun, since only *yi* can receive a covarying interpretation under a quantifier. However, *yi* will not be able to bind a simplex reflexive. In such contexts, this intensifier *zhe ntswe nyi* is once again used instead of a simplex reflexive, as seen in (30).

(30)   **[mbey weloh]**$_i$ n-gop   nge   **yi**$_i$ a   kwohk {***nyi=ey**$_i$ / **zhe**$_i$ **n-tswe**
          every person TAM-say COMP 3SG FACT likes   {self=3SG / 3SG.POSS PL-head
          nyi}
          body}
          '[**Every person**]$_i$ said **he**$_i$ likes **himself**$_i$.'

In this structure, the situation pronoun in *yi* and the situation pronoun introduced by *zhe* will both be bound by sigma operators, as seen in the simplified LF in (31).

(31)   [[[every s$_1$] person] [σ_3 [Q [said [[[the s$_3$] person] [σ_4 [likes [[his s$_4$] self]]]]]]]]]

To summarize the individual binding behavior we have seen, QDPs and *yi* do not contain individual variables and cannot license β operators. In contrast, *zheuk* and definites, which can both be argued to contain indices (Schwarz, 2009), can license β operator adjunction. This raises the prospect that, crosslinguistically, the presence of an individual variable within a DP may allow it to license an individual binding operator (a β).

6 Conclusion

We have seen that the distributional differences of Tswefap's two third person singular subject pronouns *zheuk* and *yi* can be accounted for due to differences in their internal structures and the availability of two different binding mechanisms. Crucially, *zheuk* contains an index and can license β operators to bind reflexives, but cannot act as a bound variable under a quantifier. *Yi* does not contain an index and cannot license β operators to bind reflexives, but it can behave as a bound variable under the scope of a quantifier. This behavior is summarized in (32).

(32)   *Summary of* 3SG *pronouns*

	yi	*zheuk*
Contains a situation pronoun	✓	✓
Contains an index	✗	✓
Licenses β operators	✗	✓
Can be bound by quantifiers	✓	✗
Can bind reflexives	✗	✓

These data provide evidence for two distinct types of binding in Tswefap. Individual binding is achieved through β operators, which are only licensed by *zheuk* and bare definites. Situation binding is achieved through a class of sigma operators, which are optionally licensed at specific structural positions (Elbourne, 2013). We need both of these types of binding to account for the distribution of Tswefap pronominals and reflexives, suggesting that we cannot reduce an account of the range of binding phenomena that we find crosslinguistically, or even within a particular language, to only one binding mechanism.

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