

Binding and Blocking in Nuosu¹

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Abstract. I argue for a binding theory that posits binding and blocking conditions as underived primitives as opposed to a binding theory that derives blocking conditions from binding conditions via an independent scale of dependency (Safir 2004a, b). The latter work is based on English and other Germanic languages, whereas the proposed binding theory bears on Nuosu (Tibeto-Burman: China), which exhibits a speech logophor and a long-distance reflexive, on Mupun (Afro-Asiatic: Nigeria) and on Chinese.

Keywords: Nuosu, Mupun, Chinese, logophor, anaphor, binding, blocking

1. Introduction

The influence of SOURCE-logophors (Sells 1987: 457) on the reference possibilities of other anaphors and personal pronouns is poorly understood. The Nuosu language² (Tibeto-Burman: China) exhibits an African-style logophor (Chen & Wu, 1998: 101),³ a Chinese-style reflexive and a set of personal pronouns.

Table 1: Anaphor, logophors and pronouns in Nuosu

Class	Person	Number	Core	Possessive	Basic use
Anaphor	1/2/3	SG/PL	zyt jie	zyt jie	bound in local clause
	1/2/3	SG/PL	zyt jie	zyt jie	bound in higher matrix clause
Logophors	SOURCE	SG	i	it	bound by SOURCE in speech report
	SOURCE	PL	op	op	bound by SOURCE in speech report
Pronouns	1	SG	nga	ngat	free in local clause
	2	SG	ne	nit	free in local clause
	3	SG	cy	cyp	free in local clause
	1	PL	ngop wox	ngop	free in local clause
	2	PL	nop wox	nop	free in local clause
	3	PL	cop wox	cop	free in local clause

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² The Nuosu language is spoken by 2.5 Million people in the Liangshan Prefecture of Sichuan Province. Language use is vibrant in Liangshan. The Nuosu had few contact with the Han Chinese until the 1940s. Before that time, only Shanghai salt merchants traveled regularly to Liangshan. The infrequent contacts with the Han Chinese did not leave a strong mark on Nuosu, which is reflected by the low number of Chinese loanwords in Nuosu. The reflexive *zyt jie* is closely integrated in the grammar. The logophor has two suppletive forms, a singular and plural form. Both undergo tone and rhyme changes for the patient/possessive roles. A correspondence table of the Nuosu Romanization and IPA symbols including the four tone markers *-t*, *-x*, *-∅*(empty) and *-p* can be found in Gerner (2013: 21). A glossary of technical terms and a list of abbreviations are provided at the end of the paper.

³ The term “logophoric” was originally coined by Hagège (1974) and adopted in Clements (1975)’s seminal study on Ewe. Hagège employed this term for dependent marking in indirect speech clauses attested in West-African languages including Mundang, Dogon, Ewe, Tupuri (Niger-Congo) and Mupun (Afro-Asiatic). In these languages, logophors depend not only on the internal speaker (SOURCE), but also on the holder of attitudes, thoughts and feelings (SELF). In West Africa, scholars distinguished between logophors *proper* (SOURCE-logophors) as in Igbo or Mupun (Frajzyngier 1985, 1993), and logophors *at large* (SOURCE/SELF-logophors) as in Ewe or Tupuri (Culy 1997). Besides Nuosu, Igbo and Mupun appear to be the only other languages with specialized SOURCE-logophors. As logophors encode the perspectival viewpoint of third persons, the term logophoricity was applied to long-distance uses of reflexives (LDR) as well. The Icelandic reflexive *sig*, for example, is employed in speech and attitudes reports using infinitive and subjunctive mood (Thráinsson 1976; Reuland 2006). *Sig* in infinitive clauses is c-commanded by an antecedent, but its use in subjunctive clauses is syntactically free and depends on SOURCE/SELF-antecedents. In a similar way, the Chinese reflexive *ziji* is used as SOURCE/SELF-logophor (Huang & Liu 2001).

The Nuosu reflexive *zyt jie* was borrowed from Chinese *zìjǐ* probably in the early 20th century. Similar to Chinese, we distinguish two homophonous forms, a short-distance reflexive (SDR) and a long-distance reflexive (LDR) which both are syntactic anaphors. Their homophony is based on their complementary binding domains and on the contrary semantic nature of the antecedent. The antecedent of SDR typically is an agent, while the antecedent of LDR is an attitude holder (Huang & Liu 2001).

The existence of the SOURCE-logophor interacts with the referential properties of the SDR, LDR and of personal pronouns. The different lexical forms overlap in the representation of dependency on an antecedent. In the local clause, the SDR excludes the logophor, as illustrated in (1).

(1) *SDR blocks LOG in local clause*

- a. * mu ga₁ hxip go **i**₁ **ix**_{*1} hxie yy ddix.
 muka say SENT.TOP LOG.SG LOG.SG respect QUOT
Embedded clause

‘*Muka₁ said that he₁ respects himself_{*1}.’

- b. mu ga₁ hxip go **i**₁ **zyt jie**₁ hxie yy ddix.
 muka say SENT.TOP LOG.SG SDR respect QUOT
Embedded clause

‘Muka₁ said that he₁ respects himself₁.’

In contrast to Chinese *zìjǐ* (Huang & Liu, 2001: 175), from which *zyt jie* is borrowed, the Nuosu LDR cannot track the SOURCE of a speech report, but the LOG *i/op* can.⁴

(2) *LOG blocks LDR in speech reports*

- a. * **mu ga**₁ hxip go **zyt jie**_{*1/*2} vot zza dop bbo tat xi ox ddix.
 muka say SENT.TOP LDR pig food feed go should DYP QUOT
Reported speech clause

‘*Muka₁ said that he_{*1/*2} should go to feed the pigs.’

- b. **mu ga**₁ hxip go **i**_{1/*2} vot zza dop bbo tat xi ox ddix.
 muka say SENT.TOP LOG.SG pig food feed go should DYP QUOT
Reported speech clause

‘Muka₁ said that he_{1/*2} should go to feed the pigs.’

On the other hand, the LOG *i/op* cannot depend on the SELF of an attitude reports other than speech, but the LDR can depend on the SELF of mental attitudes.

(3) *LDR blocks LOG in other attitude reports*

- a. * **mu ga**₁ **i**_{*1/*2} xyp mop xyp xi mgu.
 muka LOG.SG wife marry hope, wish
Attitude Clause

‘*Muga₁ wishes that he_{*1/*2} gets married.’

- b. **mu ga**₁ **zyt jie**_{1/*2} xyp mop xyp xi mgu.
 muka LDR wife marry hope, wish
Attitude Clause

‘Muga₁ wishes that he_{1/*2} gets married.’

Besides the LDR, personal pronouns also track the SELF of mental attitudes but with a pragmatic difference. The LDR emphasizes the antecedent in a set of alternatives. Personal pronouns do not focus.

⁴ Huang & Liu (2001: 174-181) distinguish anaphoric and logophoric uses of *zìjǐ*. As logophor, *zìjǐ* tracks the SOURCE of a speech report or the SELF of an attitude report (Sells 1987: 457).

- (4) *LDR tolerates pronouns in attitude reports*
- a. **mu rryr**₁ ngop go **zyt jie**_{1/*2} jy jie tat-ap-xi.
 mudge think SENT.TOP LDR fear should<NEG>
|Attitude Clause
 ‘Mudge₁ thinks he_{1/*2} (alone) shouldn’t fear.’
- b. **mu rryr**₁ ngop go **cy**_{1/2} jy jie tat-ap-xi.
 mudge think SENT.TOP 3P.SG fear should<NEG>
|Attitude Clause
 ‘Mudge₁ thinks he_{1/2} shouldn’t fear.’

Safir (2004a, 2004b) developed a theory of binding in which blocking is derived from the basic binding conditions of lexical forms. Due to the way Safir ranked the dependency of lexical forms, his model makes wrong predictions for Nuosu and other languages. In this paper, I argue that blocking conditions should have axiomatic status in any binding theory with claim of cross-linguistic validity. I present Safir’s theory in §2, the case of axiomatic blocking conditions in §3, an account of the Nuosu data in §4 and of two other pivotal languages in §5.

2. Deriving complementarity (Safir, 2004a, 2004b)

Safir (2004a, 2004b) developed a theory of anaphora in which the blocking condition of personal pronouns isn’t an axiom of the theory, as is the “Binding Condition B” in classical binding theory (Chomsky, 1981), but derived from the “Binding Condition A” by means of a competition algorithm. Safir clustered his theory around the following formulation of “Binding Condition A”.

- (5) LAL (“Local Antecedent Licensing” ≈ “Binding Condition A”) Safir (2004b: 77)
- a. An anaphor Y *must* covary with and be c-commanded by an antecedent in the domain D_Y.
- b. The domain D_Y of Y is the minimal maximal projection containing Y and a sister of Y.

He defines anaphors in the following way (2004b: 86, 173). The lack of deictic potential of a form is a necessary condition for anaphorhood and strict subject orientation is a sufficient condition. The Nuosu SDR and LDR are subject-oriented and therefore anaphors in Safir’s sense, as illustrated in (6). The LDR in (6b) cannot track the first person pronoun because the pronoun is not in subject position.

- (6) a. **lu po**₁ **zyt jie**_{1/*2} rre mop ddie mu rryr₂ bbyp.
 lupu SDR money COV mudge give
 ‘Lupo₁ gave Mudge₂ his own_{1/*2} money.’
- b. **at nyop**₁ ngat₂ yy ddi mu **zyt jie**_{1/*2/*3} mup shy dex la ap dop su jie.
 anyo 1P.SG.POSS because of LDR tomorrow come NEG can COMP fear
|Attitude report
 ‘Because of me₂, Anyo₁ is afraid that she_{1/*2/*3} cannot come tomorrow.’

The Nuosu SOURCE-logophor has no deictic involvement and is not subject-oriented. Its status as anaphor in Safir’s sense is therefore uncertain. In (7), the logophor *i* is not dependent on the subject of the matrix clause but on an adjunct.

- (7) mu ga₁ **lu po**₂ ddix da gge go (lupo) **i**_{1/2/*3} yi ndo ox ddix.
 muka lupu at COV hear SENT.TOP lupu LOG.SG tobacco smoke DYP QUOT
|Speech report
 ‘Muka₁ heard from Lupo₂ that he_{1/2/*3} smoked cigarettes.’

On the view that the Nuosu LDR and SOURCE-logophor are anaphors, LAL in (5) does not provide correct binding domains. The only way of repairing this situation in the sense of Safir's algorithm is by adopting recursive domains (see also §3.1).

- (8) AL (“Antecedent Licensing” \approx “Binding Condition A”)
- a. An anaphor Y *must* covary with and be c-commanded by an antecedent in the domain D^k_Y .
 - b. Suppose D^k_Y is defined for k with $1 \leq k \leq n$:
The domain D^{k+1}_Y of Y is the minimal maximal projection containing D^k_Y and a sister of D^k_Y .

The algorithm consists of a language-internal dependency scale and a form-to-interpretation principle. Safir provides the following principles for grading dependency in a language.

- (9) Principles for grading dependency Safir (2004b: 86)
- a. anaphors \gg non-anaphors (“anaphors are more dependent than non-anaphors”);
 - b. for anaphors: “ X *more* dependent than Y ” = “ X *more* referentially specified than Y ”;
 - c. for nonanaphors: “ X *more* dependent than Y ” = “ X *less* referentially specified than Y ”.

He does not define the notion of “referentially specified”, but his examples suggest that this concept should be viewed as a function of the phi-features and amount of lexical information encoded in a form. On this view, the Nuosu SDR and LDR *zyt jie* would be less specified than the logophor *i/op*, since the latter form encodes phi-features of the antecedent (number and/or person), whereas the two *zyt jie* do not. Furthermore, the logophor *i/op* is less specified than the pronouns and names (r-expressions) as the logophor contains weaker person features than pronouns and names. It can corefer to two persons (2P, 3P), while the pronouns and names refer to exactly one person (speaker, addressee or entity with name property).⁵ The exclusive 3P pronoun (nonspeaker, nonaddressee) is referentially less specific than the 1P and 2P pronouns. Proper names are stable across speech situations and thus referentially the most specific forms. There are two tentative scales depending on the acceptance of the logophor as anaphor.⁶

- (10) The Nuosu dependency scale (tentative)
- a. Logophor *is* an anaphor: LOG \gg SDR, LDR \gg 3P \gg 1P, 2P \gg name
 - b. Logophor *is not* an anaphor: SDR, LDR \gg LOG \gg 3P \gg 1P, 2P \gg name

Safir uses the following *form-to-interpretation principle* for deriving the most dependent reading.

- (11) FTIP (Form-To-Interpretation Principle) Safir (2004b: 74)
- If
- a. X c-commands Y ,
 - b. z is the lexical form or string that fills Y ,
 - c. w is a single form more dependent than z ,
 - d. both w and z could support the same identity-dependent interpretation if Y were exhaustively dependent on X ,
- then e. (the referential value for) Y cannot be interpreted as identity dependent on X .

⁵ As pointed out by a reviewer, Schlenker (2003:74) distinguishes between shiftable indexicals, forms that can refer to the primary and secondary speaker, and nonshiftable indexicals that can only refer to the primary speaker. The Nuosu 1P and the logophor are both nonshiftable.

⁶ These two scales differ from Safir (2004b:87)'s original scale for Germanic: SIG-SELF \gg pronoun-SELF \gg SIG \gg pronoun \gg r-expression. For Safir, the 1P, 2P and 3P pronouns are referentially equally specific.

For both rankings in (10), Safir’s model wrongly excludes personal pronouns from representing the attitude holder, a problem that also arises for an account of Chinese *ziji*. In (4) quoted again in (12), if *Mudge* (X) c-commands the subject of fear (Y) and if *cy* (z) isn’t the most dependent form (*zyt jie* is more dependent), then Y represented by *zyt jie* is exhaustively dependent on X. The pronoun *cy* is obviative, i.e. not coreferential, with *Mudge*. This outcome, however, is wrong. Both forms represent the same kind of identity dependency on *Mudge*, as illustrated with strict/sloppy readings in the “filled-in ellipsis” in (12).

- (12) a. **mu rryr**₁ ngop go **zyt jie**_{1/*2} jy jie tat-ap-xi, mgu, lat sse nyi xip mu ngop.
 mudge think SENT.TOP LDR fear should<NEG> think laze also DEM.DD think
Attitude Clause
- ‘Mudge₁ thinks he_{1/*2} shouldn’t fear and Laze does too.’
- Readings: (i) *Strict*: Laze thinks that Mudge shouldn’t fear. (ii) *Sloppy*: Laze thinks that Laze shouldn’t fear.
- b. **mu rryr**₁ ngop go **cy**_{1/2} jy jie tat-ap-xi, mgu, lat sse nyi xip mu ngop.
 mudge think SENT.TOP 3P.SG fear should<NEG> think laze also DEM.DD think
Attitude Clause
- ‘Mudge₁ thinks he_{1/2} shouldn’t fear and Laze does too.’
- Readings: (i) *Strict*: Laze thinks that Mudge shouldn’t fear. (ii) *Sloppy*: Laze thinks that Laze shouldn’t fear.
 (iii) *Exophoric*: Laze thinks that he (≠ Mudge, ≠ Laze) shouldn’t fear.

Furthermore, on the view that the Nuosu logophor is an anaphor (as in ranking 10a), the model wrongly predicts that the logophor excludes the SDR from depending on the local subject. The converse is true. The LDR excludes the logophor, as illustrated in (13) quoted from (1).

- (13) a. *mu ga₁ hxip go **i**₁ **ix**_{*1} hxie yy ddix.
 muka say SENT.TOP LOG.SG LOG.SG respect QUOT
Embedded clause
- ‘*Muka₁ said that he₁ respects himself_{*1}.’
- b. mu ga₁ hxip go **i**₁ **zyt jie**₁ hxie yy ddix.
 muka say SENT.TOP LOG.SG SDR respect QUOT
Embedded clause
- ‘Muka₁ said that he₁ respects himself₁.’

If the Nuosu logophor isn’t an anaphor (as in ranking 10b), the algorithm wrongly licences the LDR in reported speech clauses embedded in an attitude clause. In (14a+b), if *Muhlie* (X) c-commands the subject of *go home* (Y) and if *zyt jie* (z) is the most dependent form available in position Y (more dependent than *i* which is also available), then Y represented by *zyt jie* is identity dependent on X. In particular, the logophor *i* is obviative with *Muhlie*. This prediction, however, is wrong.

- (14) a. lat sse₁ mu hlie₂ hxip go **zyt jie**_{1/*2} ix go bbo tat xi ddix su xi mgu.
 laze muhlie say SENT.TOP LDR home go should QUOT COMP hope
Attitude report Speech report
- ‘Laze₁ hopes that Muhlie₂ would say that he_{1/*2} should go home.’
- b. lat sse₁ mu hlie₂ hxip go **i**_{*1/2} ix go bbo tat xi ddix su xi mgu.
 laze muhlie say SENT.TOP LOG.SG home go should QUOT COMP hope
Attitude report Speech report
- ‘Laze₁ hopes that Muhlie₂ would say that he_{*1/2} should go home.’

3. Binding & blocking

We propose a model that posits a binding domain and a binding condition for each form (§3.1), a blocking scale that prioritizes forms whose domains overlap (§3.2), and a lexicalization principle that states the exclusion or tolerance of licensed forms (§3.3). The term of *algorithm* (which Safir uses for his system) would not be appropriate for our model as we do not *input* binding conditions into a procedure and produce blocking constraints as *outputs*. We rather attribute a primitive status to both binding and blocking conditions.

3.1 Binding

Each lexical form z inserted in the constituent Z of an n -fold matrix construction \mathbf{S} is associated with a domain taken from the following list ($n - 1$ is the number of matrix predicates in the sentence).

- (15) Domains $D^0(z)$, $D^1(z)$, $D^k(z)$
- a. $D^0(z) = D^0$ is the physical world, the domain of deictic expressions
 - b. $D^1(z)$ is the minimal maximal projection containing z and a sister of z
 - c. Suppose $D^k(z)$ is defined for k with $1 \leq k \leq n$:
 $D^{k+1}(z)$ is the minimal maximal projection containing $D^k(z)$ and a sister of $D^k(z)$.

We posit each lexical form with a basic binding domain and a type of binding. Binding conditions of each form in Nuosu are formulated in an inclusive way. In traditional grammar, for example, third person pronouns are defined in an exclusive way, as a person who is not the speaker or the addressee. In our binding theory, the third person pronoun licences the meaning of speaker and addressee but then is blocked for their representation by first and second pronouns.

Table 2: Binding in Nuosu

Lexical Form z	Binding domain $D(z)$	Type of binding by Y
SDR	$D^1(z)$	depend on subcommanding entity Y
LDR	$D^n(z)$, $n > 1$	depend on subcommanding entity Y
LOG	$D^n(z)$	depend on SOURCE Y
1P	$D^n(z) \cup D^0(z)$	depend on speaker Y
2P	$D^n(z) \cup D^0(z)$	depend on addressee Y
3P	$D^n(z) \cup D^0(z)$	depend on entity Y
name	$D^0(z)$	depend on entity Y with name property

The binding conditions of other languages can be defined in similar terms. In §5, we sketch the binding conditions of forms in two other pivotal languages, Mupun and Chinese. The Mupun logophors resemble the Nuosu SOURCE-logophor, while the Chinese reflexive is the donor form of the Nuosu reflexive.

3.2 Blocking & tolerance

In (16)-(18), I characterize the concepts of overlap, blocking and tolerance in general, while in table 3 and (19), I summarize the empirically attested blocking and tolerance relations in Nuosu.

Binding conditions such as those in table 2 license different lexical forms in the same slot. The overlap of forms can be defined as a binary relation \sim . Let Z be a constituent of a sentence \mathbf{S} ; let z_1 and z_2 be two lexical forms that may be alternatively inserted in Z , and let $D(z_1)$ and $D(z_2)$ be their binding domains within \mathbf{S} .

(16) Definition of overlap

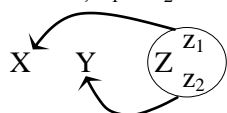
$z_1 \sim z_2$ in Z iff there are two constituents X in $D(z_1)$ and Y in $D(z_2)$ such that z_1 is bound by X and z_2 is bound by Y , according to the type of binding in table 2.

Two lexical forms can overlap in exactly three logical ways, as illustrated in (17). Two forms are licensed in the same slot by two antecedents, as in (17a); the same lexical form is licensed by two different antecedents, as in (17b); or two lexical forms are licensed by the same antecedent, as in (17c).

(17) Three logical cases of overlap

- a. 2 antecedents & 2 forms
- b. 2 antecedents & 1 form
- c. 1 antecedent & 2 forms

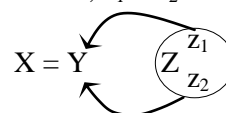
$X \neq Y, z_1 \neq z_2$



$X \neq Y, z = z_1 = z_2$



$X = Y, z_1 \neq z_2$



The Nuosu data epitomize all three kinds of overlap. (We use these kinds to structure the empirical data in §4). Quite generally, the grammar resolves these overlaps by blocking one form from representing Z , by blocking a form’s dependence on one of two antecedents, or by tolerating the overlap. Blocking and tolerance can be understood as binary relations too. Let $S[Z/z]$ denote the insertion of the lexical form z in the constituent Z of the sentence S .

(18) Blocking ($>$) and tolerance (\approx)

- a. $z_1 > z_2$ in Z iff $z_1 \sim z_2$ in Z , and $S[Z/z_1]$ is well-formed whereas $*S[Z/z_2]$ is ill-formed.
- b. $z_1 \approx z_2$ in Z iff $z_1 \sim z_2$ in Z , and $S[Z/z_1], S[Z/z_2]$ are both well-formed.

Table 3 presents the attested blocking and tolerance relations in Nuosu. Each non-empty cell states the blocking and/or tolerance relation between two forms the way they are observed in Nuosu (supporting data follow in §4). Blocking and tolerance of LDR by SDR/LDR are both possible ($> / \approx$) and depend on additional co-occurring lexical forms (§4.1). The dark cells represent blocking relations that are accounted for by Chomsky’s “Binding Condition B and C” and by Safir’s dependency scale. The relation in the light grey cells is discussed in the literature on Chinese *ziji* (Huang & Liu, 2001: 161-165).

Table 3: Blocking & tolerance in Nuosu

	SDR	1P	LOG	2P	LDR	3P	name
SDR	$>$	$>$	$>$	$>$	$> / \approx$	$>$	$>$
1P		\approx	$>$	$>$	\approx	$>$	$>$
LOG			$>$	$>$	$>$	$>$	$>$
2P				\approx	\approx	$>$	$>$
LDR		\approx		\approx	$> / \approx$	\approx	$>$
3P					\approx	\approx	$>$
name							$>$

Blocking ($>$) in Table 3 is transitive, whereas tolerance (\approx) is symmetric. We can define the union relation \blacktriangleright by the relations in the upper dashed part of Table 3. (A mathematical relation is explicitly

defined, if we enumerate all of its elements. Table 3 enumerates all elements of \blacktriangleright .) The relation \blacktriangleright is total, reflexive and transitive but not symmetric. As \blacktriangleright is transitive, we can arrange the set of lexical forms on a scale. This scale correctly predicts blocking and tolerance of lexical forms in Nuosu (see §4).

(19) The Nuosu blocking & tolerance scale

SDR \blacktriangleright 1P \blacktriangleright LOG \blacktriangleright 2P \blacktriangleright LDR \blacktriangleright 3P \blacktriangleright name

The question now is whether this scale can be derived from independent principles, something which Safir claimed for his dependency scale in (10), or whether it should be given primitive status. There appears to be no obvious independent principle other than blocking itself that motivates this scale.

Firstly, deictic and non-deictic forms are not separated in the Nuosu scale (e.g. 1P \blacktriangleright LOG and LOG \blacktriangleright 2P) which therefore disqualifies *deixis* from serving as grading principle. Secondly, if the logophor (LOG) is viewed as anaphors, then anaphors and nonanaphors would not be separated in the above scale either. *Anaphora* could thus not serve as grading principle of the above scale. Thirdly, if the logophors are not regarded as anaphors, all the forms in (19) except the SDR would be nonanaphors. On this view, *referential specification* would be a problematic criterion for grading dependency. It would be difficult to argue on the one hand that the first person pronoun encodes more phi-features than the SOURCE-logophor, and on the other hand that the SOURCE-logophor encodes fewer phi-features than the second and third person pronouns. Finally, there are no other independent criteria for grading the dependency of forms than deixis, anaphora and degree of referential specification.

We therefore conclude that the Nuosu scale in (19) is not motivated by independent criteria but *is* a statement of the respective blocking conditions. The Mupun and Chinese referential forms correspond to subsets of the Nuosu forms and their blocking conditions to subsegments of the Nuosu scale (§5).

Binding and blocking conditions have both a primitive status in our binding theory. That is the default starting position of any binding theory until we can prove that blocking conditions are derived from independent principles. This paper states the belief that a cross-linguistically valid proof cannot be provided. In any case, the *onus probandi* lies on the supporters of a derivative binding theory.

3.3 Lexicalization principle

The binding and blocking conditions of each form are processed by a LEXICALIZATION PRINCIPLE that checks the insertion of lexical items under the terminal nodes of a sentence tree.

(20) LEXICALIZATION PRINCIPLE:

On the blocking & tolerance scale we have $z_1 \blacktriangleright z_2$ in Z with X and Y being their antecedents.

- a. In case that $X \neq Y$ and $z_1 \neq z_2$ (cf 16a),
 - If $z_1 > z_2$, then z_1 can represent Z to depend on X , but z_2 can't represent Z to depend on Y .
 - If $z_1 \approx z_2$, then z_1 can represent Z to depend on X and z_2 can represent Z to depend on Y .
- b. In case that $X \neq Y$ and $z = z_1 = z_2$ (cf 16b),
 - If $z > z$, then z can represent Z to depend on Y but not X .
 - If $z \approx z$, then z can ambiguously represent Z to depend on X as well as on Y .
- c. In case that $X = Y$, $z_1 \neq z_2$ (cf 16c),
 - If $z_1 > z_2$, then Y and Z (represented by z_2) are independent or obviative.
 - If $z_1 \approx z_2$, then both z_1 and z_2 can represent Z to depend on X .

The LEXICALIZATION PRINCIPLE decides which form can be inserted, which is excluded and when two forms are tolerated.

4. Blocking & tolerance in Nuosu

Blocking and tolerance are modes of resolution for the following overlaps: Two forms are licensed by two different antecedents in the same slot (§4.1). One form is licensed by two different antecedents (§4.2). Two different forms are licensed by the same antecedent (§4.3). The antecedent and dependent

form in the sentences below are marked in bold font. Examples in this section are elicited and discussed in detail with native speakers. Texts from the standard Shynra dialect reflect the use of the forms as presented herein, but some of the complicated patterns (e.g. (28)-(30) below), were not found in written texts and narratives.

4.1 Two forms are licensed by two different antecedents in the same slot

4.1.1 *SDR* > *name*. According to the binding conditions in table 2, the noun phrase *Lamo* licenses the SDR in (21a), while the person *Lamo* in the physical world licenses the second occurrence of the noun phrase *Lamo* in (21b). The SDR excludes the second occurrence of the name *Lamo* in (21b), as predicted by *SDR* > *name* in table 3.

(21) a. **lat mop₁** **zyt jie₁** hxie yy tat xi.
lamo SDR respect should
'Lamo₁ should respect himself₁.'

b. * lat mop₁ **lat mop₁** hxie yy tat xi.
lamo lamo respect should
'Lamo₁ should respect Lamo₁.'



Lamo₁ in D⁰

4.1.2 *SDR* > *LDR* or *SDR* ≈ *LDR*. The SDR is licensed by the c-commanding subject Y in the local clause, whereas the homophonic LDR is licensed by an antecedent X in the matrix clause. Blocking depends on the agreement between the phi-features of the X and Y antecedents. For Chinese *ziji*, scholars have noted a person and number asymmetry (Huang & Tang 1991; Huang & Liu 2001; Pan 2001). These discrepancies were largely borrowed with *zyt jie* into the Nuosu language.

(A) *SDR* > *LDR* (Discrepancy between 3rd person X and 1st / 2nd person Y)

(22) a. mu ga₁ ngop go **nga₂/ne₂** **zyt jie_{*1/2}** go zyt tat-ap-xi mgu.
muka think SENT.TOP 1P.SG/2P.SG SDR to scold should-NEG-should think
'Muka₁ thinks that I₂/you₂ should not scold him_{*1}/myself₂/yourself₂.'

SDR ≈ *LDR* (Agreement between X as 3rd person and Y as 3rd person)

b. **mu ga₁** ngop go **at nyop₂** **zyt jie_{1/2}** go zyt tat-ap-xi mgu.
muka think SENT.TOP anyo REFL to scold should-NEG-should think
'Muka₁ thinks that Anyo₂ should not scold him₁/herself₂.'

(B) *SDR* > *LDR* (Discrepancy between plural X and singular Y)

(23) a. cop wox₁ ngop go **mu ga₂** **zyt jie_{*1/2}** go hxep yy mgu.
3P PL think SENT.TOP muka REFL GOAL respect think
'They₁ think that Muka₂ respects them_{*1}/himself₂.'

SDR ≈ *LDR* (Agreement between singular X and singular Y)

b. **sha mat₁** ngop go **mu ga₂** **zyt jie_{1/2}** go hxep yy mgu.
shama think SENT.TOP muka REFL GOAL respect think
'Shama₁ thinks that Muka₂ respects him₁/himself₂.'

In lieu of a detailed review of the literature on Chinese asymmetric blocking, an overview of the main positions is presented in the footnote below.⁷

4.1.3 *SDR* > *LOG*. The *SDR* *zyt jie* which is bound in the local clause excludes the second occurrence of the logophor *op* which is bound by the *SOURCE Muka* in the matrix clause.

- (24) a. mu ga₁ hxip go op₁₊₂ zyt jie₁₊₂ hxie yy ddix.
 muka say SENT.TOP LOG.PL SDR respect QUOT
Embedded clause
- ‘Muka₁ said that they₁₊₂ respect themselves₁₊₂.’
- b. *mu ga₁ hxip go op₁₊₂ op₁₊₂ hxie yy ddix.
 muka say SENT.TOP LOG.PL LOG.PL respect QUOT
Embedded clause
- ‘Muka₁ said that they₁₊₂ respect themselves*₁₊₂.’

4.1.4 *LOG* > *name*. The logophor *i* in (25a) is licensed by the *SOURCE Muka* and excludes the second occurrence of *Muka* which depends on *Muka* in the physical world.

- (25) a. mu ga₁ hxip go i₁ lat mop₂ hxie yy ddix.
 muka say SENT.TOP LOG.SG lamo respect QUOT
Embedded clause
- ‘Muka₁ said that he₁ respects Lamo₂.’
- b. *mu ga₁ hxip go mu ga₁ lat mop₂ hxie yy ddix.
 muka say SENT.TOP muka lamo respect QUOT
Embedded clause
- ‘Muka₁ said that Muka₁ respects Lamo₂.’



Muka₁ in D⁰

The logophor can occur in any syntactic position: subject as in (25), direct object as in (26), or adjunct noun phrase as in (27).

- (26) a. mu ga₁ hxip go lat sse₂ ix₁ nzur jox jjip ox ddix.
 muka say SENT.TOP laze LOG.SG hate might DYP QUOT
Embedded clause
- ‘Muka₁ said that Laze₂ might hate him₁.’

⁷ These blocking constraints were explained for Chinese *ziji* by subject-head agreement of phi-features (Batistella, 1989; Cole & Wang, 1996). However, there are multiple deviations from this rule. For example, a 1st person X antecedent is not blocked by a 3rd person Y antecedent, whereas a 3rd person antecedent is blocked by a 1st person Y antecedent.

Pan (2001: 295, 298) proposes to account for these blocking effects in Chinese by the notion of “self-ascriber” of a belief or wish (a notion borrowed from Lewis 1979). Pan explains blocking effects by the presence of a self-ascriber which is not the syntactically highest self-ascriber of the sentence.

Huang & Liu (2001) explain the Chinese blocking constraints by Kuno (1972)’s “direct discourse representation” and by identifying *ziji* with the 1st person pronoun. A sentence like *John said that I am criticizing ziji* can be converted into the direct report *John said “I (= internal SOURCE) am criticizing me (= external SOURCE)”*. This report represents a “perspectival conflict” which would cause the long-distance reading to be cancelled. Other blocking effects are explicated likewise.

As there is intra-speaker and inter-speaker variation on exactly which combination of X and Y causes a blocking effect in Chinese, none of the above accounts presents an ultimate analysis. This is also true for the blocking relation between the Nuosu *SDR* and *LDR*.

- b. * **mu ga**₁ hxip go lat sse₂ **mu ga**₁ nzur jox jjip ox ddix. ☺
 muka say SENT.TOP laze muka hate might DYP QUOT
 ‘Muka₁ said that Laze₂ might hate Muka₁.’ **Muka**₁ in D⁰
- (27) a. **at nyop**₁ hxip go lu po₂ **ix**₁ yy ddi mu da la su nge ddix.
 anyo say TOP lupu LOG.SG because CONJ come NOM COP QUOT
 ‘Anyo₁ said that Lupo₂ would come because of her₁.’
- b. * **at nyop**₁ hxip go lu po₂ **at nyop**₁ yy ddi mu da la su nge ddix. ☺
 anyo say TOP lupu anyo because CONJ come NOM COP QUOT
 ‘Anyo₁ said that Lupo₂ would come because of her₁.’ **Anyo**₁ in D⁰

4.2 One form is licensed by two different antecedents

4.2.1 LOG > LOG. When two speech reports are embedded in each other with two SOURCES (secondary speakers), then the logophor is bound by the proximal SOURCE which blocks dependence to the distal SOURCE. Example (28) shows two SOURCES, *Muka* and *Lamo*. The logophor is contained in D²(i), *Lamo*’s utterance, and is dependent on *Lamo*. *Muka* as a potential antecedent of the logophor is blocked by *Lamo*.

- (28) **mu ga**₁ hxip ngop ge go, **lat mop**₂ hxip go
 muka say 1P.PL tell SENT.TOP lamo say SENT.TOP
i_{*1/2} mup shy dex op rro la tat xi ddix.
 LOG.SG tomorrow Xichang come should QUOT
 ‘Muka₁ told us that Lamo₂ said that he_{*1/2} should come to Xichang tomorrow.’

In (29), two logophors occur at different clausal levels. The higher logophor is the addressee of *Muka*’s speech event not the entity *Muka* talks about. It is bound by *Lamo* not by *Muka*. The lower logophor is bound by *Muka* and hence cannot be bound by *Lamo*.

- (29) **lamo**₁ hxip go **mu ga**₂ hxip **ix**_{1/*2} ge go
 lamo say SENT.TOP muka say LOG.SG tell SENT.TOP
i_{*1/2} mup shy dex op rro la tat xi ddix.
 LOG.SG tomorrow Xichang come should QUOT
 ‘Lamo₁ said that Muka₂ told him_{1/*2} that he_{*1/2} should come to Xichang tomorrow.’

As logophors are licensed by the nearest SOURCE, reference to the distant SOURCE can be made by means of the LDR or pronouns which are the most dependent forms in this slot. In (30), *Muka* is the near and *Lamo* the distant SOURCE.

- (30) a. **lat mop**₁ hxip go **mu ga**₂ hxip **ix**₁ ge go
 lamo say SENT.TOP muka say LOG.SG tell SENT.TOP
zyt jie_{1/*2} mup shy dex op rro la tat xi ddix.
 LDR tomorrow Xichang come should QUOT
 ‘Lamo₁ said that Muka₂ told him₁ that he_{1/*2} should come to Xichang tomorrow.’

- b. **lat mop**₁ hxip go **mu ga**₂ hxip **ix**₁ ge go
 lamo say SENT.TOP muka say LOG.SG tell SENT.TOP
cy_{1/*2/3} mup shy dex op rro la tat xi ddix.
 3P.SG tomorrow Xichang come should QUOT
 ‘Lamo₁ said that Muka₂ told him₁ that he_{1/*2/3} should come to Xichang tomorrow.’

The LDR and the third person pronoun can both mark dependency on the antecedent *Lamo*.

4.2.2. *3P* ≈ *3P*. The 3rd person pronoun in the lower clause of (31) is licensed by the 3rd person pronoun in the matrix clause and by a contextually provided person in the physical world. Both interpretations are tolerated.

- (31) **cy**₁ at nyop **cy**_{1/2} shex ap we su hxo lo.
 3P.SG anyo 3P.SG find NEG GET COMP hope, depend
 ‘He₁ hopes that Anyo won’t find him_{1/2}.’



he₂ in D⁰

4.3 Two forms are licensed by the same antecedent

4.3.1. *SDR* > *3P*. The c-commanding subject licenses both the SDR and the third person pronoun for marking dependence on the subject. The pronoun is blocked by the SDR.

- (32) a. lu po₁ **zyt jie**₁ jip ndip.
 lupu SDR protect
 ‘Lupo₁ protects himself_{1/*2}.’
 b. lu po₁ **cy**_{*1/2} jip ndip.
 lupu 3P.SG protect
 ‘Lupo₁ protects himself_{*1/2}.’

The local co-argument domain can be extended by an additional possessor or topic noun phrase. Tang (1989)’s notion of *subcommand* (see glossary at the end of the paper) as a generalization of c-command licenses the SDR in both constructions. Possessor or topic antecedents also license personal pronouns (see table 2), but pronouns are excluded by the SDR for the representation of dependency.⁸

- (33) a. **mu ga**₁ ngop lu **zyt jie**_{1/*2} gat-tat-qip!
 muka idea SDR hamper<NEG.IMP>
 ‘Don’t let Muka₁’s ideas hamper him_{1/*2}!’
 b. **mu ga**₁ ngop lu **cyx**_{*1/2} gat-tat-qip!
 muka idea 3P.SG hamper<NEG.IMP>
 ‘Don’t let Muka₁’s ideas hamper him_{*1/2}!’

⁸ In (34b), the interpretation in which the pronoun is not bound in the clause leads to a “dangling topic” reading which is pragmatically marked. For Chinese, there is a discussion on whether topics must corefer with a constituent in the comment clause, either overtly or covertly. Shi (2000) argues that even for so-called “dangling topics” (topics with apparently no overt coreference in the comment clause) there are hidden gaps or resumptive pronouns in the comment clause. Pan & Hu (2008) argue against a purely syntactic analysis and rely on semantic conditions for licensing topics. On this second view, to the degree that the Nuosu examples do not allow aboutness interpretations, they are syntactically and semantically sanctioned, as in (34b).

- (34) a. **mu ga**₁ li **zyt jie**_{1/*2/*3} at nyop₂ hxie vur.
 muka TOP SDR anyo love
 ‘Muka₁ loves Anyo₂ himself_{1/*2/*3} (or: Muka alone loves Anyo).’
- b. # **mu ga**₁ li **cy**_{*1/*2/#3} at nyop₂ hxie vur.
 muka TOP 3P.SG anyo love
 ‘Muka₁ loves Anyo₂ himself_{*1/*2/#3} (or: Muka alone loves Anyo).’

4.3.2. *LDR* ≈ *3P*. The long-distance reflexive *zyt jie* is licensed by a subcommanding entity Y, while third person pronouns are licensed by an entity in the sentence or in the physical world. Both forms are therefore tolerated for representing dependence on the subcommanding entity Y in the matrix clause.

- (35) a. **mu ga**₁ ngop go **zyt jie**₁ ngop wox gga shyx.
 muka think SENT.TOP LDR 1P.PL way lead
 Embedded clause
 ‘Muka₁ thinks he₁ should lead us the way.’
- b. **mu ga**₁ ngop go **cy**_{1/2} ngop wox gga shyx.
 muka think SENT.TOP 3P.SG 1P.PL way lead
 Embedded clause
 ‘Muka₁ thinks he_{1/2} should lead us the way.’
- (36) a. **at nyop**₁ nga₂ yy ddi mu **zyt jie**_{1/*2/*3} mup shy dex la ap-dop su jie.
 anyo 1P.SG because of LDR tomorrow come NEG-can COMP fear
 Embedded clause
 ‘Because of me₂, Anyo₁ is afraid that she_{1/*2/*3} is unable to come tomorrow.’
- b. **at nyop**₁ nga yy ddi mu **cy**_{1/2} mup shy dex la ap-dop su jie.
 anyo 1P.SG because of 3P.SG tomorrow come NEG-Can COMP fear
 Embedded clause
 ‘Because of me, Anyo₁ is afraid that she_{1/}/he₂ is unable to come tomorrow.’

4.3.3. *IP* > *LOG*. The logophor cannot be bound by a SOURCE which is the speaker who reports his own utterance (rather the 1st person pronoun or the LDR is used in this case).

- (37) a. ***nga**₁ hxip go **i**_{*1} rre mop ddie cyx bbyp ddix.
 1P.SG say SENT.TOP LOG.SG money COV 3P.SG give QUOT
 ‘*I₁ said that I_{*1} would give him money.’
- b. **nga**₁ hxip go **nga**₁ rre mop ddie cyx bbyp ddix.
 1P.SG say SENT.TOP 1P.SG money COV 3P.SG give QUOT
 ‘I₁ said that I₁ would give him money.’
- c. **nga**₁ hxip go **zyt jie**₁ rre mop ddie cyx bbyp ddix.
 1P.SG say SENT.TOP LDR money COV 3P.SG give QUOT
 ‘I₁ said that I₁ would give him money.’

4.3.3. *LOG* > *2P*. When the speaker reports an utterance of the addressee, the 2nd person pronoun cannot depend on the SOURCE, rather the logophor should represent dependence on the SOURCE.⁹

⁹ Sentence (38a) can be understood as direct speech with additional prosodic marking such as a pause before the reported clause and a raise in pitch. On this reading, the second occurrence of the 2nd person pronoun would be different from the external addressee: “You₁ said ‘You₂ were ill’ ” as opposed to “You₁ said that you₁ were ill” (the intended reading in (38a)).

- (38) a. ***ne**₁ hxip go **ne**_{*1} na ox ddix.
 2P.SG say SENT.TOP 2P.SG ill DYP QUOT
 ‘*You₁ said that you_{*1} were ill.’
- b. **ne**₁ hxip go **i**₁ na ox ddix.
 2P.SG say SENT.TOP LOG.SG ill DYP QUOT
 ‘You₁ said that you₁ were ill.’



4.3.4. *LOG* > *3P*. In the same vein, the logophor rather than the 3rd person pronoun must represent dependence on the 3rd person whose speech is reported.

- (39) a. **ax yi ggex su**₁ hxip go **op**₁ op rro bbo ox ddix.
 child ART.PL say SENT.TOP LOG.PL Xichang go DYP QUOT
 ‘The children₁ said that they₁ had gone to Xichang.’
- b. **ax yi ggex su**₁ hxip go **cop wox**_{*1/2} op rro bbo ox ddix.
 child ART.PL say SENT.TOP 3P.PL Xichang go DYP QUOT
 ‘The children₁ said that they_{*1/2} had gone to Xichang.’

4.3.5. *LOG* > *LDR*. In reported speech, the LOG and LDR are both licensed to depend on the internal SOURCE, but the LDR is excluded.

- (40) a. ***mu hlie**₁ hxip go **zyt jie**_{*1} dde jji ox ddix.
 muhlie say SENT.TOP LDR mature, grow up DYP QUOT
 ‘Muhlie₁ said that he_{*1} is mature now.’
- b. **mu hlie**₁ hxip go **i**₁ dde jji ox ddix.
 muhlie say SENT.TOP LOG.SG mature, grow up DYP QUOT
 ‘Muhlie₁ said that he₁ is mature now.’

4.3.6. *IP* > *3P*. In table 2, third person pronouns are not licensed by an exclusive condition (*not speaker, not addressee*) but as *entities*. Since the speaker and the addressee are also ‘entities’, dependence on the speaker or addressee is blocked by the blocking conditions in table 3.

- (41) a. **nga**₁ lat mop hxie yy tat xi. 
 1P.SG lamo respect should
 ‘I₁ should respect Lamo.’ **I**₁ in D⁰
- b. ***cy**_{*1} lat mop hxie yy tat xi. 
 3P.SG lamo respect should
 ‘He_{*1} should respect Lamo.’ **I**₁ in D⁰

5. Other languages

Mupun (Afro-Asiatic: Nigeria) and Chinese (Sino-Tibetan: China) exhibit SOURCE- and SELF-logophors, respectively. The exclusion and tolerance of forms in these languages follows the same pattern as in

Nuosu. It is captured by the following hierarchies and exemplified in §5.1 and §5.2. English is mentioned for illustration (Safir, 2004b: 87).¹⁰

(42) Blocking & tolerance scales

Nuosu: SDR ▶ 1P ▶ LOG ▶ 2P ▶ LDR ▶ 3P ▶ name
 Mupun: SDR ▶ 1P ▶ 2P ▶ LOG ▶ 3P ▶ name
 Chinese: SDR ▶ 1P ▶ 2P ▶ LDR ▶ 3P ▶ name
 English: Pronoun-SELF >> pronoun >> name

The scales in Mupun and Chinese are derived from a similar empirical procedure as the one in Nuosu. The scales differ between Nuosu and Mupun. In Nuosu, the logophor excludes the 2nd person pronoun in representing dependency on a SOURCE, whereas in Mupun the 2nd person pronoun excludes the logophor. Chinese represents a subsegment of the Nuosu scale.

5.1 Mupun

In Mupun, anaphors, logophors and pronouns encode case and phi-features (gender, number). The logophors are only licensed in reported speech and not, for example, in attitude reports. A cross-linguistic rarity is the existence of logophors which track the secondary addressee, the addressee of the speech that is reported.

Table 4: Anaphors, logophors and pronouns in Mupun (Frajzyngier 1993: 83-133)

Class	Person	Gender	Singular			Plural		
			Subject	Object	Possessive	Subject	Object	Possessive
Anaphors (SDR)	1	M/F	sén	fén		sún	fún	
		M	sák	fúa		súk	fú	
	F	sík	fí					
	3	M	sín	fín		sút	fúr	
		F	sét	fér				
	Logophors (LOG)	SOURCE = Secondary Speaker	M	dí	dín	fín	dũ	dún
F			dê	dê	fér			
Secondary Addressee		M	gwàr		gwár	nūwā		núwá
		F	páa		páa			
Pronouns	1	M/F	n	án	fén	mū	mún	fún
		M	a	hà	fúa			
	F	yi	yì	fí	wū	wún	fú	
	3	M	wù(r)	wùr				fín
		F	wà(r)	wàr	fer	(mo)		fur

On the basis of available information, the binding domains and conditions of six groups of lexical forms can be specified in a similar way as in Nuosu.

¹⁰ One reviewer brought to my attention Polish data published in Frajzyngier (1997:126). In Polish reported speech clauses, subject agreement marking on finite embedded verbs allows the pro-drop of subjects. The elipsed subject of the speech clause is controlled by the SOURCE in the main clause. This phenomenon is not restricted to reported speech clauses but occurs also in other finite embedded clauses. The *pro-drop* mechanism is similar to that of other Slavic languages discussed by Landau (2004: 825-833).

Table 5: Binding in Mupun

Lexical Form z	Binding domain $D(z)$	Type of binding by Y
SDR	$D^1(z)$	depend on c-commanding entity Y
LOG	$D^n(z)$	depend on SOURCE Y
1P	$D^n(z) \cup D^0(z)$	depend on speaker Y
2P	$D^n(z) \cup D^0(z)$	depend on addressee Y
3P	$D^n(z) \cup D^0(z)$	depend on entity Y
name	$D^0(z)$	depend on entity Y with name property

Blocking and tolerance of lexical forms differs from Nuosu in two regards. Firstly, second person pronouns exclude the logophors for representing dependence on the addressee whose speech is reported. Secondly, it is uncertain whether the logophors can depend on multiple antecedents (LOG ? LOG).

Table 6: Blocking & tolerance in Mupun

	\geq	SDR	1P	2P	LOG	3P	name
SDR	>	>	>	>	>	>	>
1P			\approx	>	>	>	>
2P				\approx	>	>	>
LOG					?	>	>
3P						\approx	>
name							>

From this table we can compute the total relation \blacktriangleright which is reflexive and transitive. Because of the transitivity property, we might also represent this table as scale.

(43) The Mupun blocking & tolerance scale

SDR \blacktriangleright 1P \blacktriangleright 2P \blacktriangleright LOG \blacktriangleright 3P \blacktriangleright name

As for the Nuosu scale, the Mupun scale is not motivated by independent features such as anaphora, deixis or referential specification (see §3.2). We illustrate the Mupun scale in subsections §5.1.1 to 5.1.3.

5.1.1. *SDR exclude LOG and pronouns.* In the local clause, anaphors exclude other forms from representing dependency on the c-commanding constituent. This is illustrated for one logophor and for three singular pronouns (Frajzyngier, 1993: 119).

(44) a. ***wu**₁ sat nə **di**₁ cit **di**₁.
 3P.SG.M say COMP LOG.S.SG.M cut LOG.S.SG.M
Embedded clause

Intended meaning: ‘He₁ said that he₁ cut himself₁.’

b. **wu**₁ sat nə **di**₁ cit **si**₁.
 3P.SG.M say COMP LOG.S.SG.M cut SDR
Embedded clause

‘He₁ said that he₁ cut himself₁.’

- (45) a. ***n**₁-cit **án**₁
 1P.SG-cut 1P.SG
 Intended meaning: ‘I₁ cut myself₁.’
- b. **n**₁-cit **sen**₁.
 1P.SG-cut SDR.1P
 ‘I₁ cut myself₁.’
- (46) a. ***y**₁ cit **y**₁
 2P.SG.F cut 2P.SG.F
 Intended meaning: ‘You₁ cut yourself₁.’
- b. **y**₁ cit **sík**₁.
 2P.SG.F cut SDR.2P
 ‘You₁ cut yourself₁.’
- (47) a. ***wu**₁ cit **wùr**₁
 3P.SG.M cut 3P.SG.M
 Intended meaning: ‘He₁ cut himself₁.’
- b. **wu**₁ cit **sín**₁.
 3P.SG.M cut SDR.3P
 ‘He₁ cut hisself₁.’

5.1.2. *First and second person pronouns exclude LOG.* If the speaker reports his own or the addressee’s speech, the secondary speaker logophors cannot represent dependency on the SOURCE, but the 1st / 2nd person pronouns can (Frajzyngier, 1993: 109-111).

- (48) a. ***n**₁ sat n-wur nə **đin**₁ a ngu kwat.
 1P.SG say PREP-3P.SG.M COMP LOG.S.SG.M COP man hunt
Embedded clause
 Intended meaning: ‘I₁ told him that I₁ am a hunter.’
- b. **n**₁ sat n-wur nə **an**₁ a ngu kwat.
 1P.SG say PREP-3P.SG.M COMP 1P.SG COP man hunt
Embedded clause
 ‘I₁ told him that I₁ am a hunter.’
- (49) a. ***a**₁ sat nə ta **đi**₁ đee n-denva.
 2P.SG.M say COMP stop LOG.S.SG.M stay PREP-Denver
Embedded clause
 Intended meaning: ‘You₁ said that you₁ stopped in Denver.’
- b. **a**₁ sat nə ta **a**₁ đee n-denva.
 2P.SG.M say COMP stop 2P.SG.M stay PREP-Denver
Embedded clause
 ‘You₁ said that you₁ stopped in Denver.’

5.1.3. *LOG excludes third person pronouns.* In the report of a third person’s speech, logophors represent dependency on the SOURCE. Third person pronouns cannot represent dependency on the secondary speaker, but depend on another 3rd person mentioned previously (Frajzyngier, 1993: 108).

- (50) a. **wu**₁/**wa**₁/**mo**₁ sat nə **wu**_{*1/2}/**wa**_{*1/2}/**mo**_{*1/2} nas an.
 3P.SG.M/3P.SG.F/3P.PL say COMP 3P.SG.M/3P.SG.F/3P.PL beat 1P.SG
Embedded clause
 ‘He₁/she₁/ they₁ said that he₂/she₂/ they₂ beat me.’
- b. **wu**₁/**wa**₁/**mo**₁ sat nə **đi**₁/**đe**₁/**đu**₁ nas an.
 3P.SG.M/3P.SG.F/3P.PL say COMP LOG.S.SG.M / SG.F / PL beat 1P.SG
Embedded clause
 ‘He₁/she₁/ they₁ said that he₁/she₁/ they₁ beat me.’

In the report of speech addressed to a third person, address logophors represent dependency on the secondary addressee. Third person pronouns are licensed too, but depend on another 3rd person mentioned previously (Frajzyngier, 1993: 113).

- (51) a. n sat n-wur₁/war₁ nə taaji wur₂/war₂ dəm n-kaano
 1P.SG say PREP-3P.SG.M/F COMP PROH 3P.SG.M/3P.SG.F go PREP-Kano
 Embedded clause
 ‘I told him₁/her₁ that he₂/she₂ may not go to Kano.’
- b. n sat n-wur₁/war₁ nə taaji gwàr₁/páa₁ dəm n-kaano
 1P.SG say PREP-3P.SG.M/F COMP PROH LOG.A.SG.M / SG.F go PREP-Kano
 Embedded clause
 ‘I told him₁/her₁ that he₁/she₁ may not go to Kano.’

5.2 Chinese

The Chinese donor form of the Nuosu SDR/LDR is *zìjǐ*. While the Nuosu LDR is subject-oriented, as illustrated in (6), Chinese *zìjǐ* need not be subject-oriented but must depend on a SOURCE or SELF. In the following example quoted from Huang & Liu (2001: 158), the antecedent of *zìjǐ* is the object of the matrix verb.¹¹

- (52) zhāng sān kuā jiǎng zìjǐ₁ xià le lǐ sì₁ yī tiào.
 zhangsan praise LDR frighten DYP lisi NUM.1 jump
 Embedded clause
 ‘That Zhangsan praised him₁ greatly surprised Lisi₁.’

An overview of the anaphor, logophor and pronouns is provided in table 7.

Table 7: Anaphor, logophors and pronouns in Chinese

Class	Person	Number	Core	Possessive
Anaphor	1/2/3	SG/PL	<i>zìjǐ</i>	<i>zìjǐ-de</i>
Logophor	SELF/SOURCE	SG/PL	<i>zìjǐ</i>	<i>zìjǐ-de</i>
Pronouns	1	SG	<i>wǒ</i>	<i>wǒ-de</i>
	2	SG	<i>nǐ</i>	<i>nǐ-de</i>
	3	SG	<i>tā</i>	<i>tā-de</i>
	1	PL	<i>wǒmen</i>	<i>wǒmen-de</i>
	2	PL	<i>nǐmen</i>	<i>nǐmen-de</i>
	3	PL	<i>tāmen</i>	<i>tāmen-de</i>

The binding conditions of these forms are shown in table 8. They are identical with the binding conditions of the corresponding Nuosu forms except for the LDR which in Chinese is not an anaphor (at least not on Safir’s view that subject-orientation is a sufficient condition for anaphorhood).

Table 8: Binding in Chinese

Lexical Form <i>z</i>	Binding domain $D(z)$	Type of binding by <i>Y</i>
SDR	$D^1(z)$	depend on subcommanding entity <i>Y</i>
LDR	$D^n(z)$	depend on SOURCE or SELF <i>Y</i>
1P	$D^n(z) \cup D^0(z)$	depend on speaker <i>Y</i>
2P	$D^n(z) \cup D^0(z)$	depend on addressee <i>Y</i>
3P	$D^n(z) \cup D^0(z)$	depend on entity <i>Y</i>
name	$D^0(z)$	depend on entity <i>Y</i> with name property

¹¹ Disclaimer: Contrary to Huang & Liu’s analysis, about 60 native Chinese students of my syntax class to whom the sentence was presented in a homework assignment claim that the subject Zhāngsān be the antecedent of *zìjǐ*, not the SELF Lisi.

The Chinese blocking conditions are identical with the analogous Nuosu constraints if we take the Nuosu source logophor out of the picture.

Table 9: Blocking & tolerance in Chinese

\geq	SDR	1P	2P	LDR	3P	name
SDR	>	>	>	$\approx / >$	>	>
1P		\approx	>	\approx	>	>
2P			\approx	\approx	>	>
LDR		\approx	\approx	$\approx / >$	\approx	>
3P				\approx	\approx	>
name						>

This table again defines a total order \blacktriangleright that is reflexive and transitive. An alternative representation of \blacktriangleright is the following scale.

(53) The Chinese blocking & tolerance scale

SDR \blacktriangleright 1P \blacktriangleright 2P \blacktriangleright LDR \blacktriangleright 3P \blacktriangleright name

Similar to Nuosu and Mupun, the Chinese scale is not motivated by independent factors such as anaphora or referential specification. Below, we illustrate selected relations of blocking and tolerance.

5.2.1. *SDR* $>$ *SDR*. As the reflexive anaphor is subject-oriented, it cannot represent dependency on a nonsubject in the local clause (example is quoted from Huang & Liu, 2001: 142).

- (54) **zhāng sān₁ sòng gěi lǐ s₂ yī zhāng zìjǐ_{1/*2}-de xiàng piàn.**
 zhangsan send give lisi NUM:1 CL SDR-POSS photo
 ‘Zhangsan₁ gives Lisi₂ a picture of himself_{1/*2}.’

5.2.2. *LDR* \approx *1P*, *2P*, *3P*. The LDR is tolerant with pronouns. In (55a)-(57a), the LDR *zìjǐ* has specific dependent and generic readings. First, it encodes dependence on the SELF-antecedent, and, second, it conveys a generic sense: *it is better to go in person*. On the other hand, the pronouns in (55b)-(57b) also represent dependence on the SELF-antecedent.

- (55) a. **wǒ₁ xiǎng zìjǐ_{1/GEN} qù gèng hǎo.** b. **wǒ₁ xiǎng wǒ₁ qù gèng hǎo.**
 1P.SG think LDR go more good 1P.SG think 1P.SG go more good
 ‘I₁ think it is better if I₁ go/better to go in person.’ ‘I₁ think it is better if I₁ go.’
- (56) a. **nǐ₁ xiǎng zìjǐ_{1/GEN} qù gèng hǎo.** b. **nǐ₁ xiǎng nǐ₁ qù gèng hǎo.**
 2P.SG think LDR go more good 2P.SG think 3P.SG go more good
 ‘You₁ think it is better if you₁ go/better to go in person.’ ‘You₁ think it is better if you₁ go.’
- (57) a. **tā₁ xiǎng zìjǐ_{1/GEN} qù gèng hǎo.** b. **tā₁ xiǎng tā_{1/2} qù gèng hǎo.**
 3P.SG think LDR go more good 3P.SG think 3P.SG go more good
 ‘He₁ thinks it is better to go in person₍₁₎.’ ‘He₁ thinks it is better if he_{1/2} goes.’

6. Conclusion

In a nutshell, the Nuosu forms exclude each other according to the following ranking:

(58) SDR ► LOG ► LDR.

It is impossible to conceive of any theory of feature specification in which the SDR would not have the same feature specification as the LDR. The only difference between SDR and LDR is 'distance' which cannot serve as feature either, since it would create other problems. The Nuosu 'exclusion ranking' cannot be derived from independent principles. If it can't be derived from independent principles, we must state it as an extensional relation.

We have argued that blocking constraints cannot be derived in general from independent factors as proposed by Safir (2004a, b). We thus return to Chomsky's Binding Theory which also states binding and blocking as primitives (Binding Conditions A versus B, C). To put this into the framework of the Hegelian triad: This paper is an 'antithesis' to the 'thesis' of a derivative binding theory. A 'synthesis' would be to claim that blocking can be derived from independent principles in Germanic languages (and probably in languages with similar sets of anaphors), whereas it has primitive status in languages with genuine SOURCE and SELF logophors such as Nuosu, Mupun and Chinese.

Glossary

Expression	Definition (Safir 2004b, Tang 1989; Hagège 1974)
β depends on α	the referential value of β is a function of the interpretative content of α , the antecedent;
β covaries with α	β depends on α ;
β corefers with α	β picks out an entity in the physical world or in the discourse, the same also picked out by α ;
β subcommanded by α	- β is c-commanded by α , or - α is an NP contained in an NP that c-commands β or that subcommands β , and any argument containing α is in subject position;
β bound by α	β depends on α and is c-commanded by α (β depends on α and is subcommanded by α);
β anaphor	β lacks deictic potential and is subject-oriented;
β logophor (narrow)	β covaries with SOURCE;
β logophor (wide)	β covaries with SOURCE or SELF;

List of abbreviations

1P.PL	First person plural	DEM:DD	Discourse deictic demonstrative	PRO	Empty category
1P.SG	First person singular	DP	Determiner phrase	PROG	Progressive
2P.PL	Second person plural	DYP	Dynamic perfect	PRON	Pronoun
2P.SG	Second person singular	DO	Direct object	QUOT	Quotative
3P.PL	Third person plural	F	Female gender	REFL	Reflexive
3P.SG	Third person singular	IO	Indirect object	S	Subject
3P.SG POSS	Third person singular possessive	LOC	Locative Particle	SDR	Short-distance reflexive
ART	Article	LDR	Long-distance reflexive	SG	Singular
CAUS	Causative	LOG	Logophoric	SEND	SEND aspectual auxiliary
CL	Classifier	M	Male gender	SENT.TOP	Sentence topic
CONJ	Conjunction	MOD	Modality	STP	Stative Perfect
COMP	Complementizer	NEG	Negation	TOP	Topic
COP	Copular	NEG.IMP	Negative imperative	TP	Tense phrase
COV	Coverb	NOM	Nominalization	VP	Verb phrase
DOM	Domain	PL	Plural	V	Verb

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