## Marking Definiteness and Universal Quantification via an Overt Situation Pronoun

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**I. Introduction** This paper investigates nominals in Nuosu Yi (Yi, SOV), which employs the morpheme **su**<sup>33</sup> to mark definiteness and universal quantification. It occurs in *definites* contingent on contextually accessible shared knowledge of referents: (1)-(4), while it is obligatory in *universal quantifiers*: (5)-(6). I propose that this morpheme is a morphosyntactic exponence of a situation pronoun in the situation semantics system, explicitly introducing domain restriction (cf. Schwarz 2009, Elbourne 2013, Kratzer 2021). The patterns not only contribute to cross-linguistic landscape of domain restriction of definites (e.g., Gillon 2006) and strong quantifiers (e.g., Giannakidou 2004), but might offer novel morphosyntactic evidence for the existence of situation pronouns.

**II. Core Data** *First*, for Yi definites, (i) the classifier (Clf) must undergo tone sandhi, i.e.,  $[^{33}] \rightarrow [^{44}]$ : (3); (ii) [N+Clf<sup>44</sup>] phrases are restricted to singular definites: (1)-(4). In (1): a larger situation and (2): an immediate situation,  $\mathbf{su}^{33}$  is *optional* if both A and B share the knowledge of the referents, e.g., 'the sun' in the actual world or 'the river' in the village: ...[( $\mathbf{su}^{33}$ )]<sup>C1/C3</sup>, yet it is *obligatory* if such shared knowledge is absent, e.g., 'the sun' in a different world or 'the river' not familiar to all interlocutors: ...[\*( $\mathbf{su}^{33}$ )]<sup>C2/C4</sup>. For anaphoric definites: (3),  $\mathbf{su}^{33}$  is consistently *optional*, yet it is *obligatory* if the definite is interpreted relative to a salient context: (4).

- (1) C1: A and B are talking about their friend Muga's daily routine, and A remarked:
  C2: A is reading a story about the hero Muga from a children's storybook to her daughter: [ho<sup>33</sup>bu<sup>33</sup>-ma<sup>44</sup>-[(su<sup>33</sup>)]<sup>C1</sup>/[\*(su<sup>33</sup>)]<sup>C2</sup>] du<sup>33</sup>-la<sup>33</sup> thu<sup>33</sup>ko<sup>33</sup>, tsh<sup>33</sup> dza<sup>33</sup> dzu<sup>33</sup> o<sup>44</sup>.
  sun-Clf:DEF-SU out-come when 3SG food eat Asp 'When the sun rose, he (already) ate some food.'
- (2) C3: A and B are walking around the only river in their own village. A said:
  C4: A and B are walking around the only river in A's village, B is from another city. A said: [la<sup>33</sup>da<sup>33</sup>-tci<sup>44</sup>-[(su<sup>33</sup>)]<sup>C3</sup>/[\*(su<sup>33</sup>)]<sup>C4</sup>]-ko<sup>33</sup> a<sup>44</sup>so<sup>33</sup>mo<sup>33</sup> hu<sup>33</sup>-a<sup>44</sup>ni<sup>33</sup>-tci<sup>33</sup> dzo<sup>33</sup>. river-Clf:DEF-SU-LOC before fish-many-Clf have 'There used to be an abundance of fish in the river.'
- (3)  $\eta a^{33} [a^{44}\eta e^{33} ma^{33}] mo^{33} ndzo^{33} [a^{44}\eta e^{33} ma^{44} (su^{33})] ndzuu^{33} dz_1^{33} ndzuu^{33}$ . 1SG cat-Clf see-PAST cat-Clf:DEF-SU beautiful-very-beautiful 'I saw a cat. **The cat** is very beautiful.' (The hearer knew **the cat** based on the first sentence.)
- (4) ŋa<sup>33</sup> [sŋ<sup>33</sup>bo<sup>33</sup>-la<sup>31</sup>vu<sup>55</sup>] [a<sup>44</sup>ŋe<sup>33</sup>-ma<sup>44</sup>-\*(su<sup>33</sup>)] he<sup>33</sup>vu<sup>33</sup>.
  1SG tree-under cat-Clf:DEF-SU like
  'I like the cat under the tree.' (The hearer doesn't know the cat before (4) is uttered.)

*Second*, [N+Clf<sup>33</sup>+su<sup>33</sup>] phrases can be ambiguous between a universal quantifier and an indefinite reading (no definite reading) when serving as *subjects/topics*: (5), but not as objects: (6).

- (5) (zo<sup>44</sup>du<sup>33</sup>-ko<sup>33</sup>) [co<sup>33</sup>-ma<sup>33</sup>-\*(su<sup>33</sup>)] (li<sup>33</sup>) dzu<sup>33</sup>mo<sup>31</sup>-va<sup>55</sup> tu<sup>55</sup> o<sup>44</sup>.
   school-LOC person-Clf-SU TOP money-Clf donate Asp
   ✓ '(In school) every person donated a dollar.' / ✓ '(In school) a person donated a dollar.'
- (6) (zo<sup>44</sup>dui<sup>33</sup>-ko<sup>33</sup>) mu<sup>44</sup>ga<sup>33</sup> (li<sup>33</sup>) [co<sup>33</sup>-ma<sup>33</sup>-\*(su<sup>33</sup>)] mo<sup>33</sup>-ndzo<sup>33</sup>.
  school-LOC Muga TOP person-Clf-SU see-PAST
  ✗ '(In school) Muga saw every person.' / ✓ '(In school) Muga saw a person.'

## Q: How does su<sup>33</sup> help achieve definiteness and universal quantification in Yi nominals?

<u>III. su<sup>33</sup> Introduces Domain Restriction</u> *First*, su<sup>33</sup> may occur in novel contexts without asserting uniqueness of referents: (7a), where it only facilitates the interpretation of *some buffalo* as strong within a particular context, e.g., a farm. A parallel pattern arises in nominals containing *only*: (7b), where the absence of specific contexts renders  $su^{33}$  obligatory.

(7) a.  $[la^{31}bu^{33}-a^{44}fu^{33}-su^{33}]$  ho<sup>55</sup> $lu^{33}$  o<sup>44</sup>. b.  $[zui^{33}-a^{44}ti^{33}-ma^{44}-*(su^{33})]$  b $\underline{u}^{33}ma^{33}$  zo<sup>33</sup> bo<sup>33</sup>. buffalo-strong-SU run Asp 'A/Several strong buffalo ran away.' b.  $[zui^{33}-a^{44}ti^{33}-ma^{44}-*(su^{33})]$  b $\underline{u}^{33}ma^{33}$  zo<sup>33</sup> bo<sup>33</sup>. son-only-Clf:DEF-SU character learn go 'The only son (in *x*'s family) went to school.'

For (7b), native speakers reported that  $su^{33}$  facilitates the inference that the referent necessarily belongs to *a specific family*. The felicity of the nominal in (7b) usually depends on a contextually supplied set of individuals (Sharvit 2015). The obligatory use of  $su^{33}$  seems to ensure the availability of this contextually supplied set. *Second*, the nominal in (8) containing  $su^{33}$  must be interpreted as *three red apples* introduced in the preceding discourse; it cannot refer to wholly new ones. (8)  $mu^{44}ka^{33} sl^{31}ni^{33} vu^{33} o^{44}$ .  $na^{33} [sl^{31}ni^{33}-su^{33}-su^{33}-su^{33}-ma^{33}] dzu^{33} o^{44}$ .

Muga apple buy Asp 1SG apple-red-SU-three-Clf eat Asp

'Muga bought apples. I ate three red apples (which are among the apples Muga bought).' This suggests that su<sup>33</sup> forces the nominal to refer to objects already under discussion. Thus, I argue that one important function of **su<sup>33</sup>** is to explicitly introduce domain restriction for nominals. IV. su<sup>33</sup> Expones a Situation Pronoun *First*, the absence of su<sup>33</sup> does not preclude the definite interpretations of nominals: (1-C1)/(3), nor does its presence necessarily lead to definite interpretations of nominals: (5)/(6)/(7a). Thus, it should not be analyzed as a definite article, contra Jiang (2018). Instead, given that  $[N+Clf^{44}]$  phrases can independently function as definites: (1-C1)/(3), I propose that Clf<sup>44</sup> serves as a definite article (glossed as Clf:DEF). Specifically, a covert  $\iota$  with a phonological reflex [44] is introduced in D, which is phonologically supported by classifiers that move to D (cf. Cheng and Sybesma 2005): (11). Second, since su<sup>33</sup> introduces domain restriction, one option is to posit that it contributes a context variable C (cf. von Fintel 1994). Yet, a significant challenge for this approach lies in accounting for the universal quantifier reading introduced by [N+Clf<sup>33</sup>+su<sup>33</sup>] phrases: (5)-(6), despite the absence of a dedicated morpheme corresponding to every. If  $su^{33}$  merely contributes a C, the sequence would be expected to only mean 'a person (in a context)', contrary to observations. Particularly, the structural sensitivity of the sequence: (5) vs. (6) would be left unexplained. *Third*, (1-4) illustrate that (i) definites with an obligatory presence of  $su^{33}$  are interpreted relative to a topic situation or a salient situation introduced by an overt adverbial; and (ii) definites with an optional occurrence of su<sup>33</sup> are interpreted with respect to a salient situation characterized by shared knowledge of the referents. This interpretive difference seems to parallel two distinct approaches to interpreting definites in situation semantics. (9) a.  $[s_{\text{topic}}[topic[\Sigma_1[[[\text{the NP}]s_1]VP]]]] \rightarrow b. \quad \lambda s.s \approx s_{\text{topic}} \& \exists !x.NP(x)(s) \& \iota x.VP(x)(s)$ 

(10) a.  $[s_{topic}[topic[[[[the NP]s_r]VP]]]] \rightarrow b. \lambda s.s \approx s_{topic} \& \exists !x.NP(x)(g(r)) \& tx.VP(x)(s)$ A definite inherently contains a silent situation pronoun that determines options available for its interpretation. Situation pronouns are seen as introducing indexed variables (e.g., Schwarz 2009): (i) they can be identified with the topic situation via coindexing with the binding operator  $\Sigma$  adjoined below topic: (9); or (ii) they can be interpreted as a contextually salient situation by receiving a value via an assignment function, i.e., g(r): (10). The interpretive variation among Yi definites suggests that  $su^{33}$  introduces domain restriction by contributing a variable within definites, the value of which can be either bound or free. Yi definites appear to utilize a morphosyntactic mechanism, i.e., the occurrence of  $su^{33}$ , to determine the resolution of this variable: (i) if it obligatorily occurs, the variable must be bound: (1-C2)/(2-C4)/(4); or (ii) if it optionally occurs, the variable receives its value via an assignment function: (1-C1)/(2-C3)/(3). *Thus*, I propose that  $su^{33}$  serves as the morphosyntactic exponence of a situation pronoun. It is expected that if the variable introduced by  $su^{33}$  in the nominal in (5) is bound by various binders, ambiguity would arise.

**V. Proposal** *First*, the definite in (2) is assigned the structure in (11). I assume that NP, as the complement of ClfP, moves to [Spec, DP] to yield the correct word order (cf. Simpson 2005).  $\iota$  is defined in (12) based on Elbourne (2013), and N (Schwarz 2009) and Clf (Jenks 2018) in (13).

(11)  $\left[\left[_{DP}\left[_{NP} la^{33} da^{33} \text{ 'river'}\right]_{i} \left[_{D'}\left[_{D} t \varsigma i^{44}\right]_{j} \left[_{ClfP}\left[_{Clf} t_{j}\right] t_{i}\right]\right]\right] \mathbf{su}^{33}\right] \text{ 'the river'}$ 

(12)  $\llbracket \iota \rrbracket = \lambda f_{\langle e, st \rangle} \lambda s : s \in D_s \& \exists ! x f(x)(s) = 1 \cdot \iota x f(x)(s) = 1$ 

(13) a.  $[[N]] = \lambda x \lambda s. P(x)(s)$  b.  $[[Clf]] = \lambda P \lambda x \lambda s. [P(x)(s) \& AT(x)]$  (*AT* for atomic function) (14)  $[[(11)]] = [[DP]]([[su<sup>33</sup>]]) = \exists !x[river(x)(g(1)/s^*) \& AT(x)].\iotax[river(x)(g(1)/s^*) \& AT(x)]$ 

In (14), **su**<sup>33</sup>, which expones a situation pronoun, saturates the situation variable and returns  $s^*$ . (14) is then felicitous if: (i)  $s^*$  is bound by the binding operator  $\Sigma$  adjoined below topic, i.e., the topic situation that contains exactly one river: obligatory occurrence of **su**<sup>33</sup>; or (ii)  $s^*$  receives a contextually accessible value g(1), i.e., shared knowledge of the referent: optional occurrence of **su**<sup>33</sup> (cf. Schwarz 2012). *Second*, building on Schein (2016), I take it that higher adverbials in (5)-(6) function to modify 'framing situations', i.e., a plurality of situations, with the topic situation asserted to be one of them. Structurally, there is a Framing Phrase (FrameP) above TP with a silent head  $\emptyset_{\text{Frame}}$  that is functionally analogous to a quantifier: TP is of type  $\langle s,t \rangle$ , and  $\emptyset_{\text{Frame}}$  is of type  $\langle st, \langle st,t \rangle \rangle$  (cf. Hacquard 2010, Wellwood 2022). I propose that two possible structures are responsible for the ambiguity in (5), i.e., two potential binders are structurally available.

(16)  $[F_{rame} [F_{rame}, \emptyset_{Frame}] [\beta [T_{opP}] [[person-Clf^{33}] s_j]_{2/3} [topic [\Sigma_j [T_P t_2 [V_P...t_3]...]]]]]]$ An overt topic marker may occur in (5). (i) If the sequence 'person-Clf^{33}-su^{33}' is base-generated in [Spec, TopP] (Yi is a pro-drop language): (15), the binding operator  $\beta$  adjoined below the Frame head binds the situation pronoun *s* that su^{33} expones the way *every* binds a pronoun, which results in a bound reading (i.e., a universal quantifier): for every situation *s*, a person in *s* donated a dollar in *s*. (ii) If the sequence is base-generated in the subject position  $t_2$ : (5) or object position  $t_3$ : (6) or moved to [Spec, TopP]: (16), *s* is always bound by the binding operator  $\Sigma$  adjoined below the topic situation, given Have Local Binding! (Büring 2005), i.e., 'a person in *s* donated a dollar in *s*', which results in an indefinite reading, if the topic situation contains exactly one person.

## Selected References.

Büring, D. (2005). Binding Theory. Cambridge: Cambridge University Press.

- Cheng, L. and Sybesma, R. (2005). Classifiers in Four Varieties of Chinese. In Cinque, G. and Kayne, R., editors, <u>Oxford Handbook of Comparative Syntax</u>, chapter 7, pages 259–292. Oxford University Press.
- Elbourne, P. (2013). Definite Descriptions. Oxford: Oxford University Press.
- Giannakidou, A. (2004). Domain restriction and the arguments of quantificational determiners. In Young, R. B., editor, <u>Proceedings of SALT XIV</u>, pages 110–128. Ithaca, NY: CLC Publications.
- Gillon, C. (2006). <u>The Semantics of Determiners: Domain Restriction in Skwxwú7mesh</u>. PhD thesis, University of British Columbia.
- Jiang, L. J. (2018). Definiteness in Nuosu Yi and the theory of argument formation. <u>Linguistics</u> and Philosophy, 41:1–39.
- Schein, B. (2016). Noughty bits: the subatomic scope of negation. Linguistics and Philosophy, 39:459–540.
- Schwarz, F. (2009). <u>Two Types of Definites in Natural Language</u>. PhD thesis, University of Massachusetts, Amherst.
- von Fintel, K. (1994). <u>Restrictions on Quantifier Domains</u>. PhD thesis, University of Massachusetts, Amherst.