Encoding Domain Restrictions via an Overt Situation Pronoun

I. Introduction This paper investigates nominal phrases in Nuosu Yi (Yi), which employs the morpheme **su^{33}** to mark definiteness and universal quantification. It occurs in *definite nominals* contingent on the contextually accessible shared knowledge of referents: (1)-(3), while it is consistently obligatory in *universal quantifiers*: (4). I propose that this morpheme is a morphosyntactic exponence of a situation pronoun in the situation semantics system, encoding domain restriction (cf. Elbourne 2005, Schwarz 2009, Kratzer 2021). The observed patterns not only contribute to cross-linguistic landscape of domain restrictions of definites (e.g., Westerståhl 1984, Gillon 2006) and strong quantifiers (e.g., von Fintel 1994, Giannakidou 2004, Etxeberria 2009), 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}] →[^{44}]: (3a); (ii) [N+Clf^{44}] is restricted to singular definites: (1)-(2); and (iii) the numeral tshɿ^{31} 'one' is disallowed to occur in pre-Clf position: (3a). In (1): a larger situation and (2): an immediate situation, **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: ...[(**su^{33}**)]$^{\mathbf{C1/C3}}$, 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: ...[*(**su^{33}**)]$^{\mathbf{C2/C4}}$. For anaphoric definites: (3a), **su^{33}** is consistently *optional*, yet it is *obligatory* if the definite is interpreted relative to a salient context: (3b).

(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^{33}bu^{33}-ma^{44}-[(**su^{33}**)]$^{\mathbf{C1}}$/[*(**su^{33}**)]$^{\mathbf{C2}}$] du^{33}-la^{33} thɯ^{33}ko^{33}, tshɿ^{33} dʑa^{33} dʑɯ^{33} o^{44}.
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^{33}da^{33}-tɕi^{44}-[(**su^{33}**)]$^{\mathbf{C3}}$/[*(**su^{33}**)]$^{\mathbf{C4}}$]-ko^{33} a^{44}ʂo^{33}mo^{33} hɯ^{33}-a^{44}ȵi^{33}-tɕi^{33} dʑo^{33}.
river-Clf:DEF-SU-LOC previous fish-many-Clf have
'There used to be an abundance of fish in **the river**.'

(3) a. ŋa^{33} [a^{44}ȵe^{33}-(tshɿ^{31})-ma^{33}] mo^{33}-ndʑo^{33}. [a^{44}ȵe^{33}-(*tshɿ^{31})-ma^{44}-(**su^{33}**)] ndzɯ^{33}-dʐɿ^{33}-ndzɯ^{33}.
1SG cat-one-Clf see-PAST cat-one-Clf:DEF-SU pretty-very-pretty
'I saw a cat. **The cat** is very pretty.' (The hearer already knew **the cat** based on the first sentence.)

b. ŋa^{33} [**sɿ^{33}bo^{33}-la^{31}vu^{55}**] [si^{33}n̩i^{33}-ma^{44}-*(**su^{33}**)] he^{33}vu̱^{33}.
1SG tree-under girl-Clf:DEF-SU like
'I like **the girl** under the tree.' (The hearer doesn't know **the girl** before the utterance of (3b).)

Note that Yi definites do not display morphosyntactic distinction between strong and weak definites (Gerner 2013). ***Second***, [NP+Num+Clf+**su^{33}**] can be ambiguous between **a universal quantifier** and **an indefinite** reading when it occurs *exclusively* in the subject or topic position: (4a), but not in the object position: (4b).

(4) a. (zo^{44}dɯ^{33}-ko^{33}) [co^{33}-tshɿ^{31}-ma^{33}-*(**su^{33}**)] (li^{33}) dʐɯ^{33}mo^{31}-tshɿ^{31}-va^{55} tu^{55} o^{44}.
school-LOC person-one-Clf-SU TOP money-one-Clf donate Asp
✓'(In school) **every person** donated a dollar.' / ✓'(In school) **a person** donated a dollar.'

b. (zo^{44}dɯ^{33}-ko^{33}) mu^{44}ga^{33} [co^{33}-tshɿ^{31}-ma^{33}-*(**su^{33}**)] mo^{33}-ndʑo^{33}.
school-LOC Muga person-one-Clf-SU see-PAST
✗ '(In school) Muga saw **every person**.' / ✓ '(In school) Muga saw **a person**.'

Q: How does su^{33} help achieve definiteness and universal quantification in Yi nominals?

III. su^{33} Encodes Domain Restriction Beyond familiar contexts: (3a), **su^{33}** may occur in novel contexts without asserting uniqueness of referents: (5a), where its presence only facilitates the interpretation of *the buffalo that ran away* as strong within a particular context, e.g., a farm. A parallel phenomenon arises in nominals containing *only*: (5b), where the absence of specific contexts renders the use of **su^{33}** obligatory.

(5) a. [la^{31}bu^{33}-a^{44}fu^{33}-**su^{33}**] ho^{55}ɬu^{33} bo^{33} o^{44}. b. [zɯ^{33}-**a^{44}ti^{33}**-ma^{44}-*(**su^{33}**)] bu̱^{33}ma^{33} zo^{33} bo^{33}.
buffalo-strong-SU run go Asp son-only-Clf:DEF-SU character learn go
'**A/Several** strong buffalo ran away.' '**The only son** (in *x*'s family) went to school.'

Native speakers' judgement regarding (5a) suggests that **su^{33}** functions to impose domain restriction for the interpretation of the gradable adjective. It constrains the set of buffalo within which *the buffalo that ran away* can be evaluated as strong (Kennedy and McNally 2005). For (5b), native speaker reported that the occurrence of **su^{33}** facilitates the inference that the referent necessarily belongs to *a specific family*. The felicity of the nominal in (5b) usually depends on the presence of a contextually supplied set of individuals (Sharvit 2015). Namely, the obligatory use of **su^{33}** in (5b) seems to ensure the availability of this contextually supplied set. If this idea is on the right track, we expect that in a context where multiple objects have been introduced, **su^{33}** must occur in a nominal referring to the maximal object sum under discussion: (6).

(6) mu^{44}ka^{33} sɿ^{31}n̥i^{33} vu^{33} o^{44}. tshɿ^{31}-a^{44}mo^{33} [sɿ^{31}n̥i^{33}-gɯ^{44}-*(**su**^{33})-mu^{33}] ʥɯ^{33} o^{44}.
Muga apple buy PERF. 3SG.GEN-mom apple-Clf:DEF-SU-all eat PERF
'Muga bought **apples**. His mom ate **all the apples**.'

The bracketed nominal in (6) refers to the set of apples under discussion, not a wholly new set of apples. ***Thus***, I argue that **su**^{33} encodes domain restriction for nominals (cf. Giannakidou 2004; Gillon 2006).

III. su^{33} Expones a Situation Pronoun ***First***, the absence of **su**^{33} does not preclude the definite interpretations of nominals in appropriate contexts: (3a), nor does its presence necessarily lead to definite interpretations: (5a). Thus, it should not be characterized as a definite article (Jiang 2018). Instead, given that [N+Clf^{44}] phrases can independently function as definites under appropriate contexts: (1-**C1**), (2-**C3**), and (3a), I propose that Clf^{44} serves as **a definite article** (glossed as Clf:DEF). Specifically, a covert ι with a phonological reflex [^{44}] is introduced in D, which is phonologically supported by classifiers that move to the D head (cf. Cheng and Sybesma 2005): (9). ***Second***, since **su**^{33} encodes domain restriction, one option is to propose that it contributes a contextual set ***C*** (cf. von Fintel 1994). Yet, a significant challenge for this approach lies in accounting for the universal quantifier reading introduced by [NP+Num+Clf+**su**^{33}]: (4a), despite the absence of a dedicated morpheme corresponding to *every*. If **su**^{33} merely contributes a ***C***, the sequence in (4a) would be expected to only mean 'one person (in a relevant context)', contrary to observations. ***Third***, (1)–(3) illustrate that definites with the obligatory presence of **su**^{33} are interpreted relative to a topic situation or a contextually salient situation introduced by an overt adverbial. In contrast, definites featuring an optional occurrence of **su**^{33} are interpreted with respect to a salient situation characterized by shared knowledge of the referents. This distinction in the interpretation of definites parallels the treatment of definites in the situation semantics system (Schwarz 2009, Elbourne 2013), as sketched in (7) and (8).

(7) a. $[s_{\text{topic}}[\textit{topic}[\boldsymbol{\Sigma}_1[[[\text{the NP}]\boldsymbol{s}_1]\text{VP}]]]] \longrightarrow$ b. $\lambda \boldsymbol{s}.\boldsymbol{s} \approx \boldsymbol{s}_{\text{topic}}$ & $\exists!x.\text{NP}(x)(\boldsymbol{s})$ & $\iota x.\text{VP}(x)(\boldsymbol{s})$

(8) a. $[s_{\text{topic}}[\textit{topic}[[[\text{the NP}]s_{\mathbf{r}}]\text{VP}]]] \longrightarrow$ b. $\lambda s.s \approx s_{\text{topic}}$ & $\exists!x.\text{NP}(x)(\boldsymbol{g}(\text{r}))$ & $\iota x.\text{VP}(x)(s)$

As situation pronouns are seen as introducing indexed variables, both standard options for interpreting pronouns are available (cf. Schwarz 2009): (i) they can be identified with the topic situation via the binding operator Σ adjoined below topic, i.e., coindexed with Σ: (7); or (ii) they can be interpreted as a contextually salient situation by receiving a value via the assignment function, i.e., $\boldsymbol{g}$(r): (8). The patterns presented in (1)-(3) strongly suggest that **su**^{33} encodes domain restriction by introducing a variable within definites whose value can either be bound or free. More specifically, Yi definites appear to utilize a morphosyntactic mechanism—namely, the occurrence of **su**^{33}—to determine the resolution of this variable: (i) if it obligatorily occurs, the variable must be bound by a topic situation or by a salient situation introduced through overt adverbials: (7); or (ii) if it optionally occurs, the variable receives its value via an assignment function: (8). ***Thus***, I propose that **su**^{33} serves as the morphosyntactic exponence of a situation pronoun in Yi nominals.

IV. Proposed Analyses ***First***, I propose that the definite nominal in (2) has the structure in (9).

(9) $[[_{\text{DP}}\ [_{\text{NP}}\ \text{la}^{33}\text{da}^{33}$ 'river'$]_i\ [_{\text{D'}}\ [_{\text{D}}\ \text{tɕi}^{44}\ ]_j\ [_{\text{ClfP}}\ [_{\text{Clf}}\ \text{t}_j]\ \text{t}_i]]]$ **su**^{33}] 'the river'

(10) $[\![\iota]\!] = \lambda f_{\langle e,st\rangle}\lambda s : s \in D_s$ & $\exists!x\, f(x)(s) = 1.\iota x\, f(x)(s) = 1$

(11) a. $[\![\text{N}]\!] = \lambda x\lambda s.P(x)(s)$ b. $[\![\text{Clf}]\!] = \lambda P\lambda x\lambda s.[P(x)(s)$ & $AT(x)]$ (AT for atomic function)

(12) $[\![(9)]\!] = [\![\iota]\!]([\![\text{ClfP}]\!]) = \exists!x[\textbf{river}(x)(\boldsymbol{g}(1)/s^*)$ & $AT(x)].\iota x[\textbf{river}(x)(\boldsymbol{g}(1)/s^*)$ & $AT(x)]$

In (9), I assume that NP, as the complement of ClfP, moves to [Spec, DP] to yield the correct word order (cf. Simpson 2005). I define the covert ι in (10) following Elbourne (2013), and N (cf. Schwarz 2009) and Clf (cf. Jenks 2018) in (11). In (12), **su**^{33}, which expones a situation pronoun, saturates the situation variable and returns s^*. (12) is then felicitous if: (i) s^* is bound by the topic situation that contains exactly one river: obligatory occurrence of **su**^{33}; or (ii) s^* receives a contextually accessible value $\boldsymbol{g}(1)$, i.e., shared knowledge of the referent: optional occurrence of **su**^{33}. ***Second***, building on Schein (2016), I take it that higher adverbials: (4a) 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 $\varnothing_{\text{Frame}}$ that is functionally analogous to a quantifier: TP is of type $\langle s,t\rangle$, and $\varnothing_{\text{Frame}}$ is of type $\langle st,\langle st,t\rangle\rangle$ (cf. Wellwood 2022). I propose that two possible structures are responsible for the ambiguity in (4a).

(13) $[_{\text{FrameP}}[_{\text{Frame'}}\ \varnothing_{\textbf{Frame}}\ [\ \boldsymbol{\beta_i}\ [_{\text{TopP}}[[\text{person-one-Clf}]\ \mathbf{s}_i]_1\ [\ \textit{topic}\ [\ \boldsymbol{\Sigma}\ [_{\text{TP}}\ \textbf{pro}_1\ [_{\text{VP}}\ldots]\ldots]]]]]]]$

(14) $[_{\text{FrameP}}[_{\text{Frame'}}\ \varnothing_{\textbf{Frame}}\ [\ \boldsymbol{\beta}\ [_{\text{TopP}}[[\text{person-one-Clf}]\ \mathbf{s}_j]_2\ [\ \textit{topic}\ [\ \boldsymbol{\Sigma}_j\ [_{\text{TP}}\ \mathbf{t}_2\ [_{\text{VP}}\ldots]\ldots]]]]]]]$

An overt topic marker may occur in (4a). If the sequence 'person-one-Clf-**su**^{33}' is base-generated in [Spec, TopP] (Yi is a pro-drop language): (13), the situation pronoun s that **su**^{33} expones is bound by the Frame head operator β, which results in a bound reading (i.e., a universal quantifier): for every situation s, a person in s donated a dollar in s. If the sequence is base-generated in the subject or object position: (4b) or moved to [Spec, TopP]: (14), it is always bound by the topic situation operator Σ, given Have Local Binding! (Büring 2005), which results in an indefinite reading, if the topic situation contains exactly one person.

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