From Existential to Universal to Negative: The Dagbani *so*

Indefinites in natural language have been analyzed under two primary theoretical approaches. On one view, indefinites are existential quantifiers (Heim, 1982; Kratzer, 1998). They introduce an existential variable within their local domain of interpretation, and any specificity or wide-scope reading arises from discourse or pragmatic enrichment. Under this analysis, an indefinite like a teacher is interpreted compositionally as ∃x[teacher(x)]. Alternatively, indefinites have been analyzed as choice function (CF) variables (Reinhart, 1997; Kratzer, 1998). In this approach, an indefinite denotes a function (f) that selects an individual from a contextually supplied set. Existential closure over (f) produces a nonspecific reading, while leaving (f) free yields a specific or contextually salient individual. CF analyses have been influential in capturing specificity effects and apparent scope rigidity phenomena in embedded or intensional environments.

However, CF analyses predict scopal flexibility that is not universally attested. In particular, they allow for wide-scope or island-escaping interpretations that, as we will see, do not emerge in Dagbani.

The Dagbani puzzle: Dagbani, a Mabia language spoken in northern Ghana, exhibits a remarkable pattern in which a single morpheme, *so*, participates in multiple quantificational environments.

Bare *so* functions as an indefinite pronoun restricted to [+animate] entities.

(1) So di-ya.
SO eat-DJ
'Somebody ate.'

NP + *so* yields a specific indefinite 'a certain N'.

(2) karimba so
teacher SO
'some/a certain teacher'

so-kam expresses universal quantification 'everybody'.

(3) So-kam di-ya.
SO-∀ eat-DJ
'Everybody ate.'

so-so occurs only under sentential negation, functioning as a polarity-sensitive item 'nobody'.

(4) So-so bi di.
SO-SO NEG eat
'Nobody ate.'

so is also seen in relative clauses (Mursell and Hartmann, 2025).

(5) bihi ni yu-ri bua so maa
children COMP like-IPFV goat SO DET
'a goat that the children like'

Reduplication of existentials yielding a polarity sensitve item is not general across all other existential indefinites in the language. Similar reduplicative strategies for NPIs are attested in related languages such as Buli and Ga (Hiraiwa and Akanlig-Pare, 2022; Sampson, 2016), but Dagbani is unique in restricting the pattern to human referents.

Competing analysis: A possible CF analysis would treat *so* as denoting a variable (f) selecting an individual from a set of humans, f(x|human(x)),[karimba so] f=f(x|teacher(x)). Leaving (f) free yields a specific reading ('a certain teacher'), whereas existential closure produces a non-specific reading ('any teacher'). This has been proposed for the Akan indefinite *bi* (Arkoh, 2011; Bombi et al., 2019; Owusu, 2020). However, the Dagbani data shows that *so* does not exhibit the kind of scope flexibility or island-escaping behavior expected under a choice function

account. For example, *karimba so* can only mean 'a certain teacher' in intensional environments such as, John wants to marry *karimba so*, only the specific interpretation is available, the non-specfic reading of *any teacher* is not available.
Also in embedded clauses *so* cannot scope outside the clause. In relative clauses (5), *so* only allows narrow, local interpretation. These facts indicate that *so* behaves like a standard existential quantifier whose scope is syntactically local. A CF analysis would overgenerate unattested readings.
Proposal: *so* as an existential quantifier and different readings are obtained through the use of an Exhaustive operator.
Following Chierchia (2013), I propose that *so* is an existential quantifier over animates, rather than a variable over choice functions, whose different interpretations arise compositionally via the EXH operator. Scalar alternatives [σ] encode possible strengthening of stronger existential possibilities, while domain alternatives [D] encode distribution over the relevant domain. Evidence of this claim follows from *so* patterning as having an existential force, as it scopes locally and cannot take wide scope across islands.

(6) Adam yɛli ni o bori ni o niŋ karimba so amaliya.
Adam say COMP 3SG want COMP 3SG do teacher SO marriage.
'Adam said that he wants to marry a teacher'
Meaning: "According to Adam's statement, there exists a teacher he wants to marry."
Not "There exists a teacher (in the speaker's view) such that Adam said he wants to marry her." which would be the case if *so* takes scope outside the embedded clause to yield a wide-scope reading.

Further support for the existential analysis comes from relative clause environments. In relative clauses such as (5) *so* receives only a narrow, non-specific interpretation ('some goat that the children like') and cannot refer to a particular or contextually salient individual ('that particular goat that the children like'). Under a choice-function analysis, one would expect *so* to retain its ability to yield specific or wide-scope readings even in such syntactic islands. The absence of such readings in Dagbani therefore indicates that *so* behaves like an ordinary existential quantifier whose interpretation is compositionally local, rather than a choice function variable capable of escaping scope constraints.
Also, *so* combines productively with other quantificational morphemes such as *kam* and this follows naturally under an existential quantifier analysis. As a type $\langle\langle e,t\rangle,t\rangle$, *so* contributes a basic existential and the EXH operator distributes over this existential to yield the various readings seen in the examples above. A choice function analysis which makes *so* of the type $\langle\langle e,t\rangle,e\rangle$ would further complicate the semantics by either assuming a type shifter or existentially close over the choice function before applying the operator O.
To account for the different readings obtained in examples 1-5, I assume Chierchia's model of the use of the EXH operator over the base existential.

Form	Features	Exhaustification structure	Meaning
so	[-σ, -D]	none	existential
so-kam	[-σ, +D]	[ODA($\exists x\varphi(x)$)]	universal
so-so under negation	[+σ, +D]	[$\neg$(OσA(ODA($\exists x\varphi(x)$)))]	NPI 'any'
so under modal	[+σ, +D]	[ODA($\Diamond$(OσA($\exists x\varphi(x)$)))]	FCI 'any'

I argue that the different morphology is just a reflex of the different underlying mechanisms of the EXH operator yielding the different readings.

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