

## Binder Roof Constraint (BRC)

- It has been widely argued that choice functional accounts of indefinites fail to derive the Binder Roof Constraint.
- (1) **Binder Roof Constraint**[1]  
An indefinite cannot scope over a quantifier that binds into its restrictor.
- Under the choice functional analysis, no limitation on the upward scope of indefinites is predicted to exist.
- (2) *Context: Sue wrote two papers  $SP=\{S_1, S_2\}$  but only submitted  $S_1$ , and Mary wrote two papers  $MP=\{M_1, M_2\}$  but only submitted  $M_2$* 
  - No candidate<sub>1</sub> submitted a paper they<sub>1</sub> had written.
  - $(\exists)f[\text{No candidate}_1 \lambda_1 [t_1 \text{ submitted } f \text{ [paper they}_1 \text{ had written.]}]$
- (2) conveys that there's a way of choosing among papers that each candidate wrote such that no candidate submitted whatever paper is selected by  $f$  for them.
- As we can find such a function, namely a function that picks  $S_2$  for Sue, and  $M_1$  for Mary, the choice function account predicts that the sentence (2-a) should be judged true in this scenario, contrary to fact.

## Violations of BRC

- Not all indefinites (both within English and across languages) are subject to the Binder Roof Constraint.
- [10, 11, 4] show that a corresponding sentence containing a *certain* indefinites do in fact have the reading presented in (2).
- The sentence (3) is judged true in the scenario described above.
- (3) No candidate<sub>1</sub> submitted a *certain* paper they<sub>1</sub> had written.
- [9], [2] and [8] show that indefinites in Ga, Tiwa and Farsi pattern with English a *certain* indefinites in their ability to scope above a downward-entailing quantifier that binds into their restrictor.

## Desiderata for Theories of Indefinites

- A successful account of indefinites needs to distinguish between the two kinds of indefinites [10, 11]:
  - Indefinites that are subject to BRC (*a*-type indefinites)
  - Indefinites that are not subject to BRC (*a certain*-type indefinites)
- It should also account for the shared property of these two kinds of indefinites, i.e. **exceptional scope**

### Main claims:

- I argue for a **unified in-situ mechanism** in terms of choice functions for both kinds of exceptional scope taking indefinites.
- I propose a new formalization of Skolemization that separates the functional dependency between DPs from the semantics of indefinite determiners.
  - The indefinite determiner has a uniform semantic contribution.**
  - Functional dependencies are built in NP level.**
- That is, as [13] argues, "*functional interpretations are not, as the Skolemized choice function theory has it, inherent in the semantics of indefinites*".
- The difference between the two kinds of indefinites wrt the Binder Roof Constraint is reduced to the **(un)availability of Presupposition Accommodation** in resolving the referent of the functional variable introduced by Skolemization.

## References

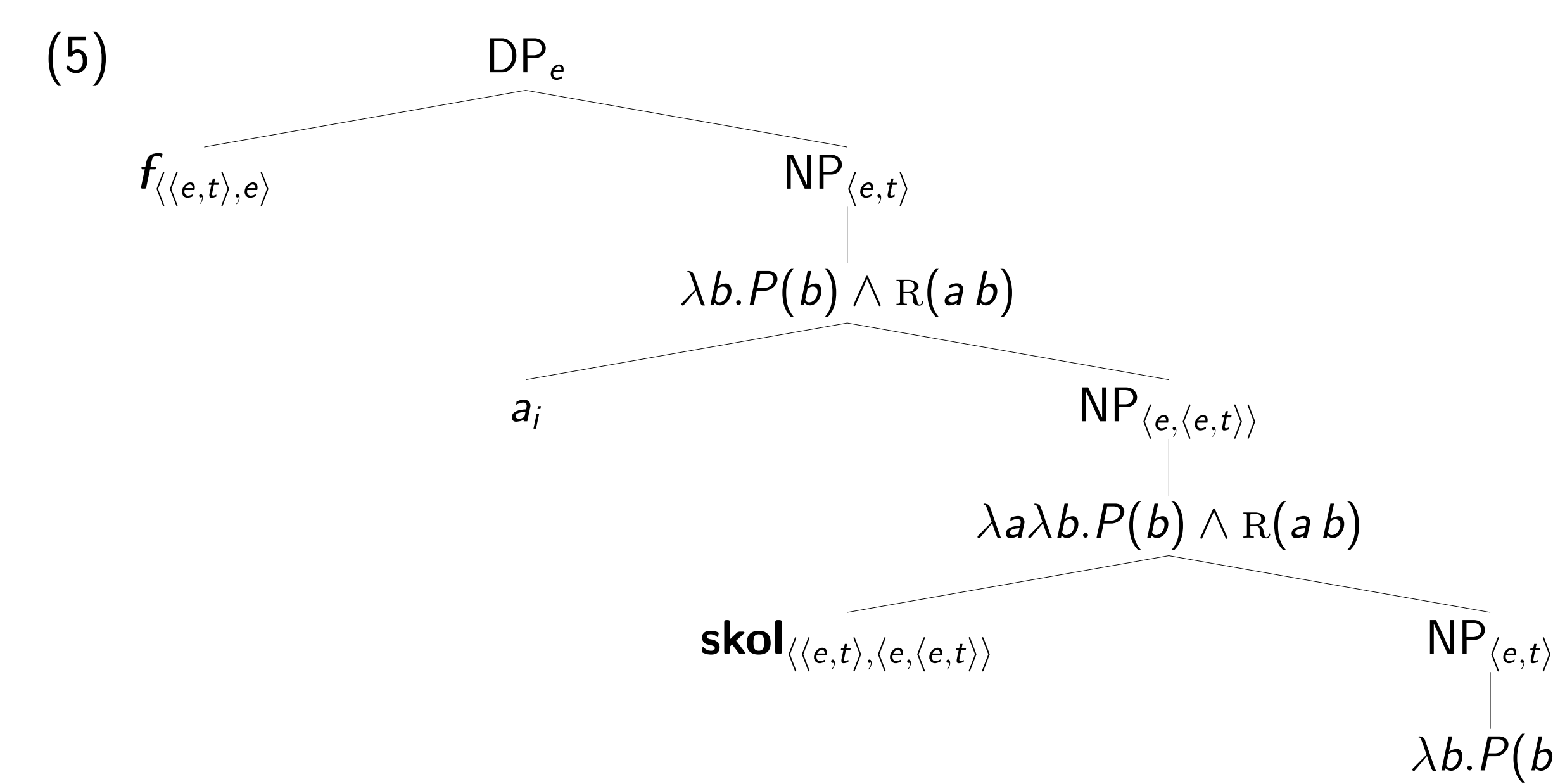
- Brasoveanu, Adrian, & Donka Farkas. 2011. How indefinites choose their scope. *Linguistics and Philosophy* 34:1–55.
- Dawson, Virginia Ellen. 2020. *Existential quantification in tiwa: disjunction and indefinites*. University of California, Berkeley.
- King, Jeffrey C. 2018. Strong contextual felicity and felicitous underspecification. *Philosophy and Phenomenological Research* 97:631–657.
- Kratzer, Angelika. 2003. Scope or pseudoscope? choice functions in context. *Semantics archive*.
- Martí, Luisa, & Tania Ionin. 2018. Wide scope indefinites in russian.
- Matthewson, Lisa. 1999. On the interpretation of wide-scope indefinites. *Natural Language Semantics* 7:79–134.
- Matthewson, Lisa. 2006. Presuppositions and cross-linguistic variation. In *Proceedings of NELS*, volume 36.
- Mirrazi, Zahra. 2023. Indefinites in negated intensional contexts: An argument for world-skolemized choice functions.
- Renans, Agata. 2018. Two types of choice-functional indefinites: Evidence from Ga (Kwa). *Topoi* 37:405–415.
- Schwarz, Bernhard. 2001. Two kinds of long-distance indefinites. In *Proceedings of the thirteenth Amsterdam Colloquium*, 192–197. Citeseer.
- Schwarz, Bernhard. 2011. Long distance indefinites and choice functions. *Language and Linguistics Compass* 5:880–897.
- Schwarzschild, Roger. 2002. Singleton indefinites. *Journal of Semantics* 19:289–314.
- Solomon, Michael. 2011. True distributivity and the functional interpretation of indefinites. *Unpublished ms., New York University*.
- Tonhauer, Judith, David Beaver, Craig Roberts, & Mandy Simons. 2013. Toward a taxonomy of projective content. *Language* 66–109.
- Von Stechow, Kai. 2008. What is presupposition accommodation, again? *Philosophical perspectives* 22:137–170.

## Proposal

- Indefinite determiners denote variables over choice functions (**type rigid**  $\langle\langle e, t \rangle, e\rangle\rangle$ ) which is existentially closed in the topmost level of the derivation [6].
- The dependency between a DP and a higher quantifier is built in the NP level via type-shifting.
- I introduce a type-shifter, which I call SKOL, that builds such a functional dependency by shifting a  $\langle e, t \rangle$ -type noun to an  $\langle e, \langle e, t \rangle \rangle$ -type noun. SKOL introduces:
  - a free **functional variable**  $R$  whose referent is contextually determined (à la [4]'s contextualist account).
  - an **individual variable**  $a_i$ , which has to be bound by a higher quantifier in the structure.

$$(4) \text{ skol } P = \lambda a \in A . \lambda b \in \beta . [ P(b) \wedge R(a, b) ], \text{ where } R \text{ is a function.}$$

- The choice function  $f$  denoted by the indefinite determiner takes this function as argument, and chooses a unique witness for every value of the variable  $a$ :



- This has the effect of narrowing the NP restrictor of the choice function to only those elements in the extension of the NP  $b \in \beta$  that have been mapped to a unique  $a \in A$ .
- The result is a **choice function over a singleton set** (See also [12]).

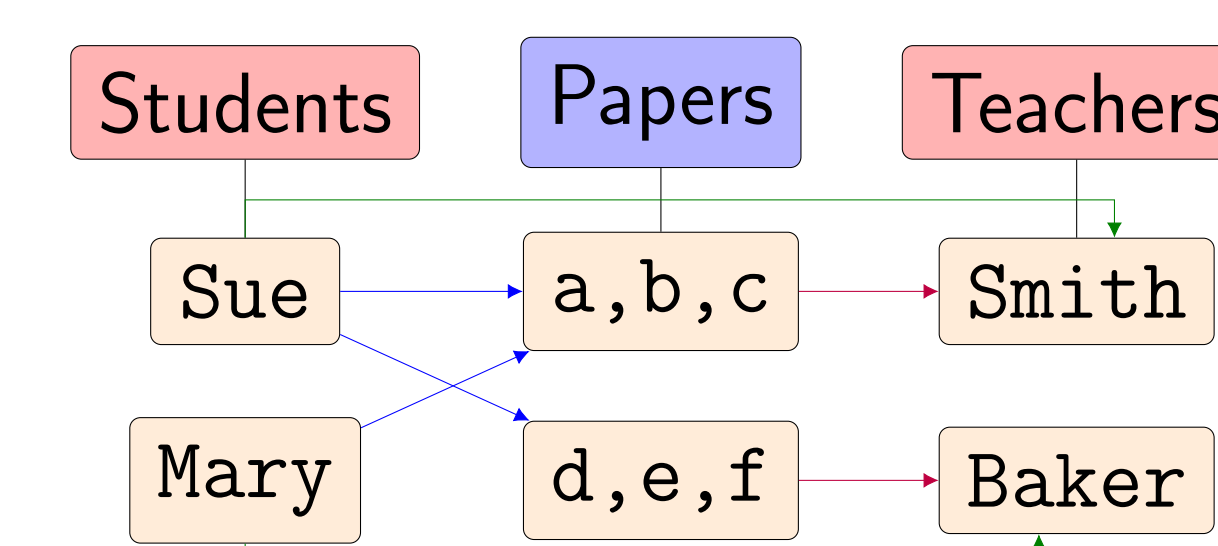
## Referent of The Functional Variable

- The functional variable  $R$  introduced via Skolemization, like other pronouns, triggers a referent/existence implication  $m$  that there is a discourse referent with which the pronoun can be identified.
- The referent/existence implication imposes a **strong contextual felicity condition** (SFC), i.e. the requirement that the trigger can be used felicitously only if the implication associated with the trigger is established in the utterance context [14, 3].
- Given the SFC, the existence of  $R$  has to be entailed in the utterance context:
  - by virtue of the **composition of existing salient relations** in the linguistic context of utterance

$$(6) \text{ Every student read every book praised by some teacher.} \\ \forall x [ \text{Student}(x) \rightarrow \forall y [ \text{book}(y) \wedge \text{praised-by}_2(y, f(R(x, \text{teacher}))) \\ \rightarrow \text{read}_1(x, y) ] ] \\ R(x, \text{teacher}) \subseteq \text{praised-by}(y, \text{teacher}) \circ \text{read}(x, y)$$

- by being **lexically specified**

(7) Every student<sub>i</sub> read every book some teacher they<sub>j</sub> like had praised.



## BRC & Presupposition Accommodation

- The difference between the two kinds of indefinites is the whether or not (or how easily) the referent implication can be accommodated ([14, 7] provide evidence for variation within and across languages concerning the way presuppositions are treated in discourse; e.g. 'also' allows for Accommodation more easily than 'too' does.)
- "As **Presupposition Accommodation depends on the hearers trusting that the speaker knows whereof she is speaking**" [15], the accommodation strategy is expected to be easily available with epistemically specific indefinites which signal **speaker's knowledge**.
- In English, the presence of the NP modifier "*certain*" which overtly signals speaker's commitment makes accommodation possible.

## Deriving BRC & Its Violations

- BRC arises when there is a dependency between the indefinite DP and a higher quantifier but there is no suitable referent for the functional variable  $R$ , and Accommodation is not allowed.**

- Let's consider (8) in the previous context, ignoring 'like' relation for now.

(8)  $\exists f$  [ Not every student<sub>1</sub>  $\lambda_1$  [ t<sub>1</sub> read every book **some** teacher they<sub>1</sub> had **praised** ] ].

- Computing  $R(x, \text{teacher})$  from the composition of the existing relations in the linguistic context (praised-by & read), there are two candidates to serve as a referent of  $R$ :

$$R_1 = \{ \langle \text{Sue}, \text{Smith} \rangle, \langle \text{Mary}, \text{Smith} \rangle \} \quad R_2 = \{ \langle \text{Sue}, \text{Baker} \rangle, \langle \text{Mary}, \text{Smith} \rangle \}$$

- None of these options verifies (8)  $\rightarrow$  it is correctly predicted to be false.
- Note that a Skolemized CF that  $f$  can randomly pick among students and teachers ( $f' = \langle \text{Mary}, \text{Baker} \rangle$ ) wrongly verifies (8) [10].
- Lexically specifying a function is correctly predicted to render a wide scope functional reading:

(9) Not every student<sub>i</sub> read every book **some** teacher they<sub>j</sub> like had **praised**.

- The sentence containing a *certain*-type indefinite (10) is predicted to be true, as  $R$  can be easily accommodated.

(10) Not every student read every book a *certain* teacher had praised.

- Now let's consider (2) again.

(11)  $\exists f$  [ No candidate<sub>1</sub>  $\lambda_1$  [ t<sub>1</sub> submitted a<sub>f</sub> [ paper they<sub>1</sub> had written. ] ] ]

- The *write*-relation between students and one of their papers is not a function.
- Under a functional interpretation of *write*, the candidates are mapped to the plural entity consisting of papers they wrote,  $R = \{ \langle \text{Sue}, S_1 \oplus S_2 \rangle, \langle \text{Mary}, M_1 \oplus M_2 \rangle \}$
- (11) is not verified in the given context  $\rightarrow$  it is correctly predicted to be false.
- Again, lexically specifying a function renders a wide scope functional reading: Assume Sue and Mary disliked the papers that they didn't submit. (12-a) is judged true, as predicted.

(12) a. No candidate<sub>1</sub> submitted a paper they<sub>1</sub> wrote but **disliked**.  
b.  $\exists f$  [ No candidate(x)  $\lambda_1$  [ t<sub>1</sub> submitted  $f$  [  $\lambda z. \text{paper}(z) \wedge R(x, z) \wedge \text{write}(x, z) \wedge \text{dislike}(x, z)$  ] ] ]

- The sentence containing a *certain*-type indefinite (3) is predicted to be true, as  $R$  can be easily accommodated.

## Cross-linguistic Predictions

- We predict that epistemically specific indefinites to allow Presupposition Accommodation, and thus circumventing BRC.
- While more research is needed, Russian epistemically specific indefinite **koe** which patterns with English a *certain*-type indefinites [5], seems to confirm this prediction.