A binding theoretic account of a typological divide

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English

- reference to discourse participants must be pronominal

(1) Bill is speaker and Sue is hearer

a. John will help Mary. ✓nominal reference

b. He will help her. ✓pronominal reference

(2) John is speaker and Mary is hearer

a. #John will help Mary ✗nominal reference

b. I will help you ✓pronominal reference

- similarly German, French, Russian, Chinese, ...

Vietnamese

- reference to discourse participants can be nominal or pronominal

(3) Bill is speaker and Sue is hearer

a. Nam will help My. ✓nominal reference
b. He will help her. ✓pronominal reference

(4) Nam is speaker and My is hearer

a. Nam will help My ✓nominal reference
b. I will help you ✓pronominal reference

- similarly Japanese, Khmer, Thai, Burmese (Cooke, 1968; Luong, 1990; Sidnell and Shohet, 2013; Irgens, 2017)

the mystery to be solved

Names have to be disjoint from discourse participants in English (German, Chinese, ...) but not in Vietnamese (Thai, Burmese, ...)

Lasnik's observation

- Names have to be disjoint from c-commanding names in English but not in Vietnamese

(5) English

a. John$_i$ thinks Mary admires him$_i$
b. #John$_i$ thinks Mary admires John$_i$

(6) Vietnamese

a. Nam$_i$ think My admire him$_i$
b. Nam$_i$ think My admire Nam$_i$

- Lasnik (1989, 153): "The oddness of [(5b)] is a fact which must be explained. But in many other languages, this fact does not obtain [...]. The variation that we find seems **parametric** in an interesting sense [...]." (emphasis mine)

the lead to be followed

- these two facts are really one
  - names have to be disjoint from discourse participants in English but not in Vietnamese
  - names have to be disjoint from c-commanding names in English but not in Vietnamese

3 The investigation: Phase 1

- Condition C
- Rule I
- Parameter

two ways of interpreting a pronoun

- pronouns can be interpreted as standing in for a name or as a variable

(7) Mary is trying to call John. She [$_{VP}$ thinks he is sick].
$\rightarrow$ VP = λx. x thinks John is sick

(8) no boy [$_{VP}$ thinks he is sick]
$\rightarrow$ VP = λx. x thinks x is sick

notation: $\lambda x.\ \phi$ = is an x such that ϕ

indices and binders

- names and pronouns bear indices

(9) Mary_3 is trying to call John_4. She_3 [$_{\text{VP}}$ thinks he_4 is sick].
$\rightarrow$ VP $= \lambda x.\ x$ thinks John is sick

- an indexed binder can be (countercyclicly) merged with predicates

(10) no boy [$_{\text{VP}}$ β_4 thinks he_4 is sick]
$\rightarrow$ VP $= \lambda x.\ x$ thinks x is sick

interpretation rule for β

- β_n combines with a predicate P and identifies expressions inside P which bear index n with the potential subject of P (Büring, 2005)

(11) $\beta_n\ P = \lambda x.\ P^{[n \to x]}(x)$

(12) a. thinks $=$ $\lambda p.\ \lambda y.\ y$ thinks p

b. thinks he$_4$ is sick $=$ $\lambda y.\ y$ thinks he$_4$ is sick

c. β_4 thinks he$_4$ is sick

$= \lambda x.\ [\lambda y.\ y \text{ thinks he}_4 \text{ is sick}]^{[4 \to x]}(x)$

$= \lambda x.\ [\lambda y.\ y \text{ thinks } x \text{ is sick}](x)$

$= \lambda x.\ x \text{ thinks } x \text{ is sick}$

bound vs. free

(13) Definition
NP is **bound** if it is c-commanded by a coindexed β, **free** otherwise

Condition C

- names cannot be interpreted as variables

(14) no boy thinks John is sick

a. no boy [λx. x thinks John is sick]

b. #no boy [λx. x thinks x is sick]

- this means the parse in (15b) is excluded by the grammar

(15) a. no boy [thinks John$_4$ is sick]

b. #no boy [β_4 thinks John$_4$ is sick]

- we assume (16) as a primitive

(16) Condition C
Names must be free

3 The investigation: Phase 1

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back to disjoint effects

- why is (17) deviant?

  (17)#John$_4$ [$_{VP}$ thinks Mary admires John$_4$]

- because there is a "better" way of saying the same thing!

  (18) John$_4$ [$_{VP}$ β_4 thinks Mary admires him$_4$]

- intuition: grammar prefers binding (Reinhart, 1983; Grodzinsky and Reinhart, 1993; Reinhart, 1995)

Rule I

- intuition: grammar prefers binding to coreference (Grodzinsky and Reinhart, 1993)

(19) Rule I
S is deviant if there is an S′ such that

a. S and S′ are semantically equivalent
b. S′ is a binding alternative of S

(20) Binding alternatives
S′ is a binding alternative of S iff S′ is derivable from S by inserting β_n and replacing a constituent of S with an expression which is taken from the **lexicon** or has been uttered in the **context**

3 The investigation: Phase 1

- Condition C
- Rule I
- Parameter

lexical vs. contextual alternatives

- contextual alternatives seem to incur a higher degree of deviance than lexical alternatives

(21) a. #John$_4$ thinks John$_4$ will win
b. John$_4$ β_4 thinks he$_4$ will win → lexical alternative

(22) a. *he$_4$ thinks John$_4$ will win
b. he$_4$ β_4 thinks he$_4$ will win → contextual alternative

- this suggests that lexical alternatives are easier for English to ignore

Vietnamese

- Hypothesis: Vietnamese ignores lexical binding alternatives completely

(23) Rule I (same as English)
S is deviant if there is an S′ such that

a. S and S′ are semantically equivalent
b. S′ is a binding alternative of S

(24) Binding alternatives (different from English)
S′ is a binding alternative of S iff S′ is derivable from S by inserting β_n and replacing a constituent of S with an expression which ~~is taken from the lexicon or~~ has been uttered in the context

explaining Lasnik's observation

- Lasnik observes not only that (25a) is acceptable but also that (26a) is unacceptable in Vietnamese

(25) a. Nam_4 thinks Nam_4 will win
b. Nam_4 β_4 thinks he_4 will win $\rightarrow$ **not** a binding alternative

(26) a. *he_4 thinks Nam_4 will win
b. he_4 β_4 thinks he_4 will win $\rightarrow$ binding alternative

the parameter

Binding alternatives can be lexical or contextual in English, but must be contextual in Vietnamese

Recap

- pronouns can be free or bound but names must be free (Condition C)
- a sentence is deviant if it has an equivalent binding alternative (Rule I)
- binding alternatives can be lexical or contextual in English but must be contextual in Vietnamese (parameter)

$\rightarrow$ recall the mystery to be solved: names must be disjoint from discourse participants in English but not in Vietnamese

4 The investigation: Phase 2

- The Performative Hypothesis
- Solving the mystery

sentences and speech acts

- speech acts are events that transpire when a sentence is used (Austin, 1962; Searle, 1969)

(27) Sentences

A: Is it raining?
logical form: whether it is raining
B: It is.
logical form: it is raining

(28) Speech acts

a. A asks B whether it is raining
b. B tells A it is raining

an old (and revived) idea

- The Performative Hypothesis: speech acts are syntactically represented (Frege, 1879; Stenius, 1967; Ross, 1970; Lakoff, 1970; Sadock, 1974; Krifka, 2001, 2014; Trinh and Truckenbrodt, 2018; Trinh, 2019; Krifka, 2020; Trinh, 2022; Miyagawa, 2022)

(29) Sentences

A: Is it raining?
logical form: A ASK B whether it is raining
B: It is.
logical form: B TELL A it is raining

(30) Speech acts

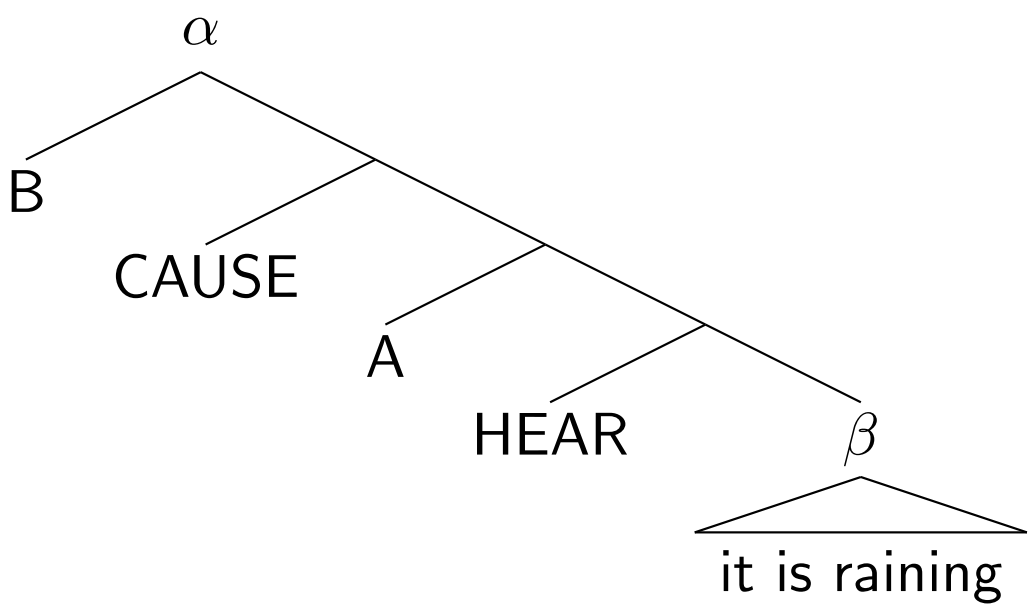
a. A asks B whether it is raining
b. B tells A it is raining

decomposing the illocutionary verb

- illocutionary verbs such as TELL are ditransitive and are thus analyzed as involving a causative head (Barss and Lasnik, 1986; Larson, 1988; Pesetsky, 1995)

(31) a. B TELL A it is raining

b.



4 The investigation: Phase 2

- The Performative Hypothesis
- Solving the mystery

English

- suppose John is speaker and Mary is hearer

(32) a. John_1 ... Mary_2 ... John_1 will help Mary_2
✓Condition C, ✗Rule I

b. John_1 β_1 ... Mary_2 β_2 ... John_1 will help Mary_2
✗Condition C, ✓Rule I

c. John_1 ... Mary_2 ... I_1 will help you_2
✓Condition C, ✗Rule I

d. John_1 β_1 ... Mary_2 β_2 ... I_1 will help you_2
✓Condition C, ✓Rule I

Vietnamese

- suppose Nam is speaker and My is hearer

(33) a. Nam_1 ... My_2 ... Nam_1 will help My_2
✓Condition C, ✓Rule I

b. Nam_1 β_1 ... My_2 β_2 ... Nam_1 will help My_2
✗Condition C, ✓Rule I

c. Nam_1 ... My_2 ... I_1 will help you_2
✓Condition C, ✗Rule I

d. Nam_1 β_1 ... My_2 β_2 ... I_1 will help you_2
✓Condition C, ✓Rule I

5 Solving other cases

- Mixed references
- Vocatives

reference to different discourse participants

- reference to different discourse participants can be in different modes

(34) Nam is speaker and My is hearer

a. Nam will help you

b. I will help My

- this is predicted

(35) a. Nam_1 ... My_2 β_2 ... Nam_1 will help you_2
✓Condition C, ✓Rule I

b. Nam_1 β_1 ... My_2 ... I_1 will help My_2
✓Condition C, ✓Rule I

reference to same discourse participants

- reference to different discourse participants cannot be in different modes

(36) Nam is speaker and My is hearer

a. #Nam know I am sick
b. #My know you are sick

- Rule I rules out such sentences, as illustrated for (36a) below

(37) a. Nam_1... Nam_1 β_1 know I_1 am sick
(i) ✓Condition C
(ii) ✗Rule I, due to the binding alternative in (37b)

b. Nam_1 β_1 ... I_1 β_1 know I_1 am sick

5 Solving other cases

- Mixed references
- Vocatives

English

- English allows nominal as well as pronominal reference to the hearer in vocatives

(38) John is speaker and Mary is hearer

a. Mary! You should go.
b. You! You should go.

Hypothesis

- Vocatives may outscope the illocutionary complex

(39) a. Mary! ...β_2... You$_2$ should go.
b. ...β_2... You$_2$! You$_2$ should go.

Vietnamese

(40) Nam is speaker and My is hearer

a. My! You should go.
   My_2! ...β_2... You_2 should go.

b. You! You should go.
   ...β_2... You_2! You_2 should go.
   You_2! ...β_2... You_2 should go.

c. My! My should go.
   ...My_2... My_2! My_2 should go.
   My_2! ...My_2... My_2 should go.

d. #You! My should go.
   You_2! ...My_2... My_2 should go.
   → ✗Rule I
   ...My_2... You_2! My_2 should go.
   → ✗Rule I

6 Spin-offs

- Relational nouns
- Language acquisition

relational nouns as forms of address

- languages that allow reference to discourse participants by proper names seem to also allow such reference to be made via relational nouns also

(41) A is B's father

A: Will child help father? 'Will you help me?'
B: Yes. Child will help father. 'Yes. I will help you.'

- hypothesis: this fact reduces to the fact that proper names can appear below the performative prefix

(42) Logical form of (42a) and (42b)

A: A ASK B will child(A) help father(B)?
B: B TELL A child(A) will help father(B).

- future research: work out the analysis

6 Spin-offs

- Relational nouns
- Language acquisition

children & scalar implicatures

- it has been observed/argued that children differ from adults in computing scalar implicatures (Paris, 1973; Braine and Rumain, 1981; Noveck, 2001; Chierchia et al., 2004)

(43) Adult

a. some $\rightsquigarrow \exists \wedge \neg\forall$

b. A or B $\rightsquigarrow (A \vee B) \wedge \neg(A \wedge B)$

(44) Child

a. $\exists \rightsquigarrow \exists$

b. $A \vee B \rightsquigarrow (A \wedge B)$

children & alternatives

- hypothesis: children have no access to lexical alternatives (Singh et al., 2016)

(45) Adult

a. ALT(some) = {some, all}
b. ALT(A or B) = {A, B, A and B}

(46) Child

a. ALT(some) = {some}
b. ALT(A or B) = {A, B}

children & reference to discourse participants

- children use proper names and relational nouns to refer to discourse participants (Wills, 1977; Chiat, 1981; Durkin et al., 1982b,a; Budwig, 1985; Chiat, 1986; Conti-Ramsden, 1989; Oshima-Takane and Derat, 1996; Smiley et al., 2011)

  (47) M: Will Johny help Mommy?
  C: Yes. John will help Mommy.

- future research: find out whether this is due to lack of lexical alternatives, i.e. whether they speak Vietnamese

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