Quantifying over alternatives with Toba Batak *manang*

I report on the use and distribution of *manang* in Toba Batak, a language of northern Sumatra, Indonesia. *Manang* is used to form logical disjunctions (1a), alternative questions (1b), *wh*-Negative Polarity Items (NPIs) (2a), and *wh*-Free Choice Items (FCIs) (2b), and also appears optionally on embedded questions. It does not, however, form simple *wh*-indefinites (2c).

(1) Manuhor buku i [ho *manang* ahu] / ?

  a. With declarative intonation, logical disjunction: ‘Either you or I bought the book.’
  b. With question intonation, alternative question: ‘Was it you or me that bought the book?’

(2) Poltak (dang) mangallang [manang aha].

  a. With *dang*, negative polarity item: ‘Poltak doesn’t eat anything.’
  b. Without *dang*, free choice item: ‘Poltak eats anything.’ (generic statement)
  c. *Simple indefinite: ‘Poltak ate / didn’t eat something.’
  d. *Wh*-question: ‘What did / didn’t Poltak eat?’ (Toba Batak allows *wh*-in-situ.)

I propose to analyze *manang* as an existential quantifier. I explain the inability of *manang* to form ordinary *wh*-indefinites, as in (2c), as the result of an interaction with Rooth’s (1992) Focus Interpretation Principle (FIP). In order to avoid this issue, *manang* as in (2) is either interpreted by a alternative-sensitive modal operator, resulting in the free choice reading, or an overt or covert *even* is invoked, leading to the NPI in (2) based on the logic of Lee and Horn (1994); Lahiri (1998).

This paper contributes to the growing literature on the cross-linguistic distribution and functions of logical particles (see e.g. Hagstrom (1998); Kratzer and Shimoyama, (2002); Szabolcsi (to appear). (In the talk, I also discuss *manang* in embedded polar questions, as noted by Percival (1981).)

**Background:** I adopt the two-dimensional semantics for focus and interrogatives originally developed by Hamblin (1973) and Rooth (1985); the notation and assumptions here follow Rooth (1992). Beck (2006), Kotek (2014), and Uegaki (2016). Each node α in the syntax has an ordinary semantic value [[α]₀] and a set of alternatives [[α]ₐₗₜ]. Regular, unfocused lexical items have the singleton set of its ordinary value as its alternative set (3); focused lexical items have contextually salient alternatives in the alternative set (not shown); and *wh*-phrases bear their domain as their alternative value, but do not have ordinary values (4). Alternative sets for complex structures are interpreted compositionally using a rule of Pointwise Functional Application.

(3) [[buku i]₀] = that book; [[buku i]ₐₗₜ] = {that book}

(4) [aha ‘what’]₀ undefined; [aha ‘what’]ₐₗₜ = {x: x inanimate}

Rooth (1992) proposes the following constraint, as part of his Focus Interpretation Principle:


A unified semantics for *manang*: Suppose *manang* takes n arguments xᵢ of type σᵢ. Let O = ∪ᵢ [xᵢ]₀, the set containing all ordinary values of the arguments, and F = ∪ᵢ [xᵢ]ₐₗₜ, the union of the arguments’ alternative sets. I propose the denotation of the *manang* phrase as follows:

(6) [[manang]₀] = ∃(O || F); 
    [[manang]ₐₗₜ] = (O || F) ∪ {∃(O)}

...where (A||B) is the set A if A is nonempty and B otherwise, and ∃(Aᵢ) := λP(σᵢ,t) . ∃x ∈ A . P(x).
Let’s consider what this denotation predicts for the bolded phrases in (1–2) above. Consider \([ho\ manang\ ahu]\) in (1). \(Ho\) and \(ahu\) have ordinary values defined, so \(O = F = \{\text{you, me}\}\).

\[(7)\]  
a. \([[ho\ manang\ ahu]]^o = \lambda P(x,t) \cdot P(\text{you}) \lor P(\text{me})\]  
b. \([[ho\ manang\ ahu]]^{alt} = \{\text{you, me}, \lambda P(x) \cdot P(\text{you}) \lor P(\text{me})\}\]  

Composing with additional material in the clause, we yield the following semantics for (1). Notice that these meanings satisfy Rooth’s Focus Interpretation Principle as stated in (5).

\[(8)\]  
a. \([\{1\}]^o = \text{you bought the book or I bought the book}\]  
b. \([\{1\}]^{alt} = \{\text{you bought the book, I bought the book, you or I bought the book}\}\]  

In order to yield the alternative question denotation as in (1b), I propose that there is an alternative, simpler denotation for \(manang\): \([manang']^o\) undefined; \([manang']^{alt} = O \parallel F\). Clauses with no ordinary semantic value are interpreted as question acts; see Beck (2006); Kotek (2014) for details.

Now consider \(manang\ aha\) in (2). The \(wh\)-phrase \(aha\) lacks an ordinary semantic value, so \(O = \emptyset\) and \(F = \{x : x \text{ inanimate}\}\). This results in the following denotations for \(manang\ aha\):

\[(9)\]  
a. \([[manang\ aha]]^o = \lambda P(x) \cdot \exists x : x \text{ inanimate} \cdot P(x)\]  
b. \([[manang\ aha]]^{alt} = \{x : x \text{ inanimate}\}\]  

This denotation composes with material above (modulo negation) to yield the following:

\[(10)\]  
a. \([\{2\}]^o = \text{Poltak eats something}\]  
b. \([\{2\}]^{alt} = \{\text{Poltak eats } x : x \text{ inanimate}\}\]  

Notice here that this denotation of (2) violates Rooth’s Focus Interpretation Principle. I will sketch two possible repairs below, which result in the \(manang\ wh\) behaving as an NPI or FCI. This end result is that (2) does not have a straightforward \(wh\)-indefinite reading (2c), even though the semantics of \(manang\) is that of a (particular kind of) existential quantifier.

**Repair 1:** \(\text{\textsc{even}}\) One solution is to add a covert or overt even \(=pe\) to associate with the indefinite. \(\text{\textsc{even}}\) “resets” the alternative set (Beck, 2006), resolving the Focus Interpretation Principle issue. \(\text{\textsc{even}}\) introduces a scalar inference that the prejacent (ordinary) value is less likely than all other alternatives. When the scalar semantics of \(\text{\textsc{even}}\) associates with an indefinite, it leads to an unsatisfiable inference (Lee and Horn, 1994; Lahiri, 1998), requiring in (10) that ‘Poltak eats something’ be less likely than any alternative in (10b). This scalar inference is however unproblematic with the addition of a downward-entailing operator, deriving the NPI use of \(manang\ aha\) in (2b).

**“Repair” 2:** association with alternative-sensitive modal Work such as Aloni (2007) propose that many modals are inherently alternative-sensitive, for example in order to explain the apparent wide-scope universal interpretation of disjunctions under modals. For example, \(\text{You may drink tea or coffee}\) entails \(\text{You may drink tea}\) is true and \(\text{You may drink coffee}\) is true. I propose to adopt this association with alternative-sensitive modals as a second type of repair. This explains the free choice reading in (2b), given a covert generic modal to yield the generic rather than episodic reading.

**Blocking the \(wh\)-question reading:** The use of \(\text{\textsc{manang’}}\) as in the alternative question derivation of (1) is blocked in (2) as the meaning of \(\text{\textsc{manang’}}\) applied to a \(wh\)-phrase is equivalent to the corresponding \(wh\)-phrase without \(\text{\textsc{manang}}\), in both dimensions of meaning. This explains the lack of a straightforward \(wh\)-question reading with \(\text{\textsc{manang}}\) (2a).

**Selected references:** Beck 2006. Intervention effects follow from focus interpretation. NLS 14 • Lahiri 1998. Focus and negative polarity in Hindi. NLS 6 • Rooth 1985. Association with focus