

## Two strategies for forming unconditionals: Evidence from disjunction\*

Karoliina Lohiniva

New York University & University of Geneva

### 1. Introduction

This paper is on *alternative unconditionals*, of which an English example is given in (1).<sup>1</sup>

- (1) [*adjunct* Whether Aini moves to Paris or London ], Eino will stay in Helsinki

It is commonly assumed that the adjunct clause of (1) is interrogative, and more specifically, that it corresponds to an alternative question (e.g. Zaefferer 1990, 1991, Gawron 2001, Rawlins 2008b,a, 2013, Ciardelli 2016, Bledin 2017). Under the view that questions denote sets of propositions, equating the adjunct clause with an alternative question is useful for capturing the intuition that unconditionals denote conjunctions of conditionals – one per each adjunct clause alternative – as shown in (2) for (1):

- (2) If *Aini moves to Paris*, Eino will stay in Helsinki, and  
if *Aini moves to London*, Eino will stay in Helsinki

In this paper, I use data from alternative unconditionals in Finnish to argue for two points. The first is that alternative unconditionals do not involve alternative question adjunct clauses in all languages. I present syntactic evidence from disjunction and *Q*-particles showing that this is the case for Finnish. While this possibility has been acknowledged in the literature (Haspelmath and König 1998, Rawlins 2013), formal analyses that do not make use of questions are still few (see Rubinstein and Doron 2014 and Szabolcsi 2019

---

\*I would like to thank the participants of the Syntax Brown Bag seminar at New York University (in particular, Lucas Champollion, Anna Szabolcsi, Philippe Schlenker, Naomi Lee, and Omar Agha) and numerous NELS attendees (in particular, Kyle Rawlins, Ömer Demirok, and Jess H.K. Law) for their valuable feedback. All errors are my own. And finally, a big thank you to Maud Oihénart, who drew the cats for example (11).

<sup>1</sup>Constituent unconditionals such as (i) are not discussed in this paper.

(i) [*adjunct* Wherever Aini moves ], Eino will stay in Helsinki

for exceptions). The proposal put forth in this paper should then be taken as an alternative, non-interrogative strategy for forming alternative unconditionals.

The second point that I make is that Finnish alternative unconditionals have two readings, just like English alternative unconditionals (Bledin 2017): they can be interpreted ‘pointwise’ (i.e. as a conjunction of conditionals, as in (2)), or ‘flat’ (as a conditional with a disjunctive antecedent). In combination with the arguments that I present for the non-interrogativity of the adjunct clause in Finnish alternative unconditionals, this means that pointwise readings do not generally require the adjunct clause to denote an alternative question. Thus, one challenge set by English and Finnish alternative unconditionals lies in explaining how the same readings can be derived using different ingredients.

To respond to this challenge, I propose a non-interrogative analysis of alternative unconditionals that is couched within the framework of two-dimensional Alternative Semantics (Rooth 1985, 1992, Erlewine 2017). In particular, I propose that the ordinary semantic value of the adjunct clause in Finnish alternative unconditionals is an existentially closed proposition, while its focus semantic value is a set of propositions. Depending on which semantic value is used when composing with the main clause, the unconditional is interpreted either flat (ordinary value used) or pointwise (focus value used).

This paper is structured as follows. I begin in Section 2 by presenting the outlines of Rawlins’ (2013) analysis of alternative unconditionals. Due to its reliance on alternative questions and the *Q*(uestion)-particle, I dub this strategy the *Q*-strategy. I then move on to argue that the *Q*-strategy is not suitable for the analysis of alternative unconditionals in Finnish in Section 3. In Section 4, I show that just like their English cousins, Finnish alternative unconditionals are ambiguous between two readings: flat and pointwise. To account for the facts of Sections 3 and 4, I propose an alternative analysis of unconditionals in Section 5. Section 6 concludes.

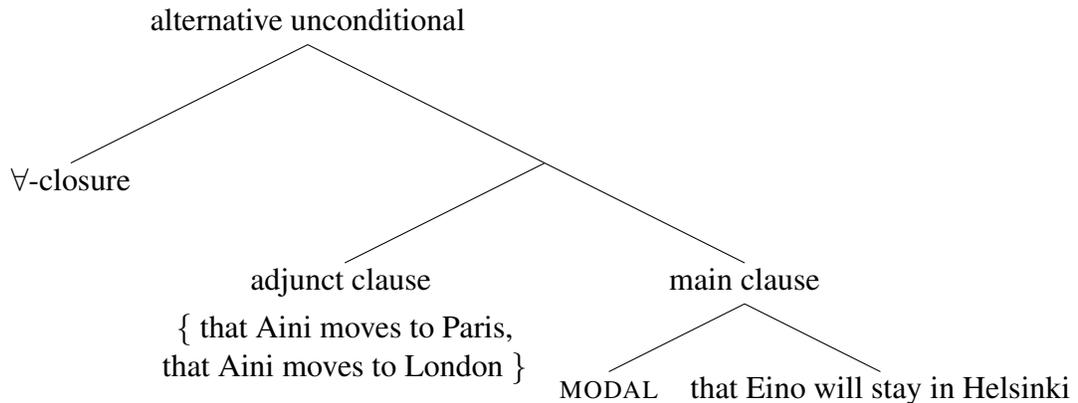
## 2. Previous work: the *Q*-strategy of Rawlins (2013)

While there is previous work on the topic of alternative unconditionals (Zaefferer 1990, 1991, Haspelmath and König 1998, Izvorski 2000, Gawron 2001), the seminal formalization of their semantics is due to Rawlins (2008a,b, 2013). In this section, I present the overall form of Rawlins’ analysis in order to pinpoint the problems it runs to with Finnish data in Section 3. Although the analysis I propose for Finnish is different from the analysis Rawlins builds for English, the two remain very closely connected: most importantly, I retain the use of Alternative Semantics, and a main clause modal.

To begin, Rawlins’ (2008b, 2008a, 2013) analysis of alternative unconditionals may be summarized in the following way. As was mentioned earlier, the adjunct clause denotes an alternative question, i.e. a set of propositions (or ‘alternatives’) (Biezma and Rawlins 2015). Each alternative in the denotation of the adjunct clause combines pointwise with a modal within the matrix clause, providing it with a restriction. And finally, at the top, (default) universal closure applies to yield a propositional meaning for the whole alternative unconditional. Schematically, this analysis may be represented as in (3):

*Two strategies for forming unconditionals*

- (3) [*adjunct* Whether Aini moves to Paris or London ], Eino will stay in Helsinki



The formal details – such as the denotation of the relevant modal – are not crucial for understanding the logic of the proposal, or why it fails in the case of Finnish. Therefore, the tree representation in (3) can be left rather undetailed here (see Rawlins 2013 for the details): what matters is that the adjunct clause denotes a set of propositions, and the main clause contains a modal that is looking for a restriction. This modal plays the formal role of *if*: informally, it makes each alternative contained in the adjunct clause an antecedent in a conditional where the main clause is the consequent. The role of the universal closure operator at the top of the structure is to yield a propositional meaning for the whole structure by conjoining these conditionals. In this way, Rawlins’ analysis captures the idea that unconditionals denote conjunctions of conditionals.

Rawlins presents a number of arguments for the assumption that the adjunct clause is an alternative question. First, the adjunct is headed by the interrogative complementizer *whether*, and has to contain a disjunct. In addition, the intonational profile of the adjunct clause is similar to that of an alternative question: a pitch accent on the first disjunct, and a falling tone on the second one (Bartels 1999, Biezma 2009, Pruitt and Roelofsen 2013). And finally, alternative unconditionals seem to carry two presuppositions that are familiar from the study of alternative questions (Biezma and Rawlins 2012, 2015):

- (4) a. Exhaustivity: The provided alternatives exhaust the space of possibilities  
 b. Exclusivity: The provided alternatives do not overlap

Taken together, the presuppositions in (4) require that at least one of the alternatives denoted by the adjunct clause is true (4a), and that at most one of the alternatives denoted by the adjunct clause is true (4b). In other words, an alternative unconditional such as (3) presupposes that Mary moves to one of the mentioned cities. Rawlins argues that these presuppositions are due to the presence of a *Q*(uestion)-particle in the adjunct clause; as such, they are identical to the presuppositions of a matrix alternative question.

The presupposition of exhaustivity that Rawlins attributes to the adjunct clause plays an important role in the overall interpretation of unconditionals, which Rawlins characterizes through two notions: relative indifference and consequent entailment. The first refers to the

discourse effect of unconditionals, or the use of unconditionals to express the irrelevance of the issue encoded in the adjunct clause for the state of affairs or issue encoded in the matrix clause. In our pet example, for example, the resolution of the issue of whether Aini will move to Paris or London is independent from the resolution of the issue of whether Eino will stay in Helsinki. The second property is what Haspelmath and König (1998) refer to as *semifactuality*: the matrix clause is asserted to be true, and not conditionally true, as is the case in regular conditionals. In our pet example, for example, it is entailed that Eino will stay in Helsinki. Under Rawlins' analysis, the presupposition of exhaustivity ensures that at least one of the antecedents is true, which results in consequent entailment. Moreover, any which one of the antecedents could be true, which in turn results in relative indifference.

For the purposes of this paper, the crucial points about Rawlins's analysis are that (i) it relies on the *Q*-particle, which allows the adjunct clause to have a well-defined semantic value of an alternative question, and produces the presuppositions shown in (4), and (ii) it involves the pointwise composition of conditionals using the adjunct clause alternatives. Thus, the analysis is well-suited for accounting for the pointwise readings of English unconditionals, but might require modification to account for the flat readings (Bledin 2017), which are discussed in Section 4.

### 3. Why the *Q*-strategy does not work for Finnish unconditionals

I now present two arguments against the *Q*-analysis of alternative unconditionals in Finnish.

#### 3.1 First argument against the *Q*-strategy: Choice of disjunctor

The first argument comes from disjunction. In Finnish, disjunction is expressed using two distinct disjunctors: *tai* and *vai* (Hakulinen and Karlsson 1979, Kaiser 2003). As (5) shows, the classical disjunctor *tai* is used in disjunctive declaratives and disjunctive polar questions that accept yes/no (y/n) answers. Alternative questions, however, require the use of the interrogative disjunctor *vai* (6), and reject y/n answers. Note that only *vai* may appear in alternative questions, and *vai* may only appear in alternative questions.<sup>2</sup>

(5) *Classic disjunctor tai: declaratives (a), disjunctive polar questions (b)*

- a. *Aini aikoo muuttaa Pariisiin tai Lontooseen*  
 Aini.NOM intends move.INF Paris.ILL DISJ London.ILL

‘Aini intends to move to Paris or London’

---

<sup>2</sup>In all English examples, the up-arrow (↑) and the down-arrow (↓) approximate the intonational contour that the questions involve. When the two disjuncts are grouped together in one intonational group followed by ↑, the interpretation is that of a disjunctive polar question. In contrast, when the disjuncts are grouped separately, and the first is associated with a raising contour and the second with a falling contour, the interpretation is that of an alternative question. For more details and discussion on the relevant intonational cues, see Pruitt and Roelofsen (2013).

*Two strategies for forming unconditionals*

- b. *Aikoo-ko Aini muuttaa Pariisiin tai Lontooseen?* [<sup>ok</sup>y/n]  
 intends-Q Aini.NOM move.INF Paris.ILL DISJ London.ILL  
 ‘Does Aini intend to move to [Paris or London]↑?’

(6) *Interrogative disjunctor vai: only alternative questions (b)*

- a. \**Aini aikoo muuttaa Pariisiin vai Lontooseen*  
 Aini.NOM intends move.INF Paris.ILL DISJ London.ILL  
 ‘Aini intends to move to Paris or London’
- b. *Aikoo-ko Aini muuttaa Pariisiin vai Lontooseen?* [<sup>\*</sup>y/n]  
 intends-Q Aini.NOM move.INF Paris.ILL DISJ London.ILL  
 ‘Does Aini intend to move to to [Paris]↑ or [London]↓?’

Based on (6), if Finnish alternative unconditionals were formed using the *Q*-strategy and alternative questions, one would expect them to involve *vai*. Contrary to this expectation, alternative unconditionals must be formed using the classical disjunctor *tai*.<sup>3</sup>

- (7) [*Muuttaa-(pa) Aini (sitten) Pariisiin {tai/\*vai} Lontooseen*],  
 moves-PRT Aini.NOM then Paris.ILL DISJ London.ILL  
*Eino jää Helsinkiin*  
 Eino stays Helsinki.ILL  
 ‘Whether Aini moves to Paris or London, Eino will stay in Helsinki’

As (6) shows, the licensing of *vai* is dependent on interrogativity. Formally, *vai* can be assumed to require the presence of a *Q*-particle. This suggests that *vai* is never licensed in alternative unconditionals because they lack *Q*. In the next section, I present another syntactic argument in favor of this claim.

### 3.2 Second argument against the *Q*-strategy: Absence of the *Q*-particle

All polar questions in Finnish involve the overt vowel-harmonic question particle *-kO* (Hakulinen and Karlsson 1979, Holmberg 2014). The presence of this particle is required in both matrix and embedded alternative questions, as shown in (8).

---

<sup>3</sup>The example given in (7) involves an indicative-mood adjunct clause. Alternatively, the adjunct-initial verb could appear in the jussive form *muutta-ko-on* ‘move-JUSS-3SG’, as in the Finnish examples that appear in Haspelmath and König (1998). At this point, I do not have evidence for a semantic difference between the indicative and jussive adjunct clauses. I therefore focus the discussion on the indicative variant, and leave the detailed investigation of the jussive variant for future work.

- (8) a. *Aikoo-\*(ko) Aini muuttaa Pariisiin?*  
 intends-Q Aini.NOM move.INF Paris.ILL
- b. *Eino haluaisi tietää aikoo-\*(ko) Aini muuttaa Pariisiin*  
 Eino.NOM wants.COND know.INF intends-Q Aini.NOM move.INF Paris.ILL
- ‘Eino would like to know whether Aini intends to move to Paris’

The presence of  $-kO$  is also required in alternative questions, as shown in (9).

- (9) a. *Aikoo-\*(ko) Aini muuttaa Pariisiin vai Lontooseen?*  
 intends-Q Aini.NOM move.INF Paris.ILL DISJ London.ILL
- ‘Does Aini intend to move to [Paris]↑ or [London]↓?’
- b. *Eino haluaisi tietää aikoo-\*(ko) Aini muuttaa Pariisiin*  
 Eino.NOM wants.COND know.INF intends-Q Aini.NOM move.INF Paris.ILL  
*vai Lontooseen*  
 DISJ London.ILL
- ‘Eino would like to know whether Aini intends to move to to [Paris]↑ or [London]↓’

Crucially,  $-kO$  cannot appear in alternative unconditionals, as shown in (10).

- (10) [*Muuttaa-\*(ko) Aini (sitten) Pariisiin {tai/vai} Lontooseen*], ...  
 moves-Q Aini.NOM then Paris.ILL DISJ London.ILL
- Int. ‘Whether Aini moves to Paris or London, ...’

If Finnish alternative unconditionals were formed using the  $Q$ -strategy, one would expect the overt realization of  $Q$  to be allowed in the structure, contrary to fact.<sup>4</sup> Thus,  $-kO$  provides further support for the absence of  $Q$  and the inapplicability of the  $Q$ -strategy in Finnish alternative unconditionals.

#### 4. Flat vs. pointwise interpretation

In the previous section, I presented two arguments for the claim that Finnish alternative unconditionals do not involve alternative questions or the  $Q$ -particle. In this section, I show that they may nevertheless be interpreted pointwise, just like English alternative unconditionals. This shows that pointwise readings do not require the  $Q$ -strategy. Moreover, we will see that in both languages, a flat reading is also available (Bledin 2017).

<sup>4</sup>Note furthermore that in both polar and alternative questions,  $-kO$  is a second position clitic that attaches to CP-fronted verbs (see examples (8)-(9)). The possibility of another second-position emphasis clitic  $-pA$  (Hakulinen and Karlsson 1979, Nevis 1985) to attach to CP-fronted verbs in unconditionals (see example (7)) suggests that the syntactic projection relevant for  $-kO$  is present in unconditionals. Thus, the unacceptability of  $-kO$  arguably does not stem from any type of ‘syntactic deficiency’ of the adjunct clause.

## Two strategies for forming unconditionals

I begin by illustrating the two readings in English with a modified version of the Missing Cat problem (Bledin 2017).

- (11) Mary has one black cat and two white cats. John has two black cats and one white cat. Unfortunately, one of these cats has gone missing. It is equally likely for any of the cats to go missing.



- a. If the missing cat belongs to Mary, then it is not equally likely that it is black and that it is white
- b. If the missing cat belongs to John, then it is not equally likely that it is black and that it is white
- c. So, whether the missing cat belongs to Mary or John, it is not equally likely that it is black and that it is white

Bledin reports having presented the Missing Cat to approximately 30 people, all of who (correctly) accept the conditional premises in (11a) and (11b). The unconditional conclusion in (11c), however, is accepted by some speakers, and rejected by others. Those speakers who accept (11c) interpret the unconditional pointwise, or in other words, as a conjunction of the two conditionals in (11a) and (11b). This reading, which is true in the context of (11), is shown in (12a). In contrast, speakers who reject (11c) interpret the unconditional in a ‘flat’ way, as illustrated in (12b). Intuitively, these speakers do not consider the two subsets of cats in turn, but all six cats at once, and the likelihood claim corresponding to the consequent is indeed false (signalled with # below).

- (12) a. [missing cat is Mary's  $\rightarrow$  not equally likely that it is black and that it is white]  $\wedge$   
[missing cat is John's  $\rightarrow$  not equally likely that it is black and that it is white]
- b. # [missing cat is Mary's  $\vee$  missing cat is John's]  $\rightarrow$   
[not equally likely that it is black and that it is white]

If pointwise readings depended on the *Q*-strategy, which Finnish alternative unconditionals do not employ (as argued in the previous section), we would expect Finnish alternative unconditionals to only have a flat reading. To see whether this is the case, I polled 20 native speakers for their judgment of a positive-polarity Finnish version of (11).<sup>5</sup> To elicit judgments, I presented the speakers with the scenario shown in (11) and the sentence in (13) (as uttered by someone). I then asked the speakers whether they thought the person who uttered (13) was right.<sup>6</sup>

<sup>5</sup>Note that the omission of negation – which was meant to lighten the overall processing requirements – has the effect of reversing the answer pattern so that rejection now goes with pointwise interpretation, and acceptance with flat interpretation.

<sup>6</sup>I did not collect judgments for the conditional premises corresponding to (11a) and (11b).

- (13) *Kuuluupa kadonnut kissa Marille tai Jonille,*  
 belongs.PRT missing.NOM cat.NOM Mari.ALL DISJ Joni.ALL  
*on yhtä todennäköistä että se on musta kuin että se on*  
 is equally likely.PAR that it.NOM is black.NOM than that it.NOM is  
*valkoinen*  
 white.NOM

‘Whether the missing cat belongs to Mari or Joni, it is equally likely that it is black and that it is white’

Of the 20 native speakers, 14 speakers (70%) said the speaker was right, and 6 speakers (30%) said the speaker was wrong. This means that 70% of the polled speakers interpreted the unconditional pointwise, regardless of the lack of a *Q*-particle and an alternative question adjunct. This result strongly suggests that the availability of a pointwise reading for an unconditional does not necessitate the use of the *Q*-strategy.<sup>7</sup> However, it also raises the question of how pointwise readings can be derived without making use of an adjunct clause with an alternative question denotation. I take up this question in the next section.

## 5. Proposal

In this section, I propose that the flat and pointwise readings of Finnish alternative unconditionals arise from using either the ordinary semantic value of the adjunct clause – which is existentially closed, and corresponds to a disjunctive proposition – or its focus semantic value – which corresponds to a set of propositions. The general form of the analysis thus remains the same as in Rawlins (2013). What changes is that the adjunct clause is not an alternative question itself: instead, it has a focus semantic value that corresponds to one.

I begin this section by laying out the syntax and semantics I assume for *tai* (and *vai*). I then discuss the structure and semantics of the adjunct clause of an alternative unconditional with these assumptions as the background. And finally, I argue that the pointwise and flat readings of Finnish alternative unconditionals may be derived by using the two semantic values of the adjunct clause.

### 5.1 The syntax and semantics of *tai* and *vai*

The proposal that I put forth is couched within two-dimensional Alternative Semantics (Rooth 1985, 1992), and based on the idea that the Finnish disjunctions – both those formed with *tai* and those formed with *vai* – do not have a well-defined ordinary semantic value on their own, as shown in (14a) (Beck 2006, Beck and Kim 2006, Erlewine 2017). They do, however, have a well-defined focus semantic value: this value collects the ordinary semantic values of the two disjointed XPs into a set, as shown in (14b) (Alonso-Ovalle 2006, Simons 2005, Szabolcsi 2015). The focus semantic value of the disjunctive phrase composes with the rest of the structure using pointwise functional application.<sup>8</sup>

<sup>7</sup>Collecting more judgments in a controlled experiment would provide stronger evidence for this claim.

<sup>8</sup>For examples of pointwise functional application that involve DISJ, see Erlewine (2017).

## Two strategies for forming unconditionals

- (14) a.  $\llbracket \alpha \text{ DISJ } \beta \rrbracket^o = \text{undefined}$  [ordinary semantic value]  
 b.  $\llbracket \alpha \text{ DISJ } \beta \rrbracket^f = \{\alpha, \beta\}$  [focus semantic value]

The difference between *tai* and *vai* is in how the ordinary semantic value of a disjunctive structure becomes well-defined. One way is through the application of  $Q$ , as defined in (15) (e.g. Beck 2006, Kotek 2014). Another is through the application of existential closure ( $\exists$ ), as defined in (16) (Kratzer and Shimoyama 2002, Uegaki 2016, Erlewine 2017).

- (15) Where  $\llbracket A \rrbracket^f$  is a set of propositions,  $\llbracket Q(A) \rrbracket^o$  is  $\llbracket A \rrbracket^f$ , and  $\llbracket Q(A) \rrbracket^f$  is the singleton set of  $\llbracket Q(A) \rrbracket^o$ :
- a.  $\llbracket Q(A) \rrbracket^o = \llbracket A \rrbracket^f$   
 b.  $\llbracket Q(A) \rrbracket^f = \{\llbracket Q(A) \rrbracket^o\}$
- (16) Where  $\llbracket A \rrbracket^f$  is a set of propositions,  $\llbracket \exists(A) \rrbracket^o$  is the proposition that is true in all worlds such that some proposition in  $A$  is true, and  $\llbracket \exists(A) \rrbracket^f$  is  $\llbracket A \rrbracket^f$ .
- a.  $\llbracket \exists(A) \rrbracket^o = \lambda w . \exists p \in \llbracket A \rrbracket^f [p(w) = 1]$   
 b.  $\llbracket \exists(A) \rrbracket^f = \llbracket A \rrbracket^f$  (Kratzer and Shimoyama 2002)

Where  $\llbracket \alpha \rrbracket^f$  is not a set of propositions,  $\llbracket \exists(\alpha) \rrbracket^o$  is a generalized quantifier.

- c.  $\llbracket \exists(\alpha) \rrbracket^o = \lambda P_{\langle \tau, t \rangle} . \exists x \in \llbracket \alpha \rrbracket^f [P(x)]$   
 d.  $\llbracket \exists(\alpha) \rrbracket^f = \llbracket \alpha \rrbracket^f$  (Uegaki 2016)

As Finnish has two distinct disjunctors, I follow Erlewine (2017) and assume that the ‘closure requirements’ of both are encoded in their syntax. Specifically, *vai* requires ‘closure’ by  $Q$ , and *tai* requires closure by  $\exists$ , as shown in (17).

- (17) The syntactic closure features of disjunctors in Finnish
- a. *tai* [u $\exists$ ]  
 b. *vai* [u $Q$ ]

In sum, while the essential semantics of the classic disjunctor *tai* and the interrogative disjunctor *vai* are the same – as shown in (14) – their syntax is not, and that affects the meaning of the whole disjunctive structure: most saliently, its ordinary semantic value is either a proposition (by  $\exists$ -closure) or a set of propositions (by  $Q$ -closure). As *vai* and  $Q$ -particles do not appear in Finnish alternative unconditionals, the proposal I put forth for their semantics only makes use of existential closure. In the next section, I propose that existential closure takes place at the top of the adjunct clause, as per (16a).

## 5.2 Adjunct clause structure and the two readings

The semantic definition of the existential closure operation in (16) allows for two options:  $\exists$ -closure may either apply high, operating over a focus semantic value that is a set of

propositions, or it may apply low, operating over a set of non-propositional semantic objects. I will now present two arguments in favour of the first option. First, focus intervention effects suggests that unconditionals involve high  $\exists$ -closure (Beck 2006, Beck and Kim 2006, Erlewine 2017):

- (18) a. *Haluaa-ko vain Aini<sub>F</sub> muuttaa Pariisiin tai Lontooseen?*  
 want-Q only Aini.NOM move.INF Paris.ILL DISJ London.ILL  
 ‘Does only Aini want to move to Paris or London?’  
 $\Rightarrow [Q [ \text{only Mari}_F \text{ wants to move } [ \exists [ \text{Paris} \vee \text{London} ] ] ] ] ]$
- b. \**Haluaa-ko vain Aini<sub>F</sub> muuttaa Pariisiin vai Lontooseen?*  
 want-Q only Aini.NOM move.INF Paris.ILL DISJ London.ILL  
 Int. ‘Does only Aini want to move to [Paris] $\uparrow$  or [London] $\downarrow$ ?’  
 $\Rightarrow *[Q [ \text{only Aini}_F \text{ wants to move } [ \text{Paris} \vee \text{London} ] ] ]$
- c. \**[Haluaa-pa vain Aini<sub>F</sub> muuttaa Pariisiin tai Lontooseen], ...*  
 want-PRT only Mari.NOM move.INF Paris.ILL DISJ London.ILL  
 Int. ‘Whether only Aini wants to move to Paris or London, ...’  
 $\Rightarrow *[ \exists [ \text{only Aini}_F \text{ wants to move } [ \text{Paris} \vee \text{London} ] ] ]$

Focus intervention effects are assumed to arise when a focus-sensitive operator such as *only* takes an argument with no well-defined ordinary semantic value, and its “focus-neutralizing” semantics leads to the resulting node having neither a well-defined ordinary semantic value nor a well-defined focus semantic value (for details, see Beck 2006). On this approach, the acceptability of the disjunctive polar question with *tai* in (18a) is explained if  $\exists$  applies below *vain* ‘only’: that way, at the point of derivation where *vain* is interpreted, the structure has a well-defined ordinary semantic value, and the semantics of *vain* do not lead to an interpretative impasse. To explain the contrast between (18a) and the alternative question with *vai* in (18b), we may assume that  $\exists$ -closure does not apply before *vain*, and thus a fatal intervention effect arises. Interestingly, alternative unconditionals behave like alternative questions with respect to focus intervention, as shown by the parallel between (18b) (alternative question) and (18c) (unconditional adjunct). This implies that unconditional adjuncts have roughly the LF shown in (18c), where  $\exists$  is high, above *vain*.

Second, scope effects also suggest the high application of  $\exists$ : as shown in (19), DISJ must scope over the universal deontic modal *täytyä* and the universal quantifier *kaikki*.<sup>9</sup>

<sup>9</sup>The corresponding disjunctive declaratives are scopally ambiguous:

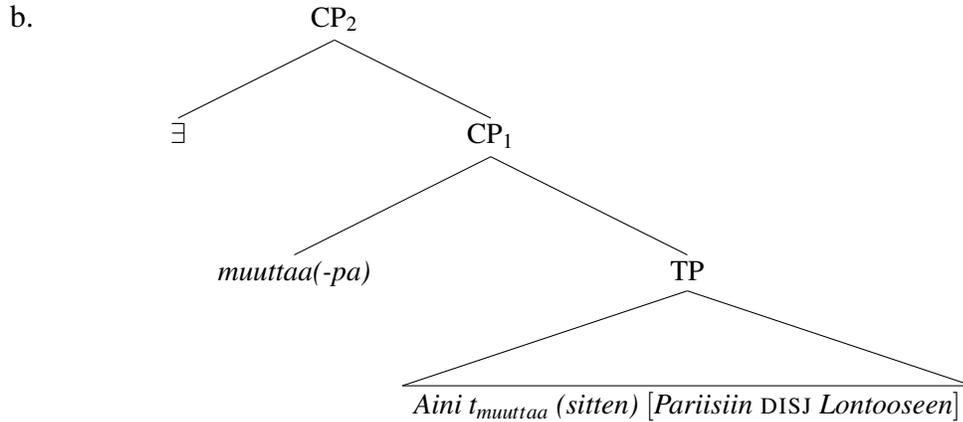
- (i) a. DISJ >  $\square$  ;  $\square$  > DISJ  
*Ainin täytyy muuttaa Pariisiin tai Lontooseen*  
 Aini.GEN must move.INF Paris.ILL DISJ London.ILL

*Two strategies for forming unconditionals*

- (19) a. DISJ >  $\square$  ; \* $\square$  > DISJ  
 [Täytyypä Ainin muuttaa Pariisiin tai Lontooseen], ...  
 must-PRT Aini.GEN move.INF Paris.ILL DISJ London.ILL  
 ‘Whether Aini must move to Paris or London, ...’
- b. DISJ >  $\forall$  ; \* $\forall$  > DISJ  
 [Muuttavatpa kaikki Pariisiin tai Lontooseen ], ...  
 move.PRT everyone.NOM Paris.ILL DISJ London.ILL  
 ‘Whether everyone moves to Paris or London, ...’

Thus, I propose that the structure of the adjunct clause of a Finnish alternative unconditional involves a high  $\exists$ , and the ordinary semantic value of the adjunct is a disjunctive proposition, while the focus semantic value of the adjunct is a set of propositions, as shown in (20) (the details concerning composition within the TP are omitted: for that, see Erlewine 2017). At this point, I do not attribute any specific role to the optional second-position clitic *-pA* (Hakulinen and Karlsson 1979, Nevis 1985) or the optional adverb *sitten* ‘then’. Intuitively, it appears that at least one of them has to be present for the adjunct clause to feel natural. Determining what the exact role of these markers is must be left for future work.

- (20) a. *muuttaa(-pa) Aini (sitten) Pariisiin tai Lontooseen*  
 moves-PRT Aini.NOM then Paris.ILL DISJ London.ILL



- c.  $[[CP_1]]^o = \text{undefined}$   
 $[[CP_1]]^f = \{\lambda w . \text{Aini moves to Paris in } w, \lambda w . \text{Aini moves to London in } w\}$
- d.  $[[CP_2]]^o = \lambda w . \text{Aini moves to Paris in } w \vee \text{Aini moves to London in } w$   
 $[[CP_2]]^f = \{\lambda w . \text{Aini moves to Paris in } w, \lambda w . \text{Aini moves to London in } w\}$

- 
- b. DISJ >  $\forall$  ;  $\forall$  > DISJ  
*Kaikki muuttivat Pariisiin tai Lontooseen*  
 everyone.NOM moved Paris.ILL DISJ London.ILL

With the denotations of  $CP_2$  in place, we are ready to account for the two readings of Finnish alternative unconditionals without making reference to an alternative question adjunct clause or  $Q$ . First, on the flat reading, the main clause modal takes as its argument the ordinary semantic value of the adjunct clause (e.g.  $[[CP_2]]^o$  of (20)). This proposition is interpreted as the restriction of the modal (i.e. as the antecedent of the conditional). In (21), I show the ‘end result’ in conditional form (for more formal details, see Rawlins 2013).<sup>10</sup>

(21) Flat reading of (7)

If *Aini moves to Paris or London*, Eino will stay in Helsinki

On the pointwise reading, the main clause modal takes each of the alternative propositions in the focus semantic value of the adjunct clause as its restriction, and the resulting set of conditionals is conjoined by  $\forall$ -closure at the top. At the end, we have (22).

(22) Pointwise reading of (7)

If *Aini moves to Paris*, Eino will stay in Helsinki, and  
if *Aini moves to London*, Eino will stay in Helsinki

Now, note that (22) is identical to (2). This is because the focus semantic value of the *tai*-disjunction is formally equivalent to the ordinary semantic value of a well-formed alternative question. In other words, even though Rawlins’ (2013)  $Q$ -analysis of unconditionals cannot be directly applied to Finnish, the general form of the analysis can be maintained as long as disjunction is given the analysis presented in Section 5.1.

Of course, many questions and issues remain. First, it is unclear what determines the choice between the ordinary semantic value and the focus semantic value. In future work, it would be interesting to see whether there is a way to ‘bias’ speakers to adopt one of the interpretations. And second, if Finnish does not use the  $Q$ -strategy, we must find a non- $Q$ -based way to account for relative indifference and consequent entailment in Finnish alternative unconditionals. In particular, any explanation of consequent entailment cannot rely on the exhaustivity presupposition contributed by  $Q$  (as in Rawlins 2013). I leave this issue open, but speculate that some type of existential presupposition could take on the role of the exhaustivity presupposition. For (7), for example, an existential presupposition would require it to be true that Aini moves somewhere, and if the options for ‘somewhere’ are contextually restricted to Paris and London, then consequent entailment and relative indifference again follow on both flat and pointwise readings of the unconditional (in any case, at least one conditional antecedent must be true). Otherwise, given that the focus semantic value of the adjunct clause is congruent with an alternative question, it is also conceivable that the exhaustivity presupposition is the by-product of the general discourse-requirements of the unconditional: in other words, it should be investigated whether felicitously used alternative unconditionals always require an alternative question to be under discussion. In that case, the exhaustivity presupposition could potentially be attributed to the  $Q$  of this question. Unfortunately, I must leave this interesting issue for future work.

<sup>10</sup>Of course, when applied to an example like (7), the two readings cannot be teased apart: to do so, one needs to consider an example like (13). For reasons of simplicity, however, I stick with (7) in this section.

## 6. Conclusion

In this paper, I provided data from disjunction and *Q*-particles showing that the adjunct clauses of Finnish alternative unconditionals are not alternative questions. This means that there must be at least two strategies for forming alternative unconditionals cross-linguistically: one that makes use of interrogative ingredients (Rawlins 2013), and one that does not. Non-interrogative analyses have indeed been proposed for Hebrew (Rubinstein and Doron 2014) and Hungarian (Szabolcsi 2019). Here, I adopted an analysis of Finnish disjunction that allows for an analysis of unconditionals that remains very close to the *Q*-strategy of Rawlins (2013). Crucially, this analysis accounts for the interpretative ambiguity of unconditionals, but it should be developed further in order to be sure to capture the interpretative properties of consequent entailment and relative indifference.

## References

- Alonso-Ovalle, Luis. 2006. Disjunction in alternative semantics. Doctoral dissertation, University of Massachusetts Amherst.
- Bartels, Christine. 1999. *The intonation of English statements and questions*. New York, NY: Garland Publishing.
- Beck, Sigrid. 2006. Intervention effects follow from focus interpretation. *Natural Language Semantics* 14:1–56.
- Beck, Sigrid, and Shin-Sook Kim. 2006. Intervention effects in alternative questions. *Journal of Comparative German Linguistics* 9:165–208.
- Biezma, Maria. 2009. Alternative vs. polar questions: The cornering effect. In *Proceedings of the 19th Semantics and Linguistic Theory Conference (SALT 19)*, 37–54. Ithaca, NY: CLC Publications.
- Biezma, Maria, and Kyle Rawlins. 2012. Responding to polar and alternative questions. *Linguistics and Philosophy* 35:361–406.
- Biezma, Maria, and Kyle Rawlins. 2015. Alternative questions. *Language and Linguistics Compass* 9:450–468.
- Bledin, Justin. 2017. Fatalism and the logic of unconditionals. In *Proceedings of the 21st Amsterdam Colloquium*, 115–124.
- Ciardelli, Ivano. 2016. Lifting conditionals in inquisitive semantics. In *Proceedings of SALT 26*, 732–752.
- Erlewine, Michael Y. 2017. Two disjunctions in Mandarin Chinese. Ms., National University of Singapore.
- Gawron, Jean Mark. 2001. Universal concessive conditionals and alternative NPs in English. In *Logical perspectives on language and information*, ed. Cleo Condoravdi and Gerard Renardel de Lavalette, 73–106. Stanford: CSLI Publications.
- Hakulinen, Auli, and Fred Karlsson. 1979. *Nykysuomen lauseoppia*. Suomalaisen kirjallisuuden seuran toimituksia 350. Jyväskylä: Gummerus.
- Haspelmath, Martin, and Ekkehard König. 1998. Concessive conditionals in the languages of Europe. In *Adverbial Constructions in the Languages of Europe*, ed. Johan van der

- Auwers, 563–640. De Gruyter.
- Holmberg, Anders. 2014. The syntax of the Finnish question particle. In *Functional structure from top to toe*, ed. Peter Svenonius. Oxford, UK: Oxford University Press.
- Izvorski, Roumyana. 2000. Free adjunct free relatives. In *Proceedings of the 19th West Coast Conference on Formal Linguistics*, 232–245. Somerville, MA: Cascadilla Press.
- Kaiser, Elsi. 2003. A question of case. *Nordlyd* 31:694–707.
- Kotek, Hadas. 2014. Composing Questions. Doctoral dissertation, Massachusetts Institute of Technology.
- Kratzer, Angelika, and Junko Shimoyama. 2002. Indeterminate phrases: The view from Japanese. In *The Proceedings of the Third Tokyo Conference on Psycholinguistics*, ed. Yokio Otsu, 1–25. Tokyo: Hituzi Syobo.
- Nevis, Joel A. 1985. Finnish Particle Clitics and General Clitic Theory. Doctoral dissertation, Ohio State University.
- Pruitt, Kathryn, and Floris Roelofsen. 2013. The interpretation of prosody in disjunctive questions. *Linguistic Inquiry* 44:632–650.
- Rawlins, Kyle. 2008a. (Un)conditionals: An investigation in the syntax and semantics of conditional structures. Doctoral dissertation, University of California Santa Cruz.
- Rawlins, Kyle. 2008b. Unifying conditionals and unconditionals. In *Proceedings of the 18th Semantics and Linguistic Theory Conference (SALT 18)*.
- Rawlins, Kyle. 2013. (Un)conditionals. *Natural Language Semantics* 21:111–178.
- Rooth, Mats. 1985. Association with focus. Doctoral dissertation, University of Massachusetts Amherst.
- Rooth, Mats. 1992. A theory of focus interpretation. *Natural Language Semantics* 1:75–116.
- Rubinstein, Aynat, and Edit Doron. 2014. Varieties of alternative unconditionals. In *Proceedings of IATL 30*, 101–114.
- Simons, Mandy. 2005. Dividing things up: The semantics of *or* and the modal/*or* interaction. *Natural Language Semantics* 13:271–316.
- Szabolcsi, Anna. 2015. What do quantifier particles do? *Linguistics and Philosophy* 38:159–204.
- Szabolcsi, Anna. 2019. Unconditionals and free choice unified. Ms., New York University.
- Uegaki, Wataru. 2016. A unified semantics for the Japanese Q-particle *ka* in indefinites, questions, and disjunctions. Ms., Leiden University.
- Zaefferer, Dietmar. 1990. Conditionals and unconditionals in universal grammar and situation semantics. In *Situation theory and its applications I*, ed. Robin Cooper, Kuniaki Mukai, and John Perry, 471–492. Stanford: CSLI Publications.
- Zaefferer, Dietmar. 1991. Conditionals and unconditionals: Cross-linguistic and logical aspects. In *Semantic Universals and Universal Semantics*, ed. Dietmar Zaefferer, 210–236. Dordrecht: Foris.