

FOCUSING ON COORDINATION: THE CASE OF JAPANESE *-TOKA* AND *-TARI*

RYAN WALTER SMITH
University of Arizona

RYOICHIRO KOBAYASHI
Sophia University/JSPS

1 Introduction

In this paper, we investigate the syntactic and semantic properties of the Japanese non-exhaustive particles *-toka* and *-tari*, which, in declarative contexts, are used to provide non-exhaustive conjunctions of nominal and verbal elements, respectively. These particles show syntactic parallels with focus particles, like *-mo* and *-sae*: for instance, they can be used either as stand-alone particles or in coordinating constructions. However, these commonalities break down when we turn our attention to the semantics: while *-mo* and *-sae* behave like true focus particles with presuppositional properties and relatively constant interpretation, *-toka* and *-tari* are non-presuppositional, and receive a disjunctive interpretation in environments like the antecedent of a conditional, polar questions, possibility modals, and imperatives.

We propose an analysis that unifies *-toka* and *-tari* with *-mo* and *-sae* syntactically, but distinguishes them semantically. Syntactically, all of these elements are independent particles, heading their own projections. These projections may be coordinated by a silent head, following Mitrovic & Sauerland's (2014) proposal for coordination cross-linguistically. Semantically, we propose that *-toka* and *-tari* introduce sets of individual and predicate alternatives, respectively. These alternatives are then universally or existentially quantified by different operators depending on the semantic context. In this way, the interpretation of the *-toka* and *-tari* phrases is determined by the context in which the phrases appear.

The paper is structured as follows. In section 2, we introduce the particles *-toka* and *-tari*, discussing how they pattern similarly to focus particles syntactically. Section 3 discusses the semantic differences between *-toka/-tari* and focus particles, and provide data from a set of environments showing the conjunctive/disjunctive alternation attested with *-toka* and *-tari*. Section 4 then provides our analysis of the syntax and semantics of *-toka* and *-tari*, as well as an in-depth analysis of their semantic alternation between conjunctive and disjunctive-like interpretations

conditioned by their semantic context in terms of a Hamblin-style alternative semantics. In Section 5, we provide some additional predictions of our analysis, and contrast these predictions with those of an analysis of a similar set of data involving the non-exhaustive coordinator *-ya* (Sudo 2014). We also discuss a previous approach to a similar set of data, Kobayashi & Smith (to appear), showing how our account improves on that analysis. Section 6 concludes the paper with some discussion of remaining issues raised by the analysis and potential areas of future research.

2 *-toka* and *-tari*: focus particles?

-toka and *-tari* are used in declarative contexts to provide non-exhaustive conjunctions of nominal and verbal elements, respectively. For instance, (1) is judged true if Taro, Hanako, and someone else similar to them came. Likewise, (2) is judged true if Taro cleaned his room, studied English, and did something similar in addition to those things.

- (1) Taro *-toka* Hanako *-toka* *-ga* ki *-ta*
 Taro *-toka* Hanako *-toka* *-NOM* come *-PST*
 ‘Taro, Hanako, and someone else came.’

- (2) Taro *-wa* heya *-o* soojisi *-tari* eigo *-o* benkyoosi *-tari* si *-ta*
 Taro *-TOP* room *-ACC* clean *-tari* English *-ACC* study *-tari* do *-PST*
 ‘Taro cleaned the room, studied English, and did other such things.’

Syntactically, these particles behave much like the focus particles *-mo* ‘also’ and *-sae* ‘even.’ First, both *-toka* and *-tari* may be used as stand-alone particles, with no coordination, just like focus particles.

- (3) Taro *-toka* *-ga* ki *-ta*
 Taro *-toka* *-NOM* come *-PST*
 ‘Taro and someone else came.’

- (4) Taro *-wa* eigo *-o* benkyoosi *-tari* si *-ta*
 Taro *-TOP* English *-ACC* study *-tari* do *-PST*
 ‘Taro cleaned the room, studied English, and did other such things.’

Similarly, *-mo* and *-sae* can be used in coordinating constructions. Coordination with *-mo* as in (5) has been extensively studied in the literature and has inspired many other studies on coordination (Mitrovic & Sauerland 2014; Szabolcsi 2015 a.o.), but coordination with *-sae* is also possible, as in (6).

- (5) Taro *-mo* Hanako *-mo* paatii *-ni* ki *-ta*
 Taro *-mo* Hanako *-mo* party *-to* come *-PST*
 ‘Both Taro and Hanako came to the party.’

- (6) Kare *-wa* nusumi *-sae* korosi *-sae* su *-ru*
 He *-TOP* steal *-even* kill *-even* do *-PRS*
 ‘He even steals and kills.’

It seems clear, then, that all of these particles possess a common syntactic core in terms of their ability to be used by themselves and in coordinating constructions.

-toka and *-tari* also pattern with *-mo* and *-sae* in being anti-topical in the sense of Tomioka (2007): none of these elements may appear in topic position, marked with the topic marker *-wa*¹.

- (7) *Taro -mo/-sae -wa ki -ta
 Taro -also/-even -TOP come -PST
 ‘As for also, even Taro, he came.’
- (8) *Taro -toka -wa ki -ta
 Taro -toka -TOP come -PST
 ‘As for Taro and others, they came.’
- (9) *Soojisi -tari -wa Taro -ga si -ta
 clean -tari -TOP Taro -NOM do -PST
 ‘As for cleaning and other such things, Taro did them.’

Finally, the particles that can attach to nominals all induce LF-intervention effects (Hoji 1986): sentences in which a nominal with *-mo* *-sae* or *-toka* precedes a *wh*-interrogative are degraded. Note, in keeping with the typical profile of intervention effects such as these, scrambling the *wh*-element over the intervener results in grammaticality.

- (10) a. *?Hanako -mo/sae dare -o home -ta no?
 H. -mo/sae who -ACC praise -PAST Q
 ‘Who did also/even Hanako praise?’
 b. Dare_i -o Hanako -mo/sae *t_i* home -ta no?
 who -ACC H. -mo/sae praise -PAST Q
 ‘Who did also/even Hanako praise?’
- (11) a. *?Taro -toka -ga nani -o tabe -ta no?
 T. -toka -NOM who -ACC eat -PAST Q
 ‘What did also Taro eat?’
 b. Nani_i -o Taro -toka -ga *t_i* tabe -ta no?
 who -ACC T. -toka -NOM eat -PAST Q
 ‘What did also Taro eat?’

On the basis of this set of commonalities, one might be led to believe that *-toka* and *-tari* are in fact focus particles themselves. However, a closer look at the semantics of *-toka* and *-tari* reveal deep differences between them and *-mo* and *-sae*.

3 Disjunctive readings with *-toka* and *-tari*

We have thus far considered each of the particles discussed in the previous section in ordinary, declarative contexts. However, in other contexts, a major difference in the interpretation of *-toka* and *-tari* *-mo* and *-sae*. We illustrate this initially with the antecedent of a conditional, as in (12) and (13).

¹ The examples in (8) and (9) may, however, receive a contrastive interpretation.

- (12) Taro -mo ki -tara, Yosuke -wa ocha -o das -u
 Taro -also come -if Yosuke -TOP tea -ACC serve -PRS
 ‘If Taro also comes to the party, Yosuke will serve tea.’
- (13) Taro -ga borokkori -o tabe -sae sur -eba, mama -wa yorokob -u
 Taro -ga broccoli -ACC eat -even do -if mom -TOP become.happy -PRS
 ‘If Taro even eats broccoli, his mom will be happy’

In (12), it must be the case that Taro comes to the party in order for Yosuke to serve tea, and it must also be the case that someone else in addition to Taro is coming to the party as well. Likewise, in (13), Taro must eat broccoli for this mother to be happy, and the interpretation that Taro does something else that makes his mother happy (which may be more expected in other situations) remains. In other words, both *-mo* and *-sae* possess additive presuppositions like their English counterparts *also* and *even*. These presuppositions project out of contexts like the antecedent of a conditional, thus explaining their behavior.

Such a state of affairs does not hold for *-toka* and *-tari*, however. In fact, in the antecedent of a conditional, the interpretation of *-toka* and *-tari* changes quite drastically; they are no longer interpreted as non-exhaustive conjunctions, but rather possess a *disjunctive* interpretation with a twist: the predicate need not hold of the overtly mentioned individual in the case of *-toka*, and the overtly mentioned predicate need not hold in the case of *-tari*. In (14), for instance, Yosuke will serve tea if Taro comes, if Hanako comes, *or* if someone like them who wasn’t mentioned at all comes. Likewise, in (15), Taro’s mother will be happy if he drinks water, eats an apple, *or* does something similar to that.

- (14) Taro -toka (Hanako -toka) -ga ki -tara, Yosuke -wa ocha -o das -u
 Taro -toka Hanako -toka -NOM come -if Yosuke -TOP tea -ACC serve -PRS
 ‘If Taro, Hanako, or someone like that comes, Yosuke will serve tea.’
- (15) Taro-ga mizu -o non -dari (ringo -o tabe -tari) si -tara mama-wa yorokob -u
 Taro-NOM water-ACC drink-tari apple-ACC eat -tari do -if mom -TOP happy -PRS
 ‘If Taro drinks milk, eats an apple, or does something like that, his mom will be happy.’

From these examples, we can see that *-toka* and *-tari* not only do not require that the overtly mentioned argument come or be done in the antecedent of a conditional, but also that their non-exhaustiveness is not presuppositional in nature, as it does not project out of the antecedent of the conditional. In (14), for example, no one in addition to Taro, Hanako, or an unmentioned person needs to come in order for Yosuke to serve tea.

Conditionals are not the only context in which *-toka* and *-tari* are interpreted disjunctively. They also receive a disjunctive-like interpretation in the scope of a possibility modal. In (16), any of the options listed, in addition to unmentioned ones, are possible. In (17), Godzilla might do any one of the listed actions, or something else similar to that, but he is not required to do them all.

- (16) shoosin -toka (kaigaikimmu -toka) -ga ari -e -ru
 promotion -toka overseas.work -toka -NOM be -POSS -PRS
 ‘You may get a promotion or work abroad or something like that.’
- (17) Godzilla -wa machi -o hakaisi -tari (teki -o taosi -tari) si -u -ru
 Godzilla -TOP town -ACC destroy -tari enemy -ACC defeat -tari do -POSS -PRS
 ‘Godzilla may destroy the town or defeat his enemies or do something like that.’

Disjunctive interpretations of *-toka/-tari* are also attested in polar questions. In (18), the addressee may reply in the affirmative if Taro, Hanako, or someone else like them came. This is also the case in (19), where the addressee may reply affirmatively if Taro did just one of the actions or something similar to them.

(18) Taro *-toka* (Hanako *-toka*) *-ga* *ki* *-ta* *no?*
 Taro *-toka* Hanako *-toka* *-NOM* *come* *-PST* *Q*
 ‘Did Taro, Hanako, or someone like that come?’

(19) Taro *-wa* *heya* *-o* *soojisi* *-tari* (*eigo* *-o* *benkyoosi* *-tari*) *si* *-ta* *no?*
 Taro *-TOP* *room* *-ACC* *clean* *-tari* *English* *-ACC* *study* *-tari* *do* *-PST* *Q*
 ‘Did Taro clean his room, study English, or do something like that?’

Finally, *-toka* and *-tari* are also interpreted as disjunctive in imperatives. In (20), the addressee will be in compliance with the speaker’s command if they bring food, drink, or something similar to that, and in (21), the speaker’s command will be complied with if the addressee dances, sings, or does something similar to entertain the speaker.

(20) *Tabemono* *-toka* (*nomimono* *-toka*) *motteko* *-i!*
food *-toka* *drink* *-toka* *bring* *-IMP*
 ‘Bring me food, drink, or something like that!’

(21) *Tsumaranai*. *Odot* *-tari* (*utat* *-tari*) *sir* *-o!*
boring *dance* *-tari* *sing* *-tari* *do* *-IMP*
 ‘I’m bored. Dance or sing or do something like that!’

In summary, while *-toka* and *-tari* share many syntactic traits with the focus particles *-mo* and *-sae*, they are quite distinct from them semantically. In the next section, we propose an analysis of *-toka* and *-tari* that captures their syntactic commonalities with focus particles and accounts for their semantics.

4 Analysis

In this section we propose a syntactic and semantic analysis of *-toka* and *-tari*. We begin with discussion of their syntax, and move then into an in-depth treatment of their semantics in different environments.

4.1 Syntax

Syntactically, we propose that *-toka* and *-tari*, like the focus particles *-mo* and *-sae*, are stand-alone particles that head their own projections, and subcategorize for an NP and VP complement, respectively. Additionally, following the spirit of previous analyses, such as that of Mitrovic & Sauerland (2014), we propose that a silent coordinator head J(unction)⁰ is optionally present to coordinate two phrases of the same type, to account for the cases of coordination that are possible with all of these particles. This is schematized in (22).

(22) a. [_{JP} [_{tokaP} NP-*toka*] [_{J⁰} [_{tokaP} NP-*toka*]]] b. [_{JP} [_{tariP} VP-*tari*] [_{J⁰} [_{tariP} VP-*tari*]]]

This accounts for the common syntactic core that focus particles and *-toka/-tari* share.

4.2 Semantics

Semantically, we propose that *-toka* and *-tari* introduce individual and predicate alternatives, respectively. These alternatives are restricted so that they are similar in some contextually relevant sense to the overtly mentioned argument. By virtue of being self-similar, the overtly mentioned argument is also present in the alternative set. We provide denotations in (23a-b) and example alternatives in (23c-d) below.

- (23) a. $\llbracket \alpha_{\langle e \rangle} \text{-toka} \rrbracket = \{x \mid C(x) \ \& \ \alpha \sim x\}$ c. $\llbracket \text{Taro-toka} \rrbracket = \{\text{Taro, Jiro, ...}\}$
 b. $\llbracket \alpha_{\langle e, t \rangle} \text{-tari} \rrbracket = \{P \mid C(P) \ \& \ \alpha \sim P\}$ d. $\llbracket \text{soojisi-tari} \rrbracket = \{\lambda x. \lambda w. x \text{ clean the room,}$
 $\lambda x. \lambda w. x \text{ do laundry, ...}\}$

For cases of coordination, we analyze J^0 as essentially just collecting up the alternatives introduced by each conjunct, in the same way that Alonso-Ovalle (2008) treats *or*.

- (24) Where $\llbracket XP \rrbracket$ and $\llbracket YP \rrbracket \subseteq D\tau$, $\llbracket \llbracket XP \rrbracket [J \llbracket YP \rrbracket] \rrbracket \subseteq D\tau = \llbracket XP \rrbracket \cap \llbracket YP \rrbracket$

The alternatives compose with other elements of the sentence through Pointwise Functional Application (Hamblin 1973), yielding a set of propositional alternatives, as in (25).

- (25) a. $\llbracket \text{Taro-toka-ga kita} \rrbracket = \{\lambda w. \text{Taro came in } w, \lambda w. \text{Jiro came in } w, \dots\}$
 b. $\llbracket \text{Taro-ga soojisi-tari si-ta} \rrbracket = \{\lambda w. \text{Taro cleaned the room in } w,$
 $\lambda w. \text{Taro did laundry in } w, \dots\}$

What happens after the alternatives reach propositional status depends on the semantics of their environments. We discuss each of these in turn.

4.2.1 Declaratives

Recall that in ordinary declarative contexts *-toka* and *-tari* are interpreted as non-exhaustive conjunctions. We model this as the insertion of a universal quantifier over propositional alternatives, defined as in (26) following Kratzer and Shimoyama (2002).

- (26) $\llbracket \forall \rrbracket^w (A) = \{\lambda w'. \forall p [p \in A \rightarrow p(w')]\}$

In declaratives, an assertion operator high in the tree will require the set of alternatives to be reduced to a singleton in order to be defined, and the universal operator in (26) is will be inserted by default (Menendez-Benito 2006, Rawlins 2008). This will result in an interpretation according to which all of the propositional alternatives are true in the world of evaluation. This gives rise to the conjunctive interpretation of *-toka* and *-tari*.

4.2.2 Conditionals

We follow Alonso-Ovalle's (2006) treatment of *if*-conditionals and analyze the antecedent of a conditional as a universal quantifier over propositional alternatives. We illustrate this in (27), using the antecedent of the conditional from example (14a).

- (27) $\llbracket \text{Taro-toka Hanako-toka ki-tara} \rrbracket = \{\lambda f_{\langle \langle s, t \rangle, \langle s, t \rangle \rangle} \lambda w. \forall p \in \{\text{Taro comes in } w, \text{Hanako comes in } w, \dots\} \rightarrow fp(w)\}$

The antecedent of a conditional will take as argument the consequent, which is a property of propositions, or function from propositions into propositions. We accomplish this through an im-

plicit necessity modal in the consequent, as in standard in treatments of bare conditionals (Kratzer 1986, a.o.). A denotation for the consequent is given in (28).

$$(28) \llbracket \text{Yosuke-wa ocha-o dasu} \rrbracket = \{ \lambda p_{\langle s, t \rangle} \lambda w. \forall w' [f_{\leq w'}(p(w')) \rightarrow \text{Yosuke serves tea in } w'] \}$$

Finally, the antecedent takes the consequent as an argument, resulting in a denotation for (14) as in (29).

$$(29) \llbracket (14) \rrbracket = \{ \lambda w. \forall p [p \in \{ \text{Taro comes in } w, \text{ Hanako comes in } w, \dots \} \rightarrow \forall w' [f_{\leq w'}(p(w')) \rightarrow \text{Yosuke serves tea in } w']] \}$$

What this says is that for every proposition, if that proposition is in the set of alternatives, then for every possible world, if p holds in a world close to the actual world, then Yosuke will serve tea in that world. In other words, (14) has an interpretation in which all closest worlds where Taro comes are worlds where Yosuke serves tea, and all closest worlds where Hanako comes are worlds where Yosuke serves tea, etc. Crucially, this does not require that both Taro and Hanako must come in the same world for Yosuke to serve tea, but simply states that one of them (or any other individual in the alternative set introduced by *-toka*) coming is sufficient for Yosuke to serve tea. This captures the disjunctive-like interpretation of *-toka* in the antecedent of a conditional by effectively distributing the alternatives over worlds closest to the world in which the consequent holds. Note that the same analysis works equally well for *-tari*, because the conditional operates over propositional alternatives, regardless of whether they were constructed from individual alternatives (in the case of *-toka*) or from predicate alternatives (in the case of *-tari*).

4.2.3 Possibility modals and imperatives

Following Menendez-Benito (2010), we introduce the universal operator defined in (26) above possibility modals to derive the disjunctive-like reading of *-toka* and *-tari*. We illustrate this analysis using the *-tari* sentence in (17), though this will work with *-toka* as well. First, we give the denotation of the propositional alternatives built up from *-tari* in (30).

$$(30) \llbracket \text{Godzilla-wa machi-o hakaisi-tari} \rrbracket = \{ \lambda w. \text{Godzilla destroy the town in } w, \\ \lambda w. \text{Godzilla defeat his enemies in } w, \dots \}$$

These alternatives will compose via Pointwise Functional Application with the modal $-u$, a possibility modal the denotation of which we provide in (31). This will result in a set of modalized propositional alternatives.

$$(31) \llbracket -u \rrbracket = \{ \lambda p. \lambda w. \exists w' [\text{acc}(w)(w') \& p(w')] \}$$

The universal operator is then introduced above the possibility modal in order to collapse the alternatives into a singleton. This results in the following representation in (32)

$$(32) \llbracket (17) \rrbracket = \{ \lambda w. \forall p [p \in \{ \lambda w. \exists w' [\text{acc}(w)(w') \& \text{Godzilla destroys the town in } w'], \\ \lambda w. \exists w' [\text{acc}(w)(w') \& \text{Godzilla defeats his enemies in } w'], \dots \} \\ \rightarrow p(w)] \}$$

What (32) says is that (17) is true iff for each proposition, if the proposition is one of the alternatives, then there is a world where each alternative is true in the world of evaluation. As such, we arrive at an interpretation in which there is a world accessible from this one in which Godzilla destroys the town, a world in which he defeats his enemies, and so on for each alternative in the

set. Much like in the case of conditionals, this does not require that Godzilla do all of the alternative actions in each possible world; doing only one of them in one of the worlds suffices. Therefore, we have once again derived the disjunctive-like interpretation of *-toka/-tari* through the interaction of the alternatives with the semantics of other operators in the sentence.

We can extend this approach to possibility modals to deal with imperatives as well. Adapting an approach due to Aloni (2007)², we can treat the imperative operator as something akin to a universal quantification over the set of alternatives, in combination with existential quantification over a set of desire worlds, which encode the set of desires that the imperative aims to satisfy. This would result in an interpretation in which each alternative is compatible with one of the desire worlds. Like in the case of possibility modals, this results in the alternatives being distributed over the desire worlds, and the effect of this is that the compliance conditions of the imperative are met if at least one of the alternatives holds. To illustrate this, we provide the denotation for an imperative sentence with *-toka*, (20), in example (33).

$$(33) \llbracket (20) \rrbracket = \{ \lambda w. \forall p \in \{ \lambda w. \text{you bring food in } w, \lambda w. \text{you bring drink in } w, \dots \} \\ \exists w' \in W_{\text{Des}} [wRw' \ \& \ p(w')] \}$$

(33) states that for each proposition in the alternative set, there is a world (in the set of desire worlds) such that that world is accessible to the world of evaluation and the proposition holds in that world. This does not require that every proposition hold in every possible world, and thus the imperative will be satisfied if the addressee brings food, drink, or something else like that. This, therefore, derives the disjunctive-like reading of *-toka/-tari* in imperatives.

4.2.4 Polar Questions

To conclude our main analysis, we turn to polar questions, which also bring about disjunctive-like readings of *-toka* and *-tari*. For these cases, we propose that the propositional alternatives are instead *existentially* quantified, using the following operator defined by Kratzer & Shimoyama (2002).

$$(34) \llbracket \exists \rrbracket^w (A) = \{ \lambda w'. \exists p [p \in A \ \& \ p(w')] \}$$

Once the alternatives are existentially quantified, this allows them to be taken as an argument by the partition operator, defined in (35), which returns the bipolar denotation of a polar question.

$$(35) \llbracket \text{Part} (\{ \lambda w'. \exists p [p \in A \ \& \ p(w')] \}) \rrbracket = \{ \lambda w'. \exists p [p \in A \ \& \ p(w')], \lambda w'. \neg \exists p [p \in A \ \& \ p(w')] \}$$

This brings about an interpretation for a question like (18) in which one could answer ‘yes’ if one or more of the alternatives holds, and ‘no’ if none of them do, the correct result.

5 Predictions and comparison with previous work

In this section, we discuss two correct additional predictions that our account makes independently of the phenomena we originally discussed above. We also discuss how the account we have proposed here compares to previous analyses of this and similar phenomena.

² We depart from Aloni in using a Hamblin-style alternative semantics, in which there is no distinction between ordinary and alternative semantic values, whereas Aloni does draw a distinction between a proposition and its alternatives.

First, our analysis predicts that *-toka* and *-tari* should receive *conjunctive* interpretations under necessity modals. This is because the interaction of the semantics of the necessity modal and the insertion of the universal propositional quantifier will result in an interpretation in which *every* proposition in the alternative set holds in *every* accessible possible world. This can be seen in (36) below.

$$(36) \{ \lambda w. \forall p [p \in \{ \lambda w. \forall w' [\text{acc}(w)(w') \rightarrow \text{Godzilla destroys the town in } w'], \\ \lambda w. \forall w' [\text{acc}(w)(w') \rightarrow \text{Godzilla defeats his enemies in } w'], \dots \} \\ \rightarrow p(w) \}$$

(36) asserts that for every world w' , if w' is accessible from w , then w' is a world where Godzilla destroys the town, and for every world w' , if w' is accessible from w , then w' is a world where Godzilla defeats his enemies, etc. The overall effect is that Godzilla does *every* alternative in *every* world.

This prediction is borne out: in (37), the graduate students must do all of the actions, not just one of them.

(37) insei -wa gakkai -de happyoosi -tari ronbun -o shuppansi -tari su -ru
 grad -TOP conf -at present -tari paper -ACC publish -tari do -PRS
 hitsuyoo -ga ar -u
 need -NOM be -PRS

‘It is necessary for graduate students to present at conferences and publish papers, etc..’

A second positive prediction our account makes concerns possible answers to questions. In particular, we predict that it is possible to answer ‘yes’ when one of the mentioned alternatives does not in fact hold. This prediction is also borne out. Consider the context in (38).

(38) Context: Taro, Ryo, and Jiro are all good friends, and everyone associates them with one another. There was a big party last night, and Hanako wants to know if any of them came. She asks:

- a. Taro -toka Ryo -toka -ga ki -ta no?
 Taro -toka Ryo -toka -NOM come -PST Q
 ‘Did Taro, Ryo, or someone like that come?’
- b. Hai, Jiro -ga ki -ta yo
 Yes Jiro -NOM come -PST EMPH
 ‘Yes, Jiro came.’

This offers support for our analysis, and shows that it would be difficult to attempt to subsume *-toka* and *-tari* under an analysis like Sudo’s (2014) treatment of the non-exhaustive coordinator *-ya*, according to which *-ya* is simply an inclusive disjunction with a conjunctive implicature in upward-entailing contexts. Such an analysis would incorrectly predict that questions with *-toka/-tari* may not be answered in the affirmative if an unmentioned alternative holds, contrary to fact.

The account developed here also improves on previous work on *-toka* and *-tari* in Kobayashi & Smith (to appear). In this work, which uses a similar (though not identical) dataset to the current paper, the alternation between conjunction and disjunction observed with *-toka* and *-tari* is explained through the insertion of either the universal or the existential propositional quantifier, depending on the (non-)veridicality of the semantic context. For example, declaratives, being veridical, support the introduction of the universal quantifier, while the antecedent of a conditional supports the introduction of the existential quantifier, because such an environment is non-

veridical. Beyond asserting which environments license which quantifier, the analysis does not provide a particular reason as to why particular environments should license the quantifier that they do.

Our current analysis is more explanatory, we believe, because rather than inserting propositional quantifiers in a mostly *ad hoc* manner, we allow the alternatives introduced by *-toka* and *-tari* to be manipulated by independently motivated aspects of the semantics of the environment in which they appear. This not only successfully captures the semantic behavior of *-toka* and *-tari* in these environments, but also allows us to make correct predictions about the behavior of these particles with necessity modals, as noted above, and to make connections with the broader alternative semantics literature.

6 Conclusion

In this paper, we have investigated the syntax and semantics of *-toka* and *-tari*, contrasting them with the focus particles *-mo* and *-sae*. Although syntactically all of these particles possess much in common, they diverge from one another semantically: while *-mo* and *-sae* are semantically focus particles, with presuppositional content, *-toka* and *-tari* are non-presuppositional, and receive inclusive disjunctive interpretations, which additionally may refer to unmentioned individuals or predicates. To account for these properties, we proposed that all of these particles possess a common syntactic core, being stand-alone particles that may be coordinated by a silent coordinator. To distinguish them semantically, we proposed that *-toka* and *-tari* are non-presuppositional, and simply introduce sets of individual and predicate alternatives, which are manipulated by independently motivated aspects of the semantics of their environments. We showed how this derives the correct interpretation for the range of environments with which we were initially concerned, including ordinary declaratives, the antecedent of a conditional, possibility modals, imperatives, and polar questions. We further showed that our analysis makes correct predictions beyond this, lending further support to our proposal.

References

- Aloni, M. 2007. Free choice, modals, and imperatives. *Natural Language Semantics* 15: 65-94.
- Alonso-Ovalle, L. 2006. Disjunction in alternative semantics. Doctoral dissertation, University of Massachusetts Amherst.
- Alonso-Ovalle, L. 2008. Innocent exclusion in an alternative semantics. *Natural Language Semantics* 16: 115-128.
- Hamblin, C. L. 1973. Questions in Montague English. *Foundations of language* 10: 41-53.
- Hoji, H. 1986. Scope interpretation in Japanese and its theoretical implications. In M. Dalrymple et al. (Ed.) *Proceedings of the West Coast Conference on Formal Linguistics*, 5, 87-101. Palo Alto: CLSI Publications.
- Kobayashi, R. & Smith, R.W. (to appear). Conjunctive or Disjunctive? On the syntax/semantics of *-toka* and *-tari* in Japanese. To appear in *Proceedings of ConSOLE XXV*.
- Kratzer, A. 1986. Conditionals. In A. Farley, T. Farley, and K. McCullough (eds.) *Proceedings of CLS 22(2)*, 1-15. Chicago: Chicago Linguistics Society.
- Kratzer, A., and J. Shimoyama. 2002. Indeterminate pronouns: The view from Japanese. In *Proceedings of the 3rd Tokyo conference on psycholinguistics* 1-34. Tokyo: Hitsuji Shobo.

- Menéndez-Benito, P. 2005. *The grammar of choice*. Doctoral dissertation, University of Massachusetts Amherst.
- Menéndez-Benito, P. 2010. On universal free choice items. *Natural Language Semantics* 18: 33-64.
- Mitrović, M., and U. Sauerland. 2014. Decomposing coordination. *North East Linguistic Society* 44: 39-52.
- Rawlins, K. 2008. Unifying "if"-conditionals and unconditionals. In T. Friedman and S. Ito (eds.) *Proceedings of Semantics and Linguistic Theory 18*, 583-600. Ithaca: CLC Press.
- Sudo, Y. 2014. Higher-order scalar implicatures of ‘ya’ in Japanese. *Handout, Theoretical East Asian Linguistics*, 9.
- Szabolcsi, A. 2015. What do quantifier particles do?. *Linguistics and Philosophy* 38: 159-204.
- Tomioka, S. 2007. Pragmatics of LF intervention effects: Japanese and Korean wh-interrogatives. *Journal of Pragmatics* 39: 1570-1590.

