Non-Interrogative Questions in Yukatek Maya*

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1. Introduction

In Yukatek Maya, a single sentence with a disjunction in the focus position functions either as an assertion, (1), or an alternative question, (2), depending on the discourse context.[1]

Scenario: Addressee and speaker both agree that one of the speaker's three siblings (Juan, Daniel, and Maribel) drank the atole (a traditional corn beverage) that was on the table.

(1) [Juan *wáa* Daniel]$_F$ uk' le sa'-o'
Juan OR Daniel drink.AGENT.FOCUS DEF atole-DISTAL
'It was Juan or Daniel who drank the atole.'

Scenario: Addressee and speaker both agree that one of the speaker's two brothers (Juan and Daniel) drank the atole that had been on the table.

(2) [Juan *wáa* Daniel]$_F$ uk' le sa'-o'
Juan OR Daniel drink.AGENT.FOCUS DEF atole-DISTAL
'Was it Juan who drank the atole or was it Daniel?'

Additionally, the two morphosyntactic components crucial to (1)/(2) – the disjunctive coordinator *wáa(h)* and the focus/cleft construction – both occur in sentences like (3), which is interpreted as a polar question regardless of the discourse context.

(3) [Juan-*wáah*]$_F$ uk' le sa'-o'
Juan-OR drink.AGENT.FOCUS DEF atole-DISTAL
'Was it Juan who drank the atole?'

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[1] **This paper is to appear in *Proceedings of SULA V***. Elements in the focus-cleft syntactic position are notated with a subscript F, [...]$_F$. The following abbreviations are used in glosses: CL: classifier, DEF: definite article, ERG: ergative (Set A in Mayanist terminology) agreement marker, NEG: negation, PFV: perfective aspect, PROG: progressive aspect, TERM: terminative aspect.

The disjunctive coordinator *wáa(h)* also occurs in sentences like (5) which do not contain a focus/clefted element and are interpreted as polar questions in all discourse contexts.

(4) táan-*wáah* u yuk'ik le sa'-o' Juan
PROG-OR ERG.3 drink DEF atole-DISTAL Juan
'Is Juan drinking the atole?'

We provide an account which derives the interpretation of (2) as a question from the interaction of two elements which are not inherently interrogative – disjunction and the focus/cleft construction.[2] To derive the interpretation of (2) as a question from morphosyntactic elements which are not inherently questioning requires a particular semantics for disjunctions more generally. Following Groenendijk (2007), Mascarenhas (2008), and Groenendijk and Roelofsen (2009), we adopt an account of disjunction in which all disjunctions have a *latent inquisitive* potential in addition to their classical, informative potential.

The role of focus, then, is to remove the latency of this inquisitive potential, making the issue raised the sole at-issue contribution of the sentence. This, we claim, is the result of the focus/cleft's existential presupposition, which presupposes the informative component of the disjunction: the information that there is some individual satisfying the main predicate. Based on this analysis, polar questions like (3) are analyzed as focused disjunctions with only one overt disjunct syntactically. The 'empty disjunct' is interpreted following principles that hold of ordinary disjunctions as the exhaustive set of like elements mutually disjoint from the overt disjunct. While polar questions like (4) do not involve focus, the tools developed to account for (1)-(3) can be readily extended to account for them as well.

The organization of the paper is as follows: **§2** characterizes the morphosyntax and interpretations of focused disjunctions and polar questions with and without a focused element; **§3** briefly presents an inquisitive semantics account of ordinary disjunctions; **§4** derives the interpretations of focused disjunctions from this account and the presuppositional semantics of the focus position; **§5** extends the account to polar questions; **§6** concludes.

2. Data

As in English or Spanish, sentences in Yukatek Maya with disjunctions outside of the focus-cleft in other sentential positions can only be interpreted as disjunctive assertions, not as questions. We see this illustrated in (5) for a disjunction in argument position.

(5) t-u yuk'ah le sa'o' Juan wáa Daniel
PFV-ERG.3 drink DEF atole-DISTAL Juan OR Daniel
'Juan or Daniel drank the atole.'

[2] It should be noted that intonation does not seem to distinguish between the uses in (1) and (2). This would not be altogether surprising since non-disjunctive elements in the Yukatek Maya (YM) focus position are not intonationally prominent (Avelino (2008) and references therein). Furthermore, polar questions in languages like English, a language which does mark focus intonationally, do not regularly occur with a final rise (Bartels (1999)).

While disjunction clearly is central to the interpretation of (2)-(4) as questions, (5) suggests there is no reason to believe that its behavior in Yukatek Maya is substantively different than its behavior in more well-studied languages.

2.1 Alternative Questions

Sentences with disjunctions in the focus/cleft position in Yukatek Maya are interpreted either as questions or assertions depending on the prior discourse context. For example, a sentence like (6) is interpreted as a request for information in context A, obliging the addressee to answer by picking either the mango or the papaya tree. In context B, however, the same sentence is interpreted as affirming that, out of the three trees in the yard, Juan cut down either the mango or the papaya tree, as opposed to the orange tree.

Scenario: There are two trees in the yard: a mango tree and a papaya tree.

(6) [le kuul maangoh *wáa* le kuul puut]$_F$ t-u ch'akah Juan
DEF plant mango OR DEF plant papaya PFV-ERG.3 cut Juan
'Was it the mango tree or the papaya tree that Juan chopped?'

Scenario: There are three trees in the yard: a mango tree, a papaya tree, and an orange tree.

(7) [le kuul maangoh *wáa* le kuul puut]$_F$ t-u ch'akah Juan
DEF plant mango OR DEF plant papaya PFV-ERG.3 chop Juan
'It was the mango tree or the papaya tree that Juan chopped.' (not the orange tree)

Intuitively, the speaker in both examples puts forth a set consisting of two alternatives: one where Juan cut the mango tree and one where he cut the papaya tree. One way to think of the difference between the two contexts in (6) and (7), then is in terms of whether or not this set of alternatives *exhausts* those which are available in the context. The sentence in (6)/(7) is interpreted as a question in contexts like A, where the alternative set the speaker presents is identical to those which were previously present in the conversation. Interpretation as an assertion in scenarios like B, then, comes about when this set of alternatives is a proper subset of the alternatives in the context. That is, it functions as an assertion when accepting the set of two alternatives serves to eliminate some other potential alternative(s) which had previously been available in the common ground.

It is important to note that there is no reason to think of this alternation as an *ambiguity* of any sort. Once the context is fixed, (6)/(7) has only a single interpretation either as a question or as an assertion. In the dynamic semantics tradition, a sentence's denotation is taken to be its context change potential (CCP) – a function mapping each possible input context to a corresponding output context. Instead of thinking of focused disjunctions like (6)/(7) as being ambiguous, then, we can think of such sentences as denoting a single CCP affecting different input contexts in different, yet predictable, ways. The goal, then, which we pursue in §4 is to provide an analysis of sentences like (6)/(7) in which they uniformly denote a proposal to update the common ground with a set of two alternatives. Whether

the sentence functions as a question or an assertion, then, results from the relation of this set to the set of alternatives previously present in the common ground.

2.2 Polar Questions

A polar question also denotes a set consisting of two alternatives, often corresponding to the English answers 'yes' and 'no' as in (8). In Yukatek Maya, we also find a second type of polar question as in (9), where the two answers can be roughly described as 'Juan drank the atole' and 'Someone else drank the atole'. Unlike the focused disjunctions in §2.1, both (8) and (9) are interpreted as questions *regardless of the discourse context*.

(8) táan-*wáah* u yuk'ik le sa'-o' Juan
PROG-OR ERG.3 drink DEF atole-DISTAL Juan
'Is Juan drinking the atole?'

(9) [Juan-*wáah*]$_F$ uk' le sa'-o'
Juan-OR drink.AGENT.FOCUS DEF atole-DISTAL
'Was it Juan who drank the atole?'

Though such sentences do not exhibit the same alternation as focused disjunctions, we still have ample reason to believe that they are closely related to focused disjunctions. Like focused disjunctions, polar questions are proposals to update the common ground with a set of two alternatives. In addition to the obvious semantic parallel, polar questions in Yukatek Maya share much of their morphosyntax with focused disjunctions. Both types of polar questions contain a morpheme *wáa* that is at least homophonous[3] with the disjunctive coordinator (in §5, we will argue that it is in fact the disjunctive coordinator) and polar questions like (9) also involve the focus-cleft construction.

The above examples typify two different classes of polar question: those like (9) with a focused element, and those like (8) with no such element. While *wáa* in (8) is phonologically dependent on the progressive aspect marker, *táan*, there is no sense in which *táan* is more informationally salient than any other element in the sentence. We see this asymmetry reflected in the distribution of *wáa* in examples of the two types. In polar questions with a focused element like (9), *wáa* occurs following the focused constituent (usually a nominal), regardless of its internal complexity. For example, we find sentences like (10) where *wáa* occurs following a relatively long and syntactically complex NP/DP.

(10) [le ts'ooya'an sakpile'en maak-*wáah*]$_F$ t-u yuk'ah le sa'o'
DEF thin pale man-OR PFV-ERG.3 drink DEF atole-DISTAL
'Was it the thin, pale man who drank the atole?'

[3]The final [h] in *wáah* is the result of a regular phonological process of phrase-final h-epenthesis detailed in AnderBois (2009b). It should be noted as well that a morpheme at least homophonous with *wáa* also occurs in conditional antecedents (c.f. English *if*) and in non-specific wh-indefinites. While both of these constructions intuitively involve alternatives of some sort, it is not clear that they deserve a unified synchronic account and as such are not further discussed.

In contrast, in examples like (8) and (11)-(12) with no focus-clefted element, the position of *wáa* appears to be prosodically determined, occurring following the first (maximal) prosodic word. Whereas *wáa* leans on the aspectual marker in (8), it can also lean on the main verb when the aspectual marker is prosodically deficient (perfective *t-* and imperfective *k-*) – (11) – or absent as in the case of non-verbal predication – (12).

(11) t-u yuk'ah-*wáah* le sa'-o'?
PFV-ERG.3 drink-OR DEF atole-DISTAL
'Did he drink the atole?'

(12) uts-*wáah* a hanal?
good-OR ERG.2 food
'Is your food good?'

The syntactic heterogeneity of the possible hosts for *wáa* strongly supports the prosodic account of its positioning in these cases. We find even more striking support from the behavior of certain aspectual markers which themselves have two phonological forms: an independent CVC form and a portmanteau CV form combining aspectual information and ergative agreement marking (see Bohnemeyer (2002), p. 103 for further discussion). The CVC variant in (13) serves as the host for *wáa*, while the phonologically dependent portmanteau form in (14) cannot, with *wáa* instead following the main verb as in (15).

(13) ts'o'ok-*wáah* a wa'alik ti leti'
TERM-OR ERG.2 say to him
'Did you already tell him?'

(14) *ts'a'a-*wáa* wa'alik ti leti"
TERM.ERG.2-OR say to him
'Did you already tell him?'

(15) ts'a'a wa'alik-*wáa* ti leti'

In polar questions with no focus-clefted element, we claim that it is the polarity of the sentence itself which *wáa* targets semantically. We see this clearly in (16) when the polarity of the sentence is phonologically overt, i.e. when it is negative.

(16) ma'-*wáah* t-a beetik hum p'el pastel
NEG-wáa PFV make one CL cake
'Didn't you make a cake?'

When polarity is phonologically covert (i.e. positive) in (11)-(13), the position of *wáa* is prosodically determined, attaching at the end of the clause-initial prosodic word regardless of its syntactic category.

3. Inquisitive semantics and disjunction

To derive the interpretation of focused disjunctions (and, by extension, polar questions), we need a semantics for all disjunctions which captures the unity between the alternatives in-

troduced by an ordinary disjunction and those introduced by a question. A significant step in this direction is made by Simons (2005) and Alonso-Ovalle (2006) who have forcefully argued that disjunction is best analyzed as collecting a set of alternatives rather than as the boolean connective corresponding to set union. The key insight of these authors is that disjunctions themselves only serve to introduces a non-singleton set of alternatives, with a syntactically non-local closure operator encoding that (at least) one of these alternatives in fact holds. The fact that disjunction itself only introduces a set of alternatives allows these authors to capture quantificational variability effects, free choice effects, the behavior of disjunctive counterfactual antecedents, and other such phenomena where sentential operators interact with these alternatives (as opposed to with their set union).

This approach, however, could equally be applied to conjunction, differing only in the quantificational force of the associated closure operator (i.e. that *all* the alternatives must hold rather than just *some*). This separation of alternatives and quantificational force, however, would not be empirically justified for conjunctions since they do not seem to exhibit quantificational variability effects, free choice effects, or other similar phenomena where the individual conjuncts interact with non-local sentential elements. What we need is an account where disjunctions introduce such alternatives while conjunctions do not.[4]

Inquisitive semantics (Groenendijk (2007), Mascarenhas (2008), and Groenendijk and Roelofsen (2009) *inter alia*) provides exactly such a framework. In these accounts, a disjunction not only introduces a set of alternatives, it also latently *raises the issue* of which alternative(s) holds. In this theory, then, a denotation for any sentence (question or an assertion) is a set of sets of possible worlds (an object of type $\langle\langle s,t\rangle t\rangle$).[5] This is true even in sentences which do not contain a disjunction. For example, the denotation for an atomic formula consisting of an n-place predicate and n terms is given in **S1**.[6]

[4]The present discussion equally applies to the semantics of indefinites as opposed to universal quantifiers. An indefinite in the Hamblin semantics approach (Kratzer and Shimoyama (2002)) introduces alternatives with an existential closure operator asserting that at least one alternative holds. See AnderBois (2009a) for an account of indefinites and their relationship to wh-questions in the present framework.

[5]As in the case of question semantics, we can alternatively formulate these denotations as *relations* between worlds rather than as sets. Mascarenhas (2008) develops such a system where the denotation of a sentence is a set of *pairs* of possible worlds. We adopt the set-based notation here for mostly expository reasons and ease of comparison with the set-based theories of Simons (2005) and Alonso-Ovalle (2006).

[6]The right side of **S1** returns all of the sets of worlds that are such that the classical denotation holds in each world in the set. As written, this allows for non-singleton denotations of the form $\{\{w_1,w_2\},\{w_1\}\}$. In order to get a set of *alternatives*, then, we need to take one more step: to eliminate any sets of worlds which are properly contained within another alternative. Groenendijk and Roelofsen (2009) accomplish this by applying what they term 'alternative closure' – (i) on the outside of the stated definition. For expositional clarity, we do not include this in any of our semantic rules, though they are technically required in all of them to avoid alternatives which properly contain other alternatives.

(i) $\textsc{Alt}\mathscr{P} = \{\alpha \in \mathscr{P} \mid \textit{for no } \beta \in \mathscr{P} : \alpha \subset \beta\}$

Atomic formulas:

S1: $[\![\mathrm{R}^n(\gamma_1, \ldots, \gamma_n)]\!]^{\mathscr{M},g,w} = \{\alpha \subseteq \mathrm{W} \mid \forall w' \in \alpha : \langle [\![\gamma_1]\!]^{\mathscr{M},g,w'}, \ldots [\![\gamma_n]\!]^{\mathscr{M},g,w'} \rangle \in [\![\mathrm{R}^n]\!]^{\mathscr{M},g,w'}\}$

The denotation for an atomic formula is the set containing as its members all of the maximal sets of possible worlds where the predicate is satisfied. Since we are dealing only with atomic formulas at this point, there will only be one such member, the classical denotation of the formula. In such sentences, then, our inquisitive semantics doesn't do any real work, simply giving us the set containing the classical denotation. The same holds for negation, conjunction, and material implication in **S2**-**S4**.

Negation:

S2: $[\![\neg\varphi]\!]^{\mathscr{M},g,w} = \{\alpha \subseteq \mathrm{W} \mid \forall \beta \in [\![\varphi]\!]^{\mathscr{M},g,w} \text{ s.t. } \alpha \cap \beta = \emptyset\}$

Conjunction:

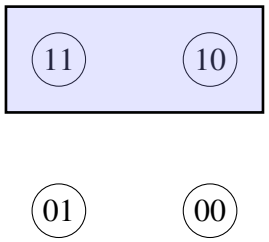
S3: $[\![\varphi \wedge \psi]\!]^{\mathscr{M},g,w} = \{\alpha \subseteq \mathrm{W} \mid \exists \beta \in [\![\varphi]\!]^{\mathscr{M},g,w} : \alpha \subseteq \beta \textit{ and } \exists \gamma \in [\![\psi]\!]^{\mathscr{M},g,w} : \alpha \subseteq \gamma\}$

Material Implication:

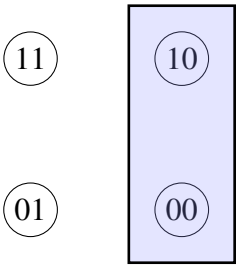
S4: $[\![\varphi \rightarrow \psi]\!]^{\mathscr{M},g,w} = \{\alpha \subseteq \mathrm{W} \mid \forall \beta \in [\![\varphi]\!]^{\mathscr{M},g,w} \textit{ s.t. } \exists \gamma \in [\![\psi]\!]^{\mathscr{M},g,w} : \alpha \cap \beta \subseteq \gamma\}$

These denotations can be represented pictorially as in (17). In these diagrams, the circles represent possible worlds, with the numbers inside representing the truth values of two propositions, φ and ψ respectively, in that world. Each box indicates an alternative, with the set of boxes being the denotation of the formula.

(17) $[\![\varphi]\!]^{\mathscr{M},g,w} =$



$[\![\neg\psi]\!]^{\mathscr{M},g,w} =$



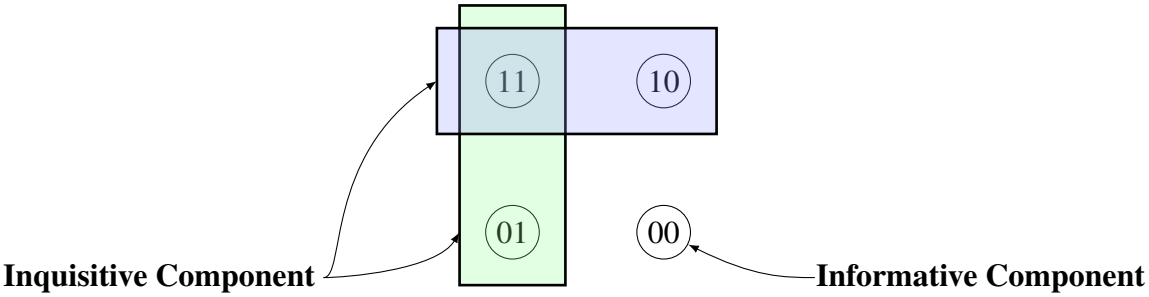
For the above formulas, which consist only of atomic formulas and classical connectives, we do not see the effects of inquisitive semantics (since all denotations are simply the set containing the classical denotation). Unlike the above formulas, however, a disjunction introduces multiple alternatives, raising the issue of which one(s) holds. In a disjunction with two disjuncts, our semantics should deliver two alternatives as in **S5**.

Disjunction:

S5: $[\![\varphi \vee \psi]\!]^{\mathscr{M},g,w} = \{\alpha \subseteq \mathrm{W} \mid \exists \beta \in [\![\varphi]\!]^{\mathscr{M},g,w} : \alpha \subseteq \beta \textit{ or } \exists \gamma \in [\![\psi]\!]^{\mathscr{M},g,w} : \alpha \subseteq \gamma\}$

Unlike in the above cases, the denotation for a disjunction contains more than one alternative, as in (18) (each box represents an alternative). This reflects the intuition that a formula containing a disjunction – unlike those composed only of atomic expressions, negation, conjunction, and material implication – introduces the *issue* of which alternative holds in addition to the *information* some alternative holds. We can call this issue the sentence's *inquisitive component* and the information its *informative component*.

(18) $[\![\varphi \vee \psi]\!]^{\mathscr{M},g,w} =$



Informative Component: It proposes to the addressee to eliminate from the context set those worlds where neither φ not ψ hold.

Inquisitive Component: It (latently) raises the issue of whether φ or ψ by introducing two alternatives, one for each.

A disjunction is an assertion, then, because it is *informative*; it proposes to eliminate worlds from the common ground (worlds where none of the disjuncts holds). At the same time, however, it is like a question since it is inquisitive; it raises the issue of which alternative(s) holds. A disjunction differs from a question since the issue is raised *latently*, allowing the addressee to address it, but not obliging them to. We see this pattern in (19).

(19)

	Inquisitive	Uninquisitive
Informative	Assertion	Assertion
Uninformative	Question	(Tautologous) Assertion

The fact that sentences that are both informative and inquisitive (i.e. sentences with disjunctions) function as assertions reflects the primacy of *information* in discourse. Raising issues is useful only because doing so directs the participants of conversation as to what information to provide. In order for a sentence to be interpreted as a question, it has to have both properties: inquisitivity and *un*informativity. In contrast, any informative sentence functions as an assertion regardless of whether or not it is also inquisitive.

Recall that one of our central goals is to understand the semantics of *focused* disjunctions in Yukatek Maya and, in particular, to capture the context-dependence of their interpretation as a question or assertion. In terms of the principle in (19), then, the task is to understand when these disjunctions are uninformative and how the semantics of the

focus-cleft and the discourse context conspire to bring this about.

Before turning to focused disjunctions, we should spell out the assumptions we make regarding the nature of assertion. Following Roberts (1996/1998), Gunlogson (2001), Farkas (2003), and Bruce and Farkas (2007), we take an assertion to be a *proposal* to update the common ground (as opposed to an actual update). As Bruce and Farkas (2007) argue in detail, this is supported by the fact that assertions are generally consistent with the same responses as polar questions, including the use of particle answers such as 'yes', 'no', 'maybe', etc. One way assertions differ from questions is that they do not *demand* or *expect* such a response whereas a question – at least typically – does. This conception of assertion treats assertions as being more similar to questions than is standardly assumed and is therefore quite consonant with Inquisitive Semantics (as Groenendijk and Roelofsen (2009) note), where assertions are of the same semantic type as questions.

4. Focused Disjunctions

Before addressing the semantics of sentences with a *disjunction* in the focus-cleft construction, we have to characterize the semantics of this construction itself. The term 'focus' in semantic literature has been used to refer to a host of constructions across languages which serve a variety of arguably separate purposes. Our task for the present section is not to fit the Yukatek Maya focus/cleft into this typology of 'focus' constructions cross-linguistically. Rather, our aim for the present section is merely to describe the aspect of the semantics of this focus construction which we claim is necessary for interpretation of disjunctions as questions – their existential presupposition. We leave open the issue of whether the focus-cleft construction has semantic contributions above and beyond this presupposition (e.g. Roothian focal alternatives).

(20) [Juan]$_F$ uk' le sa'-o'
Juan drink.AGENT.FOCUS the atole-DISTAL
'It was Juan who drank the atole'

A sentence with a DP in the focus position, as in (20), differs from its non-focused counterpart at least in what it presupposes. For example, (20) presupposes that there is someone who drank the atole and asserts that that someone is Juan. This presupposition is limited to the *information* that there is someone who drank the atole which we indicate with Groenendijk and Roelofsen (2009)'s non-inquisitive closure operator, $!\varphi$. Crucially, it does not presuppose that the *issue* of who that individual is under discussion in the previous discourse, only that the *information* that there is such an individual is agreed upon. In this regard, it appears to differ from the English *it*-cleft as in (21), which presupposes both the information that someone drank the atole and that issue of who drank the atole is under discussion.

(21) It was John that drank the atole.

While the Yukatek Maya focus cleft does not presuppose this as part of its literal meaning, it is certainly consistent with such a scenario and, indeed, this is a common use of the the focus/cleft position (much like intonationally marked focus in English). We see the presupposition of the focus-cleft illustrated in (22) for (21). Unless otherwise noted, we assume a toy model with only four worlds differing in the truth values of two propositions – drink-atole$'(juan)$ and drink-atole$'(daniel)$ – with subscripts on worlds indicating the exhaustive list of who drank the atole in that world.

(22) Presupposed (left) and at-issue (right) meaning of (20):

Thus far, we have presented an Inquisitive Semantics account of disjunction and characterized the existential presupposition of the Yukatek Maya focus-cleft construction. In the remainder of this section, we show that the variation that focused disjunctions in YM show between interpretation as a question (§4.1) and as an assertion (§4.2) is readily predicted by the interaction of our proposed semantics for disjunction and the presupposition of the focus-cleft construction.

4.1 Interpretation as a Question

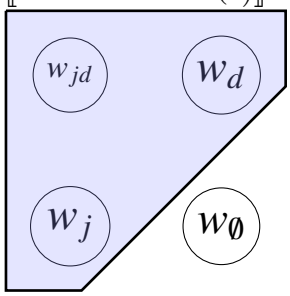
Scenario: Addressee and speaker both agree that one of the speaker's two brothers (Juan and Daniel) drank the atole that had been on the table.

(23) [Juan *wáa* Daniel]$_F$ uk' le sa'-o'
Juan OR Daniel drink.AGENT.FOCUS the atole-DISTAL
'Was it Juan who drank the atole or was it Daniel?'

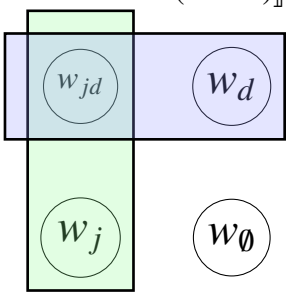
In the scenario described here, the context set consists only of worlds where Juan, Daniel, or both of them drank the bowl of atole that had been on the table. It therefore supports the presupposition of the focus-cleft construction since the information that there is someone who drank the atole is in the common ground. Since there are no other possible atole-drinkers in this context, there cannot be worlds where anyone other than Juan and Daniel drank the atole. We can describe this context in (24), then, using our model from above with the presupposed input state (left) consisting of a single alternative containing only worlds where Juan, Daniel, or both drank the atole. The at-issue meaning of (23) is the same as the ordinary disjunction above, proposing to update the common ground to one with two alternatives: one where Daniel drank the atole and one where Juan did.

(24) Presupposed (left) and at-issue (right) semantics for (23):

$[\![!\exists x$:drink-atole$'(x)]\!]$



At-issue: $[\![$drink-atole$'$(juan) $\vee$ drink-atole$'$(daniel)$]\!]$



The update in (24) functions as a question because, relative to the presupposed input state, it is inquisitive and is not informative. It is inquisitive since it proposes an update from an input state with one alternative to a state with two alternatives, raising the issue of which alternative holds. It is uninformative since the focus-cleft presupposes that there are no worlds in the input state where no one drank the atole and the discourse context ensures there are no worlds where someone other than those two did.[7] Per the principle in (19), then, the sentence will serve as a question in this discourse context.

4.2 Interpretation as an assertion

Scenario: Addressee and speaker both agree that one of the speaker's three siblings (Juan, Daniel, and Maribel) drank the atole that had been on the table.

(25) [Juan *wáa* Daniel]$_F$ uk' le sa'-o'
Juan OR Daniel drink.AGENT.FOCUS the atole-DISTAL
'It was Juan or Daniel who drank the atole.'

Focused disjunctions in Yukatek Maya can also be interpreted as assertions, as the (rough) translation with the English *it*-cleft shows. As above, the focus/cleft presupposes that w_0 is not in the context set; that is, that someone drank the atole. A disjunction like (25), however, has another potential route to informativity: eliminating worlds where someone else drank the atole (instead of Juan or Daniel). We can capture this by assuming a model where, in addition to the four worlds above, there is a world, w_m, where Juan and Daniel did not drink the atole, but someone else did: Maribel. As seen in (26), the presuppositional and at-issue components of the assertion reading are the same as the question reading in (25).

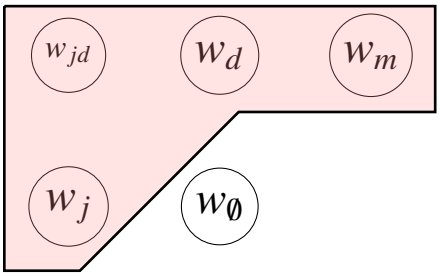
[7] Given the above discussion of English *it*-clefts, we also understand why *it*-clefted disjunctions, as in (i), cannot serve as questions *regardless* of the discourse scenario.

(i) It was John or Daniel who drank the atole.

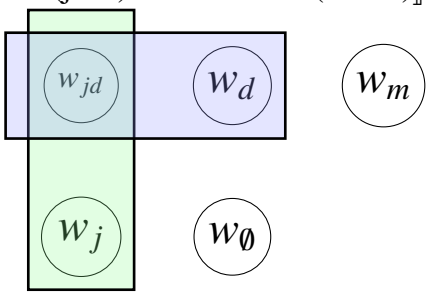
Note that (i) is in fact infelicitous in exactly those contexts where its Yukatek Maya counterpart would be interpreted as a question. Because the *it*-cleft in (i) also presupposes the *issue* of who drank the atole to be under discussion, we expect (i) to only be felicitous when it eliminates previously available alternatives.

(26) Presupposition (left) and at-issue (right) semantics for (25):

⟦!∃*x*:drink-atole′(*x*)⟧



⟦drink-atole′(juan) ∨ drink-atole′(daniel)⟧



The semantic contribution of the sentence remains the same, but (25) is *informative* in this scenario since it removes w_m from the presupposed input state. According to the interpretive principle in (19), then, (25) is correctly predicted to be an *assertion* in this context because it is informative relative to the presupposed input state. Focused disjunctions in YM initially look like they are ambiguous between a question reading and an assertion reading. In our account, however, the sentence denotes the same context change potential in both scenarios: a proposal to update the common ground with a set of two alternatives.

While our account largely shares its conception of disjunction with Groenendijk and Roelofsen (2009), it differs in the source of uninformativity in alternative questions. In their account of English alternative questions, uninformativity is provided by a 'non-informative closure' operator, ?φ, which adds the set of worlds where no disjunct holds to the proposed update, thereby obviating its informative potential. Setting aside the oft-debated issue of whether questions bear existential presuppositions (see Abusch (to appear) for a recent discussion), it's far from clear how such a semantic composition interfaces with the syntax in English or in Yukatek Maya. For YM focused disjunctions, the present account clearly fares better since it makes use of an independently observable fact (the existential presupposition of the focus-cleft construction) as the source of uninformativity.

5. Polar Questions as Single-Disjunct Disjunctions

In §2, we distinguished between two types of polar questions: those where *wáa* occurs following a focus-clefted syntactic constituent and those with no focused element, where *wáa* occurs following the first prosodic word, regardless of its syntactic category. Since both polar questions and focused disjunctions present two alternatives, the simplest assumption is that the role of *wáa* in polar questions is the same as that in focused disjunctions – disjunctive coordinator. This assumption is supported in Yukatek Maya by the fact that polar questions of both sorts, like alternative questions, do not permit particle answers equivalent to 'yes' and 'no' as illustrated in (27)-(28). In this respect, then, polar questions in Yukatek Maya pattern with English alternative questions rather than English polar questions.

(27) [Juan-*wáah*]$_F$ uk' le sa'-o'
Juan-OR drink.AGENT.FOCUS the atole-DISTAL
'Was it Juan who drank the atole?'

(28) #hah/ #?ma'/ Juan/ ma' Juan-i'
yes/ no/ Juan/ NEG Juan-IRREAL
'yes/ no/ Juan/ not Juan'

Polar questions of both sorts, however, do differ from focused disjunctions in two obvious ways: they only have one overt (syntactic) disjunct, and they function as questions regardless of the discourse context. For both varieties of polar questions, then, there are two basic questions that we must answer: (i) How is the 'empty' disjunct interpreted? and (ii) Why are the resulting disjunctions in polar questions always interpreted as questions (i.e. why are they uninformative in all contexts)?

5.1 Polar questions with a focus-clefted element

While there is only a single disjunct in the surface syntax of a polar question like (27), the question clearly denotes two distinct semantic alternatives: the overt one, *Juan*, and the covert one, roughly interpreted as 'anyone else' or 'others'. This interpretation, we argue, follows from three properties that hold of all disjunctions (see Zimmermann (2000) for a recent discussion of these properties):

1. **Exhaustivity:** provides the domain widening of *any* in '**any**one else'
2. **Mutual exclusivity:** contributes the 'else' in 'anyone **else**'
3. **Like constituents:** contributes the 'one' in 'any**one** else' (since *Juan* is of type *e*)

Having motivated the interpretation of the empty disjunct in terms of properties of disjunctions in general, we can now examine why this interpretation causes the whole disjunction to be interpreted as a question. Recall that focused disjunctions were interpreted as questions only when they were uninformative relative to their presupposed input states. As in focused disjunctions, one route to informativity is blocked because the existential presupposition already ensures that the information that someone drank the atole is in the common ground. Unlike focused disjunctions, however, the second route to informativity (eliminating another alternative such as Maribel in §4.2) is not possible since the *exhaustivity* of the empty disjunct ensures that it contains all the individuals besides Juan. The presupposition and at-issue semantics of (27) are as in (29) where the only at-issue contribution is to raise the issue of whether Juan or someone else drank the atole.

(29) Presupposition and at-issue semantics for (27):

5.2 Polar Questions without a Focus-Clefted Element

We argued in §2 that *wáa* in polar questions like (30) semantically targets the polarity of the sentence, with the linear position being prosodically determined when the polarity is phonologically null (i.e. when it is positive).

(30) táan-*wáah* u yuk'ik le sa'-o' Juan
PROG-OR ERG.3 drink DEF atole-DISTAL Juan
'Is Juan drinking the atole?'

As in the case of polar questions with a focused element, the empty disjunct is interpreted as the exhaustive set of mutually disjoint like elements – as the negation of the syntactically present polarity of the sentence. For an example like (30) where the polarity is positive, this gives us a set containing two alternatives: $\{\text{drink-atole}'(juan), \neg\text{drink-atole}'(juan)\}$. Such a set of alternatives (of the form $p \vee \neg p$) is, of course, a classical tautology and therefore cannot be informative in any context. The sentence is inquisitive for the same reason as all disjunctions. Per the principle in (19), then, the sentence will be interpreted as a question in all discourse contexts.

Unlike in polar questions with a focus-clefted element, uninformativity does not require the existential presupposition of the focus construction. Instead, uninformativity comes about by virtue of the very nature of negation itself, in particular, the law of the excluded middle. Polar questions with and without a focused element, then, are given a unified semantic account since these are the two environments which lead to uninformative disjunctions. This result is especially welcome since polar question particles in unrelated languages such as Bulgarian and Latin essentially the same peculiar distribution as *wáa* does: syntactically adjacent to a focused element or prosodically positioned with no focused element. Moreover, both of these polar question particles are clearly historically related to disjunctive coordinators.

Something more needs to be said about why tautological disjunctions where the disjoined element is polarity are different than other tautological disjunctions. In Yukatek Maya, as in English, tautological disjunctions are of course possible, but require disjunction of a larger constituent such as the clause or an elliptical version thereof. It should be noted, however, that even in English, a sentence where the polarity itself is disjoined such as (31)-(32) can really only be interpreted as a question, regardless of intonation. In contrast, disjunctions of entire clauses (or elliptical versions thereof) as in (33)-(34) can be readily interpreted as assertions.

(31) John did or did not come to the party last night.

(32) Bill is or isn't a linguist.

(33) John came to the party last night or he didn't (come to the party).

(34) Bill is a linguist or he isn't.

6. Conclusion

We have examined focused disjunctions in Yukatek Maya, in particular, the fact that they can function either as an assertion or as a question depending upon the context of utterance. Our account derives this alternation from the interaction of a semantics which treats disjunction as being both informative and inquisitive with a focus construction which presupposes only the informative component, leaving the inquisitive component as its at-issue meaning. In our account, then, the question's alternatives are provided by disjunction with focus serving to obviate the informative potential of the disjunction by presupposing it.

We can extend this same essential approach to understanding the role of focus in wh-questions (see AnderBois (2009a)). In Yukatek Maya and often cross-linguistically, wh-questions consist of indefinite wh-words occurring in a focus/cleft construction. Intuitively, indefinites are like disjunctions, being not only informative, but also inquisitive. As it does in our account of alternative questions, the existential presupposition of the focus-cleft presupposes the informative component, leaving the issue of who satisfies the predicate as the sole at-issue contribution. In this theory, then, it is *indefinite wh-words* – not focus – which introduce alternatives into the question, just as disjunctions did in alternative questions. Crucially, then, the role of focus across the two types of questions in constant.

Our account derives the interpretation of questions from the combination of an inquisitive element (disjunction or indefinite) and focus without positing any sort of covert interrogative morphemes such as a Q operator or Groenendijk and Roelofsen (2009)'s non-informative closure. Apart from the ordinary virtue of avoiding covert morphology, this has a particular virtue in understanding the question-assertion alternation we have described in focused disjunctions in Yukatek Maya. We would have to stipulate not only this morpheme's presence in contexts where focused disjunctions are interpreted as questions, but also its absence in contexts where they are interpreted as assertions. Such an account would fail to capture the context sensitivity that YM focused disjunctions exhibit.

While our account does without any interrogative-specific morphosyntax, nothing about the account indicates that this should necessarily be the case in other languages. Clearly, there are interrogative-specific morphosyntactic elements in many languages and compositional accounts of the semantics of such questions must take this into account. At the same time, however, morphosyntactic elements which are not restricted to interrogatives – disjunction, indefinites, and focus – are also prevalent in question formation across languages, and this pattern deserves a semantic explanation as well.

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