Two disjunctions in Mandarin Chinese
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Mandarin Chinese has two disjunctors, háishi and huòzhe. Alternative questions use háishi whereas logical, boolean disjunction is expressed with huòzhe. Building on previous decompositional analyses of disjunction, I propose that háishi spells out the junctor head J which projects its disjuncts as Roothian alternatives, whereas huòzhe spells out a version of the J head that must be existential closed, forming a quantifier. This account contrasts from previous work on disjunction in Mandarin, which requires háishi to move at LF or which requires the two disjunctors to differ in the size of disjuncts. Evidence comes from focus intervention effects and island (in)sensitivity.

I also consider environments where háishi and huòzhe are interchangeable, with disjunctive or conjunctive interpretation, which are also precisely where wh-phrases are used quantificationally. I offer a semantic characterization for these environments and argue against possible syntactic accounts. The distributions and interpretations of these disjunctors and wh-phrases in Mandarin Chinese form an argument for the two-dimensional Roothian Alternative Semantics framework over similar one-dimensional frameworks such as Hamblin semantics, from an empirical domain other than focus.

Keywords disjunction, alternative questions, wh-quantification, Alternative Semantics, Mandarin Chinese

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1 Introduction

Mandarin Chinese has two disjunctors: háishi and huòzhe. The sentences in (1a) and (1b) are superficially identical but for the choice of disjunction. Example (1a) uses háishi and must be interpreted as an alternative question, which is answered by identifying which person Zhang San likes. Equivalents of ‘yes’ or ‘no’ are not valid replies to question (1a). In contrast, example (1b) uses huòzhe and must be interpreted as a logical disjunction.1

(1) Two disjunctors in Mandarin Chinese:

a. háishi ⇒ alternative question:

Zhāng Sān xǐhuān Lǐ Sì háishi Wáng Wǔ (ne)?
Zhang San like Li Si háishi Wang Wu NE
‘Does Zhang San like Li Si or Wang Wu?’ (alternative question)

b. huòzhe ⇒ boolean disjunction:

Zhāng Sān xǐhuān Lǐ Sì huòzhe Wáng Wǔ.
Zhang San like Li Si huòzhe Wang Wu
‘Zhang San likes Li Si or Wang Wu.’

Such contrasts have led previous authors to posit a syntactic difference between these two disjunctions, such as bestowing háishi disjunctions with a [+wh] feature which must be checked by a question complementizer (Huang 1982, Huang, Li, and Li 2009, Tsai 2015).

There are, however, other environments where this difference is “neutralized.” This includes universal quantification with dōu as in (2), but also in conditional antecedents and consequents, and within the scope of epistemic modals and (high) negation—all environments that license non-interrogative interpretations of wh-phrases in Mandarin (see e.g. Lin 1998b). Note in particular that (2) with háishi does not have an interpretation as an alternative question.

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1Example (1b) can be made to be a polar question with the addition of the sentence-final polar question particle ma, but this still differs from (1a): (1a) disallows simple ‘yes’ or ‘no’ answers (Li and Thompson 1981:561ff), whereas these are the expected answers to a polar question built on (1b) with ma. The optional but frequent sentence-final ne particle on alternative questions such as (1a) will be discussed in section 2.2.

The disjunctor huòzhe can also be huòshì or simply huò. Some speakers report some preferences between these depending on the environment, but there seems to be some variation amongst speakers. For uniformity, here I use huòzhe throughout.
(2) **Háishi and huòzhe are interchangeable in certain contexts:**

Zhāng Sān háishi/huòzhe Lǐ Sì dǒu jǐn-lái-le.
Zhāng Sān háishi/huòzhe Lǐ Sì dǒu jǐn-lái-le

‘Both Zhang San and Li Si came in.’

In a two-dimensional Alternative Semantics (Rooth 1985, 1992, von Stechow 1991), I propose two operators: a junctor head J which collects the ordinary values of disjuncts into a set of alternatives, and an existential closure operator ∃ that operates over these alternatives. I propose that huòzhe realizes a J head which requires a local ∃, whereas háishi realizes the junctor J alone, resulting in an alternative set with no ordinary denotation, akin to the denotation of wh-phrases in Ramchand (1997), Beck (2006), Kotek (2014, to appear). These alternatives may be quantified over in certain alternative-sensitive environments such as with dǒu in (2) or otherwise must be interpreted as a question as in (1a), just as wh-phrases are interpreted in Mandarin. This analysis is presented in section 2. The approach accords with many proposals that advocate for the decomposition of disjunction in other languages into similar ingredients, such as Winter (1995, 1998), Den Dikken (2006), Slade (2011), Szabolcsi (2013, 2015), Mitrović and Sauerland (2014), Uegaki (2016).

In section 3, I argue that both huòzhe and háishi disjunction take disjuncts of various sizes. In particular, háishi in alternative questions does not have to take disjuncts of clausal size—with conjunction reduction to give the appearance of local disjunction—as has been proposed by Ray Huang (2010) for Mandarin and which has been suggested more generally for a range of languages by Han and Romero (2004b).

In section 4, I show that the region between háishi disjunctions and the clause edge is susceptible to focus intervention effects (Beck 2006, Beck and Kim 2006). This supports my proposal that these disjunctions are interpreted in-situ at LF through the computation of Rooth-Hamblin alternatives. This evidence joins previous evidence from Huang (1991) that háishi disjunctions are sensitive to syntactic islands, in arguing against any analysis where háishi disjunction moves covertly at LF (Huang 1982, Huang, Li, and Li 2009).

Finally, in section 5, I discuss environments that “neutralize” the difference between háishi and huòzhe, as in (2). I show, following Hsin-yin Lin (2008), that these neutralizing contexts are precisely those environments which license non-interrogative uses of wh-phrases. I propose the generalization that these environments are those where only the alternative set dimension of meaning is used for interpretation, which accurately predicts their distribution under my proposal. I argue against syntactic analyses where háishi is
distinguished from huòzhe through a syntactic feature such as [+wh] or [+Q], unlike in a number of previous analyses.

Mandarin Chinese is far from the only language that makes such a lexical cut between these two types of disjunctors, which Haspelmath (2007) calls “interrogative” vs “ordinary.” A non-exhaustive list includes Albanian, Amharic, Egyptian and Syrian Arabic, Basque, Burmese, Finnish, Georgian, Gothic, Kannada, Latin, Lithuanian, Malagasy, Marathi, Polish, Sinhala, Somali, Vietnamese, and Yoruba; see Moravcsik (1971), Alonso-Ovalle (2006), Slade (2011), Winans (2013), Mauri and van der Auwera (2012) and references therein. The analysis here offers what is, to my knowledge, the first analysis for interrogative vs ordinary disjunctions in any language in Alternative Semantics, and the first to account for environments where the two disjunctions become interchangeable. In the conclusion in section 6, I argue that the two-dimensional Rooth-Hamblin semantics is crucial for this deriving the full set of Mandarin facts captured here.

2 Proposal

My proposal is couched within the framework of Alternative Semantics (Rooth 1985, 1992) and its extension to interrogatives, which builds on Hamblin (1973) and is often associated with Beck (2006). The key features of this framework, which I call Rooth-Hamblin Alternative Semantics, is that it is two-dimensional and that the same alternative set dimension is used both for the computation of focus alternatives and interrogative (Hamblin) alternatives.

In Alternative Semantics, each node $\alpha$ in the syntax is associated with two meanings in different “dimensions”: the ordinary semantic value $[\alpha]^o$ and a set of alternatives $[\alpha]^{alt}$. The interpreted meaning of an utterance is its ordinary semantic value. Alternative sets are computed compositionally parallel to the computation of ordinary semantic values, in a manner described below.

I first describe the function of $J$, the abstract, polyadic functional head underlying
disjunctions (Den Dikken 2007), which is the common core of both háishi and huòzhe. J collects the ordinary semantic values of its disjuncts into a set, which is then the alternative set denotation for the JP. The ordinary semantic value of JP is undefined.

(3) **The semantics of J:**

a. \([J_{x_1, \ldots, x_n}]^o\) undefined

b. \([J_{x_1, \ldots, x_n}]^{alt} = \{[x_1]^o, \ldots, [x_n]^o\}\)

J here is defined for an arbitrary number of arguments, though in most examples here I will illustrate its use with two disjuncts. For example, consider the disjunction of two DPs of type e, Li Si and Wang Wu, as in the examples in (1a) above.

(4) a. \[
\begin{array}{c}
\text{JP} \\
\text{DP} \\
\text{Li Si}
\end{array} \quad \begin{array}{c}
\text{DP} \\
\text{J} \\
\end{array} \begin{array}{c}
\text{JP} \\
\text{DP} \\
\text{W. Wù}
\end{array}
\] ^o undefined

b. \[
\begin{array}{c}
\text{JP} \\
\text{DP} \\
\text{Li Si}
\end{array} \quad \begin{array}{c}
\text{DP} \\
\text{J} \\
\end{array} \begin{array}{c}
\text{JP} \\
\text{DP} \\
\text{W. Wù}
\end{array}
\] ^alt = \{Li Si, Wang Wu\}

Previous work such as Winter (1995, 1998), Alonso-Ovalle (2006), Simons (2005), Szabolcsi (2013, 2015) share the idea that (dis)junction collects a set of alternatives which then trigger the computation of corresponding alternatives at higher levels of structure (via pointwise composition, described below). However, these previous proposals are couched in a one-dimensional Hamblin semantics. My proposal for J in (3) is a particular implementation of this idea within Rooth’s two-dimensional Alternative Semantics. As we will see, the organization of meanings into these two dimensions will be crucial to modeling the differences and similarities between Mandarin háishi and huòzhe.

Meanings such as the JP with denotations in (4) are not by themselves interpretable, as ordinary semantic values are what are actually interpreted. Some higher alternative-sensitive operator must construct an ordinary semantic value based on the alternatives, so that the utterance root can be interpreted. Canonically, this happens in one of two ways: either an operator \(\exists\) existentially quantifies over these alternatives, resulting in boolean disjunction, or the alternatives are used to form a question, with each alternative corresponding to a possible answer. Other uses of the alternatives generated by J—in environments where háishi and huòzhe become interchangeable—are discussed in section 5.
2.1 Logical disjunctions with *huòzhe*

I first discuss the application of existential closure over the alternatives introduced by J, corresponding to the canonical uses of *huòzhe* as a logical disjunction. I define the abstract, unary existential closure operator $\exists$ as in (5) below. Existential closure over propositional alternatives has been proposed in e.g. Kratzer and Shimoyama (2002), but here I follow Uegaki (2016) in adopting a cross-categorial meaning for $\exists$ which applies to nodes of non-propositional type as well.\(^4\)

\[(5)\]

**Existential closure of node \(\alpha\) of type \(\tau\):**

\[\exists \alpha \overset{\circ}{=} \begin{cases} \bigvee [\alpha]^{\text{alt}} & \text{if } \tau = t \\ \lambda P_{(\tau,t)} \cdot \exists x \in [\alpha]^{\text{alt}} [P(x)] & \text{otherwise} \end{cases}\]

I propose that *huòzhe* is the realization of a J head—with the semantics in (3)—with a syntactic requirement for a local $\exists$ operator. I also propose that $\exists$ cannot be freely adjoined in the absence of a trigger such as the *huòzhe* J head that requires it, which will become important in the following section. I encode this requirement with the uninterpretable feature $[u\exists]$ on the J pronounced *huòzhe* which must be checked by Agree,\(^5\) but the syntactic details of this licensing are not crucial here.

For example, if $\exists$ applies directly to the JP in (4), we yield the generalized quantifier meaning for the disjunction ‘Li Si or Wang Wu’ in (6). The resulting alternative set is equal to that for the JP: $[\exists \text{JP}]^{\text{alt}} = [\text{JP}]^{\text{alt}} = \{\text{Li Si, Wang Wu}\}$ (4b). The resulting two-dimensional denotation for $[\exists \text{JP}]$ is equivalent in both dimensions to that of the English disjunction *Li Si or Wang Wu* according to the two-dimensional proposals of von Stechow (1991:53ff) and Beck and Kim (2006).

\[(6)\]

\[\begin{array}{c}
\exists \\
\downarrow \\
\text{JP} \\
\downarrow \\
\text{DP} \\
\downarrow \\
\text{Li Si} \\
\downarrow \\
\text{huòzhe} \\
\downarrow \\
\text{DP} \\
\end{array} \overset{\circ}{=} \lambda P_{(e,t)} \cdot P(\text{Li Si}) \lor P(\text{Wang Wu})\]

\(^4\)The presentation in (5) is an extensional version of Uegaki’s intensional formulation. The intensional variant is easily arrived at by replacement of \(t\) with \(\langle s, t \rangle\).

\(^5\)This follows the syntactic treatment of German *irgendein* as an existential-closure-dependent alternative generator in Kratzer and Shimoyama (2002). Tsai (2015) also suggests a similar syntactic feature for *huòzhe* (p. 62), but Tsai also proposes marking *hàishi* as $[++Q]$ (p. 52), similar to Huang’s (1982) $[++\text{wh}]$, which is unnecessary in the proposal here.
In object position as in example (1b), repeated here as (7), the structure in (6) would have to QR to a node of propositional type.

(7) **Boolean disjunction with huòzhe (=1b):**

Zhang Sān xǐhūn [JP  Lǐ Sī huòzhe  Wáng Wū].
Zhang San like Li Si HUOZHE Wang Wu

‘Zhang San likes Li Si or Wang Wu.’

Alternatively, ∃ may adjoin at a higher node of propositional type. Following Huang (1993), I assume the VP-internal subject hypothesis for Mandarin Chinese and describe the base position of agents as Spec,VP, making VP a node of propositional type. The tree in (8) illustrates the VP in (7) with the subject reconstructed in its VP-internal position, with alternative sets and the types of their elements indicated at each node.

(8) $\begin{array}{c}
\text{VP}_t \\
\{ \text{like}(ZS, LS), \\
\text{like}(ZS, WW) \}
\end{array}$

\[
\begin{array}{c}
\text{DP}_e \\
\text{[Zhang San]} \left\{ \lambda y . \text{like}(y, LS), \\
\lambda y . \text{like}(y, WW) \right\}
\end{array}
\]

\[
\begin{array}{c}
\text{V}'_{(e,t)} \\
\lambda x . \lambda y . \text{like}(y, x)
\end{array}
\]

\[
\begin{array}{c}
\text{JP}_e \\
[\text{Li Sī, Wang Wu}]
\end{array}
\]

As is reflected in (8), the alternative set for a branching node with daughters $\beta$ and $\gamma$ is computed by crossing each denotation in $[\beta]_{alt}$ with each denotation in $[\gamma]_{alt}$ and composing them using the appropriate rule of composition, e.g. function application. This process is called *Pointwise Composition* in much literature on Alternative Semantics. By default, the alternative set for a node $\alpha$ is simply the singleton set with its ordinary value, $\{ [\alpha]^o \}$. Each alternative in $[\text{JP}]_{alt}$ of type $e$ corresponds to an alternative of propositional type in $[\text{VP}]_{alt}$.

Note that the node JP in (8) does not have an ordinary semantic value, as defined in (3). The nodes V' and VP, which are dependent on the denotation of JP, will therefore also
be undefined.

The application of $\exists$ at this level creates an ordinary semantic value by disjoining the propositional alternatives, yielding the intended interpretation:

$\exists$ VP$[^0] = \text{like}(Zhang San, Li Si) \lor \text{like}(Zhang San, Wang Wu) = [\!(7)\!]^0$

The height at which $\exists$ adjoins to a propositional node will determine the observed scope of the disjunction, much as the height of QR of a generalized quantifier formed with $\exists$ (6) would. An important remaining question is exactly where $\exists$ is allowed to adjoin. Unfortunately, in my experience I have found these scope facts difficult to pin down, with significant speaker variation. For example, Lin (2008) claims that $\text{huòzhe}$ in an embedded clause always takes narrow scope within the embedded clause (see pages 20, 31), but only some of my speakers report judgments compatible with Lin’s claim. I will therefore leave this question open for future research.

2.2 Alternative questions with $\text{háishi}$

I propose that $\text{háishi}$ is the pronunciation of the J head without syntactic requirement for existential closure with $\exists$, the uninterpretable $[u\exists]$ feature, and that $\exists$ cannot be freely adjoined in the absence of this feature. Consider the basic alternative question example (1a) from above, repeated here as (10).

(10) **Alternative question with $\text{háishi}$ (=1a):**

Zhang San xīhuān [JP Lí Sì háishi Wáng Wú] (ne)?

Zhang San like Li Sī háishi Wang Wu NE

‘Does Zhang San like Li Si or Wang Wu?’

The semantic denotation for the TP clause in (10), modulo the contribution of tense/aspect semantics which I do not consider here, is equal to the denotation of the VP illustrated in (8) above. The alternative set contains two propositions, which I intensionalize here—corresponding to Zhang San liking Li Si and Zhang San liking Wang Wu. Its ordinary semantic value is undefined:

(11) a. $[\text{TP}]^o$ undefined b. $[\text{TP}]^{\text{alt}} = \{^\wedge\text{like}(ZS, LS), ^\wedge\text{like}(ZS, WW)\}$
Recall that whole utterances are interpreted as their ordinary semantic values. TP here cannot stand alone as an utterance.\(^6\) We need an operator that defines an ordinary semantic value—in this case of a question—based on the denotation in (11). Following Kotek (2016, to appear), I call this operator \texttt{AltShift}:

\begin{equation}
\text{(12) } \texttt{AltShift (Kotek 2016, to appear):}
\end{equation}

\begin{enumerate}
\item \(\left[ \texttt{AltShift} \alpha \right]^o = \left[ \alpha \right]^{alt}\)
\item \(\left[ \texttt{AltShift} \alpha \right]^{alt} = \left\{ \left[ \texttt{AltShift} \alpha \right]^o \right\} = \left\{ \left[ \alpha \right]^{alt} \right\}\)
\end{enumerate}

The denotation for \texttt{AltShift} in (12) is equivalent to the semantics that Beck (2006) and Beck and Kim (2006) attribute to the interrogative complementizer (Beck and Kim 2006:177), but Kotek argues that this function should be attributed to an adjoining operator distinct from the complementizer, but which must adjoin to an interrogative CP or a segment thereof. See Kotek (to appear) for discussion and see also footnote 12 below for my own rationale from Mandarin alternative questions for adopting Kotek’s \texttt{AltShift} proposal. The complementizer itself is semantically vacuous: \([\text{CP}] = [\text{TP}]\).

\texttt{AltShift} applied to the CP built from (11) results in a set of propositions as its ordinary semantic value, each corresponding to different possible answers, i.e. a question denotation (Hamblin 1973):

\begin{equation}
\text{(13) a. } [\texttt{AltShift CP}]^o = \{^\land \text{name(ZS, LS), } ^\land \text{name(ZS, WW)}\}
\end{equation}

\begin{equation}
\text{b. } [\texttt{AltShift CP}]^{alt} = \{\{^\land \text{name(ZS, LS), } ^\land \text{name(ZS, WW)}\}\}
\end{equation}

The idea that an operator—here, \texttt{AltShift}—“lifts” a set from the alternative dimension into the ordinary dimension is due to Beck (2006) and Beck and Kim (2006). Beck and Kim discuss the interpretation of \textit{wh}-phrases in-situ at LF and propose that \textit{wh}-phrases have no ordinary semantic value but take the set of individuals in their domain as their alternative denotations, just as Ramchand (1997) independently proposed earlier:

\begin{equation}
\end{equation}

\begin{enumerate}
\item \([\text{which book}]^o\) undefined
\item \([\text{which book}]^{alt} = \{x : x \text{ is a book}\} = \{\text{Moby Dick, War and Peace,}\ldots\}\)
\end{enumerate}

\(^6\)Beck (2006:16) calls this requirement for root nodes to have an ordinary semantic value the \textit{Principle of Interpretability}.
A clause including *which book* will end up with a denotation akin to our (11) above: no ordinary semantic value, but a set of propositions as its alternative set. The application of $\text{AltShift}$ to this structure yields an interpretable *wh*-question. See also Kotek (2014, 2016, to appear) for a recent extension of this approach to the compositional semantics of a range of *wh*-question constructions cross-linguistically. Beck and Kim (2006) extends this approach to the interpretation of alternative questions, with disjunctions projecting alternatives which are interpreted by $\text{AltShift}$, which is a precursor to my analysis of *háishi* alternative questions.

It’s worth noting that the interrogative complementizer and $\text{AltShift}$ (12) are both distinct from the sentence-final particle *ne* which commonly marks the end of matrix alternative questions, as in (10).⁷ As convincingly argued in Constant (2014), Mandarin sentence-final *ne* is a marker of contrastive topic. Briefly, contrastive topics correspond to different sub-questions within a discourse strategy (family of questions); see e.g. Roberts (1996/2012), Büring (2003), Constant (2014) for more. Constant shows that Mandarin sentence-final *ne* is licensed in both declaratives and questions when the clause is congruent to a sub-question within a strategy or itself represents an entire strategy. As Constant notes, any alternative question denotation such as ‘Does Zhang San like Li Si or Wang Wu?’ (13a) can be mapped to a family of polar questions of the form {Does Zhang San like Li Si?, Does Zhang San like Wang Wu?}—an idea that Constant (pp. 341ff) attributes to discussion in Han and Romero (2004b: footnote 14). This consistently licenses the use of sentence-final *ne* in matrix alternative questions and, indeed, Constant observes that “It appears to be a robust generalization that matrix alternative questions with *háishi* can always be marked with a final *ne*” (p. 341). See chapter 4 of Constant (2014) for detailed discussion.

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⁷A brief note on the syntax of sentence-final *ne*: Previous work such as Cheng (1991) proposed that sentence-final *ne* is a dedicated clause-typing complementizer for constituent questions, but I follow Constant (2014) in taking a contrary view.

The current consensus regarding the syntax of Chinese sentence-final particles is that they are head-final heads in the clausal spine; see e.g. Paul (2014) and Erlewine (2017). The cooccurrence of an interrogative complementizer and *ne* in matrix alternative questions can be naturally modeled within a Split CP architecture as in Rizzi (1997).

The fact that *ne* is limited to matrix clauses is a general property of Chinese sentence-final particles in the clause periphery (Paul 2014, Erlewine 2017). In contrast, I assume that embedded alternative questions are syntactically typed as interrogatives, requiring a local $\text{AltShift}$, even though *ne* cannot appear for these embedded questions. This is yet another reason to distinguish sentence-final *ne* from the complementizer.

Note that there is also another sentence-final *ne* in Mandarin Chinese, which marks durative aspect. Unlike contrastive topic *ne*, aspectual *ne* is available in embedded clauses. See Constant (2011) for details.
2.3 Don’t lose the prejacent!

I now propose a condition on the use of AltShift in (12), not spelled out in earlier work that invokes such an operator (e.g. Beck 2006, Beck and Kim 2006, Kotek 2014, 2016). Building on discussions with Hadas Kotek (p.c.), the requirement is stated in (15):

(15) Don’t Lose The Prejacent!

\[ [\text{AltShift } \alpha]^o \text{ is only defined if } [\alpha]^o \text{ is undefined or if } [\alpha]^\text{alt} \text{ is a singleton set.} \]

The intuition behind this condition is as follows. Recall that the two-dimensional Alternative Semantics framework adopted here was developed first for the interpretation of focus in Rooth (1985, 1992). If a constituent \( \alpha \) is focused or focus-containing, it will have a non-singleton set of alternatives \([\alpha]^\text{alt}\), one of which is the stated value—the prejacent, \([\alpha]^o\). For example, the ordinary semantic value and alternative set for the sentence Sarah likes [MARY]: is given in (16). The alternatives in \([\text{TP}]^\text{alt}\) vary in the position of focus and \([\text{TP}]^o\) encodes the choice of prejacent.

(16) Two-dimensional Alternative Semantics encodes the choice of prejacent:

- a. \([\text{TP Sarah likes [MARY]}]^o = \text{^like}(Sarah, Mary)\)
- b. \([\text{TP Sarah likes [MARY]}]^\text{alt} = \{ \text{^like}(Sarah, Mary), \text{^like}(Sarah, Bill), ... \}\)

The application of AltShift to a meaning of this form in (16) results in denotations as in (17). Notice that the original choice of prejacent (Mary, as opposed to Bill etc.) has been lost.

(17) Misapplication of Q loses the prejacent information:

- a. \([\text{AltShift TP}]^o = \text{TP}^\text{alt} = \{ \text{^like}(Sarah, Mary), \text{^like}(Sarah, Bill), ... \}\)
- b. \([\text{AltShift TP}]^\text{alt} = \{ \{ \text{^like}(Sarah, Mary), \} \} \{ \text{^like}(Sarah, Bill), ... \}\)

\(^8\)Beck and Kim (2006) do propose their own condition on the application of AltShift: “\([\text{AltShift } \alpha]^o\) is only defined if \([\alpha]^\text{alt}\) has two or more members” (p. 185, with notation changed), motivated by the idea that “a singleton set is not appropriate as a question meaning.” However, here I follow Erlewine & Kotek (ms) in adopting the view that polar questions have singleton set denotations, with the single element corresponding to their yes answer (Roberts 1996/2012, Abels 2005, Biezma and Rawlins 2012).
The proposed constraint in (15) militates against such prejacent-destroying applications of \textit{AltShift}. The statement reflects the fact that there are two situations in which \textit{AltShift} will not lose prejacent information: when the ordinary semantic value is undefined (i.e. when there is no prejacent chosen among the alternatives) and when there is only one alternative. See Erlewine & Kotek (ms) for discussion of the latter case.

The demonstration in (16–17) above provides important empirical motivation for this constraint. Notice that the denotation we yield by applying \textit{AltShift} to a focus-containing clause in (17) is equivalent to the denotation for the \textit{wh}-question \textit{Who does Sarah like?} within this framework. If \textit{AltShift} were allowed to freely apply to the clause \textit{Sarah likes [MARY]}\textsubscript{F}, then, we predict it to be interpretable as a constituent question, contrary to fact. A constraint such as Don’t Lose The Prejacent! (15) is necessary to block this illicit question interpretation of focus.

Returning now to disjunction in Mandarin Chinese, Don’t Lose The Prejacent! blocks the application of \textit{AltShift} to clauses where \(\exists\) has been applied and introduces an ordinary semantic value. Given the correlation between \(\exists\) and the \([u\exists]\) feature on \textit{huòzhe} proposed in the previous section, this amounts to blocking the use of \textit{AltShift} with \textit{huòzhe} disjunctions, which would turn them into alternative questions. This derives the basic one-to-one correlation in simple case as in (1) of \textit{háishi} with alternative questions on the one hand and \textit{huòzhe} with logical disjunction on the other. Other contexts, where \textit{huòzhe} and \textit{háishi} become interchangeable, will be discussed in section 5.

3 On the syntax of \textit{huòzhe} and \textit{háishi} disjunction

I now briefly discuss the syntax of \textit{huòzhe} and \textit{háishi} disjunctions. I argue that both disjunctions can take XPs of any category as their disjuncts, for example allowing for the local disjunction of DPs as in the ‘Li Si \textit{huòzhe/háishi} Wang Wu’ examples above. However, disjunction at the clausal level with stripping/bare argument ellipsis can lead to the appearance of discontinuous disjuncts.

Han and Romero (2004b) argue that, in English, Hindi, and Korean, disjunctions for alternative questions necessarily take disjuncts of clausal size (in their terms, IP or VP), even though these languages have logical disjunctions of DP. This discussion suggests that alternative questions perhaps universally must take disjuncts of clausal size. The arguments here that Mandarin \textit{háishi} does not require clausal disjuncts, contra Huang (2010), is thus an important contribution for our understanding of the typology of the
alternative question syntax/semantics.⁹

My primary evidence for local disjunction in háishi disjunction comes from the placement of the focus particle shì (see e.g. Teng 1979). Shi is a focus-sensitive operator with cleft-like semantics.¹⁰ What is important here is its syntactic distribution: shì adjoins to the clausal spine and is required to be as low as possible while taking its focus in its scope (Paul and Whitman 2008, Erlewine 2015a).¹¹

For example, for shì to associate with a narrow focus within the VP, it must adjoin directly to the VP (18). The position between the verb and object is banned because shì must adjoin to the clausal spine and cannot adjoin directly to DPs. The position before the subject is not possible as a lower position (adjoining to VP) was possible. In contrast, shì must adjoin to TP in the case of subject focus (19), as that is the lowest position from which shì can associate with the focus.

(18) **Focus on object ⇒ pre-verbal shì**

\[
\{^\ast\text{shì}\} \text{Wò \{^\ast\text{shì}\} mǎi-le \{^\ast\text{shì}\} [kāfēi]_{F} \ gěi \ Zhāng Sān.}
\]

\[
\text{shì 1sg shì buy-le shì coffee give Zhang San}
\]

‘I bought [coffee]$_F$ for Zhang San.’ (...not tea)

(19) **Focus on subject ⇒ pre-subject shì**

\[
\{^\ast\text{shì}\} \text{[māo]$_F$ \{^\ast\text{shì}\} tōu-le yú.}
\]

\[
\text{shì cat shì steal-le fish}
\]

‘[The cat]$_F$ stole the fish.’ (...not the dog)

The same syntactic restriction is observed with shì associating with the háishi disjunctions in alternative questions. If we have a disjunction of objects, shì can adjoin to VP, but not higher or lower (20). If we have a disjunction of subjects, shì can adjoin to TP (21).

---

⁹Uegaki (2014a: section 4.1) similarly considers and rejects the view that alternative questions cross-linguistically all involve clausal disjunctions, but without in-depth argumentation.

¹⁰The addition of shì adds constraints on the relationship between the current clause and existing QUDs, but it does not affect the at-issue content. I do not discuss the semantic effect of shì here. See (Erlewine 2015b) for discussion.

¹¹When examples with embedded clauses are considered, the final generalization is that shì must be as low as possible relative to a given phase. See Erlewine (2015a) for detailed evidence for this generalization in Mandarin. See also Büring and Hartmann (2001) and Erlewine (to appear) for similar effects in German and Vietnamese, respectively.
(20) **Object disjunction ⇒ pre-verbal shì**

\[\{\text{\`{s}hi}\} \text{Nǐ} \{\`{s}hi\} \text{mǎi-le} \{\text{\`{s}hi}\} \text{[kāfēi hāishi hóngchá]} \text{gěi} \text{Zhāng Sān?} \]

\[\text{shì} \text{2sg shì buy-le shì coffee hāishi tea} \text{give Zhang San} \]

‘Did you buy coffee or tea for Zhang San?’ (alternative question)

(21) **Subject disjunction ⇒ pre-subject shì**

\[\{\`{Shì}\} \text{[máo hāishi gǒu]} \{\`{shì}\} \text{tōu-le yú?} \]

\[\text{shì cat hāishi dog shì steal-le fish} \]

‘Did the cat or the dog steal the fish?’ (alternative question)

The distribution of *shì* in alternative questions is best explained if *hāishi* forms local disjunctions of DPs in (20), as indicated above, without any ellipsis. In contrast, consider the derivation that Huang (2010) would posit for the object *hāishi* question in (20):

(22) **Clausal disjuncts with ellipsis makes the wrong prediction for shì in (20):**

\[\text{[Nǐ mǎi-le kāfēi gěi ZS] hāishi [nǐ mǎi-le hóngchá gěi ZS]?} \]

\[\text{2sg buy-le coffee give ZS hāishi 2sg buy-le tea} \text{give ZS} \]

According to Huang (2010), *hāishi* always disjoins full clauses, followed by optional Conjunction Reduction: a non-constituent deletion process that will “delete the identical constituent[s] from the edge of conjuncts in coordinate sentences... forward deletion applies where a coordinate structure shows an identical element on a left branch, whereas backward deletion applies the other way around” (p. 98). Given that *shì* must be in a position to associate with the entire disjunction, the structure in (22) predicts *shì* to be in pre-subject, sentence-initial position in example (20), contrary to fact.

So far the examples here have shown subject and object disjunctions, but both *hāishi* and *huòzhe* can disjoin VPs as well as full clauses; see (23–24). This is in stark contrast to conjunction in Mandarin, where different conjunctors are used for conjuncts of different categories and sizes.

13
(23) **VP disjunction:**

Zhāng Sān [\[VP sǎo dì] háiishi/huòzhe [\[VP xǐ wǎn]]

Zhang San clean floor háiishi/huòzhe wash dish

háiishi: ‘Does Zhang San clean the floor or wash dishes?’ (alternative question)

huòzhe: ‘Zhang San either cleans the floor or washes dishes.’

(24) **Sentential disjunction:**

[\[\([\text{TP}}\text{ Zhāng Sān nòng cuò le} \text{ háiishi/huòzhe}\text{ [\[\text{TP}}\text{ diànnǎo zìjǐ dāngjī le}\text{]]}\]

Zhang San make wrong le háiishi/huòzhe computer self crash le

háiishi: ‘Did ZS make a mistake or did the computer crash by itself?’ (alt. question)

huòzhe: ‘Either Zhang San made a mistake or the computer crashed by itself.’

Although I have argued against the Huang’s (2010) idea that háiishi disjunction always takes clausal disjunction followed by Conjunction Reduction, I should note that some háiishi alternative questions do involve clausal disjunction followed by a form of ellipsis. I argue that example (25) from Constant (2014) is one such example. The availability of two sentence-final ne particles here is the tell-tale sign that there are two clauses being disjoined.

(25) **Alternative question with two ne (Constant 2014:341):**

Tā xiǎng qù Xiǎo-Wáng ne háiishi Xiǎo-Lǐ ne?

3sg want marry little-Wang ne háiishi little-Li ne

‘Does s/he want to marry Wang or Li?’ (alternative question)

I propose that example (25) is indeed derived from the disjunction of two full clauses, each with their own ne, followed by a form of ellipsis in the second disjunct. However, we need not resort to the non-constituent Conjunction Reduction as proposed by Huang (2010). The second disjunct is an instance of what is called ‘stripping’ or ‘bare argument ellipsis’ (Hankamer and Sag 1976, Rooth 1992, and others). I assume a movement-and-deletion derivation for stripping, as illustrated for (25) in (26) below. See Merchant (2003) and Wurmbrand (2017) and references there for more detailed discussion.
Derivation for (25) through stripping:\(^{12}\)

\[
[[\text{CP} \ 	ext{t} \quad \text{xiāng} \ qū \ 	ext{Xiǎo-Wáng} \ ne] \ 	ext{háishi} \ [\text{CP} \ 	ext{Xiǎo-Lí} \ [\text{PP} \ 	ext{t} \quad \text{xiāng} \ qū \ t] \ ne]]
\]

\[3\text{sg want marry little-Wang ne} \ \text{háishi} \ \text{little-Li} \ 3\text{sg want marry ne}\]

An alternative analysis for (25), briefly discussed by Constant, is that (25) involves a local disjunction of the object DPs ‘little Wang’ and ‘little Li,’ and ne is allowed to appear at the right edge of hāishi disjuncts. But as Constant notes, ne cannot generally appear at the edges of disjuncts (27).

(27) \textit{Ne cannot simply be added to the edges of disjuncts (Constant 2014:341):}

\[
\text{Tā xiāng} [[\text{PP} \ gēn \ 	ext{Xiǎo-Wáng}] (*ne) \ 	ext{hāishi} \ [\text{PP} \ gēn \ 	ext{Xiǎo-Lí}] (*ne)] \ jiēhūn (‘ne)?
\]

\[3\text{sg want with little-Wang ne} \ 	ext{háishi} \ with \text{little-Li ne marry ne}\]

‘Does s/he want to marry Wang or Li?’ (alternative question)

Although Constant introduces the data in (25) and (27), he does not offer an analysis, concluding that “the syntactic restrictions remain to be explained” (p. 342). My account here offers a natural explanation for such data. In (25), it just so happens to be the case that the correlate ‘little Wang’ of the stripping constituent ‘little Li’ is clause-final, giving the surface illusion of a possible local disjunction parse, but it is actually the disjunction of two full clauses with stripping. No such clausal disjunction parse is possible in (27), which must be a local disjunction.

If stripping is instead applied with the correlate of stripping in a clause-medial position in the left disjunct, we yield the appearance of a discontinuous disjunction of subclausal constituents. Such examples are indeed possible, as predicted by my account. In example (28), the right disjunct has been reduced through stripping to the PP ‘with little-Li,’ which corresponds to the clause-medial PP ‘with little-Wang’ in the left disjunct. I give some bracketing to indicate the derivation in (28), with \(\Delta\) standing in for the elided TP in the right disjunct.\(^{13}\)

---

\(^{12}\)The disjuncts of J (pronounced as hāishi) must be CPs, because that the sentence-final ne here is in the CP domain. See footnote 7 on the syntax of ne. In the interpretation of (26), AltShift then adjoins above the disjunction of the two CPs. Such examples are the reason that I adopt Kotek’s (to appear) proposal which associates the semantics in (12) with the adjoining operator AltShift rather than with a complementizer.

\(^{13}\)The contrast between (27) and (28) is reminiscent of patterns with high \textit{either} in English \textit{either...or} disjunction as discussed in Schwarz (1999); see e.g. his examples (18) vs (27). Descriptively, Schwarz proposes that \textit{either} cannot be high—under his proposal, indicating an underlyingly larger disjunction—“if that disjunction is not final” (p. 349).
(28) **Stripping with a clause-medial correlate:**

\[
[[\text{CP} \, \text{Tā} \, \text{xǐāng} \, [\text{PP} \, \text{gèn} \, \text{Xiǎo-Wáng}] \, \text{jǐēhūn} \, (\text{ne})]] \, \text{háiishi} \, [\text{CP} \, [\text{PP} \, \text{gèn} \, \text{Xiǎo-Lǐ}] \, \Delta \, (\text{ne})]]?
\]

3sg want with little-Wang marry NE háishi with little-Lì NE

‘Does s/he want to marry Wang or Li?’ (alternative question)

I conclude that both háishi and huòzhe disjunctors can take XPs of different sizes and categories. In this section we have seen DPs, PPs, VPs, TPs, and CPs disjoined. The fact that háishi and huòzhe are indistinguishable in the size of disjuncts that they take—contra Huang (2010) and the cross-linguistic suggestion of Han and Romero (2004b)—is predicted by my account, where both háishi and huòzhe are realizations of (variants of) the same syntactic head, J. Disjunctions can also involve ellipsis in the second disjunct, but only well-defined and independently necessary forms such as stripping, not the non-constituent deletion of Conjunction Reduction proposed by Huang (2010).

4 **Island (in)sensitivity and intervention effects in alternative questions**

As discussed in work such as Han and Romero (2004a,b), Beck and Kim (2006), Uegaki (2014a), and Biezma and Rawlins (2015), there is a tension between the surface form and interpretation of alternative questions with apparently local disjunctions as in (29). The issue is that its ultimate denotation as a question is that of a set of propositions—here, \{\ ^\text{like}(\text{Zhang San, Li Si}), \ ^\text{like}(\text{Zhang San, Wang Wu}) \} (13a)—but the disjunction appears to be over subclausal constituents, Lǐ Sì and Wáng Wǔ.

(29) **Alternative question with local háishi disjunction (=1a/10):**

\[
\text{Zhāng Sān \ xǐhuān} \, [\text{Lǐ Sì \ háishi \ Wáng Wǔ}] \, (\text{ne})?
\]

Zhang San like Li Si háishi Wang Wu NE

‘Does Zhang San like Li Si or Wang Wu?’

One possibility is that the disjunction is underlingly a clausal disjunction with some form of ellipsis. I argued against this view for Mandarin alternative questions in the previous section. The other possibility is that the disjunction (JP in (29)) takes scope over the clause. In contemporary theorizing on the syntax/semantics interface and scope-taking, there
are at least two possibilities for this scope-taking: covert movement and the projection of Rooth-Hamblin alternatives. My proposal here in section 2 is based on the latter. In this section, I present arguments for the in-situ interpretation of háishi disjunctions using Rooth-Hamblin alternative computation.

Huang (1982) and Huang et al. (2009:242 fn. 5) propose that háishi disjunction in an alternative question moves covertly to the interpreting complementizer at LF. But Huang (1991) shows that háishi disjunctions are not sensitive to sentential subject and relative clause islands. This core data is reproduced here in (30–31). Huang (1982, 1991) shows that these environments are syntactic islands for at least some covert movements in Mandarin.

(30) **Háishi is not sensitive to sentential subject islands (Huang 1991:313–314):**

\[
\begin{align*}
\text{[island} & \quad \text{Wǒ qù [měiguó háishi yīngguó]} \text{] bǐjiào hǎo?} \\
& \quad \text{I go America haishi England comparatively good} \\
& \quad \text{‘Is it better for me to go to America or to England?’ (alternative question)}
\end{align*}
\]

(31) **Háishi is not sensitive to relative clause islands (Huang 1991:314):**

\[
\begin{align*}
\text{[island} & \quad \text{Nǐ xǐhuān [[rènshì nǐ] háishi [bu rènshì nǐ]] de rén]} \\
& \quad \text{you like know you haishi neg know you de person} \\
& \quad \text{‘Do you like people who know you or people who don’t know you?’ (alt. question)}
\end{align*}
\]

Huang (1982) argues that covert movement in Mandarin Chinese exhibits an argument/adjunct asymmetry, with arguments able to covertly move out of islands. A possible concern about examples such as (30), then, is that what the disjunction is an argument—the object of ‘go’—which may move covertly without violating the island constraint. However, háishi disjunctions of adjuncts are also not sensitive to these islands. See the disjunction of ‘because’ clauses in (32), which contrasts with the ‘why’ adjunct in the same environment in (33). This data thus shows that háishi disjunctions are uniformly interpreted in-situ at LF.\(^{14}\)

\[^{14}\text{Erlewine (2014) shows that háishi in alternative questions is sensitive to wh-islands. This is expected under the analysis here: embedded questions will have their own Alt\textsc{Shift} at their edge, which will interpret the alternatives from háishi below, blocking their interpretation by a higher Alt\textsc{Shift}. This is essentially the logic of focus intervention effects, discussed in section 4 below. See also similar discussion of wh-island sensitivity in Japanese interrogatives and wh-quantification in Shimoyama (2006).}\]
(32) **Adjunct háishi is not sensitive to complex NP islands (Huang 2010:125):**

Ní xiāngxin [[land Xiaodi shi [yīnwèi qiàn zhài] háishi [yīnwèi shī you believe Xiaodi shì because owe debt háishi because lose liàn] ér zishā] de shuōfā] ne?

romance so suicide de story NE

‘Do you believe the story that Xiaodi committed suicide because of owing debt or because of failing at love?’ (alternative question)

(33) **Adjunct wh is sensitive to relative clause islands (ex Huang 2010:124):**

*Ní xīhuān [[land Xiaodi wēishénme xiě __] de shū]*?

you like Xiaodi why write de book

Intended: ‘What is the reason x such that you like books which Xiaodi wrote for reason x?’

Having established that háishi disjunctions are interpreted in-situ at LF, I turn to the identification of the interpretational link between the in-situ disjunction and the clause edge. Here I will employ focus intervention effects (Beck 2006, Beck and Kim 2006, and others) as a diagnostic for Rooth-Hamblin alternative computation. Beck (2006) argues that an intervention effect occurs when a focus-sensitive operator (intervener) intervenes between a wh-phrase and its interpreting operator (Op), which here is AltShift. Intervention does not affect movement chains or other forms of binding.

Consider the Korean object wh-questions in (34). Korean is a wh in-situ language, so example (34a) reflects the default word order for object wh-questions, but it is ungrammatical due to the higher subject ‘only.’ Scrambling the wh-phrase above the intervener results in the grammatical, intended interpretation.

(34) **Intervention affects alternative computation but not movement (Beck 2006:3):**

a. *Minsu-man nuku-lûl po-ss-ni?
   Minsu-only who-ACC see-PAST-Q

b. *Nuku-lûl minsu-man t po-ss-ni?
   who-ACC Minsu-only see-PAST-Q

‘Who did only Minsu see?’
Beck (2006) proposes that the badness of (34a) reflects its uninterpretability due to disruption of the interpretation of the *wh* by the focus-sensitive operator. Beck (2006) proposes that *wh*-phrases in languages like Korean are interpreted in-situ at LF using the computation of Rooth-Hamblin alternatives, as described in section 2.2 above. Two problems occur when an intervening focus-sensitive operator such as ‘only’ is introduced. First, focus-sensitive operators such as ‘only’ quantify over the alternatives in their complement and have the effect of “resetting” the alternative set projected above it. Higher operators such as AltShift at the clause edge will no longer be able to access the alternatives introduced by the *wh*-phrase. Second, focus-sensitive operators such as ‘only’ require both a defined ordinary value as well as an alternative set for their complement, but the scope of ‘only’ in (34a) contains the *wh*-phrase and therefore does not have a defined ordinary value. Both of these problems are avoided by scrambling the *wh*-phrase above ‘only’ in (34b) as the alternatives introduced by ‘who’ are never in the scope of ‘only.’ Intervention affects regions of Rooth-Hamblin alternative computation, not movement.\(^{15}\)

Similar intervention effects of *wh* interpretation by focus-sensitive operators has been reported for Mandarin Chinese. See Yang (2008, 2012), Li and Cheung (2015), Li and Law (2016) for further data and discussion.

(35) **Intervention of *wh* in Mandarin (Yang 2012:47):**

a. *Zhīyǒu [Zhāng Sān]_{F} chī-le shénme? only Zhang San eat-le what
   Intended: ‘What did only [Zhang San]_{F} eat?’

b. *Lián [Zhāng Sān]_{F} dōu chī-le shénme?
   even Zhang San dou eat-le what
   Intended: ‘What did even [Zhang San]_{F} eat?’

Beck (2006), Beck and Kim (2006) show that such intervention effects also occur with alternative questions. Both examples in (36) are intended as alternative questions. This interpretation is possible in (36a) but not in (36b), where ‘only’ has been added to the subject. Their explanation for such effects is the same as for intervention in *wh*-in-situ.

\(^{15}\)This explanation of Beck’s for focus intervention effects is specifically a consequence of the Rooth-Hamblin framework as adopted here, where the same “alternative” dimension denotations are used for the propagation of focus alternatives as well as alternatives from *wh* and disjunctions. Such an interaction is not predicted if focus alternatives and *wh*/disjunctive alternatives are computed in different ways, for example as suggested for compositional inquisitive semantics in Ciardelli et al. (2017: footnote 30).
Example (36) is interpreted with a local disjunction (Mary or Susan) projecting alternatives which must then be interpreted at the clause edge (here, by AltSHIFT). The addition of ‘only’ in (36b) blocks the intended interpretation of the alternatives introduced by the embedded disjunction.

(36) **Intervention effects in alternative questions (Beck and Kim 2006:167):**
(both intended as alternative questions)

a. ✓ Does Sarah like Mary or Bill?

b. *Does only Sarah like Mary or Bill?

I now demonstrate that Mandarin alternative questions are also susceptible to intervention effects, as predicted if háishi disjunctions are interpreted in-situ at LF by the computation of Rooth-Hamblin alternatives. I begin with the ‘only’ and ‘even’ particles shown to be interveners for Mandarin wh-questions in (35) above.

(37) **Intervention of Mandarin alternative questions:**
(all intended as alternative questions)

   only Zhang San like Li Si haishi Wang Wu NE
   Intended: ‘Does only [Zhang San]F like Li Si or Wang Wu?’

   shì Zhang San dou like Li Si haishi Wang Wu NE
   Intended: ‘Does even [Zhang San]F like Li Si or Wang Wu?’

The ungrammaticality of (37) reflects the focus intervention effect caused by a focus-sensitive operator hierarchically coming between the háishi disjunction (JP) which introduces alternatives and AltSHIFT at the clause edge. For the intended interpretation as an alternative question, AltSHIFT must interpret the alternatives projected by the disjunction, but the intervening focus-sensitive operators disrupts this projection of alternatives.

This intervention effect can be avoided by using larger, clausal disjuncts which each individually contain the focus-sensitive operator. An example of this form with ‘only’ is in (38). The interpretation of (38) is equivalent to the intended interpretation of (37a), which was ungrammatical.
‘Only’ in each disjunct does not trigger intervention; cf (37a):\(^{16}\)

[[\text{CP} \text{ Zhǐyōu} \ (\text{ZS})_F \ xīhuān \ \text{LS} (\text{ne})] \ hāishi \ [\text{CP} \text{ zhiyōu} \ (\text{ZS})_F \ xīhuān \ \text{WW} \ (\text{ne})]]?\n\begin{align*}
\text{only} & \quad \text{ZS} & \text{like} & \quad \text{LS} & \quad \text{NE} & \text{hāishi} & \quad \text{only} & \quad \text{ZS} & \text{like} & \quad \text{WW} & \text{NE} \\
\end{align*}

‘Does only Zhang San like Li Si or does only Zhang San like Wang Wu?’ (alt. q.)

The difference between (37a) and (38) is clear: in (37a), the focus-sensitive operator ‘only’ intervened between the disjunction, disrupting the interpretation of the alternatives from disjunction by \textit{AltShift} at the clause edge. In contrast, in (38), ‘only’ is interpreted within each clause independently, and the resulting propositions are taken as disjuncts of \textit{J}, and then lifted into a question meaning by \textit{AltShift}.

Note too that under Huang’s (2010) Conjunction Reduction analysis for \textit{hāishi} alternative questions, a structure akin to (38) would be the underlying structure for the ungrammatical (37a), with the only difference being in the application of optional Conjunction Reduction. This forms yet another argument against the clausal disjunction analysis of \textit{hāishi}. The sensitivity of Mandarin alternative questions to focus intervention effects and the distribution of such effects are predicted by and support my account in section 2, where \textit{hāishi} disjunction is interpreted in-situ at LF through the computation of Rooth-Hamblin alternatives.

\(^{16}\)We might imagine that a surface string similar to (37a) but with \textit{ne} after each disjunct—as in the double \textit{ne} examples in (25) and (28) above—might be possible through the application of stripping to the clausal disjunction structure in (38). But this prediction is false:

(i) *[[\text{CP} \text{ Zhǐyōu} \ (\text{ZS})_F \ xīhuān \ \text{LS} \ \text{ne}] \ hāishi \ [\text{CP} \text{ WW} \ [\quad \text{Zhiyōu} \ (\text{ZS})_F \ xīhuān \quad] \text{ne}]?\n\begin{align*}
\text{only} & \quad \text{ZS} & \text{like} & \quad \text{LS} & \quad \text{NE} & \text{hāishi} & \quad \text{WW} & \text{only} & \quad \text{ZS} & \text{like} & \quad \text{NE} \\
\end{align*}

The problem with this structure has to do with the invocation of stripping. Stripping involves movement of the focused phrase followed by clausal ellipsis; see (26). In the case of (i), this ellipsis site includes a focused (F-marked) constituent, \textit{Zhāng Sān}, against the common prohibition against the deletion of F-marked material (Tancredi 1992, Heim 1997, Merchant 2001, and others). This explains the ungrammaticality of the stripping in (i).
5 The difference between háishi and huòzhe and its neutralization

Finally, I return to the difference between háishi and huòzhe. Under my proposal, háishi and huòzhe are both realizations of the same head J with the same semantics in (3) above, but huòzhe requires that an existential closure operator ∃ (5) adjoins above it. For concreteness, take the ordinary and alternative denotations of [JP Lǐ Sì J Wáng Wǔ] with and without ∃ adjoined, repeated from (4) and (6) above:

(39) A JP denotation, e.g. for Lǐ Sì háishi Wáng Wǔ, from (4):

\[
\begin{align*}
&\text{a. } [\begin{array}{c}
\text{JP} \\
\text{DP} \\
\text{LS} \\
\text{WW}
\end{array}]^o & \text{undefined} \\
&\text{b. } [\begin{array}{c}
\text{JP} \\
\text{DP} \\
\text{LS} \\
\text{WW}
\end{array}]^\text{alt} = \{\text{LS, WW}\}
\end{align*}
\]

(40) JP (39) with ∃ adjoined, i.e. Lǐ Sì huòzhe Wáng Wǔ, from (6):

\[
\begin{align*}
&\text{a. } [\begin{array}{c}
\exists \\
\text{JP} \\
\text{DP} \\
\text{LS} \\
\text{WW}
\end{array}]^o = \lambda P(e,t) \cdot P(\text{LS}) \lor P(\text{WW}) \\
&\text{b. } [\begin{array}{c}
\exists \\
\text{JP} \\
\text{DP} \\
\text{LS} \\
\text{WW}
\end{array}]^\text{alt} = \{\text{LS, WW}\}
\end{align*}
\]

∃ introduces an ordinary semantic value of a disjunction in (40a), whereas [JP]^o in (39a) is undefined—just as the ordinary value of a wh-phrase is undefined (Ramchand 1997, Beck 2006, and others). In section 2, I showed how this simple difference in their denotations yields their canonical difference in interpretation. The AltShift operator will yield a question denotation from a clause containing JP (40), leading to an interpretation as an alternative question, but AltShift cannot apply to a clause built from (40), as it already has an ordinary semantic value (15). In simple examples, this derives the one-to-one correlation of huòzhe being a logical disjunction and háishi resulting in an alternative question interpretation.

But now notice that the sets of alternatives here are identical: [JP]^\text{alt} (39b) = [∃ JP]^\text{alt} (40b). ∃ simply passes up the alternative set of its complement. This makes a prediction: pairs of JP with and without ∃ as in (39–40) should be indistinguishable in the immediate scope of an operator whose interpretation depends only on the alternative set denotation of its scope. In other words, the disjunctors háishi and huòzhe should become interchangeable in such contexts.
As noted briefly in the introduction, there are a number of such contexts which “neutralize” the difference between háishi and huòzhe. I will now briefly survey these contexts, and then present a generalization regarding these neutralizing contexts, based on the prediction above. I then return to the question of the difference between háishi and huòzhe.

Example (41), repeated from (2) above, demonstrates neutralization in the context of quantification with dōu, which has variously been described as a distributor or universal quantifier; see e.g. Lin (1998a).\(^{17}\) Both the háishi and huòzhe variant of (41) are interpreted as quantifying universally over the individuals Zhang San and Li Si. In particular, the háishi variant does not have an alternative question interpretation.

(41) **Neutralization by dōu universal quantification:**

\[
\text{[Zhāng Sān háishi/huòzhe Lí Sì] dōu jīn-lái-le.}
\]

‘Both Zhang San and Li Si came in.’

Such neutralization is also observed in the scope of certain negators. Examples (42) and (43) below show this for méiyǒu and búshì, where both háishi and huòzhe are interpreted as disjunctions under the scope of negation.\(^{18}\) (I have independently verified the interpretation of the huòzhe variants and added them here.) Again, the háishi variants in (42–43) do not have alternative question readings.

(42) **Neutralization under méiyǒu high negation (Hsieh 2004:89):**

\[
\text{Wǒ méiyǒu kànjiàn [Zhāng Sān háishi/huòzhe Lí Sì].}
\]

1sg asp.neg see Zhang San háishi/huozhe Li Si

‘I haven’t seen Zhang San nor Li Si.’ (\(\neg > \vee\))

\(^{17}\)Here the constituent that describes the domain of dōu’s quantification is a subject in its canonical preverbal position, but dōu generally requires this constituent to be to its left, which can trigger fronting for non-subjects.

\(^{18}\)Note that Hsieh (footnote 22) reports that some speakers do not accept háishi in (42). Example (43) is marked without a clear contextual alternative to Zhang San and Li Si, as búshì prefers to associate with a focus. See discussion below on the focus-sensitive nature of búshì.
(43) **Neutralization under búshi high negation** (Lin 2008:52):

Tā búshi xǐhuān [Zhāng Sān háishi/huòzhe Lǐ Sì].
3sg NEG like Zhang San Haishi/Huozhe Li Si

‘S/he doesn’t like Zhang San nor Li Si.’ (¬ > ∨)

As noted by Lin (2008), this neutralization is not observed with the negator bù, which is structurally lower than méiyǒu and búshi (Huang 1988, Yeh 1992, Hsieh 1996). Háishi under bù simply yields an alternative question interpretation in (44).¹⁹

(44) **No neutralization under low negation bù** (Lin 2008:51):

Tā bù xǐhuān [Zhāng Sān háishi Lǐ Sì]
3sg NEG like Zhang San Haishi Li Si

a. *‘S/he doesn’t like Zhang San nor Li Si.’ (¬ > ∨)

b. ‘Does s/he not like Zhang San or Li Si?’ (alternative question)

Another neutralizing environment is the antecedent of conditionals, where both háishi and huòzhe are interpreted as disjunctions in the conditional clause, or as conjunctions out of the scope of the conditional clause; see Alonso-Ovalle (2006) and Rawlins (2008) for relevant discussion. Conditional clauses can take various forms in Mandarin. A rúguǒ-conditional example is shown in (45) below. See also Lin (2008:59ff) for additional examples.

(45) **Neutralization in rúguǒ-conditional:**

Rúguǒ (yǒu) [ZS háishi/huòzhe LS] dǎdiànhuà lái, jiù shuō wǒ bú zài.
if have ZS Haishi/Huozhe LS call come then say 1sg not present

‘If Zhang San or Li Si calls, say that I’m not here.’

There are also conditionals that are explicitly marked as unconditionals (see Rawlins 2008, 2013) with dōu in the consequent, with the antecedent optionally introduced by wúlùn or bùguǎn ‘no matter.’ Háishi and huòzhe are interchangeable in these environments, as has been noted by many authors; see Ito (2014) and citations there.

¹⁹See Lin (2008:51–59) for additional data on non-interrogative interpretations of háishi under negation. The generalization seems to be that a certain distance between the negation and the alternative-source is necessary, not that only high negations are able to trigger existential licensing.
Neutralization in ‘no matter’ unconditional:

(Wúlùn/bùguˇan) [ZS háishi/huòzhe LS] dǎdiànhuà lái, wǒ dōu bú zài.

‘No matter whether Zhang San or Li Si calls, I’m not here.’

Epistemic modals also neutralize the difference between háishi and huòzhe. Example (47) is based on an example from Huang (2010:130). Both háishi and huòzhe are interpreted as disjunctions in the scope of the modal here. See Lin (2008:74ff) for additional examples, including with some non-epistemic modals.

Neutralization under epistemic modals (based on Huang 2010:130):

Tā dàgài/kěnéng xǐhuān [Zhāng Sān háishi/huòzhe Lǐ Sì].

‘S/he probably/might like(s) Zhang San or Li Si.’

Dōu quantification, negation, conditionals, and modals are not the only neutralizing environments. See Lin (2008) for extensive additional data, including with negative adverbs and downward-entailing quantifiers, non-factive embeddings such as ‘hope,’ imperatives, and polar questions. As noted by Lin (2008), what is notable is that these contexts are precisely those which license non-interrogative interpretations of who-phrases in Mandarin Chinese. See the examples below, which correspond to examples (41), (42),

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20 There seems to be some speaker variation with these contexts. See Ito (2014) for some survey results which reflect this variation, and see also footnote 18 above. In particular, there is outright disagreement in reported judgments in the literature for polar questions. See the polar questions in (i) vs (ii) below with polar question particle ma, which are identical modulo choice of participants. Huang (2010) reports (i) as grammatical but Dong (2009) reports (ii) as ungrammatical.

(i) Tā xǐhuān Zhāng Sān háishi Lǐ Sì ma? (Huang 2010:130)

‘Does s/he like either Zhang San or Li Si?’ (polar question)

(ii) *Zhāng Sān xǐhuān Lǐ Sì háishi Mǎlǐ ma? (Dong 2009:74)

Intended: ‘Does Zhang San like either Li Si or Mary?’
(48) **Non-interrogative *wh* in the neutralizing contexts above:**

a. *Shéi dōu jìn-lái-le.*

   **who dōu enter-come-le**

   ‘Everyone came in.’

   (Cheng and Giannakidou 2013:124)

b. *Wǒ méiyǒu kànjiàn shéi.*

   1sg **asp.neg see who**

   ‘I haven’t seen anyone.’

c. *Rúguǒ (yǒu) nǎ-ge rén dǎdiànhuà lái, jǐu shuō wǒ bù zài.*

   **if have which-cl person call come then say 1sg not present**

   ‘If anyone calls, say that I’m not here.’

   (Ibid.:140)

d. *(Wúlùn/bùguān) nǎ-ge rén dǎdiànhuà lái, wǒ dōu bù zài.*

   **no.matter which-cl person call come 1sg dōu not present**

   ‘No matter who calls, I’m not here.’

   (Ibid.:140)

Recall also that there was a difference between structurally higher and lower negators. This difference is also reflected in the licensing of non-interrogative *wh*:

(49) **Wh*-indefinite licensed by high *búshì* but not by *bù* (Lin 2008:53):**

a. *Tā bùshì tǎoyàn shéi.*

   3sg **neg dislike who**

   ‘S/he doesn’t dislike anyone.’

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21With just one exception: Lin (2008) claims that subject ‘only’ licenses indefinite interpretations of *háishi* but not *wh*. See her pages 80–81 and 162–163. We can imagine various reasons for this one discrepancy. If we are to think of indefinite *wh* or *háishi* as polarity licensed—as suggested by discussion in Li (1992), Lin (1998b), Kuo (2003) and others on *wh* and Lin (2008) for *háishi*—it’s worth noting that polarity licensing by ‘only’ is notoriously complex, both syntactically and semantically (see e.g. von Fintel 1999, Wagner 2006, Xiang to appear). It may also be relevant that ‘only’ is itself a focus-sensitive operator that triggers intervention; see section 4. I will leave this issue open here.

22Cheng and Giannakidou (2013) report some differences between simplex *wh*-words such as *shéi* ‘who’ vs complex *wh*-phrases such as *nǎ-ge rén* ‘which person’ in some of these environments, but such restrictions appear to be subject to some speaker variation as well.
b. Tā bù tāoyàn shéi
   3sg neg dislike who
   i. *‘S/he doesn’t dislike anyone.’
   ii. ‘Who does s/he not dislike?’

Recall that in the two-dimensional Rooth-Hamblin Alternative Semantics framework adopted here, *wh*-phrases have an alternative set denotation corresponding to its domain, but no ordinary value defined. Environments that quantify over the domain of a *wh*-phrase are necessarily considering only the alternative set denotation of their scope. The fact that these environments that yield non-interrogative quantificational readings of *wh*-phrases are also exactly those where háishi and huòzhe become interchangeable supports my conjecture regarding neutralizing contexts above. Based on these facts, I offer the following generalization:

(50) **Generalization:**

If and only if *Op* is a non-*AltShift* operator whose interpretation \([Op \alpha]\) depends only on the alternative set denotation of its scope \([\alpha]_{\text{alt}}\), and not on its ordinary denotation \([\alpha]_{\text{o}}\), then in the immediate scope of *Op*:

a. *wh*-phrases will have non-interrogative interpretation; and

b. háishi and huòzhe will be interchangeable and háishi cannot form an alternative question.

This uniform generalization in (50) regarding the distribution of non-interrogative *wh* and the neutralization of háishi and huòzhe yields an important new desideratum for the analysis of the semantics of individual neutralizing contexts. While providing detailed analyses for each of these contexts is not possible within the confines of this paper, I will offer some brief suggestions of possible directions for the four contexts surveyed above.

For dōu quantification, Dong (2009) has proposed a denotation for dōu as a universal quantifier over a set denotation in a one-dimensional Hamblin semantics, following Kratzer and Shimoyama (2002), Kratzer (2005), Shimoyama (2006). This denotation can be straightforwardly modified so that it is specifically the alternative set denotation that is quantified over, in the two-dimensional Rooth-Hamblin semantics here. See recent related discussion in Tsai (2015). See also Xiang (2016) and Liu (to appear) for two other recent analyses for various uses of dōu; in both approaches, dōu quantifies over sets of
alternatives—though not necessarily with dōu itself providing the universal quantification directly—and therefore can be adapted to the two-dimensional semantics here.

For modals, conditionals, and negation, previous work has described the non-interrogative uses of wh-phrases in their scope as polarity items (Huang 1982, Li 1992) or free choice items, with licensing in non-veridical or non-episodic environments being one prominent proposal; see e.g. Lin (1998b), Cheng and Giannakidou (2013), Giannakidou and Cheng (2006) on Mandarin and also Giannakidou (1998) for a more general theory. Work such as Kratzer and Shimoyama (2002), Aloni (2007), and Chierchia (2013) have aggressively pursued the idea that the common core of such polarity and free choice items—not just for those derived of wh-words—is the projection of a set of alternatives.

Based on the interpretations of disjunctions under modals, Simons (2005), Alonso-Ovalle (2006), and Aloni (2007) argue that modals should have access to the individual disjuncts in its prejacent as a set of alternatives—i.e., modals quantify over the alternative dimension, satisfying the generalization in (50). Similar considerations have led to the claim that disjunction in conditional clauses should project Hamblin alternatives which can be quantified over; see e.g. Alonso-Ovalle (2006) and Rawlins (2008, 2013). (I return to a claim of Rawlin’s, below.)

Finally, I consider negation. The facts for negation are a bit more complex. Recall the contrasts between high and low negations in (43–44) and (49) above. This correlates with the fact that the higher bùshì negator, rather than the lower bù, is used for metalinguistic and contrastive negation (Hsieh 1996)—a cross-linguistically common pattern of “external” negation; see e.g. Kroeger (2014). One way to think about the negation data is as a last resort insertion of ∃ licensed by higher negations, precisely in the cases where the higher, focus-sensitive negation would cause an intervention effect. I will leave the detailed investigation of the semantics of higher and lower negations in Mandarin for future study.

I return now to the question of the difference between háishi and huòzhe. Recall that a number of previous analyses have proposed that háishi is distinguished from huòzhe by being syntactically marked [+wh] (Huang 1982, Huang et al. 2009) or [+Q] (Tsai 2015).23 Let’s spell out the [+wh] feature proposal first. Suppose that certain operators probe for a [+wh] constituent in its scope and specify its quantificational force. For example, if a [+wh] is checked by dōu, it will be used for universal quantification; if it is checked

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23Uegaki (2014a) similarly suggests a [+wh] feature based on the discussion of similar pairs of disjunctors in other languages, but without discussion of Mandarin.
by an interrogative complementizer, it will be interpreted as an interrogative phrase, etc. A [+wh] feature on háishi predicts háishi disjunctions to always be interpreted on par with a wh-phrase in the same environment. This is in fact correct: as shown above and supported through much additional data in Lin (2008), the interpretation of háishi disjunction in a particular environment—whether interrogative, existential (disjunction), or universal (conjunction)—corresponds exactly to the interpretation of a wh-phrase in the same environment.24

However, this [+wh] feature account fails to explain why it is exactly these environments that have these wh-probes. The fact that wh-phrases and háishi disjunction do not yield interrogative interpretations when in a conditional clause becomes an arbitrary fact about the lexicon: heads introducing conditional clauses, such as rútu, just happen to have such a wh-probe. Instead, I have shown that there is a semantic characterization for the environments where wh-phrases are used non-interrogatively and háishi and huòzhe disjunctions are neutralized: they are in the immediate scope of operators that consider only their scopes’ alternative set denotations for their interpretation (50). The semantics for háishi and huòzhe proposed here is superior to the [+wh] feature account in explaining this distribution.

Now consider the proposal where háishi is marked [+Q] as in Tsai (2015). Taken at face value, this requires háishi to always form a question denotation. The environments which appear to quantify over háishi’s disjuncts then must all be analyzed as question embeddings. Rawlin’s (2008, 2013) claim that all unconditionals are syntactically questions lends support for such a view. For example, rútu-conditionals appear to necessarily be clausal; see (51–52). This is compatible with a view where all neutralizing contexts are question embedders.

(51) **Rútuo-(un)conditionals are clausal:**

a. Rútuo [Zhāng Sān háishi/huòzhe Lǐ Sì xiǎng lái], tā dōu kěyǐ lái.
   if Zhang San háishi/huòzhe Li Si want come 3sg dōu able come
   ‘If Zhang San or Li Si wants to come, he/they can come.’

b. Rútuo [shéi xiǎng lái], tā dōu kěyǐ lái.
   if who want come 3sg dōu able come
   ‘If anyone wants to come, they can come.’

24Modulo one exceptional case: see footnote 21 above.
(52) **Rúguō-(un)conditionals cannot be phrasal:**
   a. *Rúguō* [Zhāng Sān háishi/huòzhe Lǐ Sì], tā dōu kěyǐ lái.
      if Zhang San háishi/huòzhe Lǐ Sì 3sg dōu able come
   b. *Rúguō* [shéi], tā dōu kěyǐ lái.
      if who 3sg dōu able come

However, when we compare this to another, very similar neutralizing context—*wúlùn* unconditionals—we see that neutralizing contexts cannot all be question embeddings. Notice that *wúlùn* can take a clausal or phrasal argument with a source of alternatives such as a disjunction or a *wh*-phrase:

(53) **Wúlùn-unconditionals can be clausal:**
   a. Wúlùn [Zhāng Sān háishi/huòzhe Lǐ Sì xiǎng lái], tā dōu kěyǐ lái.
      no.matter Zhang San háishi/huòzhe Lǐ Sì want come 3sg dōu able come
      ‘No matter whether Zhang San or Li Si wants to come, he/they can come.’
   b. Wúlùn shéi xiāng lái, tā dōu kěyǐ lái.
      no.matter who want come 3sg dōu able come
      ‘No matter who wants to come, they can come.’

(54) **Wúlùn-unconditionals can be phrasal:**
   a. Wúlùn [Zhāng Sān háishi/huòzhe Lǐ Sì], tā dōu kěyǐ lái.
      no.matter Zhang San háishi/huòzhe Lǐ Sì 3sg dōu able come
      ‘No matter Zhang San or Li Si, he/they can come.’
   b. Wúlùn [shéi], tā dōu kěyǐ lái.
      no.matter who 3sg dōu able come
      ‘No matter who, they can come.’

In particular, the phrasal arguments of *wúlùn* in (54) are identical to the attempted arguments of *rúguō* in (52) above. This argues against a possible description of (54) as a superficially reduced question embedding, for example with a form of copula drop. If the forms in (54) count as questions, and all neutralizing contexts are question embeddings, these same phrases should be grammatical in (52).
6 Conclusion

In this paper I investigated the distributions and interpretations of the two disjunctors in Mandarin Chinese, háishi and huòzhe. I proposed that the two disjunctors are both realizations of the same J head, both taking disjuncts of various sizes. J projects the disjuncts’ denotations as a set of alternatives. Huòzhe is syntactically marked as requiring an existential operator ∃ to adjoin above and create an existential quantifier from these disjuncts. These meanings are given schematically in (55) with the disjuncts A and B and with adjunction of ∃ directly to JP for huòzhe.

(55) Two disjunctions in a two-dimensional semantics: 25

A crucial ingredient of this proposal is the use of the two-dimensional Alternative Semantics of Rooth (1985, 1992) as applied to the interpretation of interrogatives as well as focus, as in Beck (2006)—what I call Rooth-Hamblin Alternative Semantics here. The two separate dimensions of meaning—ordinary and alternative in (55)—allow for huòzhe to differ from háishi in having an ordinary semantic value of a disjunction over its disjuncts, while also continuing to project the same sets in the alternative dimension. The difference in the ordinary dimension meaning results in their classic division of labor between alternative question formation and logical disjunction. The fact that their alternative denotations are equivalent explains their identical behavior in neutralizing contexts, as well as my semantic characterization of these environments as those which consider only the alternatives in their scope, and the fact that these are also environments where wh-phrases receive non-interrogative interpretations (50).

In contrast, consider a variant of the proposal here in a one-dimensional Hamblin semantics, as in Kratzer and Shimoyama (2002) or Alonso-Ovalle (2006). In this framework, every node is associated with a set denotation. Constituents have singleton denotations

25For ease of presentation, ∨ is used in (55–57) as a cross-categorial disjunction. See (5a) for a formulation.
if they do not include a source of alternatives such as a disjunction or *wh*-phrase. These alternatives compose pointwise, as with the alternative set denotations in the Roothian framework. Clauses with non-singleton denotations are then interpreted as questions. *Háishi* disjunctions must have a non-singleton denotation in order to introduce alternatives that can lead to a question interpretation. An existential closure operator as in (56), similar to my ∃ in (5), then applies in the case of logical disjunction (Hagstrom 1998, Kratzer and Shimoyama 2002, Shimoyama 2006, Alonso-Ovalle 2004, and others).

(56) **Existential closure in a Hamblin semantics:**

\[
[∃α] = \{ ∨ [α] \}
\]

(57) **Two disjunctions in a Hamblin (one-dimensional) semantics:**

\[
\begin{array}{ccc}
\text{JP} & \text{JP} \\
A & J & B & A & J & B \\
\text{(háishi)} & \text{(huòzhe)}
\end{array}
\]

Hamblin: \{A, B\} \rightarrow [∃(56)] \rightarrow \{A ∨ B\}

Because there is only one dimension in the semantics, this operator (56) introduces the disjunction in (57) at the expense of overwriting the set of individual disjuncts. This correctly predicts that the disjunction with ∃ (huòzhe) cannot be used to form an alternative question, but we lose the ability to later access the individual disjuncts and quantify over them. The one-dimensional Hamblin framework is thus insufficient to model the behavior of “neutralizing” environments, discussed in section 5, which quantify over the set of alternatives in their scope.²⁶

²⁶The same criticism applies to most formulations of Inquisitive Semantics (Ciardelli et al. 2013, Roelofsen 2013, Ciardelli et al. 2017 see e.g.), which are similarly one-dimensional. Suppose a basic disjunct J introduces the disjuncts as separate alternatives, resulting in an “inquisitive” meaning appropriate for háishi. (See e.g. Ciardelli et al. (2013) on the formal representations used in Inquisitive Semantics, although the notion of (propositional) alternative here is similar to the notion in Alternative Semantics. See Ciardelli et al. 2013 endnote 5.) The non-inquisitive closure operator ! will collapse the individual disjuncts together, yielding a meaning appropriate for huòzhe, but with the effect of making the individual disjuncts no longer accessible for quantification.

To my knowledge the only proposal for a similar pair of interrogative and logical disjunctors in Inquisitive Semantics is Winans’s (2013) proposal for the Egyptian Arabic disjunctions *wallaa* vs *au*. Although the details of her formulation differ, *wallaa* is necessarily a source of inquisitiveness, whereas *au* never can be (pp. 31–34). Again, modeling huòzhe as in this *au* would not allow us to access the individual disjuncts for quantification in neutralizing contexts.

A variant in the Inquisitive Semantics tradition that may fare better is Roelofsen and Van Gool (2009), but
The additional dimension of meaning offered in the two-dimensional Alternative Semantics of Rooth (1985, 1992) is independently necessary for the interpretation of focus, over and above what is offered by one-dimensional Hamblin semantics or Inquisitive Semantics, in order to encode choices of prejacent. (On Inquisitive Semantics, see footnotes 15 and 26.) I have shown here that capturing the difference between háishi and huòzhe disjunctions in Mandarin—as well as their behavior in neutralizing environments—also independently necessitates such a two-dimensional semantics. This constitutes an important new argument for the Alternative Semantics framework from an empirical domain other than the interpretation of focus.

References


this is because it is a two-dimensional framework, computing a “highlighting” denotation for each node in addition to the standard Inquisitive Semantics “proposing” denotation. The motivation for this addition is in fact the consideration of effects of focus, which similarly cannot be captured in the one-dimensional Hamblin semantics.


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