Cross-linguistic variation in ordinary vs interrogative disjunctions

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A number of languages of the world use a distinct disjunctor form to express *alternative questions* (AltQ). For instance, the Finnish AltQ in (1a) must use *vai*, whereas the disjunctive declarative in (2a) must use *tai* (Kaiser, 2003). The (b) and (c) examples in (1–2) show the same contrasts in Mandarin Chinese and Vietnamese. Following Haspelmath 2007, I call the *vai/háishì/hay* type "interrogative disjunction" (IDISJ) and the *tai/huòzhe/hoặc* type "ordinary disjunction" (ODISJ). (Ordinary disjunctions can also be used to form polar questions and therefore are not specifically limited to declarative environments.)

(1) Interrogative disjunction for AltQ $\{p, q\}$:
    'Does he/she drink coffee or tea?' (AltQ)

    a. Juo-ko hän kahvia **vai/*tai**   teetä?
         drinks-Q 3sg coffee IDISJ/*ODISJ tea

    b. Tā hē   kāfēi **háishì/*huò** lǜchǎ?
         3sg drink coffee IDISJ/*ODISJ tea

    c. Nó uống cà phê **hay/*hoặc** trà?
         3sg drink coffee IDISJ/*ODISJ tea

(2) Ordinary disjunction for $p \vee q$:
    'He/she drinks coffee or tea.' (declarative)

    a. Hän juo kahvia **tai/*vai**   teetä.
         3sg drinks coffee ODISJ/*IDISJ tea

    b. Tā hē   kāfēi **huòzhe/*háishì** lǜchǎ.
         3sg drink coffee ODISJ/*IDISJ   tea

    c. Nó uống cà phê **hoặc/*hay** trà.
         3sg drink coffee ODISJ/*IDISJ tea

Here, I highlight the fact that languages may vary in the distinction encoded in their ODISJ vs IDISJ pairs. In particular, I show that certain environments "neutralize" the ODISJ/IDISJ distinction in Mandarin and Vietnamese, but not in Finnish or Tiwa (Tibeto-Burman; from Dawson 2020). To my knowledge, no prior work has made this observation, in both descriptive (e.g. Haspelmath 2007, Mauri 2008) and theoretical literature on logical connectives. I offer a proposal for this variation in ODISJ/IDISJ distributions.

Neutralization of the ODISJ/IDISJ distinction in Mandarin and Vietnamese: Building on Huang 2010, Erlewine 2014 shows that the Mandarin IDISJ *háishì* functions as a regular (non-question-forming) disjunction in certain environments, becoming interchangeable with ODISJ *huòzhe*. These environments include antecedents of conditionals (3), unconditionals and *dōu* free choice constructions, and under high, focus-sensitive negation. Erlewine notes that these are all environments where *wh*-words receive non-interrogative, indefinite interpretations (Lin, 1998; Cheng and Giannakidou, 2013).

(3) [Yàoshì Akiu cízhí **háishi/huòzhe** tuìxiū dehuà] qǐng   gàosù wǒ.
    if   Akiu resign IDISJ/ODISJ   retire COND please tell   1sg
    'If Akiu resigns or retires, please tell me.'   (Mandarin: Huang 2010: 128)

Here I show that Vietnamese IDISJ *hay* also exhibits neutralization with ODISJ *hoặc* in a similar range of environments, including the conditional in (4).

(4) [Nếu Minh **hay/hoặc** Kim gọi đến] thì bảo là tôi đang họp.

    if   Minh IDISJ/ODISJ Kim call come then say that 1sg PROG meeting

    'If Minh or Kim calls, say that I'm in a meeting.' (Vietnamese)

<u>Non-neutralization in Finnish and Tiwa:</u> In contrast, Finnish IDISJ *vai* appears to never neutralize with *tai*. For example, IDISJ *vai* in the conditional clause in (5a) necessarily leads to the entire utterance being an alternative question, and cannot contribute an ordinary disjunction meaning. ODISJ *tai* in the same environment (5b) contributes an ordinary disjunctive meaning, which here results in a polar question interpretation due to the presence of the question particle *-ko*. (Note that *wh*-words in Finnish do have non-interrogative, indefinite uses in some environments such as in forming unconditionals (Hakulinen et al., 2004: §761) but *vai* cannot be used in such environments either.)

(5) Olisit-ko   onnellise-mpi, [jos Pekka { a. **vai** / b. **tai** } Liina tulee]?

    be.COND.2sg-Q happy-COMP   if Pekka   IDISJ /   ODISJ Liina comes

    a. *vai*: 'Would you be happier if Pekka comes or if Liisa comes?' (AltQ / *PolarQ)

    b. *tai*: 'Would you be happier if one of Pekka or Liisa comes?' (PolarQ / *AltQ) (Finnish)

Similarly, IDISJ *na* in Tiwa does not have an ordinary disjunction function, instead resulting in a matrix alternative question interpretation in (6):

(6) [Mukton **na** Saldi phi-gai-do], Tonbor khâduw?

    Mukton IDISJ Saldi come-COND-TOP Tonbor happy

    'Will Tonbor be happy if Mukton comes or if Saldi comes?' (AltQ) (Tiwa: Dawson 2020: 79)

Note that this cross-linguistic difference cannot be deduced from the presence or absence of *wh*-movement: Finnish is a *wh*-fronting language, but Mandarin, Vietnamese, and Tiwa are all *wh*-in-situ languages.

<u>Analysis:</u> My core claim is that <u>the ODISJ/IDISJ distinction involves an additional, *syntactic* distinction in Finnish and Tiwa but is an entirely *semantic* distinction in Mandarin and Vietnamese.</u>

For the basic contrast between ODISJ and IDISJ, I build on the analysis of Erlewine 2014 for the ODISJ/IDISJ distinction in Mandarin Chinese, which assumes the two-dimensional Alternative Semantics of Rooth 1985, 1992 as extended to the semantics of interrogatives as in Beck 2006, Beck and Kim 2006, and Kotek 2019. A disjunction phrase headed by ODISJ has an ordinary semantic value as a boolean disjunction of its disjuncts (with appropriate type-lifting for non-propositional types, following e.g. Alonso-Ovalle 2006 appendix C), but a disjunction phrase headed by IDISJ has no defined ordinary semantic value (8a). Both return the set of their disjuncts' ordinary values as their alternative set values: see (7 b), (8 b).

(7)   a. $[\![\text{A ODISJ B}]\!]^o = [\![\text{A}]\!]^o \vee [\![\text{B}]\!]^o$ (8)   a. $[\![\text{A IDISJ B}]\!]^o$ undefined

    b. $[\![\text{A ODISJ B}]\!]^{alt} = \{[\![\text{A}]\!]^o, [\![\text{B}]\!]^o\}$ b. $[\![\text{A IDISJ B}]\!]^{alt} = \{[\![\text{A}]\!]^o, [\![\text{B}]\!]^o\}$

The result of an ɪᴅɪsᴊ phrase as per (8) has has a non-singleton alternative set and an undefined ordinary value, which is the signature of *wh*-words in the Rooth-Hamblin semantics of Beck 2006 and subsequent work. A simple clause that includes ᴏᴅɪsᴊ will have a disjunctive ordinary semantic value, resulting in a valid disjunctive propositional expression. In contrast, a simple clause built from ɪᴅɪsᴊ will not have an ordinary semantic value and therefore requires an operator to construct a question denotation from its alternative set (interrogative C in Beck 2006 and Beck and Kim 2006, Aʟᴛsʜɪꜰᴛ in Kotek 2019), leading to an interrogative interpretation just as simple *wh*-containing clauses do. (Following discussion in Kotek 2019, Aʟᴛsʜɪꜰᴛ cannot apply to structures with an ordinary semantic value, thereby explaining the inability for ᴏᴅɪsᴊ to form alternative questions in (1).)

In Finnish-type languages, ɪᴅɪsᴊ additionally encodes a syntactic dependency (e.g. via Agree) on an interrogative clause-type complementizer, ensuring that it contributes to an alternative question. Note that this dependency need not involve covert movement. Adjunct clauses such as conditionals constitute islands for overt movement in both Finnish (Huhmarniemi, 2012: 101) and Tiwa (Dawson, 2020: 68), but ɪᴅɪsᴊ inside conditionals result in grammatical matrix alternative questions in (5–6).

In Mandarin-type languages, ɪᴅɪsᴊ does not impose an additional syntactic requirement that it form an interrogative. Following Erlewine 2014, neutralizing contexts are precisely those which can derive an interpretation by considering alternative set denotations alone; for instance, it has been independently argued by Alonso-Ovalle (2006) and Rawlins (2008, 2013) that the interpretation of conditionals builds on the alternative set denotation of the conditional clause. I discuss the semantics of other neutralizing contexts at the talk.

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