Questions and conditionals with disjunction in Gitksan

The morpheme *ji* in Gitksan (Tsimshianic; VSO),[1] glossed as 'if' or 'irrealis' (Rigsby, 1986), is observed in a wide range of environments that are yet to receive a unified analysis. *Ji* glossed as 'if' occurs in embedded polar questions and conditional antecedents. This paper provides novel data showing that, in embedded alternative questions and conditional antecedents with disjunction, *ji* is required in each disjunct. I will argue that *ji* takes a proposition and forms a monopolar question denotation, building on Brown's (2024) work on a related language and inspired by the literature on the Japanese Q-particle (Uegaki, 2018) as well as the literature on (un)conditionals with disjunction (Alonso-Ovalle, 2006; Rawlins, 2008, 2013). Finally, I suggest that the analysis explains the semantic effects of *ji* in environments that do not appear to involve questions at a glance.

Data

Ji is required in embedded polar questions (1) and conditional antecedents ([redacted, to appear]).

(1) Gidax̲-a-[-t]=s Lisa 'nii'y *(**ji**) 'witxw-i'y g̲o'osun ky'oots
ask-TR[-3.II]=PN Lisa 1SG.III IRR arrive-2SG.II here yesterday
'Lisa asked me if I came here yesterday.'

In a related language, Sm'algyax, Brown (2024) analyzes a cognate of *ji* in embedded polar questions as a monopolar question operator. I will apply this view to *ji* in broader environments.

A novel observation is that in conditional antecedents with disjunction and embedded alternative questions, each disjunct requires *ji*.[2]

(2) Context: Mary to John: "You arrived so fast. Did you walk or did you run?"
Gidax̲-a[-t]=s Mary a[-t]=s John **ji** yee-t oo *(**ji**) bax-t
ask-TR[-3.II]=PN Mary PREP[-3.II]=PN John IRR walk-3.II OO IRR run-3.II
'Mary asked John if he walked or he ran.'

(3) **Ji** siipxw-in oo *(**ji**) hlabixsxw-in sgi dim ha'w-in
IRR be.sick-2SG.II OO IRR be.tired-2SG.II CIRC.NECESS PROSP go.home-2SG.II
'If you're sick or tired, you should go home.'

Analysis Take (1) as an example. I propose that *ji* takes the prejacent proposition (4a) and forms a singleton set containing that proposition (4b). (4b) can then combine with the matrix verb *gidax̲*, which requires a question denotation (4c).

(4) a. ⟦ 'witxw-i'y g̲o'osun ky'oots ⟧ = λw. I came here yesterday in w

b. ⟦ **ji** 'witxw-i'y g̲o'osun ky'oots ⟧ = {λw. I came here yesterday in w}

c. ⟦ gidax̲ ⟧ = λQ_{stt}. λx. λw. Ask(Q, x, w)

A disjunctive meaning (2, 3) arises when two singleton sets of propositions are combined by a set union operator *oo* (5a), analyzed here as an overt realization of a Junction head (Uegaki, 2018). This is illustrated in (5b) for the conditional antecedent in (3).

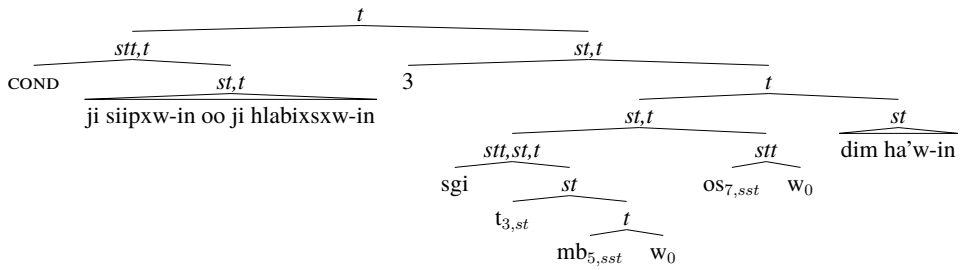
(5) a. ⟦ oo ⟧ = λQ_{stt}. $\lambda Q'_{stt}$. $Q \cup Q'$

b. ⟦ **Ji** siipxw-in oo **ji** hlabixsxw-in ⟧ = {λw. you are sick in w, λw. you are tired in w}

[1] Unless otherwise noted, data are obtained by elicitation with two fluent speakers using the standard methodologies in semantic fieldwork (Matthewson, 2004).

[2] *Ji* in the second disjunct can be replaced by another understudied morpheme *ligi*, which has also been characterized as a singleton set-forming operator (Matthewson, 2014).

The structure of a conditional sentence in (3) below follows Rawlins (2013). The variables mb and os are the contextually supplied modal base and ordering source, respectively, and tense is ignored. The antecedent moves from the sister of the modal base, leaving a trace t_3 of type *st*.



The matrix clause in (3) has the denotation in (6), where g(3) has been combined with the modal base through Predicate Modification before being abstracted over.

(6) $[\![3\ [[\text{sgi}\ t_3\ [\text{mb}_5\ w_0]]\ [\text{os}_7\ w_0]]\ \text{dim ha'w-in}]\!]^g$
= $\lambda p.\ \forall w'[w' \in \text{BEST}_{g(os_7)(w_0)}(p \cap g(\text{mb}_5)(w_0)) \rightarrow$ you will go home in $w']$

Following the treatment of (un)conditionals with disjunction in English (Alonso-Ovalle, 2006; Rawlins, 2008, 2013), I propose that each proposition in the set denoted by the antecedent (5b) is composed with the matrix clause in a point-wise manner to restrict the circumstantial necessity modal (Matthewson, 2013) *sgi*. For concreteness, I postulate a covert COND operator responsible for this operation, which denotes what Alonso-Ovalle (2006) attributes to conditional antecedents.

(7) $[\![\text{COND}]\!] = \lambda Q_{stt}.\ \lambda P_{stt}.\ \forall q[q \in Q \rightarrow P(q)=1]$

As a result, (3) receives the denotation in (8), which is identical to conjunction of two conditional statements, 'If you're sick, you should go home' and 'If you're tired, you should go home.'

(8) $[\![(3)]\!]^g = \forall q[q \in \{\lambda w.$ you are sick in w, $\lambda w.$ you are tired in $w\} \rightarrow$
$\forall w'[w' \in \text{BEST}_{g(os_7)(w_0)}(q \cap g(\text{mb}_5)(w_0)) \rightarrow$ you will go home in $w']]$

The present analysis extends to other environments. A corpus of the language (Gogag et al., prep) includes eight adjunct *when* clauses introduced by *ji*, all of which accompany future-oriented or generic statements. In addition, *ji* can accompany a temporal adverbial, but only when the resulting meaning is future-oriented, as in *ji gyuu'n* 'soon' in (9).

(9) Ha'niigood-i'y (**ji**) dim kw'itxw[-t]=s Henry **ji** **gyuu'n**
think-1SG.II IRR PROSP arrive[-3.II]=PN Henry IRR now
'I think Henry will be here soon.'

Given that future-oriented clauses in Gitksan include a (covert) modal (Matthewson et al., 2022), what unifies the above mentioned *when* clauses and temporal adverbials is the presence of a modal in the matrix clause. The current restrictor analysis suggests an explanation for this restricted distribution of (seemingly) temporal *ji*, in line with the restrictor analysis of generic *when* clauses (Farkas and Sugioka, 1983): *ji* clauses need a modal to restrict unless it receives a question reading. This generalization leads us to conclude that the *ji*-clause formed by the first occurrence of *ji* in (9) is a question. This was indeed suggested in [redacted, to appear], following an account of an analogous use of the Japanese Q-particle (Goodhue and Shimoyama, 2022). The idea is that the *ji* clause is an adjunct expressing the content of the thought. In summary, even though *ji* outside of polar questions shares with other morphemes termed 'irrealis' (Grano et al., 2024) the surface property of signaling the presence of a modal, its semantics can be unified as a monopolar question operator, most strongly supported by the novel data on conditional antecedents with disjunction.

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