Iffy discourse: Japanese *moshi* in conditionals and nominal topics

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Introduction

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■ This property of *if* is later coined the term 'iffiness' by von Fintel and latridou (2002).

See Appendix 1 for how German conditional connectives fare with Lewis's example.

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- For moshi at least, iffiness amounts to unsettledness in the context;
- For cross-linguistic studies on iffiness, the tests established here could help disentangle the iffiness associated with each conditional marker.

Why Japanese moshi?: Preliminaries

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(4) (*moshi) John-ga {ki-masu / kuru darou / kuru youda.}

MOSHI J-NOM come-POL come MOD come EVID

'John will come.' / 'J will probably come.' / 'It looks like J will come.'

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The iffiness of *moshi* in conditionals

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Whether one wakes up **tomorrow** is normally not questionable, but whether one wakes up **in the middle of the night** may be.

See also Appendix 2 for a similar argument with evidence from unconditionals.

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■ An alternative option: iffiness = unsettledness in the context?

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- (9) A: John came.
 - B: moshi John-ga HONTOU-ni ki-ta nara, Mary-mo ki-teiru hazu

 MOSHI J-NOM really-DAT came COND M-NOM come-ASP should

 da kedo.

 COP but

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'If John **REALLY** came, Mary should be here, too (but look, she isn't).'

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Description of moshi's iffiness in conditionals:

moshi requires the antecedent proposition not to be entailed by CS.

The iffiness of *moshi* in topics

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(11) [Teacher speaking in front of students in classroom]

shinbun-o yomi-tai hito-wa, koko-ni ar-imasu.

newspaper-ACC read-want people-TOP here-DAT be-POL.NPST

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Since this constraint is independent of *moshi'*, our tests for *moshi'*s iffiness in topics should not be confounded by it.

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Description of moshi's iffiness in topics:

moshi requires it to remain open as to which individuals satisfy the property expressed by the topic and which individuals don't.

Analysis

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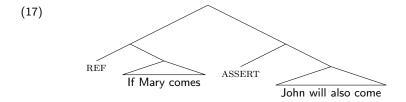
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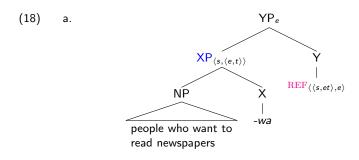
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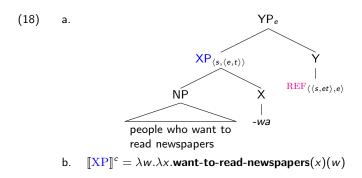
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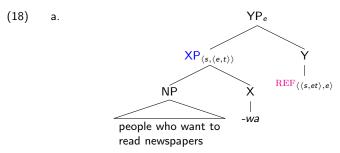
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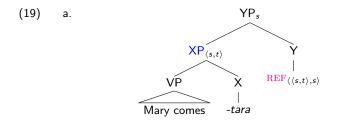
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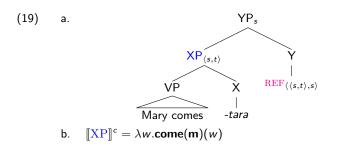


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- c. $[\![\text{REF}]\!]^c = \lambda P_{\langle s,et \rangle} \cdot \sigma(\{x|P(w_c)(x)\}), \text{ where } x \text{ is salient in } c$ (σ maps atomic individuals to the maximal element of their closure under sum, Link 1983)

The topic denotes the plural definite description of individuals $\mathbf{a}_1 \oplus \mathbf{a}_2 ... \oplus \mathbf{a}_n$ such that each atom is salient and wants to read newspapers in w_c



Propositions marked by conditional markers denote sets of worlds;



- Propositions marked by conditional markers denote sets of worlds;
- A speech act operator REF maps propositions to definite descriptions of worlds in the context set where the propositions is true.

(Schlenker 2004; Schein 2001; Bhatt and Pancheva 2006)

- b. $[XP]^c = \lambda w.come(m)(w)$
- c. $[\![\operatorname{REF}]\!]^c = \lambda p_{\langle s,t \rangle}.\sigma(\{v|p(v)\})$, where $v \in \mathit{CS}_c$

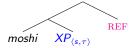
- Propositions marked by conditional markers denote sets of worlds;
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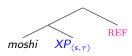
Antecedent denotes the plural definite description of worlds $w_1 \oplus w_2 ... \oplus w_n$ such that each atom is in CS_c and Mary comes there.

moshi takes two arguments



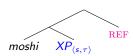
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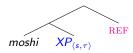
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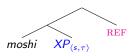
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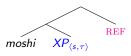
Intuitively, *moshi* tests on whether REF applies to an element whose extension is unsettled in the context set.

It presupposes some worlds in $\it CS$ disagree w.r.t the extension of $\it moshi's$ first argument:

$$[\![moshi]\!]^c \underbrace{(X_{\langle s,\tau\rangle})}_{antecedent/topic} \underbrace{(f)}_{REF} \text{ presupposes } \exists u.\exists v \in \mathit{CS}_c[X(u) \neq X(v)]$$

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...and is truth-conditionally vacuous:

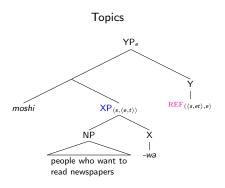
When defined,
$$[moshi]^c(X)(f) = f(X)$$

Presupposition: $\exists u \in \mathit{CS}_c. \exists v \in \mathit{CS}_c[\ [\![XP]\!]^c(u) \neq [\![XP]\!]^c(v)\]$

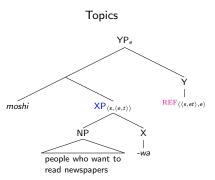
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Topics

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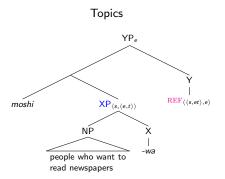


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Defined only if some worlds in CS disagree w.r.t. the set of individuals who want to read newspapers.

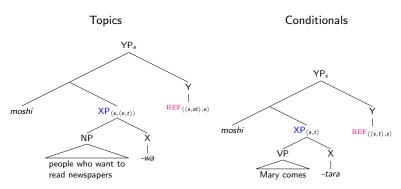
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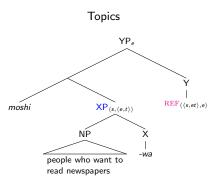
Conditionals

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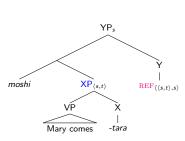
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Defined only if some worlds in CS disagree w.r.t. the set of individuals who want to read newspapers.

Conditionals



Defined only if some worlds in CS disagree w.r.t. the truth-value of the proposition *Mary comes*.

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- ✓ Captured the iffy requirement in conditionals and topics: By the presupposition of *moshi*.
- Ruled out moshi in root clauses: By the compositionality that one of moshi's arguments must be of the same type as REF-operator.

See Appendix 3 for predictions about special root clauses that perform the $\ensuremath{\mathrm{REF}}$ speech act.

Conclusion

Learning from *moshi*:

■ Iffiness = unsettledness in the context;

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- moshi's iffiness is a property shared by conditionals and topics; this lends support to the view that likens conditionals and topics (Haiman 1978; Bittner 2001; Schein 2001; Schlenker 2004; Bhatt and Pancheva 2006; Ebert et al. 2014 a.o.)

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Remaining issue:

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Remaining issue:

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Remaining issue:

- Aboutness topics do not allow *moshi*-marking:
 - (20) (#moshi) terewaaku suru hito-wa undoubusoku-ni nari-yasui.

 MOSHI telework do people-TOP lack.of.exercise-DAT become-easy

 'People who work from home are hard to get enough exercise.'

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- English if is still strange (and possibly other conditional markers, too):
 - (21)?If Caesar woke up, he usually had tea. (Lewis's example)
 - (Factual conditional) (22)A: John came.

If John came, Mary probably also has come. B:

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- English if is still strange (and possibly other conditional markers, too):
 - (21) ?If Caesar woke up, he usually had tea. (Lewis's example)
 - (22) A: John came. (Factual conditional)
 B: If John came, Mary probably also has come.

Is English if not 'iffy' at all, or do we need polysemy for iffiness?

Thank you!

And thanks to Teruyuki Mizuno, Magda Kaufmann, Nadine Theiler, Yoshiki Fujiwara, and the audience at the Semantics Colloquium, Goethe University Frankfurt (Jan 2021) and UConn Meaning Group (Feb 2021) for discussions.

Appendices

Appendix 1: German conditional connectives in Lewis's example

German iffy candidates: falls (Hinterwimmer 2014), sollte (Sode and Sugawara 2018)

- (23) {??Falls / Wenn} Peter aufwacht, trinkt er meistens erst mal eine Tasse Kaffee. (Hinterwimmer 2014: (15))
- (24) #Sollte Peter aufwachen, trinkt er meistens erst mal eine Tasse Kaffee.

 'When Peter wakes up, he always drinks a cup of coffee first.'

 (Magda Kaufmann p.c.)

But the iffy elements identified solely by Lewis's test may come apart in other environments, e.g. if vs. sollte:

- (25) According to the schedule, the train leaves at 8:00...
 - a. If the train leaves at 8:00, we have to be at the station at 7:50.
 - b. ??Sollte der Zug um 8 Uhr abfahren, dann müssen wir spätestens um 7.50 Uhr am Bahnhof sein. (Sode and Sugawara 2018: (23))

Appendix 2: Additional evidence from unconditionals

Unconditionals have antecedents that jointly exhaust all possibilities:

(26) Whether or not Alfonso goes to the party, it will be fun. (Rawlins 2013: 112)

Prediction: Iffy markers should be incompatible with such antecedents.

moshi is incompatible with unconditionals:

- (27) (#moshi) M-ga ki-temo ko-naku-temo, J-wa kuru darou.

 MOSHI M-NOM come-COND come-NEG-COND J-TOP come MOD

 'Whether or not Mary comes, John will probably come.'
- (28) (#moshi) dare-ga ki-temo, watashi-wa ik-imas-en.

 MOSHI who-NOM come-COND I-TOP go-POL-NEG.NPST

 'Whoever comes, I will not go.'

moshi is ok in antecedents that raise multiple options but do **not** jointly exhaust all possibilities:

(29) (moshi) shippai shi-temo baka-ni sare-temo, kanojo-wa akirame-nai MOSHI fail do-COND idiot-DAT do.PASS-COND she-TOP give.up-NEG darou.

MOD

'Even if she fails, even if ppl. laugh at her, she'll probably not give up.'

Appendix 3: Further prediction about root clauses that tolerate moshi

Our account predicts *moshi* to be ok in declaratives that perform the REF speech act.

This prediction is borne out, e.g. suppose -sentences that set up contexts for modal subordination: (Roberts 1989; Kaufmann 2000)

(30) (moshi) dorobou-ga kita to suru. terebi-ga to-rareru kamoshirenai.

MOSHI burglar-NOM came C do TV-NOM take-PASS MOD

'Suppose a burglar broke in. The TV might be taken.'

References I

- Arita, S. (1992). Nihongo-no jouken to shudai-no yuuwa-ni tsuite danwa-ni okeru setting kinou (Setting in discourse by conditionals and topics in Japanese). In *Proceedings of Kansai Linguistic Society*, pages 110–119.
- Arita, S. (2007). Nihongo zyôkenbun to zisêsetusê [Japanese conditionals and tensedness]. Kuroshio, Tokyo.
- Bhatt, R. and Pancheva, R. (2006). Conditionals. In *The Wiley Blackwell Companion to Syntax*, pages 638–87. John Wiley & Sons, Inc.
- Bittner, M. (2001). Topical referents for individuals and possibilities. In *Proceedings of Semantics and Linguistic Theory 11*, pages 36–55.
- Ebert, C., Ebert, C., and Hinterwimmer, S. (2014). A unified analysis of conditionals as topics. *Linguistics and Philosophy*, 37(5):353–408.
- Endriss, C. (2009). Quantificational Topics: A Scopal Treatment of Exceptional Wide Scope Phenomena. Springer.
- Haiman, J. (1978). Conditionals are topics. Language, 54(3):564-589.
- Hinterwimmer, S. (2014). A comparison of the conditional complementizers if and falls. Slides at Wuppertaler Linguistisches Forum (WLF), Universität Wuppertal.

References II

- latridou, S. (1991). *Topics in conditionals*. PhD thesis, Massachusetts Institute of Technology.
- Kaufmann, S. (2000). Dynamic context management. Formalizing the dynamics of information, pages 171–188.
- Kuroda, S.-Y. (1992). *Japanese syntax and semantics: Collected papers*. Springer Science & Business Media.
- Lambrecht, K. (1994). Information Structure and Sentence Form: Topic, Focus, and the Mental Representations of Discourse Referents, volume 71. Cambridge University Press.
- Lewis, D. (1975). Adverbs of quantification. In Keenan, E. L., editor, *Formal Semantics of Natural Language*, pages 178–188. Cambridge University Press.
- Link, G. (1983). The logical analysis of plurals and mass terms: A lattice-theoretical approach. In *Meaning*, *Use*, and the *Interpretation of Language*. de Gruyter, Berlin.
- Mikami, A. (1960). Zoo wa hana ga nagai (As for elephants, the nose is long). Kurosio Publishers, Tokyo.
- Rawlins, K. (2013). (un) conditionals. *Natural Language Semantics*, 21(2):111–178.

References III

- Repp, S. (2011). Relevance topics. In *Proceedings of Sinn und Bedeutung 15*, pages 483–498.
- Roberts, C. (1989). Modal subordination and pronominal anaphora in discourse. *Linguistics and philosophy*, 12(6):683–721.
- Schein, B. (2001). Adverbial, descriptive reciprocals. In *Proceedings of Semantics and Linguistic Theory 11*, pages 404–430.
- Schlenker, P. (2004). Conditionals as definite descriptions. *Research on Language and Computation*, 2(3):417–462.
- Searle, J. R. (1969). Speech Acts: An Essay in the Philosophy of Language, volume 626. Cambridge University Press, Cambridge.
- Sode, F. and Sugawara, A. (2018). On the deliberative use of the german modal sollte. In *New Frontiers in Artificial Intelligence*, pages 341–356. Springer.
- Stalnaker, R. C. (1978). Assertion. In *Context and Content*, pages 78–95. Oxford University Press.
- Tateishi, K. (1990). Syntax of the conditional topic construction in Japanese. In *North East Linguistics Society*, volume 20, pages 458–471.
- von Fintel, K. and latridou, S. (2002). If and when if-clauses can restrict quantifiers. Ms., MIT.
- Yoshida, M. (2006). Constraints and Mechanisms in Long-Distance Dependency Formation. PhD thesis, University of Maryland, College Park.