The Japanese unconditional operator *doose*

1. Introduction
This paper investigates the distribution of *doose*, a Japanese modal adverb, and provides a formal analysis of its semantics. *Doose* is often treated as an evaluative adverbial in the Japanese linguistic literature (Koyano 2000, among others). However, its distributional characteristics are quite different from typical Japanese evaluative adverbials (Arita, to appear). We argue, based on its distribution in matrix and subordinate clauses, that *doose* is an unconditional modifier of (overt or covert) epistemic necessity modals. We analyze its semantics in a standard Kratzer-style formal framework, following recent work on unconditionals by Rawlins (2008a,b) but going further in setting up an analysis in which unconditionals are conditionals.

2. Basic meaning of *doose*
In (1), *doose* implies that the speaker has resigned himself to the inevitability of Taro’s going to Tokyo. In (2), *doose* conveys that the speaker feels s/he cannot solve the question, regardless of how hard s/he tries.

(1) Doose, Taroo-wa Tookyoo-ni syuttyoo.suru.
   in.any.case Taro-TOP Tokyo-to business.trip-do,NON.PAST
   In any case, Taroo will make a business trip to Tokyo. [We cannot stop him from going.]

(2) Boku-ni-wa doose sono mondai-wa tok-e-na-i.
   I-to-TOP at.any.rate this question-TOP solve-can-NEG-NON.PAST
   At any rate, I will not be able to solve the question. [I have already given up solving it.]

These connotations, often called ‘negative implications’ in the Japanese literature, are responsible for the frequent treatment of *doose* as an ‘evaluative’ adverb. However, the following characteristics of its distribution are unexpected under that analysis:

(i) *Doose* appears only in tensed clauses, and
(ii) *Doose* is available only in sentences which satisfy both a) and b):
   a) the speaker considers the proposition highly likely;
   b) the speaker is not absolutely certain that the proposition is true.

3. Interaction with modality and tense
Regarding (i), *doose* modifies epistemic modals, which generally embed tensed clauses, as in (3), but it does not modify root modals, which embed untensed clauses as in (4).1

(3) a. Doose, [Nakamura-wa rokkaaruumu-ni ir-u] hazuda
       anyway Nakamura-TOP locker.room-in be-NON.PAST must_{epistemic}
   Anyway, Nakamura must be in the locker room.

   b. Doose [Nakamura-wa rokkaaruumu-ni i-ta] daroo
       Anyway Nakamura-TOP locker.room-in be-PAST will_{inference}
   Anyway, Nakamura must have been in the locker room.

(4) a. #Doose [konya ano mise-ni ik-] -anakerebanaranai..
       at.any.rate tonight that bar-to go must_{deontic}
   You should go to that bar tonight no matter what.

1 The unavailable reading of (4a) is ‘your obligation is to go to the bar tonight no matter what’. The sentence is felicitous when *doose* scopes over the deontic modal, as in ‘[your obligation is to go to the bar tonight] no matter what’. We assume that *doose* in the latter case modifies a silent epistemic modal, accordingly its felicity is expected and this reading is irrelevant to the present claim. Similarly for (4b).
b. #Doose [konya ano mise-ni ik]-oo.
at.any.rate tonight that bar-to go will\textsubscript{intention}
I will go to that bar tonight no matter what.

Furthermore, \textit{doose} appears only in tensed subordinate clauses, as the contrast between the tensed and untensed subordinate clauses in (5) and (6) shows. (The presence or absence of tense is determined by the selectional restrictions of the embedding connective, here concessive noni vs. temo in (5) and conditional nara vs. tara in (6).)

(5)  
a. (Doose) daigaku-wo sotugyoo-suru-noni, hataraki-taku-nai-no-desu-ka? 
anyway univ-ACC graduate-do.NONPST.CONCESS work-want-NEG-NOMINALIZER-Q? 
Don’t you want to work, even though you are graduating from college (no matter what)?

b. (*Doose) daigaku-wo sotugyoosi-temo, hataraki-taku-nai-desu-ka? 
anyway university-ACC graduate-CONCESS work-want.to-NEG-Q? 
Don’t you want to work, even if you graduate from college (*no matter what)?

(6)  
a. (Doose) Tookyoo-ni iku-nara, Asakusa-ni iki-tai. 
no.matter.what Tokyo-to go.NONPST.COND Asakusa-to go-want.to 
If I go to Tokyo anyway, I want to go to Asakusa.

b. (*Doose) Tookyoo-ni it-tara, Asakusa-ni iki-tai. 
no.matter.what Tokyo-to go-COND Asakusa-to go-want.to 
If I go to Tokyo anyway, I want to go to Asakusa.

Both subordinate clauses (5a) and (5b) are concessive, but \textit{doose} can only occur in the tensed one. The same is true for the contrast between tensed and non-tensed conditional clauses, as shown in (6a) and (6b). In view of the parallelism with modals (Japanese epistemic vs. root modals select tensed and untensed clauses respectively), we conclude that tense is crucial for \textit{doose}.

Regarding (ii-a), \textit{doose} appears within the scope of daroo ‘will’ and hazuda ‘(epistemic) must/should’ but not within the scope of kamosirenai ‘(epistemic) may/might’, as shown in (3)/(7).

(7) *Doose Nakamura-wa rokkaaruumu-ni iru-kamosirenai 
anyway Nakamura-TOP locker.room-in be.NON.PAST-may 
Anyway, Nakamura might be in the locker room.

Assuming that the modal force of epistemic modals indicates the degree of the speaker’s confidence in the truth of the embedded proposition, hazuda and daroo convey a high confidence, whereas kamosirenai merely conveys that the speaker gives the proposition non-negligible likelihood (and implicates that this likelihood is not high). The fact that \textit{doose} can occur with hazuda and daroo, but not with kamosirenai, shows that \textit{doose} expresses the speaker's high commitment to the truth of the proposition.

4. Factivity

As to (ii-b), \textit{doose} does not appear in the focused position of cleft constructions. Sentence patterns like \textit{P nowa Q da} are considered a type of cleft construction in Japanese. Here, \textit{no} is a nominalizer, \textit{wa} a topic marker, and \textit{da} is the copula. \textit{P nowa Q da} can be translated as \textit{It is Q that P}. For instance, (8b) is a cleft version of (8a), with \textit{asita} in the focused position.

(8)  
tomorrow Taroo-NOM Tokyo-to business.trip-do.NON.PAST 
Taroo will make a business trip to Tokyo tomorrow.

It is tomorrow that Taroo will make a business trip to Tokyo.
Doose cannot appear in the focused position, as shown in (9b), a cleft version of (9a).

(9) a. Doose Asita Tookyoo-ni syuttyoo-suru.
    anyway tomorrow Tokyo-to business.trip-do.NONPST
    I will make a business trip to Tokyo anyway.

    tomorrow Tokyo-to business.trip-do.NONPST.NOMINALIZER.TOP anyway-COP
    It is anyway that I will make a business trip to Tokyo tomorrow.

Moreover, doose cannot occur in the complement of factive verbs like regret. The Japanese counterpart of regret, kuyamu, cannot take complement clauses modified by doose:

(10) Taro-wa paatii-ni (*doose) syusse-ki-deki-nai koto-wo kuyandeiru.
    Taro-TOP party-at anyway attend-can-NEG.NPST that-ACC regret.PROG.NPST
    Taro regrets that he cannot attend the party anyway.

Both the focused position of the cleft construction and factive verbs share in common the property that they presuppose the truth of their complement. The fact that doose cannot appear in either position leads us to conclude that doose cannot appear in factive contexts.

To sum up, syntactically, doose is available only in the tensed clauses, and semantically, doose expresses both the speaker's strong commitment to the truth of the proposition and his/her lack of complete certainty.

5. Semantic analysis of doose

Morphologically, the accepted view is that doose consists of two parts: doo, a wh-word meaning ‘how’, and se, an archaic imperative form of su(ru) ‘do’. Several Japanese expressions with universal conditional-concessive readings are formed according to this pattern, (e.g., dotti-ni-seyo ‘whichever you do’).

The analysis builds on the framework of Kratzer (1981). Modal expressions denote quantifiers over possible worlds, characterized by (i) their modal force (possibility vs. necessity); (ii) a modal base (a set of worlds consistent with certain background assumptions, for example all those worlds that are consistent with the speaker’s beliefs); and (iii) an ordering source which, for each world of evaluation, imposes a pre-order on the possible worlds according to their relative likelihood, salience, relevance, desirability or other contextually given criteria. We assume for simplicity that the modal base is finite. A modal sentence ‘must p’ is interpreted relative to a modal base MB and ordering source OS by evaluating p at the minimal worlds in MB under OS—intuitively the ones that are minimally “far-fetched,” i.e., most likely/salient/relevant according to OS. ‘Must p’ is true iff p is true at all such minimal worlds.

We also adopt the standard Kratzer-style analysis of conditionals as modal expressions, where the if-clause modifies an overt or covert modal whose default modal base is epistemic and whose modal force is that of human necessity. Semantically, the role of the if-clause is to restrict the relevant MB to just those worlds at which the antecedent is true. Thus if p, q is true if and only if q is true at the minimal p-worlds in the modal base.

Rawlins’ analysis of English unconditionals assumes that they are similar to conditionals, the main difference being that the modifier denotes a set of alternative propositions (i.e., a question denotation), rather than a single proposition. Thus they are roughly of the form regardless of \{p_1,\ldots,p_n\}, q . Glossing over important details, the basic idea is that such a sentence is true if and only for all p_i in the set \{p_1,\ldots,p_n\} of alternatives, the conditional ‘if p_i, q’ is true.

Our analysis is built on this approach. Doose q presupposes the presence of an open question or set of alternatives in the context, and involves a human-necessity modal. The sentence asserts that the truth of must q is independent of these alternatives, i.e., that ‘if p, must q’ is true relative to
each alternative $p_i$. An innovation in our formal implementation goes beyond Rawlins’ analysis, however: The set of alternatives is represented as an *issue* in the sense of Groenendijk (2008): an equivalence relation $E$ partitioning $MB$ into two or more equivalence classes. *Must* $q$ is then evaluated relative to $MB$ and the intersection of the pre-order induced by $OS$ with $E$. The intersection of these two relations is again a pre-order which, however, may have minimal worlds that are not minimal under $OS$ alone (they are “local minima” in each cell of the partition). No universal quantification over antecedents is involved, but the unconditional nevertheless entails each of the corresponding conditionals.

Recall that *doose* depends on the presence of tense. We explain this fact by assuming with Kaufmann (2005) that tense includes a modal component which is modified by *doose*. Tenseless clauses do not contain an appropriate epistemic modal for *doose* to operate on. In tensed clauses with non-epistemic modals, such as (4) above, the tense introduces an epistemic modal taking wide scope. It is this covert epistemic modal that *doose* modifies under the only available reading for these sentences (see Footnote 1).

We note that this analysis predicts that *doose Modal* $q$ is redundant with a modal expressing “simple” necessity in Kratzer’s sense (i.e., truth of $q$ at all worlds in the modal base). For in this case, the truth of *Modal* $q$ relative to $MB$ already implies that *Modal* $q$ is true relative to any subset of $MB$. It is for this reason that although *doose* $q$ is typically stronger than *must* $q$, it signals (via a standard scalar implicature) that the speaker is not completely certain about the truth of $q$.

In sum, our analysis of *doose* contributes both new cross-linguistic data and an innovative formal analysis. We conclude with an overview of other Japanese unconditional expressions and their similarities and differences with *doose*.

**Selected References:**


Rawlins, Kyle (2008a), Unifying unconditionals and if-conditionals. Handout, SALT 18, UMass Amherst.