The Japanese unconditional operator *doose*

Setsuko Arita and Stefan Kaufmann†*
**Osaka Shoin*
†Northwestern University

1 Introduction

This paper investigates the distribution of *doose* 'anyway', 'in any case', 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*

The Japanese adverbial *doose* 'in any case' has a negative (undesirable) implication that there is nothing the speaker can do about the truth of the embedded clause, as in the following examples.[1]

(1) *Boku-ni-wa doose sono mondai-wa tok-e-na-i.*
I-to-TOP anyway that question-TOP solve-POSS-NEG-NPST
'At any rate, I will not be able to solve the question. (I have given up solving it.)'

(2) *Doose Taroo-wa asu koko-o syuppatusur-u.*
anyway Taroo-TOP tomorrow here-ACC leave-NPST
'In any case, Taro will leave here tomorrow. (We cannot stop him from going.)'

In (1), *doose* conveys that the speaker feels (s)he cannot solve the question, regardless of how hard (s)he tries. (2), implies that the speaker has resigned himself to the inevitability of Taro's going to Tokyo. These connotations, often called "negative (undesirable) implications" in the Japanese literature, are responsible for the frequent treatment of *doose* as an "evaluative" adverb (Watanabe 1996). The implication, however, can be neutralized when *doose* appears in certain sentences with future reference, as in (3), and in some types of subordinate clauses, as in (4) and (5).

(3) *Doose atira-e-wa teburade ik-u.*
anyway there-to-TOP with-empty-hands go-NPST
'Anyway, I will go there without taking anything with me.'

(4) *Doose mot-u-nara nagaku tuk-aer-u mono-o.*
anyway get-NPST-if long use-POSS-NPST thing-ACC
'Since I buy this thing anyway, I want one that will last long.'

[1] We use the following symbols for grammatical categories. NPST nonpast; PST past; PROG progressive; NOM nominative; ACC accusative; GEN genitive; TOP topic; NEG negation; NMLZ nominalizer; COP copula; NEC necessity; POSS possibility; EPIST epistemic; DEONT deontic; VOL volitional; DESID desiderative; POL polite; Q interrogative particle; YA assertive particle.

(5) *Doose kekkonsur-u-kara haken-de ii-ya.*
anyway marry-NPST-because temporary-worker good-YA.
'As I will marry (soon) anyway, it doesn't matter if I am just a part-time worker.'

Sentence (3) implies that the proposition, which need not have negative connotations, is already determined at the utterance time. The conditional *nara* clause in (4) expresses that the given proposition is presumed to be realized in the near future, but it does not include any negative implication. The same observation can be made about the *kara* 'because' clause in (5). Thus, the negativity of the implication does not seem to be a central part of the meaning of *doose.*

3 Factivity

Doose shows a clear-cut contrast with such typical negative evaluative adverbials as *ainiku* 'unfortunately' in factive contexts, as discussed in Arita (2006, to appear). First, *doose* does not appear in the focused position in cleft constructions. Sentence patterns like *p no-wa q da* are considered a type of cleft construction in Japanese, meaning 'it is *q* that *p*' (see glosses below). For instance, (6b) is a cleft version of (6a), with *asita* 'tomorrow' in the focused position.

(6) a. *Asita Taroo-ga syuttyoo-sur-u.*
tomorrow Taro-NOM business.trip-do-NPST
'Taro will make a business trip tomorrow.'

b. *Taroo-ga syuttyoo-sur-u-no-wa asita-da.*
Taroo-NOM business.trip-do-NPST-NMLZ-TOP tomorrow-COP.NPST
'It is tomorrow that Taro will make a business trip.'

Doose cannot appear in the focused position, as shown in (7b), which is a cleft version of (7a). In contrast,*ainiku* can appear in both positions, as shown in (8a) and (8b).

(7) a. *Doose asita Tookyoo-ni syuttyoo-sur-u.*
anyway tomorrow Tokyo-to business.trip-do-NPST
'In any case I will make a business trip to Tokyo tomorrow.'

b. **Asita Tookyoo-ni syuttyoo-sur-u-no-wa*
tomorrow Tokyo-to business.trip-do-NPST-NMLZ-TOP
doose-da.
in.any.case-COP.NPST

(8) a. *Ainiku asita Tookyoo-ni syuttyoo-sur-u.*
Unfortunately tomorrow Tokyo-to business.trip-do-NPST
'Unfortunately, I will make a business trip to Tokyo.'

b. *Asita Tookyoo-ni syuttyoo-sur-u-no-wa*
Tomorrow Tokyo-to business.trip-do-NPST-NMLZ-TOP
ainiku-da.
unfortunate-COP.NPST
'It is unfortunate that I will make a business trip to Tokyo tomorrow.'

The second difference between *doose* and *ainiku* is that *doose* cannot occur in the complement of factive verbs like 'regret'. The Japanese counterpart of *regret, kuyamu*, cannot take complement clauses modified by *doose,* but it can take complement clauses modified by *ainiku.*

(9) **Taroo-wa [paatii-ni doose sanka-deki-na-i] koto-o*
Taro-TOP party-to anyway attend-can-NEG-NPST NMLZ-ACC
kuyan-deir-u.
regret-PROG-NPST
'Taro regrets that he cannot attend the party in any case.'

(10) *Taroo-wa [paatii-ni ainiku sanka-deki-na-i] koto-o*
Taro-TOP [party-to unfortunately attend-can-NEG-NPST] NMLZ-ACC
kuyan-deir-u.
regret-PROG-NPST
'Taro regrets that he cannot attend the party unfortunately.'

The third difference is that *ainiku p* entails *p*, while *doose p* does not entail *p*. Compare (11) with (12). The *ainiku*-sentence (11) presupposes (13), whereas the *doose*-sentence (12) does not presuppose (13). Sentence (14), canceling the presupposition in (13), can follow (12) but cannot follow (11).

(11) *Ainiku kanozyo-wa boku-ga kirai-da.*
unfortunately she-TOP I-NOM unlikable-COP.NPST
'Unfortunately, she dislikes me.'

(12) *Doose kanozyo-wa boku-ga kirai-da.*
anyway she-TOP I-NOM unlikable-COP.NPST
'Anyway, she dislikes me.'

(13) *Kanozyo-wa boku-ga kirai-da.*
she-TOP I-NOM unlikable-COP.NPST
'She dislikes me.'

(14) ... *hontoo-no tokoro-wa wakara-na-i ga.*
true-GEN part-TOP sure-NEG-NPST but
'...I'm not sure what she really thinks, though.'

The focused position of the cleft construction and factive verbs share the property that they presuppose the truth of their complement. The above discussion leads us to the conclusioin that *doose* cannot appear in factive contexts, unlike *ainiku.* The meaning of *doose* is not adequately captured by the generalization that it is an evaluative adverbial with negative implication.

4 Interaction with tense and modality

Japanese has two tenses, Past and Nonpast. In this section, we first show that there is a correlation between the presence of tense in a clause and its ability to be modified by *doose,* suggesting that the acceptability of *doose* depends on tense. We then argue that this conclusion is at best descriptively adequate, and that the crucial factor in determining the acceptability of *doose* is the presence of epistemic modality.

4.1 Tense in subordinate clauses

Subordinating conjunctions differ in whether they require tensed or untensed complements. For instance, *kara* 'because', *noni* 'although', and the conditional connective *nara* require tensed complements and are compatible with both tenses. On the other hand,

-temo 'although' and the conditional connective *-tara* are morphologically verbal suffixes and require untensed complements. *Doose* appears only in tensed subordinate clauses, as shown by the contrasts in (15) and (16).

(15) a. *Daigaku-o* { *sotugyoosur-u-noni* / *sotugyoosi-temo* }
college-ACC { graduate-NPST-although / graduate-although }
hataraki-taku-na-i-no-desu-ka?
work-DESID-NEG-NPST-NMLZ-COP.POL.NPST-Q?
'Don't you want to work, even though you are graduating from college?'

b. *Doose daigaku-o* { *sotugyoosur-u-noni* / **sotugyoosi-temo* } *hataraki-taku-na-i-no-desu-ka?*
'Don't you want to work, even though you are graduating from college anyway?'

(16) a. *Tookyoo-ni* { *ik-u-nara* / *it-tara* } *Asakusa-ni iki-ta-i.*
Tokyo-to { go-NPST-if / go-if } Asakusa-to go-DESID-NPST
'If I go to Tokyo, I want to go to Asakusa.'

b. *Doose Tookyoo-ni* { *ik-u-nara* / **it-tara* } *Asakusa-ni iki-ta-i.*
'If I go to Tokyo anyway, I want to go to Asakusa'

This regularity suggests superficially that the acceptability of *doose* is closely tied to the presence of tense. The picture is complicated, however, by further constraints on its co-occurrence with tenses in matrix clauses and with modal expressions.

4.2 Tense in matrix clauses

In matrix contexts, *doose* is unnatural in Past sentences (Morimoto 1994; Koyano 2000; Watanabe 2002) unless it is accompanied by modal markers like *-n(o)da(roo)*:[2]

(17) a. *(*Doose) Taroo-wa kinoo itinitizyuu ie-ni i-ta.*
anyway Taro-TOP yesterday all.day home-at be-PST
'In any case, Taro was at home all day yesterday.'

b. *Doose kimi-wa itinitizyuu ie-ni i-ta-n-daro?*
anyway you-TOP all.day home-at be-PST-NMLZ-NEC.EPIST
'Anyway, weren't you at home all day yesterday?'
(implying: 'Why didn't you answer my call?')

(18) a. *(*Doose) Taroo-wa kinoo mo osoku kaette-ki-ta.*
anyway Taro-TOP yesterday also late return-come-PST
'In any case, Taro was back late yesterday too.'

b. *Doose Taroo-wa kinoo mo osoku kaette-ki-ta-n-da.*
anyway Taro-TOP yesterday also late return-come-PST-NMLZ-COP.NPST
'In any case, Taro was back late yesterday, too.'
(Because a taxi was stopping in front of his house at midnight.)

Similarly, *doose* hardly occurs in Nonpast sentences whose reference time is the speech time unless accompanied by a modal:

[2]Some native speakers of Japanese, who did not perceive the above sentences with *doose* as bad, did not understand them as declaratives, but reinterpreted them as modalized sentences without an overt modal marker.

(19) *Doose imagoro-wa minnade sawai-deir-u *(-nda).*
anyway about.now-TOP all.together make.noise-PROG-NPST NMNLZ-COP.NPST
'Anyway, they all together must be tipsy and noisy about now.'

Interestingly, however, *doose* can appear without modals in Nonpast sentences whose reference time lies in the future:

(20) a. *Doose asu-wa yasumi-da.*
anyway tomorrow-TOP holiday-COP.NPST
'Anyway, tomorrow is a day off. (Let's drink to the full tonight.)'

b. *Asu-wa doose dare-mo ko-na-i.*
tomorrow-TOP anyway who-also come-NEG-NPST
'Anyway, nobody will come tomorrow.'

In sum, *doose* can appear in non-modalized matrix clauses as long as the reference time lies in the future and not in the past or present. This suggests that *doose* is sensitive to asymmetry between a 'fixed' past and present and an 'open' future. This asymmetry arises from the interplay between temporal reference and modality. We next take a closer look at the latter.

4.3 Epistemic vs. root modality

Like English, Japanese distinguishes between epistemic modals such as *daroo* 'will (predictive)' and root modals like deontic *-bekida* 'ought to' and volitional *-oo* 'shall'. The three modals are illustrated in (21a), (22a) and **??**e:modality oo). The corresponding (b)-sentences show that *doose* can modify epistemic *daroo,* but neither of the root modals.[3]

(21) a. { *(Asita) ame-ga fur-u / (Kinoo) ame-ga fut-ta* } *daroo.*
{ tomorrow rain-NOM fall-NPST / yesterday rain-NOM fall-PST } NEC.EPIST
'It may well rain tomorrow. / It probably rained yesterday.'

b. *Doose ame-ga { fur-u / fut-ta } daroo.*
anyway rain-NOM { fall-NPST / fall-PST } nec.epist
'It may well rain / probably rained anyway.'

(22) a. *Kimi-ga { ik-u / *it-ta } beki-da.*
You-NOM { go-NPST / go-PST } NEC.DEONT-COP.NPST
'You should go.'

b. **Kimi-ga doose ik-u-beki-da.*
You-NOM anyway go-NPST-NEC.DEONT-COP.NPST
'You should go there in any way.'

(23) a. *Boku-ga kimi-no nimotu-o mot-oo.*
I-NOM you-GEN luggage-ACC carry-NEC.VOL
'I will carry your luggage.'

b. **Boku-ga doose kimi-no nimotu-o mot-oo.*
I-NOM anyway you-GEN luggage-ACC carry-NEC.VOL
'I will carry your luggage anyway.'

[3]The unavailable reading of (22b) is 'your obligation is [to go no matter what]'. The sentence is felicitous when *doose* scopes over the deontic modal, as in '[your obligation is to go] no matter what'. We assume that *doose* in the latter case modifies a silent epistemic modal (see below), accordingly its felicity is expected, and this reading is irrelevant to the present claim.

Notice that of the three modals, only *daroo* combines with clauses in both tenses, whereas *-bekida* selects for Nonpast, and *-oo* is incompatible with either tense. The ill-formedness of (22b) despite the presence of Nonpast tense shows that the presence of tense is not sufficient for the acceptability of *doose.* We argue that what really licenses *doose* is the presence of a (covert or overt) epistemic modal operator, assuming with Kaufmann (2005) that such an operator is normally included in the semantics of tense. Under this view, the tense in (22b) may turn out "defective" in that it does not introduce a covert epistemic operator. At this point we leave open the question of what explains this behavior and whether it is related to the incompatibility of *-bekida* with Past tense or to its status as a root modal.

4.4 Modal force

Doose occurs with the epistemic modals *daroo* 'will' and *hazuda* 'must/should', but not with *kamosirenai* 'may/might', as shown in (24) and (25).

(24) *Nakamura-wa doose rokkaaruumu-ni ir-u* { *hazu-da* / *daroo* }
Nakamura-TOP anyway locker.room-in be-NPST { nec.epist-npst / nec.epist }
'Anyway, Nakamura must / will be in the locker room.'

(25) **Nakamura-wa doose rokkaaruumu-ni ir-u-kamosirena-i*
Nakamura-TOP anyway locker.room-in be-NPST-POSS.EPIST-NPST
'Anyway, Nakamura might be in the locker room.'

Given that the modal force of epistemic modals indicates the degree of the speaker's confidence in the truth of the prejacent, *hazuda* and *daroo* convey a high level of confidence, whereas *kamosirenai* merely conveys that the speaker gives the proposition non-negligible likelihood (and implies that this likelihood is not high). The fact that *doose* can occur with *hazuda* and *daroo,* but not with *kamosirenai,* shows that *doose* expresses the speaker's high commitment to the truth of the proposition. Together with the finding from **section 3** that *doose* is not felicitous with sentences expressing complete certainty, we conclude that its modal force is that of **human necessity** in the sense of Kratzer (1981).

5 Analysis

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'). Semantically, sentences modified by *doose* are **unconditionals,** a class of sentences represented in English by a variety of forms:

(26) a. *Whether Mary comes or not, we will open another bottle.*
b. *Whether John or Mary comes, we will open another bottle.*
c. *Whoever comes, we will open another bottle.*
d. *No matter who comes, we will open another bottle.*
e. *Regardless of who comes, we will open another bottle.*
f. *Rain or shine, we will have our party.*

Although unconditionals have received some attention in previous work (Gawron 2001; Haspelmath & König 1998; König 1986; Zaefferer 1990, 1991), the interrogative form

of their antecedents was only recently taken seriously in the semantic analysis (Rawlins 2008a,b). Our goal in this section is to develop a unified account under which conditionals and unconditionals are interpreted in *exactly* the same way. Japanese *doose* then differs from sentences like those in (26) only in that the content of the antecedent is left implicit or underspecified.

5.1 Modals and conditionals

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. The order imposed at a world w by an ordering source o is defined as follows, for all worlds u, v:

(27) $u \leq {}^{o}{}_{w} v \iff \{p | p \in o(w) \wedge v \in p\} \subseteq \{p | p \in o(w) \wedge u \in p\}$

We assume for simplicity that the modal base is finite. Our main departure from Kratzer is to replace the modal base $f(w)$ with the equivalence relation $\sim {}^{f}{}_{w}$ on the accessible worlds: $u \sim {}^{f}{}_{w} v$ iff $u, v \in \bigcap f(w)$. For a sentence *must* p to be true at w relative to f and o, p must be true at the set of *minimal* worlds under the relation $\sim {}^{f}{}_{w} \bigcap \leq {}^{o}{}_{w}$. Intuitively, two worlds u, v stand in this relation iff (i) both are in the modal base and (ii) u is at least as likely/salient/relevant as v under o. We omit the sub- and superscripts for readability.

(28) a. For any binary relation R on worlds, let $\min_{R} = \{v | \forall u[uRv \rightarrow vRu]\}$.
b. Then $[\![\textit{must } p]\!]^{w,\sim,\leq} \iff \min_{(\sim \cap \leq)} \subseteq p$.

We adopt the standard Kratzer-style semantic analysis of conditional *if*-clauses as restricting the modal base of an overt or covert epistemic modal to those worlds at which the antecedent is true. In our relational framework, however, this restriction is represented as the equivalence relation on those worlds at which the antecedent is true:

(29) $[\![\textit{if } p, (\textit{must}) \; q]\!]^{w,\sim,\leq} \iff [\![\textit{must } q]\!]^{w,(\sim \cap p \times p),\leq}$

5.2 Unconditionals

Rawlins (2008a; 2008b) assumes in his analysis of English unconditionals 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 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 builds on this approach, but differs in the way the denotation of the interrogative antecedent "?p" is represented. This denotation is an *issue* in the sense of Groenendijk (2008): an equivalence relation $[\![?p]\!]$ partitioning the modal base into two ore more equivalence classes. "*Must* q" is then evaluated relative to the intersection of the relation $\sim {}^{f}{}_{w}$ induced by the modal base with this issue, combined with the pre-order induced by the ordering source as before. The resulting relation is again a pre-order which, however, may have minimal worlds that are not minimal relative to $\sim {}^{f}{}_{w}$ 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.

(30) $[\![?p, (must)\ q]\!]^{w,\sim,\leq} \iff [\![must\ q]\!]^{w,(\sim\cap[\![?p]\!]),\leq}$

5.3 Tense and modality

Recall from **section 4** that although *doose* semantically modifies modal operators, it requires the presence of tense and appears in some cases to be licensed by tense alone. We explain this fact by assuming with Kaufmann (2005) that tense includes a modal component, which is then modified by *doose.* Tenseless clauses do not contain an appropriate epistemic modal for *doose* to operate on. In tensed clauses with non-epistemic modals, 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 3).

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" implies that "*modal* q" is true relative to any partition of the modal base. 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.

Acknowledgments

We thank Yukinori Takubo and the audience at the Fourth Workshop on Inferential Mechanisms and their Linguistic Manifestation, Kyoto University, Japan, July, 2008, for insightful comments. We gratefully acknowledge the support of the Japan Foundation for the Promotion of Science (JSPS, Project "Inferential mechanisms and their linguistic manifestations.")

REFERENCES

Arita, S. 2006. Doose-no imi-to kiteisei [the semantics of *doose* and settledness]. In: I. Ueda and H. Noda (eds.). Gengai-to Gennai-no Kooryuubunya [Interaction between Linguistic and Non-linguistics Fields]. Tokyo: Daigakushorin. 35–45.

Arita, S. to appear. *Doose* as an epistemic modal expression. In: Proceedings of the 7th Conference of the Nordic Association of Japanese and Korean Studies.

Gawron, J. M. 2001. Universal concessive conditionals and alternative NPs in English. In: Cleo Condoravdi and Gerard Renardel de Lavalette (eds.). Logical Perspectives on Language and Information. Stanford, CA: CSLI Publications. 73–106.

Groenendijk, J. 2008. Inquisitive semantics and dialogue pragmatics. Ms., University of Amsterdam.

Haspelmath, M. and E. König. 1998. Concessive conditionals in the languages of Europe. In: J. van der Auwera (ed.). Adverbial Constructions in the Languages of Europe. Mouton de Gruyter.

Kaufmann, S. 2005. Conditional truth and future reference. Journal of Semantics 22: 231–280.

König, E. 1986. Conditionals, concessive conditionals and concessives: Areas of contrast, overlap and neutralization. In: Traugott et al. (1986), 229–246.

Koyano, T. 2000. Hyookatekina imi — doose-wo rei-ni [Evaluative interpretation: A case study of *doose*]. In: S. Yamada, Y. Kikuchi and Y. Momiyama (eds.). Nihongo: Imi-to Bunpoo-no Huukei [Japanese Language: Meaning and Grammar]. Hitsuji Shoboo. 225–236.

Kratzer, A. 1981. The notional category of modality. In: J.J. Eikmeyer and H. Riesner (eds.). Words, Worlds, and Contexts. Walter de Gruyter. 38–74.

Morimoto, J. 1994. Hanashite-no Shukan-wo Arawasu Fukushi-nitsuite [On Japanese Speaker-oriented Adverbs]. Tokyo: Kuroshio Publishers.

Rawlins, K. 2008a. (Un)conditionals: An Investigation in the Syntax and Semantics of Conditional Structures. Ph.D. thesis. UCSC.

Rawlins, K. 2008b. Unifying unconditionals and *if*-conditionals. Poster handout, SALT 2008.

Traugott, E. C., A. ter Meulen, J. Snitzer Reilly and Ch. A. Ferguson (eds.) . 1986. On Conditionals. Cambridge University Press.

Watanabe, M. 1996. Nihongo Gaisetsu [Introduction to Japanese Linguistics]. Tokyo: Iwanami Publishers.

Watanabe, M. 2002. Sasuga Nihongo! Tokyo: Iwanami Publishers.

Zaefferer, D. 1990. Conditionals and unconditionals in universal grammar and situation semantics. In: R. Cooper, K. Mukai and J. Perry (eds.). Situation Theory and its Applications. Stanford, CA: CSLI Publications, volume 1. 471–492.

Zaefferer, D. 1991. Conditionals and unconditionals: Cross-linguistic and logical aspects. In: D. Zaefferer (ed.). Semantic Universals and Universal Semantics. Foris Publications.