

**Two types of attenuation strategies for polarity-sensitive items:
The semantics of degree adverbs *amari* and *sonnani* in Japanese**

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Abstract (200 words)

Cross-linguistically, degree modifying adverbs often exhibit polarity sensitivity, and they can be broadly classified into emphatic (e.g. *He isn't clever at all*) and understating/attenuating (e.g. *He isn't all that clever*) types (Israel 1996). The degree adverbs *amari* and *sonnani* are both attenuators that can be licensed by negation (just like English *all that*), but they show distributional differences in non-negative environments (Matsui 2013, Nihongo Kijutsu Bunpoo Kenkyuukai 2007 and references therein). Ido (2019) confirms these observations by corpus study, and further notes that, among different types of conditionals, *amari* (but not *sonnani*) most frequently appears in the *to*-conditional, a type of conditional that expresses generalizations and tendencies. Building on these previous studies, we sketch the beginnings of an analysis for *amari* and *sonnani* in this paper. Our proposal essentially is that *amari* and *sonnani* achieve their attenuating effects via different pragmatic strategies: whereas *sonnani* simply indicates the speaker's (or the attitude holder's) suspension of $P(d)$ (with some contextually posed d) to be common ground (cf. Onea and Sailer (2013) on English *all that*), *amari* signals the speaker's (or the attitude holder's) belief about what s/he presumes to be the 'natural/unsurprising consequence' of accepting $P(d)$.

Languages: Japanese, English

1 Introduction

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adverbs *amari* and *sonnani* are both attenuators that can be licensed by negation (just like English *all that*), but they show distributional differences in non-negative environments (Matsui 2013, Nihongo Kijutsu Bunpoo Kenkyuukai 2007 and references therein). Ido (2019) confirms these observations by corpus study, and further notes that, among different types of conditionals, *amari* (but not *sonnani*) most frequently appears in the *-to* conditional, a type of conditional that expresses generalizations and tendencies. Building on these previous studies, we sketch the beginnings of an analysis for *amari* and *sonnani* in this paper. Our proposal essentially is that *amari* and *sonnani* achieve their attenuating effects via different pragmatic strategies: whereas *sonnani* simply indicates the speaker's (or the attitude holder's) suspension of $P(d)$ (with some contextually posed d) to be common ground (cf. Onea and Sailer (2013) on English *all that*), *amari* signals the speaker's (or the attitude holder's) belief about what s/he presumes to be the 'natural/unsurprising consequence' of accepting $P(d)$. While we do not spell out a formal analysis in this paper, our proposal has advantages over a previous proposal by Matsui (2011, 2013) in that it clarifies the underlying conceptual properties of *amari* and *sonnani* and at the same time has some empirical advantages over the latter. If the overall conclusion of the present paper is on the right track, it suggests that there are multiple strategies for achieving attenuation effects in natural language among NPI-like words that superficially have similar meanings.

The structure of this paper is as follows. In section 2, we review the basic data. Section 3 provides an overview of two previous accounts that our own proposal most directly builds on, specifically, Matsui's (2011, 2013) semantic analysis of *amari* and Ido's (2019) corpus study on the distributional differences between *amari* and *sonnani*. In section 4, we review Onea and Sailer's (2013) work on English *all that*. Section 5 discusses the properties of *amari* and *sonnani* in more detail, presenting an initial sketch of an analysis in informal terms. Section 6 is a summary and conclusion.

2 Basic data

2.1 Similarities between *amari* and *sonnani*

In descriptive studies of Japanese, it has been pointed out early on that although *amari* and *sonnani* are infelicitous in declarative clauses without negation (cf. (1)), both can appear in non-negative environments such as the antecedent of conditional clauses in

(_e2)-(_e3). These previous studies have also noted that, descriptively, both these words express a non-high degree in negative environments and an excessive degree in non-negative environments (Shindo 1983; Morita 1989; Suga 1992; Hattori 1993; Group Jammassy 1998; Nihongo Kijutsu Bunpoo Kenkyuukai 2007, etc.).

- (_e1) a. Taro-wa nomikai-ga {amari/sonnani} suki-de-wa-nai.
Taro-TOP drinking.party-NOM AMARI/SONNANI like-COP-TOP-NEG
'Taro doesn't like drinking parties a lot.'
- b. *Taro-wa nomikai-ga {amari/sonnani} suki-da.
Taro-TOP drinking.party-NOM AMARI/SONNANI like-COP
intended: 'Taro likes drinking parties a lot.'

(_e2) {Amari/Sonnani} tabe-ru-to onaka-o kowas-u-yo.
AMARI/SONNANI eat-NPST-COND stomach-ACC ruin-NPST-SFP
'If you eat too much, it'll give you a stomachache.'

(_e3) {Amari/Sonnani} atsuke-reba, eakon-o tsuke-nasai.
AMARI/SONNANI hot-COND air.conditioner-ACC turn.on-IMP
'If it's so hot, turn on the air conditioner.'

Note that even in the conditional case, the essential function of *amari* and *sonnani* is the same as in declarative sentences like (_e1): in (_e2) and (_e3), both *amari* and *sonnani* behave as attenuators, that is, they function to weaken the overall claim of the sentence.

(_e4a) shows that *amari* and *sonnani* can appear inside topicalized NPs.

- (_e4) a. [{Amari/Sonnani} ookii sakana]-wa aji-ga ochi-ru.
AMARI/SONNANI large fish-TOP taste-NOM drop-NPST
'Too large fish is tasteless.'
- b. {Amari/Sonnani} sakana-ga ookii-to aji-ga ochi-ru.
AMARI/SONNANI fish-NOM large-COND taste-NOM drop-NPST
'If the fish is too large, it would be tasteless.'

As the parallel sentence (_e4b) shows, the topicalized NPs semantically behaves like an antecedent of conditionals (cf. Haiman 1978, Hara 2014), so, the above data can be understood in a way essentially parallel to conditional sentences such as (_e2) and (_e3).

Given the licensing pattern of *amari* and *sonnani* above, where they are licensed in non-veridical contexts such as negation and conditionals, one might think that the relevant factor is non-veridicality. However, non-veridicality is by itself not a sufficient condition for the licensing of *amari* and *sonnani*. This point can be seen particularly clearly from the fact that possibility epistemic modals such as *kamosirenai* ‘may’ is not a licenser for either *amari* and *sonnani*, as pointed out by Ido (2019: 352) for *sonnani*:

(_e5) *Taroo-wa kanshoku-o {amari/sonnani} tabe-ru-kamoshirenai.
 Taro-TOP snack-ACC AMARI/SONNANI eat-NPST-may
 ‘Taro may eat a lot of snacks.’

2.2 Differences between *amari* and *sonnani*

Turning now to the distributional differences between the two, one environment in which *amari* and *sonnani* show different distributions is interrogative sentences (Matsui 2011, 2013):

(_e6) Soto-wa {*amari/sonnani} atsui-no?
 outside-TOP AMARI/SONNANI hot-Q
 ‘Is it so hot outside?’ (Matsui 2013: 319)

Another case comes from adversative psychological predicates such as *odoroku* ‘be surprised’ (Ido 2019). As shown in (_e7), *sonnani* can occur in the complement clause of such predicates, whereas *amari* is at least not perfectly natural in this environment.^[1]

(_e7) a. *Taroo-wa haha-ga amari karui-no-ni odoroi-ta.
 Taro-TOP mother-NOM AMARI light-NMLZ-DAT be. surprised-PST

‘Taro was surprised by how lightweight his mother was.’ (Ido 2019: (17b))

b. *Sonnani Kondoo-ga warui-no-ni odoroi-ta.*

SONNANI Kondo-NOM bad-NMLZ-DAT be. surprised-PST

‘I was surprised by how bad Kondo’s condition was.’

(Ido 2019: (35), modified)

A related case is exclamation. *Sonnani* (but not *amari*) can appear in exclamation with *-towa/-nante*, without an explicit adversative predicate as the embedding verb.

(_e8) {**Amari/Sonnani*} *atsui* {-*towa/-nante*} (*odoroi-ta*)!

AMARI/SONNANI hot-COMP. EXCLAM (be. surprised-PST)

‘How hot it is!’

Another similar, but slightly different case is when the utterance expresses the speaker’s “discovery”, i.e. the fact or situation which the speaker has just found out. The sentence is typically marked with the *-noda/-nda* ending, and allows *sonnani* to appear (but not *amari*). This type of sentence is often referred to as the “discovery usage of *-noda*” (Noda 1997, Ishiguro 2003, Iori 2013, Yukimatsu 2016 and references therein).

(_e9) *Hee, naruhodo, {*amari/sonnani} atsui-nda.*

oh indeed AMARI/SONNANI hot-NODA

‘Oh, I see, it’s that hot.’

Finally, it has been noted in the literature that *amari* and *sonnani* contrast with each other in their distribution in ‘because’-clauses (Hattori 1993; Morita 1989; Suga 1992; Group Jamasy 1998; and Matsui 2011, 2013). As shown in (_e10), *amari* is natural in ‘because’-clauses, but replacing it with *sonnani* typically results in an infelicitous sentence.

(_e10) Heya-ga {amari/*sonnani} atsui-kara eakon-o
 room-NOM AMARI/SONNANI hot-because air.conditioner-ACC
 tsuke-ta.
 turn.on-PAST
 'Because the room was so hot, I turned on the air conditioner .' (Matsui
 2013: 319, modified)

However, the situation with 'because'-clauses is actually more complex. Though this fact has gone unnoticed in the literature, there are at least two situations in which *sonnani* can appear felicitously within the 'because'-clause. The first case is when the entire sentence is marked with the *-noda/-nda* ending as in (_e11).

(_e11) Ne-ru-maeni sonnani takusan tabe-ru-kara
 sleep-NPST-before SONNANI a.lot eat-NPST-because
 futo-ru-noda.
 gain.weight-NPST-NODA
 'You gain weight because you eat that much before you go to sleep.'

The other case is cleft sentences. As shown in (_e12), the 'because'-clause which includes *sonnani* can appear in the pre-copula position of a cleft sentence.

(_e12) Futo-ru-no-wa ne-ru-maeni sonnani
 gain.weight-NPST-NMLZ-TOP sleep-NPST-before SONNANI
 tabe-ru-kara-da.
 eat-NPST-because-COP
 'It' s because you eat that much before you go to sleep that you gain weight.'

In both (_e11) and (_e12), it is not the 'because'-clause that allows *sonnani* but rather the fact that the sentence involves a particular information structure. In a sense, these examples are similar to the discovery and surprisal examples in (_e8) and (_e9) in that the content of the 'because'-clause is something that the speaker doesn't simply take for granted. We will examine the properties of this type of 'because'-sentences and the

factor that is involved in the licensing of *sonnani* in such examples in more detail in section 5.^[1.5]

In this section, we have briefly observed the similarities and differences between *amari* and *sonnani*. The two degree adverbs are similar in that they cannot appear in a simple affirmative sentences and can appear under negation, in the antecedent of conditionals and in topicalized NPs. However, they behave differently in other non-negative environments such as interrogative clauses, under adversative predicates and exclamatives, and in ‘because’-clauses. Any principled theory of this type of attenuating adverbs should be able to account for these distributional similarities and differences. In the next section, we take a look at two proposals in the previous literature addressing this question.

3 Previous studies

3.1 Matsui (2011, 2013)

As compared to *sonnani*, for which the literature unanimously endorses an anaphoric analysis, the literature on *amari* is somewhat complex, where we can identify two competing views. Some previous studies (Shindo 1983; Morita 1989; Suga 1992; Hattori 1993, 1994, Ido 2019) have posited two distinct lexical items for *amari*, one for negative (expressing “weak”, or moderate degrees) and the other for non-negative environments (expressing “excessive” degrees).

Matsui’s (2011, 2013) proposal differs from these ambiguity approaches in that it attempts a unified analysis which recognizes a single lexical entry for *amari* for both negative and non-negative environments. Moreover, this work is important in that it lays the groundwork for a discourse-based analysis we will eventually be advocating in this paper. For this reason, we review Matsui’s proposal in some detail in this section. Matsui gives a pragmatic explanation for the distribution of *amari* along the lines of (e13).

(e13) *Amari* denotes "very" semantically, and is licensed in environments in which the original proposition is pragmatically "weak" compared to the alternative proposition.

The point of (_e13) is that *amari* has a function to soften the speaker's claim whether it appears in a negative sentence or in any other environment. For example, in (_e10), the original proposition containing *amari* is "It is very hot outside, so I turned on the air conditioner". The alternative proposition is "It is hot outside, so I turned on the air conditioner". In general, the situation of turning on the air conditioner is more likely to occur when it is very hot than when it is just hot, which means that the original proposition has a weaker claim than the alternative proposition. The same is true for negative sentences: the situation "not very hot" is more likely to occur than the situation "not hot", making the overall claim made by the sentence pragmatically weaker. By contrast, in interrogatives, as in (_e6), the question "Is it very hot?" is a more specific question than "Is it hot?", which is a pragmatically stronger question for the speaker to ask the listener. Therefore, *amari* is not licensed in interrogative sentences.

Matsui's proposal is attractive in that it offers a uniform analysis of negative and non-negative *amari*. Moreover, the pragmatic-based proposal that makes reference to the pragmatic strength of statement is conceptually simple and seems essentially on the right track. However, aside from the unclarity of the notion of pragmatic strength (for which Matsui (2013) gives only intuitive explanations based on paraphrases of specific examples), there is some reason to believe that a global, speech act-level account of the sort Matsui proposes is not the whole story. To see this point, note that the licensing of *amari* is not affected by embedding the licenser under another licenser, which should have the effect of reversing the direction of inference at the global level:

(_e14) Sono eiga-ga amari omoshiroku-nake-reba betsu-no eiga-o mi-ru.
 that movie-NOM AMARI interesting-NEG-COND other-GEN movie-ACC watch-NPST
 'I'll watch another movie if that movie isn't very interesting.'

In this example, the inference pattern goes in the opposite direction than in simple negative or conditional examples:

(_e15) If the movie is not very interesting, I'll watch another movie.
 => If the movie is not interesting, I'll watch another movie.

In Matsui’s analysis, the strength of the statement (and comparison with alternatives) is calculated at the level where the speech act operators ASSERT and QUEST apply. But if this is the case, then, since the higher degree results in a stronger statement at the global level in examples such as (e14), it systematically makes incorrect predictions for such examples. What seems to be needed instead is a licensing mechanism that calculates the relevant inference in the local environment in which *amari* is embedded.

3.2 Ido’s (2019) corpus study with BCCWJ

Most of the previous literature, including Matsui’s (2011, 2013) proposal we have just reviewed above, is based on informal introspective judgments. In order to obtain a better understanding of the distributional and semantic differences between *amari* and *sonnani*, it is more desirable to examine attested data in corpora. Ido (2019) conducted precisely such a study, using BCCWJ (Balanced Corpus of Contemporary Written Japanese). Table 1, adopted from Ido (2019), shows 300 randomly selected examples of each of *amari* and *sonnani* from BCCWJ, excluding inappropriate examples. In order to make sure that both *sonnani* and *amari* are used in the relevant degree meanings in the retrieved examples, the search was conducted under the condition that an adjective immediately follows *amari* and *sonnani*.

Table 1: Clause types in which *amari* and *sonnani* appear

clause type	form	<i>amari</i>	<i>sonnani</i>
negative clause	total	251	118
	[[... ADV ...]NP ... NEG]	55	75
	[[... ADV ...]S ... NEG]	12	10
conditional clause	- <i>tara</i> ‘if ...’	0	3
	- <i>reba</i> ‘if ...’	1	1
	- <i>to</i> ‘if ...’	16	1
	- <i>nara</i> ‘if ...’	0	5
	- <i>te/de-wa</i> ‘if ...’	0	1
	- <i>te/de-mo</i> ‘even if ...’	1	0
	- <i>noni</i> ‘even though ...’	0	1
reason clause	- <i>node</i> ‘because ...’	14	0

	<i>-kara</i> ‘because ...’	2	0
	<i>-te</i> ‘and ...’	7	0
	other	3	0
temporal adverbial clause	<i>-toki</i> ‘when ...’	2	0
	<i>-aida</i> ‘while ...’	1	0
interrogative clause		0	83
noun-modifying clause		2	2
	total	300	300

This corpus study confirms the general patterns noted in the previous literature:

1. *Amari* does not appear in interrogatives, but *sonnani* does (*amari*: 0 sentence, *sonnani*: 83 sentences).
2. *Amari* appears in ‘because’-clauses, but *sonnani* does not (*amari*: 26 sentences, *sonnani*: 0 sentences).

Ido’s corpus study also revealed some new findings. The first is the fine-grained pattern found with conditionals. Among various types of conditional clauses in Japanese (*-tara*, *-reba*, *-nara*, *-to*, and *-te(-wa/mo)* clauses), *amari* tends to appear in *to*-conditionals (*to*-conditionals: 16 sentences, other conditionals: 2 sentences) more frequently than in other types of conditionals, but there is no such tendency with *sonnani*. In the Appendix, we list some attested examples of conditional sentences with *amari* and *sonnani* from BCCWJ cited in Ido (2019). We hasten to note here that care should be taken in interpreting this type of tendency in attested data in corpora, since the pattern may be affected by multiple factors. In the case at hand, one possibility is that the apparent correlation is simply the result of the fact that other forms of conditionals tends to be avoided in writing, and the relatively formal *-to* conditionals tends to be preferred in writing regardless of the presence of *amari*.^[2] For this reason, our discussion below is tentative, but assuming that this pattern is real, it is consistent with the overall profile of *amari* as opposed to *sonnani*, as will become clear when we consider the meanings of these words in more detail in section 5.

In order to make sense of the correlation between *amari* and *-to* conditionals (assuming that it reflects some real semantic pattern), we need to review some background on the differences among different types of conditional clauses noted in the literature. Interestingly, it turns out that the *-to* conditional is a rather peculiar (or non-prototypical) type of conditional sentence. Setting aside the differences among *-tara*, *-reba*, and *-nara* clauses, one of the most significant property of the *-to* conditional which distinguishes it from the other types is that it cannot be followed by imperatives (*-nasai*, *-te kudasai*) and other forms of addressee-directed (direct or indirect) requests, such as *-te-mo ii* ‘is allowed to do/be’ and *-te hoshii* ‘want X to do/be’.

- (_e16) a. Heya-ga {atsukat-tara/atsuke-reba/atsui-nara} eakon-o
 room-NOM hot-COND air. conditioner-ACC
 {tsuke-te kudasai/tsuke-nasai/tsuke-te-mo ii-desu-yo}.
 turn. on-TE please/turn. on-IMP/turn. on-TE-also allowed-POL-SFP
 ‘If the room is hot, (please/you can) turn on the air conditioner.’
- b. *Heya-ga atsui-to eakon-o
 room-NOM hot-COND air. conditioner-ACC
 {tsuke-te kudasai /tsuke-nasai/tsuke-te-mo ii-desu-yo}.
 turn. on-TE please/turn. on-IMP/turn. on-TE-also allowed-POL-SFP
 intended: ‘If the room is hot, (please/you can) turn on the
 air conditioner.’

Another characteristic of the *-to* conditional is that it cannot be used in so-called epistemic conditionals of the sort in (_e17). In this example, the truth of the antecedent “the light is on” is not yet known to the speaker, but the speaker is making an inference based on the knowledge, observation, hearsay, or information offered by the addressee that Taro must be at home supposing that the antecedent is true. As shown in (_e17), other conditional markers are all fine, but using *-to* in this type of conditional sentence is infelicitous.

- (_e17) Heya-no denki-ga tsui-te {i-tara/i-reba/i-ru-nara/*i-ru to}
 room-GEN light-NOM on-TE be-COND

Taro-wa kaet-te-i-ru-daroo.

Taro-TOP return-TE-be-NPST-may

'If the light in the room is on, Taro is probably at home
(has already come home).'

Masuoka and Takubo (1989) note that the most fundamental property of *to*-conditionals is to express "general accidental dependencies". Thus, the most typical usage of *to*-conditionals is a sentence like (ex26a), which expresses habitual or generic relation between the two events or situations. Note that replacing *-to* in (ex26a) with the other conditional markers makes the sentence less natural, as shown in (ex26b).

(_e18) a. Koko-de-wa hachigatsu-ni hai-ru-to minna kiseishi-te
here-LOC-TOP August-DAT enter-NPST-COND all go.to.hometown-TE
shimat-te kansanto shi-masu.

finish-TE empty do-POL. NPST

'In August, everybody goes home, so, this place becomes very empty.'

b. Koko-de-wa hachigatsu-ni {?hai-reba/?hait-tara/*haitta-nara}
here-LOC-TOP August-DAT enter-COND

minna kiseishi-te shimat-te kansanto shi-masu.

all go.to.hometown-TE finish-TE empty do-POL. NPST

'In August, everybody goes home, so, this place becomes very empty.'

(Arita 1999)

In view of these considerations and based on the fact that *amari* tends to appear in *-to* conditionals rather than in the other types of conditionals, Ido (2019) suggests that *amari* fundamentally has some kind of genericity or habituality as part of its meaning.

It is important to note that this does not necessarily mean that the distributions of *amari* and the *-to* conditional perfectly match with each other. In fact, that is not the case. To see this point, note that *amari* can also appear in conditionals in which *-to* conditionals cannot appear, i.e. conditionals with imperatives (_e19) and epistemic conditionals (_e20).

(_e19) Heya-ga amari {atsui-nara/atsukat-tara/atsuke-reba/*atsui-to}
room-NOM AMARI hot-COND

eakon-o tsuke-te kudasai.

air.conditioner-ACC turn.on-TE please

'Please turn on the air conditioner if the room is too hot.'

(_e20) Chuushajoo-ni amari takusan kuruma-ga {a-ru-nara/at-tara/a-reba
parking-DAT AMARI many car-NOM be-NPST-COND/be-COND/ be-COND/
/*a-ru-to} tennai-wa sootoo kon-de-i-ru-no-daroo.

be-NPST-COND shop.inside-TOP rather crowded-TE-be-NPST-NMLZ-probably

'If there are so many cars in the parking slot, the shop should be very crowded.'

Thus, it is unlikely that the distributions of *amari* and *-to* conditionals are constrained by exactly the same factors. Rather, the correlation between *amari* and the *-to* conditional is only a tendency, reflecting the most stereotypical types of contexts in which they are used. The other conditional markers are often compatible with (if not most frequent in) such contexts, and *amari* can appear in environments that are not exactly prototypical, as long as the context in question does not incur a semantic conflict with its lexically encoded meaning.

Another finding of Ido (2019) is that *amari* is, but *sonnani* is not, found in temporal adverbial clause such as *toki* 'when' clauses (*amari*: 3 sentences, *sonnani*: 0 sentence).

(_e21) Mata itami-ga amari hageshii toki-wa ansei-ni shi-te hiyas-u-to
also pain-NOM AMARI keen when-TOP calm-DAT do-TE cool-NPST-COND
yoi-deshoo.

good-probably. POL

'Also, if the pain is very keen, it is recommended to rest and cool the affected part.' (LBh4_00007)

According to Ido, the adverbial clause in which *amari* appears, whether it is conditional ('if'-clauses) or temporal ('when'-clauses), expresses a "general condition" that leads to the conclusion expressed by the main clause. Note that this is consistent with the

observation we just reviewed above regarding the distribution of *amari* in the *-to* conditional clause. *Sonnani*, on the other hand, does not have such a characteristic.

Based on this corpus study, Ido (2019) describes the distribution of *amari* and *sonnani* as follows:

(_e22) *Amari* is either used in negative clauses, or in adverbial clauses expressing general conditions leading to the consequences expressed by the main clause.

(_e23) *Sonnani* is used in clauses that describe situations that the speaker does not recognize as ‘settled’.

Importantly, Ido’s corpus study supplements previous intuition-based work by presenting more descriptively adequate data and observation. However, it is still unclear how we should go about characterizing the distributions of *amari* and *sonnani* precisely based on the licensing mechanisms for the two words. In particular, the notion of “general condition” in (_e22) remains vague. Moreover, Ido treats *amari* in negative environments and in non-negative environments as distinct lexical items without providing compelling empirical motivation for positing lexical ambiguity here. It would be more desirable if we could derive the distribution of *amari* without invoking lexical ambiguity. Thus, there is still more work to do so as to clarify the meanings and distributions of the two attenuating adverbs *amari* and *sonnani*.

4 Onea and Sailer (2013) on English *all that*

As we have seen above, *amari* and *sonnani* both have some kind of attenuation effect just like English *all that*. In particular, *sonnani* has a distribution that closely resembles that of the English expression *all that* (Matsui 2013, Onea and Sailer 2013). Essentially, both *sonnani* and *all that* are anaphoric degree adverbs, and it is instructive to examine the behavior of *all that* in order to make sense of *sonnani* (and *amari*). For this purpose, we review Onea and Sailer’s (2013) study of *all that* in this section.

Onea and Sailer (2013) conducted a corpus study using COCA and found that *all that* appears not only with clausemate negation but also with n-constituents, non-

clausemate negations, in polar questions, *wh*-questions and in some other environments. The following examples are from Onea and Sailer (2013; (5)).

- (_e24) a. It was not all that easy to decide on the Man of the Year for 1991.
b. “None of us are going to look all that great with no make-up”, I said.
c. I laughed heartily even though I didn’t think his joke was all that funny.
d. I’m curious, is that all that different from what President Bush is saying?
e. “Well, really, what did he do that’s all that different from anyone else?”
f. Well, someone must love you a lot to make all that good food you got in there.

They also found examples from COCA in which *all that* is licensed by so-called weak licensers such as *few*, *hardly*, and *not every*, as shown in (_e25) from O&S (2013; (8)).

- (_e25) a. But very few scents are all that memorable.
b. A wounded and bitter fellow, this fictional hero of mine, but his bilious arguments hardly seem all that dated.
c. Not everyone is all that shocked about the lack of prime choices.

In addition, they point out that *all that* can also appear in the complement clause of a factive adversative predicate such as *be surprised*.

- (_e26) I am/Robin is surprised that the exam was all that easy. (O&S 2013; (10))

Given that *all that* can be licensed by weak licensers as in COCA examples in (_e25) and a constructed one in (_e26), one might conclude that *all that* is a weak NPI. However, Onea and Sailer also found that there are some contexts in which *all that* cannot be licensed even though those contexts are supposed to be licensing environments for strong NPIs (and hence for weak NPIs as well).

- (_e27) a. *Nobody who is all that happy smiles.
b. *Everyone who is all that happy smiles.
c. *At most a third of the audience found her performance all that great.

d. *Only smiling people are all that happy. (O&S 2013; (11-12))

In order to account for the unique licensing environments of *all that*, Oena and Sailer (2013) propose a presuppositional account for *all that* within a DRT-style representation, instead of referring to the classical domain-widening and strengthening approach (e.g. Kadmon and Lamdman 1993) or Krifka's (1995) alternative-based approach). In particular, they propose the lexical meaning of *all that* along the lines of (e28).

(e28) $[[\text{all that}]] = \lambda d. \lambda u. \lambda P. \lambda x.$

asserted meaning: $P(d)(x)$

presupposes: $\exists d. \text{HIGH}(d,s) \ \& \ \text{BEL}(u, \neg P(d)(x)) \ \& \ \exists u'. \text{BEL}(u', P(d)(x))$

The asserted meaning simply says that x is P to degree d . In addition, there is a presupposition which says that there is a salient degree d in the discourse which is high on some scale s , and that the attitude holder u (typically the speaker) believes that x is not P to degree d . At the same time, it is also presupposed that there is another attitude holder u' different from u who believes that x is P to degree d .

This analysis gives a straightforward answer to why *all that* is unacceptable in simple declarative clauses such as the following:

(e29) *Peter is all that happy.

This example is unacceptable because it is presupposed that the attitude holder u (the speaker) believes that Peter is not happy to degree d , but at the same time the speaker asserts that Peter is happy to degree d . Thus, there is a contradiction between what is asserted and what is presupposed. In contrast, when *all that* appears in the scope of negation or conditional, such as the following, there is no such conflict between what is presupposed and what is asserted.

(e30) Peter is not all that happy.

(_e31) If Peter is all that happy, he smiles.

These examples are acceptable, since here what is asserted (“Peter is not happy to degree *d*” and “If Peter is happy to degree *d*, he smiles”, respectively) and what is presupposed (“the speaker doesn’t believe that Peter is indeed happy to degree *d*”) are not contradictory. The distribution in other licensing environments can be accounted for similarly. See Onea and Sailer (2013, section 5) for details.

Onea and Sailer’s approach demonstrates how the non-asserted meaning inherent to *all that* (which they technically analyze as a type of presupposition) accounts for the peculiar distributional pattern of *all that* that differs from the typical NPI licensing pattern. Their analysis also captures the anaphoric aspect of *all that* to account for the fact that *all that* “can only be used in a context in which there is someone who previously uttered, or somehow is known to maintain or be committed to the belief that the individual under discussion has some property to a very high degree” (Onea and Sailer 2013, 338).

We believe that Onea and Sailer’s analysis of *all that* is basically on the right track in capturing the anaphoric property of *all that* and relating it to the speaker’s take on whether this high degree is actually satisfied. We will therefore basically adopt their key idea for our analysis of *sonnani* (but not for *amari*). However, we believe that there are reasons to believe that the particular implementation of this analytic idea by means of presupposition with the belief operator (BEL) along the lines of (_e28) leaves room for improvement.^[3] To see this point, note that at least for *sonnani*, what’s relevant is the speaker’s stance on the “issues on the table”, rather than his/her own epistemic state itself. For example, the *sonnani* sentence in (_e2), repeated here as in (_e32), can be uttered in the situation in which the speaker is actually watching his/her interlocutor eat a lot in front of him/her.

(_e32) {Amar i/Sonnani} tabe-ru-to onaka-o kowas-u-yo.
AMARI/SONNANI eat-NPST-COND stomach-ACC ruin-NPST-SFP
‘If you eat too much, it’ ll give you a stomachache.’

In such a case, the speaker *knows* his/her interlocutor eats a lot. Thus, if $BEL(u, \neg P(d)(x))$ were presupposed, this sentence should be infelicitous to be uttered in that situation. This suggests that we need a model which can explicitly represent dynamic negotiations among interlocutors in a more nuanced way than is possible with a simple DRT model (in which global presuppositions simply correspond to what is shared knowledge among all interlocutors in the CG).

The following type of example shows perhaps most clearly why applying Onea and Sailer's (2013) approach directly to *sonnani* does not work:

(_e33) Kimi-ga sonnani binboona-koto-wa watashi-mo mochiron shit-te
 you-NOM SONNANI poor-NMLZ-TOP I-also of. course know-TE
 i-ru-ga, ...
 IPFV-NPST-but
 'I of course know you are so poor, (but even then...).'

Here, *sonnani* is embedded under the verb *shit-te i-ru* 'know', with the speaker as the subject, so, if it really presupposed that the speaker does not believe $P(d)$ it should directly contradict what is asserted by the sentence. However, there is no sense of contradiction of this sort, and the use of *sonnani* can be understood as a rhetorical device to signal to the hearer that the speaker is reluctant to admit the truth of $P(d)$.

5 Toward an analysis

The properties of *amari* and *sonnani* that emerge from the discussions in sections 2 and 3 point toward an analysis that takes into account the ways in which speakers and hearers negotiate with each other about how to update shared knowledge in discourse. This point should be particularly clear in the case of *sonnani*, given its anaphoric nature and given the fact that, as we have seen in the previous section, a simple presuppositional account of the sort proposed by Onea and Sailer (2013) for *all that* in English is not fine-grained enough to capture the subtleties of its discourse-oriented properties. For *amari*, the discourse-oriented nature may be less apparent, but recall from the discussion in section 3 that one of Ido's (2019) key observations based on

corpus study with BCCWJ was that *amari* at its core relies on knowledge about “general tendencies” to support the conclusion drawn in the sentence. In this sense, *amari*, too, is a discourse-sensitive device employed by the speaker to negotiate with the hearer on what to (and what not to) add to the CG as mutual knowledge. Matsui’s (2013) approach via the alternative-based framework of Krifka (1995) essentially gets at the same idea, though the conceptual toolkit employed is somewhat different.

In what follows, we will try to articulate the main analytic ideas we would like to advocate for *amari* and *sonnani* as clearly as possible in prose, without attempting a completely formalized analysis. The key claims of our proposal are that (i) both *amari* and *sonnani* are attenuation markers that are fundamentally discourse sensitive and that (ii) the particular ways in which they are discourse sensitive are different for the two. In particular, we propose that *sonnani* is anaphoric to a previously introduced degree. This is a natural assumption given that morphologically, *sonnani* is one of the *so*-series demonstratives in Japanese (*sore* ‘that’, *soko* ‘there’, etc.). *Amari*, on the other hand, is a context adjustment device which directly manipulates the degree denoted by the sentence based on the speaker’s knowledge/belief. We argue that this difference in the discourse-oriented aspects of meaning is the source of the distributional differences between *sonnani* and *amari* we have reviewed in the previous sections.

The main reason that we refrain from a formal analysis at this point is simple. As should already be clear from the exposition of the empirical properties of *amari* and *sonnani* above, there are two aspects of meaning that need to be taken into account in a proper analysis of these expressions: (i) the ways in which their meaning contributions interact with discourse-level semantics, and (ii) the ways in which these interactions are sensitive to the sentence-internal compositional semantics involving the “truth-functional” operators such as negation, interrogative and conditional operators. The difficulty here is that, so far as we are aware, there is as yet no formal model of discourse in which both of these components are well-developed and in which these components smoothly interact with one another. The natural place to look, of course, is the long tradition of dynamic semantics. Indeed, there is a well-established tradition of analyzing the sentence-internal update compositionally in a dynamic setup (Heim 1982; Kamp 1981; Groenendijk and Stokhof 1991; Kamp and Reyle 1993, to name just some of the most representative literature). There is also a surge of work in the recent

literature, starting with the seminal work by Farkas and Bruce (2010), on approaches to formally modelling aspects of speaker-hearer interactions in discourse explicitly. This latter line of work has so far mainly focused on phenomena directly pertaining to speech act such as tag questions (Malamud and Stephenson 2015), biased questions (Jeong 2021) and certain uses of epistemic modals that are associated with particular speech act effects (Bledin and Rawlins 2020). These are all phenomena at the main-clause level, and it is currently still largely unclear how the model of discourse originally proposed by Farkas and Bruce (2010) can be extended to deal with interactions with sentence-internal semantics, such as the dynamic aspects of conditionals and negation.^[4] For these reasons, we find it most productive to adopt a “divide-and-conquer” approach, setting the goal of the present paper to be a pre-theoretical characterization of the core meanings of *amari* and *sonnani*. Since our ultimate goal is to develop a formal analysis, we will note outstanding issues for a formal analysis as clearly as possible in the ensuing discussion.

5.1 *Sonnani*

As noted in section 4, our analysis of *sonnani* follows Onea and Sailer’s (2013) analysis of *all that* in its basic analytic idea. However, we have seen there that implementing the relevant meaning component in terms of the speaker’s epistemic state itself via the BEL predicate is problematic. We thus depart from Onea and Sailer (2013) in this respect and propose the following as the semantic contribution of *sonnani*:

(_{e34}) **sonnani**(*P*)

presupposition: there is some contextually salient high degree *d*

assertion: *P(d)*

non-asserted content: the speaker refuses to accept *P(d)*

Unlike Onea and Sailer’s (2013) account, (_{e34}) does not directly refer to the speaker’s epistemic state. That is, it is perfectly consistent for the speaker to believe some proposition *p* while still denying the truth of *p*, that is, acting *as if* one doesn’t believe *p*, for the purpose of conversation (for example, when making a false testimony). What

(e34) is meant to capture is the intuition that it is this latter aspect of discourse that *sonnani* is sensitive to.

Several consequences follow from this analysis. First, the infelicity of simple affirmative sentences such as the following follows on our account along lines essentially identical to Onea and Sailer (2013), but conceptually improving over the latter.

(e35) **Kyoo-wa sonnani atsui.*
today-TOP SONNANI hot
intended: ‘It’ s so hot today.’

Our analysis predicts that (e35) is infelicitous, given that the default discourse function associated with declarative sentences is to propose to update the Common Ground with the proposition expressed by the sentence. It is plainly contradictory to propose to (jointly) accept *p* as true while at the same time refusing to accept *p* for oneself.

As shown in section 2.2, *sonnani* is felicitous in the complement clause of adversative psychological predicates (e36) (= (ex6b)) and in exclamatives (e37) (= (e8)) as well as the “discovery” type of sentence with the *-noda/-nda* ending (e38) (= (e9)).

(e36) *Sonnani Kondoo-ga warui-no-ni odoroi-ta.*
SONNANI Kondo-NOM bad-NMLZ-DAT be. surprised-PST
‘I was surprised by how bad Kondo’ s condition was.’
(Ido 2019: (35), modified)

(e37) {**Amari/Sonnani*} *atsui* {-*towa/-nante*} (*odoroi-ta*)!
AMARI/SONNANI hot-COMP. EXCLAM (be. surprised-PST)
‘How hot it is!’

(e38) *Hee, naruhodo, {*amari/sonnani} atsui-nda.*
oh indeed AMARI/SONNANI hot-NODA
‘Oh, I see, it’ s that hot.’

Here, the speaker did not know that it was so hot, but recognizes it right before his/her utterance, and expresses this discovery by uttering the above sentences. These sentences can be followed up by an expression such as *mada shinji-rare-nai-kedo* ‘I still can’t believe it, though’, showing that the speaker has not yet come to fully accept that discovery.

The fact that *sonnani* is felicitous in non-veridical contexts such as interrogative, conditional and negative sentences also follows straightforwardly on this analysis, essentially for the same reason as in Onea and Sailer’s (2013) account. For example, in the following conditional sentence, the antecedent clause denotes the proposition “it’s (very) hot”, but the sentence as a whole doesn’t entail it. Thus, what is asserted by the whole sentence (suggestion to turn on the air conditioner on the condition that the temperature is above a certain high degree (= *p*)) is consistent with the speaker expressing his/her own skepticism on the truth of *p*.

(_e39) *Sonnani atsuke-reba, eakon-o tsuke-tara?*
 SONNANI hot-COND air.conditioner-ACC turn.on-how.about
 ‘If it’s so hot, how about turning on the AC?’

As noted in section 2.2 (repeated below), ‘because’-clauses by itself does not allow *sonnani*.

(_e40) **Sonnani atsui-kara, eakon-o tsuke-ta-mama ne-ta.*
 SONNANI hot-because AC-ACC turn.on-NPST-with sleep-PST
 ‘Since it was so hot, I slept with the AC turned on (all night).’

The unacceptability of (_e40) essentially follows from the fact that ‘because’-clauses entail the truth of the antecedent clause. That is, in (_e40), the speaker is using the proposition **hot**(*d*) of the ‘because’-clause for the purpose of justifying the claim made in the consequent clause. However, the use of *sonnani* signals to the hearer that the speaker refuses to accept **hot**(*d*). Using a proposition whose truth one doesn’t commit to

as the justification for some other claim is plainly incoherent. Thus, the infelicity of (e40) follows straightforwardly.

Now, recall from section 2.2 ((e11) and (e12), repeated below as (e41) and (e42)) that *sonnani* can appear in the ‘because’-clause under a certain condition.

(e41) Ne-ru-maeni sonnani takusan taberu-kara
sleep-NPST-before SONNANI a. lot eat-because
futo-ru-noda.
gain. weight-NPST-NODA

‘You gain weight because you eat that much before you go to sleep.’

(e42) Futo-ru-no-wa ne-ru-maeni sonnani tabe-ru-kara-da.
gain. weight-NPST-NMLZ-TOP sleep-NPST-before SONNANI eat-NPST-because-COP

‘It’ s because you eat that much before you go to sleep that you gain weight.’

As pointed out in section 2.2, these sentences involve a particular information structure. In particular, it is the ‘because’-clause, or the reasoning itself, that is emphasized as some kind of new information. Generally, as we discussed above, ‘because’-clauses entail the truth of the antecedent clause. However, in this particular case, the ‘because’-clause is explicitly marked either by *-noda/-nda* as in (e11) or by cleft as in (e12) as new information, i.e. something that the speaker has just found out right before the utterance. Thus, intuitively speaking, this pragmatic condition rescues *sonnani*, making it possible to appear in ‘because’-clauses.

Finally, the fact that *sonnani* does not appear in the scope of epistemic possibility modals such as *kamosirenai* ‘may’ is also straightforward in the proposed analysis.

(e43) *Taroo-wa kanshoku-o sonnani tabe-ru-kamoshirenai.
Taro-TOP snack-ACC SONNANI eat-NPST-may

‘Taro may eat a lot of snacks.’ (Ido 2019, 352)

For (43) to make sense, the speaker has to believe (or, more precisely, make his/her publicly expressed belief consistent with the proposition) that there is a possibility that the prejacent proposition is true. But this directly conflicts with what the use of *sonnani* conveys to the hearer. Thus, the infelicity of *sonnani* under epistemic modals directly follows in our account.

Before turning to the case of *amari*, we would like to note outstanding issues that our proposal for *sonnani* raises. The most important question that we have deliberately set aside in the preceding discussion is the status of the non-asserted content. Is the non-asserted content Pottsian CI, or does it arise as an interaction between presupposition and some other aspect of meaning? Merely saying that it is Pottsian CI does not necessarily clarify the nature of this particular meaning contribution. But it seems equally unilluminating to seek a presupposition-based account. Such an attempt is likely to fail anyway, since whether the speaker chooses to accept or reject some issue under discussion is not merely a matter of what is shared knowledge at a particular point in the discourse. Note that this is precisely the reason that a direct application of Onea and Sailer's (2013) account to *sonnani* will be a non-starter. A closely related question is what it exactly means to say that the speaker (or some attitude holder) "refuses to accept" a proposition. Does this mean that the speaker simply opts out from updating his/her own belief with what is added to the CG? Or should we understand this notion as something that acts on the CG more directly, for example, as a proposal to *remove p* from the CG? We fully recognize that these are very important issues, but have decided to leave them for future work, partly because of the technical issues noted at the beginning of this section, and partly because these issues don't directly affect the account of the empirical patterns we are primarily interested in in the present paper. What seems clear at this point is that we need a model of discourse that takes into account the interactions between interlocutors explicitly. As noted at the beginning of this section (see footnote 4), recent extensions of the Farkas & Bruce model such as Bledin and Rawlins (2019) seem to offer the most promising candidate for implementing an analysis along these lines more explicitly.

5.2 *Amari*

One clear difference between *sonnani* and *amari* is that, unlike *sonnani*, *amari* is not anaphoric. Rather, in an *amari* sentence, the speaker relies on what s/he takes to be an uncontroversial pattern of inference to support the particular claim made by the sentence. We believe that the notion of “general conditional inference” that Ido (2019) invokes for non-negative uses of *amari* essentially gets at the core meaning of *amari*. However, the relationship (if any) between negative and non-negative uses of *amari* is left unaccounted for in Ido’s proposal. Matsui’s (2013) alternative-based approach is instructive in this respect, as it offers a unified analysis. In particular, the idea that the attenuation effect is obtained via a comparison among possible alternative propositions with varying degrees d for $P(d)$ and that the relevant comparison pertains to the strength of statement seems essentially on the right track. However, we have seen in section 2 that treating *amari* as a speech act-level operator makes some incorrect predictions.

Based on these considerations, and in an attempt to unify the insights of previous authors, we propose the following as the core meaning of *amari*:

(_{e44}) **amari**(P)

assertion: $P(d)$, where $d \gg \text{std}$

non-asserted content: $P(d)$ leads to some consequence q , and the speaker takes it uncontroversial that the higher the degree d , the easier it is to accept the consequence q within the local context in which q occurs.

There are several issues that need to be clarified in this characterization of the meaning of *amari*. First, for this analysis to work, the consequence q in the non-asserted content needs to be identified with the content of the consequent clause in the case of conditional sentences (and in ‘because’ sentence, too). We do not attempt to spell out a compositional analysis in this paper, but the key intuition here is that *amari* is licensed in contexts that introduce hypothetical assumptions and that manipulating the parameter d affects the ease with which update of information under that hypothetical assumption can be carried out. And here again, we leave it for future work to figure out the exact

nature of the non-asserted content. We suspect that this is some sort of presumption on the part of the speaker, that is, something that the speaker simply takes for granted (but which may or may not be on the CG, depending on the accuracy of the speaker's knowledge about what is shared knowledge among his interlocutors).

Given these assumptions, the fact that *amari* is felicitous in conditional sentences falls out straightforwardly. For example, in (e45), the non-asserted content of *amari* identifies the consequent clause of the conditional sentence as *q*, and imposes the felicity condition along the lines of (e46).

(e45) *Amari atsuker-eba, eakon-o tsuke-ru.*
AMARI hot-if air.conditioner-ACC turn.on-NPST
'If it's so hot, I'll turn on the air conditioner.'

(e46) The speaker takes it uncontroversial that the hotter it is, the easier it is to accept the fact that the speaker will turn on the air conditioner.

Note that the assertion of the sentence, namely, the proposition that the speaker will turn on the air conditioner if the temperature is sufficiently higher than some contextually determined threshold, is naturally supported by the presumption in (e46). It is this relation between the non-asserted and asserted meanings that gives rise to the attenuation effect of *amari*.

The case of 'because'-clauses can be explained similarly. (e47) has essentially the same speaker presumption supporting the causal inference as (e45).

(e47) *Amari atsui-kara, eakon-o tsuke-ta.*
AMARI hot-because air.conditioner-ACC turn.on-PST
'Since it was so hot, I turned on the AC.'

The difference between (e45) and (e47) is just that a 'because' sentence entails the truth of both the antecedent and the consequent clauses. But the non-asserted meaning of *amari* targets the causal meaning of a 'because' clause, and the attenuation effect is

obtained in exactly the same way as in the conditional sentence (e45): Given (e46), a high temperature is (at least according to what the speaker believes is taken for granted in the discourse context) a completely unsurprising (or well-justified) reason for turning on the air conditioner.

By contrast, in the case of affirmative declarative sentences such as (e48), *amari* does not appear in an environment that introduces a hypothesis-consequence pair, so that the felicity condition in (e44) is not satisfied.

(e48) *Kyoo-wa amari atsui.
today-TOP AMARI hot
intended: 'It's not so hot today.'

To put it somewhat differently, in this case manipulating the degree d (and thereby changing the strength of entailment of $P(d)$) does not have any obvious associated consequence about how the next step of discourse update is to be carried out. For this reason, *amari* is infelicitous in affirmative declarative sentences. We will see below that things are crucially different when negation is involved by taking into account the dynamic aspect of negation in terms of discourse update.

The infelicity of *amari* in interrogative sentences such as (e49) follows essentially for the same reason as affirmative sentences.

(e49) *Amar i atsui-no?
AMARI hot-Q
'Is it so hot?'

The function of a polar question is to ask the hearer to resolve the issue of whether $P(d)$ or its negation $\neg P(d)$ holds. The issue of whether $P(d)$ is the case remains open (so, $P(d)$ may be taken to be hypothetical), but crucially, the sentence by itself does not explicitly specify the consequence of entertaining the hypothesis $P(d)$. Thus, there is no point in manipulating the degree d . That is, adjusting the strength of the statement $P(d)$ by

manipulating d does not have any effect on the ‘immediate next update move’ invoked by the hypothesis $P(d)$, since there is simply no such update move to begin with.

Finally, negation needs a somewhat careful attention. Given the characterization of the meaning of *amari* in (e44), it might at first sight appear that our account would make an incorrect prediction about examples with negation as the licenser, since unlike conditionals and ‘because’-clauses, negation does not seem to have the force of introducing a hypothetical assumption and evaluating some consequence under that hypothesis, at least if one takes negation to correspond to boolean negation in static semantics. We believe that the proper way to understand the licensing property of negation for *amari* comes from taking a dynamic perspective. In dynamic semantics (see, e.g., Heim (1982)), negation is defined as an operator that updates the CG in a particular way that is somewhat similar to how dynamic update takes place for conditionals. Conditionals introduce a hypothetical context consistent with the antecedent p (that is, by temporarily updating the CG with p) and then evaluate whether q holds true in that context. Similarly, the effect of negation can be understood as a sequence of dynamic update along the following lines. Just like conditionals, a hypothetical context is created by updating the CG with p . But unlike conditionals, instead of further updating this hypothetical context with another proposition, the next move is to *reject* this hypothesis so that we obtain just the subset of the original CG in which p does *not* hold.

Then, in the case of *amari* sentences with negation such as (e50), we can understand q in (e44) to correspond to the update that rejects the p -worlds to obtain the effect of negation. That is, here, the speaker’s presumption has it that increasing d has the effect of making it more likely that $P(d)$ is rejected as a possible state of affairs consistent with the current CG.

(e50) Kyoo-wa amari atsuku-nai.
today-TOP AMARI hot-NEG
‘It’ s not so hot today.’

Thus, unlike what might initially appear, we believe that the case of negation is fully consistent with the proposal in (e44), once we take into account its dynamic property properly. Having said this, we recognize that implementing this idea in an explicit system of compositional dynamic semantics is a nontrivial task, both technically and conceptually—this is an important task that is left for future work.

Finally, note that the case of embedded licenser such as (e51) is not problematic for our proposal.

(e51) Sono eiga-ga amari omoshiroku-nake-reba, betsu-no eiga-o
that movie-NOM AMARI interesting-NEG-COND other-GEN movie-ACC
mi-ru.
watch-NPST
'I'll watch another movie if that movie isn't very interesting.'

Unlike Matsui (2013), who takes a global, speech act-level approach, we assume that the effect of *amari* with respect to q is confined to the local context in which q occurs. Though formally modelling this local effect is a non-trivial task, we believe that the underlying intuition is clear: *amari* targets the update that is under the assumption of its containing clause $P(d)$. Given this assumption, it immediately follows that *amari*'s attenuation effect targets its local negation in (e51), so it is correctly predicted that (e51) is acceptable for just the same reason that a simple negation sentence such as (e50) is.

Before concluding this section, we would like to briefly comment on the observation from Ido (2019) that the occurrence of *amari* in conditional sentences was mostly restricted to *-to* conditionals. We already noted in section 3 that care should be taken in interpreting these data, but suppose that the pattern is real and that it reflects some underlying semantic difference among the different types of conditionals. Then, we can understand the correlation between *amari* and *-to* conditionals along the following lines. The key idea here is the intuition that the non-asserted content of *amari* that we have characterized as in (e44) is something that the speaker presumes to be taken for granted among his/her interlocutors. The question then is, how does the speaker obtain such knowledge? Monotonic inferences of the sort schematized in (e44) are often part of

commonsense knowledge about the world. Such inferences are most typically formed and reinforced by repeated observations (and confirmations of a hypothesis), which most likely is obtained through (either direct or indirect) experience. But then, it is not particularly surprising that, in the most stereotypical types of discourse contexts, the non-asserted meaning of *amari* schematized in (e44) has the flavor of ‘general tendency’ that forms part of the shared knowledge in the relevant speech community. Given that the *-to* conditional tends to be most typically used to express such meanings, it is not totally surprising that this form gets to be chosen as the form that is most natural when *amari* appears in the antecedent clause of a conditional sentence.

6 Conclusion

This paper raises more issues than it solves, but in a way that we think is ultimately productive. The main conclusions of the paper are that *amari* and *sonnani* achieve their attenuation effects via different pragmatic strategies. Whereas *sonnani* is an anaphoric degree modifier that signals the speaker’s resistance to accept some degree-related statement salient in the discourse, *amari* does not have any such anaphoric component in its meaning, and it instead achieves its attention effect by supporting the claim made by the sentence with what the speaker takes to be an uncontroversial pattern of inference shared among interlocutors. These main ideas are essentially refinements of proposals of previous authors such as Matsui (2011, 2013) and Ido (2019), but as we have noted at various points throughout the paper (especially in section 5), the apparently simple characterization of the meanings of these words raise several nontrivial issues for current models of discourse semantics. This is essentially because the key functions of these words pertain directly to both sentence-external discourse pragmatics and sentence-internal dynamic compositional semantics. This is precisely where a formal theory of discourse semantics finds its most promising application, but current models still lack an integrated interface component for dealing with the interactions of the two levels fully smoothly. Once such a formal theory is in place, it should become possible to formulate an explicit analysis of the ways in which the lexically contributed pieces of meaning interact with sentence-internal dynamic aspects of meaning (of various operators such as conditionals, questions and negation), and such an analysis will

ideally provide a principled account of the ways in which these words attain the effects they do when they appear in particular discourse contexts and in particular syntactic environments. We are not yet there, but we think that the kinds of issues we have discussed in the present paper offers possibly the best starting point for developing such a theory. The task is by no means trivial, but it should be fully rewarding.

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9 Notes

[1] While Matsui (2013) claims that both *amari* and *sonnani* appear in the complement clause of adversative predicates such as *odoroku* ‘be surprised’, Ido (2019) points out that such sentences are only acceptable because *amari* and *sonnani* appear in the adverbial *-te* clause, which in fact should be regarded as a kind of ‘because’-clause. According to Ido (2019), the examples in (_e10), which do not suffer from this confound, show that *amari* cannot, but *sonnani* can, appear in the complement clause of adversative predicate.

[1.5] Other than the “discovery” type, it has been noted in the literature that the *-noda/-nda* sentences have various discourse functions such as “marking the scope of focus/negation”, “giving explanation”, “supplying background information”, and “expressing causal relation” (Noda 1997, Iori 2013, Ishiguro 2003, Yukimatsu 2016 and references therein). The example (_e11) can be thus considered as one of those cases depending on the discourse context in which the sentence is uttered.

[2] Note that one cannot immediately reject this possibility merely on the basis of the fact that, as compared with *amari*, *sonnani* does occur with other types of conditionals, since, unlike *amari*, a large portion of the occurrence of *sonnani* in BCCWJ is likely to consist of conversational style in novels and similar genres in written language.

[3] It should be noted that Onea and Sailer (2013: 226, fn 5) themselves are aware of the fact that a more complex model that teases apart beliefs and discourse commitments properly may be more adequate. In this respect, we believe that what we propose in this

paper is not at odds with the spirit of Onea and Sailer (2013), but should in fact be seen as a natural refinement of the latter.

[4] But it should be noted that there are some promising recent attempts at extending the Farkas & Bruce model to these finer-grained and more complex aspects of discourse update (Bledin and Rawlins 2019; Yang 2021). These new lines of development indeed seem to provide a good starting point for formally analyzing the discourse semantics of *amari* and *sonnani*.

[6] On Onea and Sailer's (2013) account, one might attempt to accommodate (ex45) by making the assumption that the evaluation time of the presupposition can be backshifted in certain contexts such as embedding under an explicit 'surprise' predicate (Onea and Sailer 2013, 347).

10 Appendix: *Amari* and *sonnani* in conditional clauses in attested data in BCCWJ

(_e52) *amari* in *to*-conditional

Sorezore-no danraku-wa kanketsuni su-beki-de, amari
each-GEN paragraph-TOP concise do-should-COP AMARI
nagai-to yomi-zurai.
long-COND read-difficult

'Each paragraph should be concise; if it is too long, it is difficult to read.'

(LBc8_00002)

(_e53) *amari* in other types of conditionals

a. Amari takaku-nat-te-mo koma-ru-kedo.
AMARI expensive-become-TE-even. if bothered-NPST-but
'If it gets too expensive, I'll be in trouble.'

(LBd9_00039)

b. Ryooshuusho-no nai bun-ga amari ooke-reba sore-mo

receipts-NOM nothing rate-NOM AMARI a. lot-COND that-also
mondai-da-shi ...
problem-COP-SFP

'If the percentage without receipts is too high, there is a problem.'
(LBi9_00092)

(_e54) sonnani tongat-te bakari i-ru-to shusse
SONNANI defiant-TE always be-NPST-COND be. promoted
deki-nai-zo
can. do-NEG-SFP
'You can't be promoted if you keep being so defiant.'
(LBt3_00059)

Note that this example is not an ordinal type of if-conditional (at least it is not hypothetical) as one can tell from the translation "To see that your face turned red".

(_e55) Sonanni in *tara*-conditional
Anata-ga sonnani okorippoi-to shit-te-i-tara
you-NOM SONNANI irascible-COMP know-te-INPRF-COND
tokkuni anokata-wa aitenishi-nakat-ta-noni.
a. long. time. ago he. POL-TOP deal. with-NEG-PST-though
(LBj9_00214)

'If he had known that you were so irascible, he would have stopped dealing with you a long time ago.'

(_e56) *sonnani* in *nara*-conditional
Kono-yononaka-ni sonnani erai hito-ga iru-nara ichido
this-world-DAT SONNANI great parson-NOM exist-COND once
at-te mi-yoo-to dekake-ta tokoro ...
meat-TE try-FUT-COMP go.out-PST when
'If there is such a great person in this world, I went out to meet him...'
(LBg7_00024)

(_e57) *sonnani* in *reba*-conditional

Sonnani hoshike-rya ya-ru-yo.

SONNANI want-COND give-NPST-SFP

‘If you want this so badly, you can have it.’

(Lbmn_00017)

