

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

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## 1 Introduction

Cross-linguistically, degree modifying adverbs often exhibit polarity-sensitivity, and are 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, 2011; see Sawada, Kishimoto and Imani (this volume), section 2.9.4, for a brief discussion of Israel's work). Both the degree adverbs *amari* and *sonnani* are attenuators whose licensing environments include negation (like English *all that*), although they demonstrate distributional differences in non-negative environments (Matsui 2013; Nihongo Kijutsu Bunpoo Kenkyuukai 2007 and references therein).<sup>1</sup> A corpus study by Ido (2019) confirmed these observations, and she 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 outline 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 they presume to be the 'natural/unsurprising consequence' of accepting  $P(d)$ . While we do

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<sup>1</sup> *Amari* is also known for its peculiar, long distance syntactic licensing by negation (see Kishimoto (this volume); Ido (2019)). We leave it for future study to see whether the semantic analysis we propose in this paper can properly account for this apparently peculiar syntactic property of *amari*.

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 basic data and confirm the empirical issues to be solved. Section 3 provides an overview of three previous accounts that our own proposal most directly builds on, specifically, Matsui’s (2011, 2013) semantic analysis of *amari*, Ido’s (2019) corpus study on the distributional differences between *amari* and *sonnani*, and Onea and Sailer’s (2013) work on English *all that*. Section 4 discusses the properties of *amari* and *sonnani* in more detail, presenting an initial outline of an analysis in informal terms. Section 5 is a summary and conclusion.

## 2 Basic data

### 2.1 Similarities between *amari* and *sonnani*

In descriptive Japanese studies, it has been pointed out 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 (2)–(3). These 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 Jamassy 1998; Nihongo Kijutsu Bunpoo Kenkyuukai 2007, etc.).

- (1) a. *Taroo-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. \**Taroo-wa nomikai-ga* {*amari/sonnani*} *suki-da*.  
 Taro-TOP drinking.party-NOM AMARI/SONNANI like-COP  
 intended: ‘Taro likes drinking parties a lot.’

- (2) {*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.’

- (3) {*Amari/Sonnani*}     *atuke-reba,*             *eakon-o*             *tuke-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 (1): in (2) and (3), both *amari* and *sonnani* behave as attenuators; specifically, they function to weaken the overall claim of the sentence.

(4a) shows that *amari* and *sonnani* can appear inside topicalized NPs.

- (4) a. [{*Amari/Sonnani*}     *ookii*     *sakana*]-*wa*     *azi-ga*             *oti-ru*.  
 AMARI/SONNANI    large     fish-TOP     taste-NOM    drop-NPST  
 ‘Too large fish is tasteless.’
- b. {*Amari/Sonnani*}     *sakana-ga*     *ookii-to*             *azi-ga*             *oti-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 (4b) shows, the topicalized NPs semantically behave 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 (2) and (3).

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* or *sonnani*, as pointed out by Ido (2019: 352) for *sonnani*:

- (5) \**Taroo-wa*     *okasi-o*             {*amari/sonnani*}             *tabe-ru-kamosirenai*.  
 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):

- (6) *Soto-wa*            { \**amari/sonnani* }            *atui-no?*  
outside-TOP    AMARI/SONNANI    hot-Q  
'Is it so hot outside?'  
(Matsui 2013: 319)

Another case is exclamatives. *Sonnani* (but not *amari*) can appear in exclamatives with *-towa/-nante*, without an explicit adversative predicate as the embedding verb.<sup>2</sup>

- (7) { \**Amari/Sonnani* }    *atui{-towa/-nante}*    (*odoroi-ta!*)  
AMARI/SONNANI    hot-COMP.EXCLAM    (be.surprised-PST)  
'How hot it is!'

Another similar, but marginally different case is when the utterance expresses the speaker's "discovery," i.e., a 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

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<sup>2</sup> While Matsui (2013) claims that both *amari* and *sonnani* appear in the complement clause of adversative predicates such as *odoroku* 'be surprised' such as in (i), Ido (2019) points out that such sentences are only acceptable because *amari* appears in the adverbial *-te* clause, which in fact should be regarded as a kind of "because"-clause.

- (i)    Heya-ga a(n)mari atuku-te odoroitā.  
Room-NOM a(n)mari hot-and be.surprized

'I was surprised that the room was so hot.' (Matsui 2011: 303)

According to Ido (2019), the examples in (7), which do not suffer from this confound, show that *amari* cannot, but *sonnani* can, appear in the complement clause of adversative predicates.

(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).

- (8) *Hee, naruhodo, {\*amari/sonnani} atui-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; Matsui 2011, 2013). As shown in (9), *amari* is natural in ‘because’-clauses, but replacing it with *sonnani* typically results in an infelicitous sentence.

- (9) *Heya-ga {amari/\*sonnani} atui-kara eakon-o take-ta.*  
 room-NOM AMARI/SONNANI hot-because air.conditioner-ACC 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. Although this fact has remained 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 (10).

- (10) *Ne-ru-maeni sonnani takusan tabe-ru-kara*  
 sleep-NPST-before SONNANI a.lot eat-NPST-because  
*huto-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 (11), the ‘because’-clause which includes *sonnani* can appear in the pre-copula position of a cleft sentence.



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 consider three proposals in the previous literature addressing this question.

### 3 Previous studies

In this section, we review three proposals. First, we review Matsui (2011, 2013), whose main focus is on the licensing mechanism of *amari*. Next, we take a look at Ido's (2019) corpus study on *amari* and *sonanni*. Lastly, we review Onea and Sailer's (2013) work on the English attenuator *all that*.

#### 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; 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 provides a pragmatic explanation for the distribution of *amari* along the lines of (12).

- (12) *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 (12) 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 (9), 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 makes 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 (6), 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 the statement is conceptually simple and seems essentially on the right track. However, aside from the obscurity regarding the notion of pragmatic strength (for which Matsui [2013] gives only intuitive explanations based on paraphrases of specific examples), there is a potential problem with Matsui’s proposal. Crucially, in her analysis, the licensing of *amari*, i.e., the checking mechanism that determines whether the condition in (12) has been met or not, relies on the existence of a speech-act operator such as ASSERT or YN.QUEST, following Krifka (1995). Since speech-act operators only appear in the matrix clause by nature, Matsui’s proposal predicts that the licensing of *amari* can be done only at the global level and that it is not affected by embedding the licenser under another licenser. To establish this point, let us consider the example in (13), in which *amari* appears under two potential licensers, i.e., the negation *-nake* and the conditional *-reba*.

- (13) *Sono eiga-ga amari omosiroku-nake-reba betu-no*  
 that movie-NOM AMARI interesting-NEG-COND other-GEN  
*eiga-o mi-ru.*  
 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:



- (14) *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 YN.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 (13), it systematically makes incorrect predictions for such examples. As mentioned above, speech-act operators by their nature operate only at the global level. Given this, (13) shows that it is not ideal to impose the licensing mechanism on the speech-act operator. What is required 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 that 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 desirable to examine attested data in corpora. Ido (2019) conducted precisely such a study, using the Balanced Corpus of Contemporary Written Japanese (BCCWJ). Table 1, adopted from Ido (2019), shows 300 randomly-selected examples each for *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] types	55	75
	[[... ADV...]s...NEG] types	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



is making an inference based on the knowledge that Taro must be at home supposing that the antecedent is true. As shown in (16), all other conditional markers are fine, but using *-to* in this type of conditional sentence is infelicitous.

- (16) *Heya-no denki-ga tui-te {i-tara/i-reba/i-ru-nara/\*i-ru-to} Taro-wa*  
 room-GEN light-NOM on-TE be-COND Taro-TOP  
*kaet-te-i-ru-daroo.*  
 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 (17a), which expresses habitual or generic relationship between the two events or situations. Note that replacing *-to* in (17a) with the other conditional markers makes the sentence less natural, as shown in (17b).

- (17) a. *Koko-de-wa hatigatu-ni hai-ru-to minna*  
 here-LOC-TOP August-DAT enter-NPST-COND all  
*kiseisi-te simat-te kansanto si-masu.*  
 go.to.hometown-TE finish-TE empty do-POL.NPST  
 ‘In August, everybody goes home, so, this place becomes very empty.’
- b. *Koko-de-wa hatigatu-ni {?hai-reba/?hait-tara/\*haitta-nara} minna*  
 here-LOC-TOP August-DAT enter-COND all  
*kiseisi-te simat-te kansanto si-masu.*  
 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 correspond 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 (18) and epistemic conditionals (19).

- (18) *Heya-ga amari {atui-nara/atukat-tara/atuke-reba/\*atui-to}*  
 room-NOM AMARI hot-COND  
*eakon-o take-te kudasai.*  
 air.conditioner-ACC turn.on-TE please  
 ‘Please turn on the air conditioner if the room is too hot.’
- (19) *Tyuusyazyoo-ni amari takusan kuruma-ga {a-ru-nara/at-tara*  
 parking-DAT AMARI Many car-NOM be-NPST-COND/be-COND/  
*/a-reba/\*a-ru-to} tennai-wa sootoo*  
 be-COND/ be-NPST-COND shop.inside-TOP rather  
*kon-de-i-ru-no-daroo.*  
 crowded-TE-be-NPST-NMLZ-may  
 ‘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 clauses such as *toki* ‘when’ clauses (*amari*: 3 sentences, *sonnani*: 0 sentence).<sup>5</sup>

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<sup>5</sup> Since there were only two instances of *-toki* temporal adverbial clauses in Ido (2019), we conducted an additional search with the entire BCCWJ. Our results are largely consistent with the conclusions of Ido (2019), with 13 instances of *amari* and only one instance of *sonnani* in temporal adverbial clauses. The one case of *sonnani* appearing in a temporal adverbial clause turned out to be a case in which the adverbial clause itself was embedded inside a conditional clause. Since it is the conditional clause and not the temporal adverbial clause that is the licenser in such examples, Ido's (2019)

- (20) *Mata itami-ga amari hagesii toki-wa ansei-ni si-te*  
 also pain-NOM AMARI keen when-TOP calm-DAT do-TE  
*hiyas-u-to yoi-desyoo.*  
 cool-NPST-COND good-probably.POL  
 ‘Also, if the pain is very keen, it is recommended to rest and cool the affected part.’  
 (LBh4\_00007: 57800)

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. Conversely, *sonnani* does not have such a characteristic.

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

- (21) *Amari* is either used in negative clauses, or in adverbial clauses expressing general conditions leading to the consequences expressed by the main clause.
- (22) *Sonnani* is used in clauses that describe situations that the speaker does not recognize as factual.

Importantly, Ido’s corpus study supplements previous intuition-based work by descriptively presenting adequate data and observation. However, it remains 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 (21) remains vague. Moreover, Ido treats *amari* in negative

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generalization that *sonnani* does not appear in temporal adverbial clauses is maintained. With *amari*, the vast majority of the attested examples (12 out of 13) had the topic marker *wa* immediately following *-toki*, making it equivalent to a conditional clause (see Section 2 for the relationship between topic and conditional clauses). In the one remaining case, the entire clause including the *-toki* clause was embedded in a conditional clause. Thus, in all of the attested data we were able to find, *amari* in temporal adverbial clauses appeared within conditional clauses.

environments and in non-negative environments as distinct lexical items without providing compelling empirical motivation for positing lexical ambiguity here. It would be desirable if we could derive the distribution of *amari* without invoking lexical ambiguity. Thus, more work needs to be done so as to clarify the meanings and distributions of the two attenuating adverbs *amari* and *sonnani*.

### 3.3 Onea and Sailer (2013) on English *all that*

As we have seen above, *amari* and *sonnani* both have some kind of attenuation effect just as *all that* in English. In particular, *sonnani* has a distribution that closely resembles that of *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*). Accordingly, 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]).

- (23)
- 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 (24) from Onea and Sailer (2013; [8]).

- (24) 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*.

- (25) *I am/Robin is surprised that the exam was all that easy.*  
 (Onea and Sailer 2013; [10])

Given that *all that* can be licensed by weak licensors as in COCA examples in (24) and a constructed one in (25), 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).

- (26) 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.*  
 (Onea and Sailer 2013; [11–12])

In order to account for the unique licensing environments of *all that*, Onea 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 (27).

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



- a. **asserted meaning:**  $P(d)(x)$
- b. **presupposes:**  $\exists d.HIGH(d,s) \& BEL(u,\neg P(d)(x)) \& \exists u'.BEL(u',P(d)(x))$

The asserted meaning simply says that  $x$  is  $P$  to degree  $d$ . In addition, there is a presupposition, which states 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  $d$ . Simultaneously, 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:

(28) \**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.

(29) *Peter is not all that happy.*

(30) *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 (27) leaves room for improvement.<sup>6</sup> 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 their own epistemic state itself. For example, the *sonnani* sentence in (2), repeated here as in (31), can be uttered in a situation in which the speaker is actually watching the hearer eat a lot in front of him/her.

- (31) {*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.’

In such a case, the speaker *knows* the hearer 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).

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<sup>6</sup> 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.

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

- (32) *Kimi-ga sonnani binboona-koto-wa watasi-mo motiron sit-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 *sit-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  $P(d)$ .

In this section, we have reviewed three approaches to the licensing mechanism of attenuating NPIs. Matsui’s (2011, 2013) analysis on *amari* adopts an alternative-based account on NPIs (cf. Krifka 1995) and proposes that the licensing is checked at the level of speech-act operators. Ido’s (2019) corpus study reveals a particular tendency of *amari* in conditionals, and argues that the notion of “general conditions” is the key component of the meaning of *amari*, which is not shared by *sonnani*. Onea and Sailer’s (2013) analysis on English *all that* assumes a presuppositional approach, and argues that *all that* presupposes the speaker’s disbelief in the degree mentioned previously in the discourse.

In the next section, we outline an analysis of *amari* and *sonnani*, and explain their similarities and differences discussed in Section 2.

#### 4 Toward an analysis

In Section 2, we have seen that *amari* and *sonnani* have overlapping but distinct distributions with respect to different NPI licensing environments (in particular, ‘because’ clauses and interrogative clauses). The proposals reviewed in Section 3 attempt to offer solutions for these facts. However, as we have noted, there are still several outstanding issues that each of these proposals faces. One thing that seems clear nonetheless is that both *amari* and *sonnani* are sensitive to the ways in which speakers

and hearers negotiate with each other about how to update shared knowledge in discourse. Note, for example, the anaphoric nature of *sonnani* (and its counterpart *all that* in English), which is etymologically a demonstrative. For *amari*, this point may perhaps be less apparent, but recall Ido's observation from Section 3.2 (based on corpus study) that *amari*'s function at its core is to rely on knowledge about "general tendencies" to justify the particular conclusion drawn in the sentence.

Given these findings, we propose 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, *sonnani* is a "suspension" marker that anaphorically refers to a previously introduced degree. By contrast, *amari* is a context adjustment device that manipulates the degree denoted by the sentence (based on the speaker's knowledge/belief) to induce its attenuation effect. We argue that this difference in the discourse-oriented aspects of meaning is the source of the distributional differences between *sonnani* and *amari*. Our proposal is informed by recent developments in dynamic discourse semantics (in particular, formal models of discourse that build on Farkas and Bruce's [2010] so-called "table model"). However, we refrain from complete formalization since the main goal of the present paper is to lay out the empirical groundwork for a more refined analysis in a territory in which formal tools are still being actively developed. We will say more about outstanding issues and future directions in the concluding section.

#### 4.1 *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*:<sup>7</sup>

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<sup>7</sup> It has been pointed out in the literature that the *so*-series demonstratives in general can appear in "discovery"-type contexts in which the speaker has not yet come to fully accept the discovery just made (see also Akatsuka's (1985) discussion of the conditional

(33) **sonnani**( $P$ )

- a. **presupposition:** there is some contextually salient high degree  $d$
- b. **assertion:**  $P(d)$
- c. **non-asserted content:** the speaker is reluctant to commit him/herself to the truth of  $P(d)$  for the purpose of the conversation

At the level of assertion, *sonnani* is just a degree modifier designating some high degree salient in the context (note that this “asserted” meaning is not identical to the actual assertion at the top level of the sentence, since [33] can be embedded under the scope of other operators). This part of the analysis is essentially identical to Onea and Sailer’s (2013) analysis of *all that*. The difference is in the non-asserted component of the meaning; unlike Onea and Sailer’s (2013) account, (33) does not directly refer to the speaker’s epistemic state. Rather, it merely signals the speaker’s tentativeness as to whether to accept  $P(d)$  (note that similar ideas have been proposed in the literature of the *so*-series demonstratives; see footnote 6 for some discussion). Note that it is perfectly consistent for the speaker to believe some proposition  $p$  while still hesitating to accept the truth of  $p$  for the purpose of the conversation. In an extreme case of this, one can act *as if* one doesn’t believe  $p$  (for example, when making a false testimony).

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*-nara* which involves a similar notion). For example, Kuroda (1979/1992) characterizes the function of the *so*-series demonstratives as follows:

- (i) *so*- captures an object as being outside of one’s direct experience, conceptual knowledge in the case of anaphoric uses and other people’s direct knowledge in the case of deictic uses. (Kuroda 1979/1992 translated and cited in Takubo and Kinsui 1997)

Takubo and Kinsui (1997) further elaborated Kuroda's characterization and proposed an analysis based on a mental model approach. However, these studies do not present an analysis of *sonnani* as an attenuator. We leave it for future study to examine the relationship between this prior literature on the general properties of the *so*-series demonstratives and the specific analysis of the degree adverb *sonnani* we have proposed in this paper.

What (33) is meant to capture is the intuition that it is this latter aspect of discourse that *sonnani* is sensitive to. This immediately explains the fact that (32) is not contradictory. In this sentence, the speaker is well aware of the fact that the hearer is very poor, but signals his reluctance to accept that fact as given for the purpose of the subsequent discourse moves.

Several consequences follow from this analysis. First, our account explains the infelicity of simple affirmative sentences such as the following in a similar way as Onea and Sailer (2013), but conceptually improving over the latter.

- (34) \**Kyoo-wa sonnani atui.*  
 today-TOP SONNANI Hot  
 intended: ‘It’s so hot today.’

Our analysis predicts that (34) 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 signaling reservations for accepting *p* for oneself.

As shown in Section 2.2, *sonnani* is felicitous in the complement clause of adversative psychological predicates (35) (= [6b]) and in exclamatives (36) (= [7]) as well as the “discovery” type of sentence with the *-noda/-nda* ending (37) (= [8]).

- (35) *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)

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

- (37) *Hee, naruhodo, { \*amari/sonnani } atui-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 the utterance, and expresses this discovery by uttering the above sentences. These sentences can be followed up by an expression such as *mada shinzi-rare-nai-kedo* ‘I still can’t believe it, though,’ showing that the speaker has not yet come to fully accept that discovery.<sup>8</sup>

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 indicating their own skepticism on the truth of *p*.

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

As noted in Section 2.2 (repeated below), “because”-clauses by itself does not allow *sonnani*.

(39) \**Sonnani atui-kara, eakon-o take-ta-mama ne-ta.*  
 SONNANI hot-because air.conditioner-ACC turn.on-NPST-with sleep-PST  
 ‘Since it was so hot, I slept with the air conditioner turned on (all night).’

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<sup>8</sup> On Onea and Sailer’s (2013) account, one might attempt to accommodate (37) 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).





For example, *sonnani* is still acceptable in the following type of example (given by the reviewer). In this example, the adverbial clause ‘as I always think’ clearly suggests that the information that the hearer eats a lot is nothing new to the speaker.

- (42) *Itumo omou-nda kedo, sonnani tabe-ru kara*  
 always think-NODA but SONNANI eat-NPST because  
*huto-ru-nda-yo.*  
 gain.weight-NPST-NODA-FIN  
 ‘As I always think, you gain weight because you eat that much.’

(42) can be uttered even when the speaker has had a meal together with the hearer many times and thinks, every time they eat together, that the reason that the hearer gains weight is because s/he eats that much. Why is *sonnani* felicitous in this type of example? In (33) we have characterized the function of *sonnani* as signaling that “the speaker is reluctant to commit him/herself to the truth of  $P(d)$  for the purpose of conversation”. Right after obtaining new information is one of the most typical situations in which the speaker has not yet fully committed him/herself to the truth of the obtained information (see, for example, Akatsuka’s (1985) notion of “epistemic scale” in this connection, in which newly learned information belongs to the realis domain but is closer to the irrealis domain than known facts). However, there are other situations too. For example, the speaker may know that the reason for the hearer’s weight increase is the meal size, but the speaker may still be hesitant to accept it as a fact that the hearer eats that much and gains weight (note again that, as emphasized by Akatsuka, [internalized] knowledge and [objective] information are distinct for humans, and human language often reflects this distinction). By saying “reluctant to commit him/herself to the truth of  $P(d)$ ,” we do not mean to restrict the pragmatic condition only to the situation in which the information expressed by the sentence is new to the speaker.

Here is yet another example which illustrates this point.

- (43) *Hai hai, (anata-ga i-u yooni) watasi-wa sonnani*

yeah yeah (you-NOM say-NPST as) I-TOP SONNANI  
*atama-ga waru-i desu-yo.*  
 brain-NOM bad-NPST POL-FIN  
 ‘Yeah, yeah, I am that stupid (as you say).’

The above sentence can only be uttered perfunctorily. Essentially, the speaker superficially admits that they are stupid to whatever high degree suggested by their interlocutor just in order to let the conversation flow, but they are not taking it seriously. Thus, the licensing condition of *sonnani* is fundamentally pragmatic, and is quite complex and nuanced.

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.

(44) \**Taroo-wa okasi-o sonnani takusan tabe-ru-kamosirenai.*  
 Taro-TOP snack-ACC SONNANI a-lot-of eat-NPST-may  
 ‘Taro may eat a lot of snacks.’  
 (Ido 2019: 352)

For (44) to make sense, the speaker has to believe (or, more precisely, make their 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.

## 4.2 *Amari*

Let us now move on to the analysis of *amari*. A 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 the 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*:

(45) **amari**( $P$ )

- a. **Assertion:**  $\exists d.P(d)$ , where  $d$  is high above the standard degree
- b. **Non-asserted content:**
  - (i)  $P(d)$  potentially leads to some abnormal consequence  $q$  (in the normative sense), and
  - (ii) the higher the degree  $d$ , the more likely it is that  $q$ .

There are several issues that need to be clarified in this characterization of the meaning of *amari*. First, although the informal analysis in (45) does not clarify this point, we assume that the consequence  $q$  in the non-asserted content is not just any consequence that follows from the asserted meaning of the sentence, but corresponds to the denotation of the consequent clause (where “consequent”—as opposed to “consequence”—is a syntactic notion designating  $q$  in the sentence form “if  $p$  then  $q$ ”). 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. The case of ‘because’ clauses and negation can be given a parallel analysis, as we explain below. Here again, we leave it to future research to examine 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 (46), the non-asserted content of *amari* identifies the consequent clause of the conditional sentence as *q*, and expresses the meaning (47).

(46) *Amari atuker-eba, eakon-o take-ru-daroo.*  
 AMARI hot-if air.conditioner-ACC turn.on-NPST-may  
 ‘If it’s so hot, I’ll turn on the air conditioner.’

- (47) a. **Assertion:** If it’s extremely hot, the speaker will turn on the air conditioner.
- b. **Non-asserted content:**
- (i) high temperature potentially leads to an abnormal consequence in which the speaker turns on the air conditioner, and
  - (ii) the hotter it is, the more likely it is that the speaker will turn on the air conditioner.

Note that there is no attenuation effect just by the assertion (47a). What gives rise to the attenuation effect is the combination of (47a) and (47b). Given the non-asserted content (47b), the assertion (47a) turns out to be an obvious or justifiable claim. The characterization of the consequent clause as designating an “abnormal” situation (in the normative sense) is meant to capture the fact that *amari* sentences are associated with certain “negative evaluations”. This is especially clear in conditional and ‘because’ sentences. For example, (46) is typically asserted as an excuse (in advance). We will say more about this at the end of this section.

The case of ‘because’-clauses can be explained similarly; (48) has essentially the same speaker presumption supporting the causal inference as (46).

(48) *Amari atui-kara, eakon-o take-ta.*  
 AMARI hot-because air.conditioner-ACC turn.on-PST  
 ‘Since it was so hot, I turned on the air conditioner.’

- (49) a. **Assertion:** Because it was extremely hot, the speaker turned on the air conditioner.
- b. **Non-asserted content:**
- (i) high temperature potentially leads to an abnormal consequence in which the speaker turns on the air conditioner, and
- (ii) the hotter it is, the more likely it is that the speaker will turn on the air conditioner.

The difference between (46) and (48) is just that a ‘because’ sentence entails the truth of both the antecedent (‘it was extremely hot’) and the consequent clauses (‘the speaker turned on the air conditioner’). But this difference does not affect the licensing condition for *amari*; 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 (46): Given (49b), 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. Therefore, the non-asserted content (49b) makes the assertion (49a) less controversial just as in the case of the conditional sentence in (46)–(47).

By contrast, in the case of affirmative declarative sentences such as (50), *amari* does not appear in an environment that introduces a hypothesis–consequence pair, so that the felicity condition in (45) is not satisfied.

- (50) \**Kyoo-wa amari atui.*  
 today-TOP AMARI hot  
 intended: ‘It’s ~~not~~ so hot today.’

- (51) a. **Assertion:** It’s extremely hot.
- b. **Non-asserted content:**
- (i) high temperature potentially leads to an abnormal consequence X, and
- (ii) the hotter it is, the more likely it is that X

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. Note here again that, by assumption,  $q$  in (45) is not just any consequence that follows from the main assertion of the sentence, but corresponds to the denotation of the consequent clause that is provided by the syntax/compositional semantics of the sentence. Conceptually,  $q$  is a consequence that obtains only under the *hypothetical* assumption of  $P(d)$ . Since no such compositionally provided  $q$  exists in the case of affirmative sentences, *amari* is infelicitous in (50). 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 (52) follows essentially for the same reason as affirmative sentences.

(52) \**Amari atui-no?*  
 AMARI hot-Q  
 ‘Is it so hot?’

- (53) a. **Issue to be resolved:** {It’s extremely hot, It isn’t extremely hot}  
 b. **Non-asserted content:**  
 (i) high temperature potentially leads to an abnormal consequence X, and  
 (ii) the hotter it is, the more likely it is that X

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  $d$ . Specifically, 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 (45), it might 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. The following shows the update steps in an informal way.

(54) Conditional: *If  $p$  then  $q$*

1. Update the current CG with  $p$ .
2. Among the worlds obtained in 1, retain only those in which  $q$  is true.

(55) Negation: *Not  $p$*

1. Update the current CG with  $p$ .
2. Discard all the worlds obtained in 1 (= among the worlds obtained in 1, retain only those in which the contradiction holds).

Consequently, in the case of *amari* sentences with negation such as (56), we can understand  $q$  in (45) to correspond to the contradiction (in the technical sense, that is, the proposition that is false in all possible worlds). Essentially, here, the speaker’s presumption has it that increasing  $d$  has the effect of making it more likely that the

contradiction obtains. This is similar to saying that increasing  $d$  makes it more likely that  $P(d)$  is rejected as a possible state of affairs consistent with the current CG.

(56) *Kyoo-wa amari atuku-nai.*  
 today-TOP AMARI hot-NEG  
 ‘It’s not so hot today.’

- (57) a. **Assertion:** It isn’t extremely hot.  
 b. **Non-asserted content:**  
 (i) high temperature potentially leads to a contradiction (which is an abnormal state of affairs)  
 (ii) the greater the degree  $d$  is, the more likely it is that a contradiction ensues

Thus, unlike what might initially appear, we believe that the case of negation is fully consistent with the proposal in (45), 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 (13), repeated here as (58), is not problematic for our proposal.

(58) *Sono eiga-ga amari omosiroku-nake-reba, betu-no*  
 that movie-NOM AMARI interesting-NEG-COND other-GEN  
*eiga-o mi-ru.*  
 movie-ACC watch-NPST  
 ‘I’ll watch another movie if that movie isn’t very interesting.’

Recall from Section 3.1 that Matsui (2013) makes a wrong prediction for (58) because it takes a global, speech act-level approach. Unlike her proposal, we assume that the effect of *amari* with respect to  $q$  is confined to the local context in which  $q$  occurs. Though formally modeling 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 (58), so it is correctly predicted that (58) is acceptable for just the same reason that a simple negation sentence such as (56) is.

Before concluding this section, we would like to briefly comment on the modal aspect of the non-asserted content of *amari*, especially on the admittedly vague expressions “abnormal” and “more likely”. When we are only considering cases like how hot it is or whether to turn on the air conditioner according to the temperature, we are simply dealing with the worlds that are ordered in terms of how likely they are based on our commonsense knowledge of some kind. From the perspective of possible worlds semantics on modality (Kratzer 1981), the modal base in that case is the stereotypical conversational background, paraphrased as “in view of the normal course of events”. In this connection, it is worth reconsidering the finding by Ido (2019) about the distributional tendency of *amari* in conditionals. Recall from Section 3.2 that the corpus study revealed that *amari* tends to appear in certain types of conditionals, namely the *-to* conditional. According to Ido (2019), this tendency suggests that *amari* fundamentally has some kind of genericity or habituality as part of its meaning. This seems to be closely related to the stereotypical conversational background in the Kratzerian sense.

However, the normative sense corresponding to the characterization of the consequence  $q$  as “abnormal” is not (merely) stereotypical. It is interesting to note in this connection that, as pointed out by one of the reviewers, when *amari* appears in the antecedent of conditionals, there is typically a negative connotation or the speaker's evaluative (negative) perspective to the whole sentence. For example, in the following pairs (given by the reviewer), (59a) and (60a) are perfectly natural, whereas (59b) and (60b) sound odd.

- (59) a. *Amari tabe-ru-to huto-ru-yo.*  
 AMARI eat-NPST-COND gain.weight-FIN  
 ‘If you eat too much, you’ll get fat.’
- b. *#Amari tabe-ru-to kenkoo-ni na-ru-yo.*  
 AMARI eat-NPST-COND healthy-DAT become-NPST-FIN  
 ‘If you eat a lot, you’ll be healthy.’

- (60) a. *Amari benkyoosu-ru-to karada-o kowa-su-yo.*  
 AMARI study-NPST-COND health-ACC break-NPST-FIN  
 ‘If you study too much, you’ll ruin your health.’
- b. *#Amari benkyoosu-ru-to ii-daigaku-ni hair-eru-yo.*  
 AMARI study-NPST-COND good-university-ACC break-can-FIN  
 ‘If you study a lot, you’ll get into college.’

By uttering (59b) or (60b), there is an impression that the speaker has a negative feeling about being healthy or being enrolled in a good college, and that is why the oddness arises. But where does this negative feeling come from?

Based on our proposal, the meaning of (60b) will be as follows.

- (61) a. **Assertion:** If the hearer eats a lot, they will get healthy.
- b. **Non-asserted content:**
- (i) the hearer’s eating a lot leads to some abnormal consequence in which the hearer gets healthy, and
  - (ii) the more the hearer eats, the more likely it is that the hearer gets healthy

In the non-asserted content, it is stated that the hearer getting healthy is abnormal. Now, if this is interpreted with a neutral stereotypical conversational background, i.e., “in view of the normal course of events,” then abnormality is something rare. This is too weak as the constraint imposed on *q* via the conventionally-encoded meaning of *amari*, since this alone will not explain the infelicity of (59b). It thus seems that the modal base that supports the normative judgment characterizing *q* is something more “evaluative,” that is, teleological, deontic, or bouletic conversational backgrounds, according to which abnormality corresponds to goal-defeating, to-be-avoided, or undesirable situations. This is why the contrast in (59) and (60) arises: the speaker’s negative (evaluative) feeling comes from the notion of abnormality in the meaning of *amari*.<sup>9</sup>

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<sup>9</sup> A question remains as to whether the same type of normative implication arises in the case of negation as the licenser, that is, in examples such as (56). Intuitively, such examples do not seem to involve any kind of negative evaluation that the excessive degree is unfavorable or somehow deviant according to the norm. There is, however, a sense in which the characterization of *q* in the negation case in our analysis is closely

## 5 Conclusion

This paper raises more issues than it solves, but in a way that we hope is ultimately productive. The main conclusion of the paper is that *amari* and *sonnani* achieve their attenuation effects via different pragmatic strategies. Whereas *sonnani* is an anaphoric degree modifier that signals the speaker's reluctance 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 attenuation 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).

The next obvious step is to develop a more formal analysis that embodies the ideas we have informally spelled out in this paper, and we see two main challenges for this task, one conceptual and the other technical. The conceptual issue is the status of the non-asserted content of *sonnani* and *amari*, on which we have (deliberately) said hardly anything in the foregoing discussion. The term “non-asserted content” is reminiscent of the notion of “non-at-issue” in the recent literature on the so-called “projective” meanings (see, e.g., Potts 2005, 2015; Tonhauser et al. 2013; Oshima 2016; Sawada 2018, among others). One might then think that what we have labeled “non-asserted content” is a type of CI in the sense of Potts (2005), or some sort of projective content. Descriptively, the non-asserted meanings of *amari* and *sonnani* undoubtedly fit the profile of projective content, since they project over truth-functional operators such as negation and conditional. But just as in other domains in which a CI analysis would seem to be *prima facie* plausible, there is the question of whether an alternative

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related to the notion of deviation from the norm that is perceived to be vividly present in other cases. Recall from the discussion above that *q* corresponds to the contradiction in the case of (56). Contradiction is in a sense the ultimate anomaly in the conversational situation, since once it ensues, there is no choice for the interlocutors other than to backtrack and retract the problematic proposition. This being said, we leave it for future research to see whether a completely uniform analysis of *amari* is feasible or if it would be more appropriate to adjust the modal base in different syntactic/semantic environments explicitly so as to bring the analysis in line with the intuitively available interpretations in the respective cases.

presuppositional analysis (such as the one proposed by Onea and Sailer [2013] for *all that* in English) can be safely eliminated. We feel that this (often posed) “presupposition or CI?” question is potentially quite misleading as it foregrounds too much false dichotomy, and that a more productive way of making sense of the underlying factors involved will ultimately come from characterizing the nature of these meanings more precisely. As we have emphasized throughout this paper, the “non-asserted” meanings of *amari* and *sonnani* are fundamentally discourse-oriented, where the notion “discourse-oriented” itself needs to be understood in a broader sense than what this term is typically understood to mean. It is interesting to note in this connection that other polarity-sensitive expressions in Japanese that have looser licensing conditions than strictly negative environments often exhibit sensitivity to modality or likelihood/plausibility scales pertaining to presumptions of speakers and hearers (see, e.g., Tanaka, Mizutani and Solt (this volume); Sawada (this volume); Kinuhata (this volume); Sawada (2018); Ido (2017, 2023); Kubota (2021)). Exploring the dynamic interactions between such discourse-oriented factors and the grammatical functions that these polarity expressions serve is a particularly promising direction to pursue in future work.

The conceptual issue noted above relates closely to the technical issue. What seems clear at this point is that we need a model of discourse that takes into account the interactions between interlocutors explicitly. Moreover, the model needs to embody an architecture in which such interactions are sensitive to the sentence-internal compositional semantics involving “truth-functional” operators such as negation, interrogative, and conditional operators. The challenge here is that, so far as we are aware, there is as yet no formal model of discourse that satisfies both these criteria adequately. The most promising line of work is the body of literature starting with the seminal work by Farkas and Bruce (2010). This line of work has so far mainly focused on phenomena directly pertaining to speech act at the main-clause level (see, e.g., Malamud and Stephenson 2015; Bledin and Rawlins 2020; Jeong 2021). However, there have been some promising attempts recently at extending this approach to finer-grained and more complex aspects of discourse update pertaining to sentence-internal compositional semantics with conditional and modal operators (Bledin and Rawlins 2019; Yang 2021). This seems to be a good starting point for a formal theory of

dynamic compositional discourse semantics in which we can define the key notions that we have utilized in this paper (such as “reluctant to commit oneself to the truth of  $p$ ”) more precisely. We are not yet there, but we believe that our discussion in this paper can potentially inform a very exciting development in the construction of a formal theory in this empirical domain.

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

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

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



‘Each paragraph should be concise; if it is too long, it is difficult to read.’  
(LBc8\_00002: 22750)

(63) *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: 81310)

b. *Ryoosyuusho-no nai bun-ga amari ooke-reba sore-mo*  
receipts-NOM nothing rate-NOM AMARI a.lot-COND that-also  
*mondai-da-si ...*  
problem-COP-SFP  
‘If the percentage without receipts is too high, there is a problem.’  
(LBi9\_00092: 27290)

(64) *sonnani tongat-te bakari i-ru-to syusse*  
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: 10680)

(65) *sonanni* in *tara*-conditional

*Anata-ga sonnani okorippoi-to sit-te-i-tara*  
you-NOM SONNANI irascible-COMP know-te-INPRF-COND  
*tokkuni anokata-wa aitenisi-nakat-ta-noni.*  
a.long.time.ago he.POL-TOP deal.with-NEG-PST-though  
‘If he had known that you were so irascible, he would have stopped dealing with you a long time ago.’  
(LBj9\_00214: 41970)

(66) *sonanni* in *tara*-conditional

*Kono-yononaka-ni sonnani erai hito-ga iru-nara itido*  
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 would definitely want to meet him', I thought, so, I went to meet that guy, and then ...'

(LBg7\_00024: 44400)

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

*Sonnani*      *hosike-rya*      *ya-ru-yo*.

SONNANI    want-COND    give-NPST-SFP

'If you want this so badly, you can have it.'

(LBmn\_00017: 17120)