

Chapter 15

Domain size matters: An exceptive that forms strong NPIs

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The study of exceptives provides important insights into the nature of negative polarity items (NPIs). Specifically, the NPI nature of exceptive phrases in English can be transparently related to the compositional operation of shrinking the domain of a quantifier. But we show that exceptive phrases in Japanese form strong NPIs while English exceptives form weak NPIs. We account for the difference between Japanese and English by suggesting that exceptives in the two languages select different exhaustification operators. Our result may provide a new avenue towards understanding the difference between strong and weak NPIs.

1 Introduction

A frequent route of inquiry in linguistics and other fields of science is to understand complex properties of a structure by first decomposing the structure into its pieces and to then analyze how the different pieces give rise to the complex properties. The understanding of the complex behavior of negative polarity items (NPIs) has been greatly advanced by a series of papers on exceptives by von Stechow (1993), Gajewski (2008), and Hirsch (2016) that follows this route. Specifically, the underlying assumption of this line of work has been that the NPI nature of some English exceptives derives from their compositional structure and its interaction with the environment it occurs in. The idea is that the function of an exceptive can only make sense in an environment that licenses NPIs, i.e. an *antitone* envi-



ronment.¹ We introduce this idea by means of example (1) here, and then in more general terms in §3.

Polarity phenomena relate closely to quantification in language. Quantificational meaning depends on the size of the domain of a quantifier. An exceptive phrase in a quantificational statement provides a way to restrict the domain of the quantifier. Consider for example the English sentence (1).

- (1) No player but Susi has access to the ocean.

The exceptive phrase *but Susi* in (1) has a number of semantic effects. The primary one is to reduce the size of a domain as illustrated below: If *s* representing Susi was an element of the domain of players, the exceptive *but Susi* forms a smaller domain where *s* is no longer an element.

$$\begin{array}{ll} \text{player:} & \{s, j, u, k\} \\ \text{player but Susi:} & \{j, u, k\} \end{array}$$

The immediate effect of the exceptive is then that (1) expresses a generalization over a domain that Susi is no longer part of: (1) requires that players *j*, *u*, and *k* have no access to the ocean, but exempts Susi.

In fact, (1) provides more information about Susi than merely exempting her. We infer from (1) that Susi does have access to the ocean. This inference can be derived as an implicature of the domain size reduction by the exceptive: Roughly speaking, we assume that the speaker's reason for exempting Susi must be that (1) would be false without the exceptive. That means that the speaker must believe that the property *has access to the ocean* must be false of each player in $\{j, u, k\}$, but true of at least one player from $\{s, j, u, k\}$, which entails that it must be true of *s*. In other words, Susi must have access to the ocean.

The implicature provides an insightful approach to the NPI distribution of exceptives in English. Briefly compare the ungrammatical (2) with (1).

- (2) * Some player but Susi has access to the ocean.

The line of explanation we adopt is based on the fact that the implicature predicted for (2) stands in contradiction to the primary meaning of (2): Namely, the primary meaning asserts that one player from $\{j, u, k\}$ has access to the ocean.

¹We use the traditional order-theoretic terms *isotone* and *antitone* (Birkhoff 1940) because they are more concise and widely accepted than their synonyms. Specifically the terms *upward entailing* or *upward monotone* and *downward entailing* or *downward monotone* are synonyms of *isotone* and *antitone*, respectively, that are used widely in linguistics.

But the implicature requires that no player from the set $\{s, j, u, k\}$ has access to the ocean. Both cannot be true at the same time. The ungrammaticality of (2) follows from the contradiction we just observed if we make two further assumptions: 1) implicatures of the type we observe here with exceptives are obligatory inferences and 2) contradictions of the type we observe here can lead to the perception of ungrammaticality. Both assumptions, surprising as they may initially seem, have been supported by a number of interesting further predictions they make (Chierchia 2013, and others). We therefore adopt the approach just outlined, which we discuss in more detail in §3 below.

Our main concern in this paper is Japanese data with *sika* such as (3). *Sika*-phrases have been analyzed as exceptives by Alonso-Ovalle & Hirotani (2004), Yoshimura (2007), Kawahara (2008), and Shimoyama (2011).² But these works have assumed that *sika* is construed with a silent universal quantifier, while we argue that a silent existential quantifier makes better predictions.

- (3) Pureeyaa-wa Susi-sika umi-ni akusesu-ga nai.
 player-TOP Susi-SIKA ocean-to access-NOM NEG
 ‘No player but Susi has access to the ocean.’

Sika-phrases share the basic NPI distribution of English exceptives. Note that the Japanese example does not contain a negative quantifier corresponding to *nobody*, but instead contains *sika* and the sentential negation *nai* (‘not’). The distribution of *sika* is restricted, as shown by the ungrammatical (4), where the sentential negation of (3) is left out.

- (4) * Pureeyaa-wa Susi-sika umi-ni akusesu-ga aru.
 player-TOP Susi-SIKA ocean-to access-NOM exist

The contrast between (3) and (4) in Japanese closely resembles the one between (1) and (2) in English. But we show below that, overall, the distribution of *sika*-phrases is actually more restrictive than that of *but*-exceptives in English. In §2.3, we discuss the relation of *sika*-phrases in Japanese and one frequent way of expressing negative quantifiers in Japanese, an indeterminate phrase like *nani* (‘what’) with the particle *mo* (‘all’, ‘also’), and the sentential negation. In §2, we propose that the difference in distribution between *but*-exceptives and *sika*-phrases is parallel to that between weak and strong NPIs. We then present

²Other authors like Hasegawa (2010) argue against an exceptive analysis of *sika*. Items similar to *sika* seem to also exist at least in Korean (*pukkey*, Sells 2001 and others) and French (*ne ... que*, von Stechow & Iatridou 2007 and others), and have also been analyzed as exceptives at least in the works cited here.

in §3 a semantic proposal based on the work of Gajewski (2011) to account for the strong NPI distribution of *sika*-phrases, and also account for the difference between *sika*-phrases and negative concord. We conclude with a summary of the stipulations required for our analysis.

2 The distribution of *sika*-exceptives

In this section, we argue that Japanese *sika*-phrases have the distribution of strong NPIs while English *but*-exceptives have the distribution of weak NPIs. As we saw in the introduction, exceptives, like other NPIs, are licensed only in the immediate scope of operators that are antitone in a sense to be specified. In this section, we compare the distribution of *sika*-phrases with that of *but*-exceptives, that of other weak NPIs like *ever*, and that of strong NPIs like *in weeks* in English. In the following two subsections, we first consider environments that license both strong and weak NPIs, and then environments that only license weak NPIs. The generalization we substantiate is that *sika*-phrases share the distribution of English strong NPIs rather than that of *but*-exceptives. In the final subsection, we show that *sika*-phrases are licensed in many environments where also negative concord items are licensed in Japanese, but that there are also differences between the two.

2.1 Strong NPI licensing environments

Environments that license strong NPIs like *in weeks* in English are the immediate scope of negation, the scope of *without*, and the scope of negative universal quantifiers like *nobody*. Furthermore, the quantifier *few* is in some cases capable of licensing strong NPIs, but the matter is a bit complex (see the discussion by Chierchia 2013) and since there is no lexical item corresponding to *few* in Japanese, we will not discuss *few* in this paper. As far as we know, any environment that licenses strong NPIs also licenses weak NPIs.³ English *but*-exceptives are licensed in the scope of negation, as (5) illustrates.

- (5) Susi didn't choose any number but 11.

The parallel example (6) shows that a *sika*-phrase associated with the object noun *player-o* is licensed by clausal negation as well.

- (6) Susi-wa suuzi-wa 11-sika eraba-na-katta
 Susi-TOP number-TOP 11-SIKA choose-NEG-PAST
 'Susi didn't choose any number but 11.'

³In Slavic, there may be exceptions.

Moreover, example (7) shows that a bare *sika*-phrase is also licensed in the same structural configuration. In other words, the Japanese *sika*-phrase does not need an associated NP that defines its domain of alternatives.

- (7) Susi-wa 11-sika eraba-na-katta
 Susi-TOP 11-SIKA choose-NEG-PAST
 ‘Susi chose only 11.’

One difference between English and Japanese arises with subjects: While a clause-mate negation does not license an NPI in subject position in English (with some exceptions, see Uribe-Etxebarria 1995), NPIs in subject position are generally licensed by clausal negation in Japanese. We think such differences relate to cross-linguistic differences in the position of the subject of the type Wurmbrand (2006) discusses. Thus, the fact that in examples like (9) *sika* is licensed is expected and should not be attributed to differences between English *but* and Japanese *sika*, but to different structural properties of the two languages.⁴

- (8) * Anybody but Susi didn’t eat sushi.
 (9) Susi-sika sushi-o tabe-na-katta.
 Susi-SIKA sushi-ACC eat-NEG-PAST
 ‘Nobody but Susi ate Sushi.’

The requirement to be in the immediate scope of the licenser is an important property of polarity licensing, but one that does not distinguish between strong and weak licensing. Therefore, we do not explore this issue in detail here, but note that negation in restructuring environments (Wurmbrand 2001) can license a *sika*-phrase associated with the embedded object position (Muraki 1978).

- (10) Susi-ga [Kazuko-ga kanozyo-to-sika kaado-o kookan-suru yooni
 Susi-NOM Kazuko-NOM she-with-SIKA card-ACC trade-do COMP
 nozoma-naka-tta.]
 hope-NEG-PAST
 ‘Susi didn’t hope for Kazuko to trade cards with anyone but her.’

⁴Also, negative concord items are licensed in the subject position of a negated verb in Japanese:

- (i) Dare-mo sushi-o tabe-na-katta.
 IND-MO sushi-ACC eat-NEG-PAST
 ‘Nobody ate sushi.’

The argument of *without* is another environment where NPIs are licensed in English. There is no general counterpart in Japanese for the English expression *without* across all its possible uses. But in some cases, the suffix *nasi*, as in *hituzi-nasi* ('without sheep'), can be used. A *sika*-phrase is licensed within this structure, as shown below.

- (11) Susi-wa 11-sika-nasi-de ka-tta.
 Susi-WA 11-SIKA-without-at win-PAST
 'Susi won without anything but 11.'

Licensors such as *without* are relevant for the classification of polarity sensitive words. We return to this topic below.

In English, *but*-exceptives are licensed in the scope of a negative quantifier, as the following example shows.

- (12) Nobody chose any resources but sheep.

The Japanese counterpart in (13), however, is not acceptable (Kawamori & Ikeya 2001). This is curious given that there is a sentential negation that could license *sika*.

- (13) *Dare-mo sigen-wa hituzi-sika tora-na-katta.
 who-MO resource-TOP sheep-SIKA take-NEG-PAST
 Intended: 'Nobody took any resources but sheep.'

When the subject is changed to a universal quantifier as in (14), however, the sentence becomes grammatical, suggesting that it is the existence of both a negative quantifier and the *sika*-phrase, both of which require a sentential negation, that affects the grammaticality.

- (14) Dare-mo-ga sigen-wa hituzi-sika tora-na-katta.
 who-MO-NOM resource-TOP sheep-SIKA take-NEG-PAST
 'Everybody took no resources but sheep.' (lit: 'Everybody didn't take any resources but sheep')

2.2 Weak NPI licensing environments

Now consider environments that license only weak NPIs, but not strong ones (Zwarts 1998, Gajewski 2011). Relevant environments in English are the restrictor of universal determiner quantifiers such as *every*, the restrictor of negative universal quantifiers such as *no*, the restrictor of free choice *any*, and conditional

clauses. As can be seen below, the strong NPI *in weeks*, for instance, is not licensed in any of these environments, as the following examples illustrate (Hoeksema 2005).

- (15) a. * Every player who won in weeks celebrated.
 b. * No player who won in weeks celebrated.
 c. * Susi can beat any player who won in weeks.
 d. * If Susi has won in weeks, she is happy.

As we consider exceptives in these four environments in turn, we will see that *but*-exceptives are licensed in all of them while *sika*-phrases are licensed in none of them.

2.2.1 Restrictor of a positive universal

The following two examples show that *but*-exceptives are licensed when it is in the restrictor of a positive universal, as illustrated by (16), or in a relative clause, if the restrictor of *every* is formed by a relative clause, as illustrated by (17).

- (16) Every player *but Susi* has access to the ocean.
 (17) Every number that anybody *but Susi* likes was rolled.

Before we consider universal quantifiers in Japanese, let us clarify the general structure of the expressions we focus on. First, there are a number of quantificational expressions with positive universal force in Japanese, just like in English. In this paper, we primarily focus on quantificational expressions formed with *indeterminate pronouns* (Nishigauchi 1990, Shimoyama 2006, Yatsushiro 2009, among others), but the generalizations we develop hold, as far as we know, for other quantificational expressions as well.

Second, the Japanese quantifiers that we focus on are created by combining an indeterminate pronoun and a dedicated suffix, as illustrated in the Table 1. The most well-known use of the indeterminate pronoun is as a *wh*-phrase. In Table 1, we list other uses that are relevant for the following discussion.

Let us now consider whether *sika*-phrases are licensed in the same environment as *but*-exceptives. The sentence (18) is the Japanese literal translation of (16). The example is ungrammatical because of the presence of the *sika*-phrase. This may be because the environment the *sika*-phrase occurs in cannot license it, though it may also be attributed to an impossibility to attach the *sika*-phrase to a quantified noun phrase.

Table 1: Relevant ways in Japanese to combine three selected Wh (or indeterminate) pronouns with a quantificational particle to form a universal, negative polarity or free choice item.

	<i>Wh</i>	Universal: <i>mo</i>	Negative: <i>mo</i>	Free choice: <i>demo</i>
who	dare	dare-mo-CASE	dare-mo	dare-demo
what	nani	nani-mo-CASE	nani-mo	nan-demo
which	dono	dono-NOUN-mo	dono-NOUN-mo	dono-NOUN-demo

- (18) *Dono pureeyaa-mo Susi-sika umi-ni akusesu-ga aru
 which player-MO Susi-SIKA ocean-to access-NOM exists.
 Intended: ‘Every player *but* Susi has access to the ocean.’

We do observe, however, that the same contrast between English and Japanese obtains also for the literal translation of (17) in (19), where the *sika*-phrase occurs inside of a relative clause. Since, in this case, the *sika*-phrase does not occur with an associated nominal phrase, only the lack of a licensing environment can explain the ungrammaticality of (19).

- (19) *Susi-sika suki-na dono-kazu-mo de-ta.
 Susi-SIKA like-cop which-number-MO turn.out-PAST

This contrasts with example (20) in which a negation is added to the relative clause internal verb.

- (20) Susi-sika suki-ja-nai dono-kazu-mo de-ta.
 Susi-SIKA like-cop-neg which-number-MO turn.out-PAST
 ‘Every number that nobody but Susi likes was rolled.’

2.2.2 The restrictor of negative universals

In English, the negative determiner *no* licenses a *but*-exceptive in its restrictor, as the following example illustrates (recall also (1)).

- (21) No family members but Susi took a development card.

The Japanese counterpart (22), however, is ungrammatical.

- (22) *Dono-kazoku-no itiin-mo Susi-sika kaado-o tora-na-katta
 which-family-GEN member-MO Susi-SIKA card-ACC take-NEG-PAST

Recall that the grammatical example (3) in the introduction involved a bare noun and a sentential negation, whereas the natural English translation involved a negative quantifier. The contrast of (22) to its English counterpart on the one hand, and to (3) on the other, both point to the impossibility of licensing a *sika*-phrase in the restrictor of a negative universal quantifier. To further strengthen this point, consider also some slightly different structures. Example (23) shows that a *sika* phrase is also ungrammatical in the restrictor of the Japanese equivalent of *nobody*.⁵

- (23) *Dare-mo Susi-sika 11-ni mati-ga na-katta.
 who-MO Susi-SIKA 11-to town-NOM NEG-PAST
 Intended: ‘Nobody but Susi had a town on 11.’

Example (24) shows that a *sika*-phrase is also not licensed in a relative clause that is part of the restrictor of *dare-mo + na* (‘nobody’) in Japanese. In sum, we conclude that *sika*-phrases are never licensed within the restrictor of a negative universal in Japanese.

- (24) *Susi-to-sika kaado-o kookan-si-ta dono-pureeyaa-mo
 Susi-with-SIKA card-ACC trade-do-PAST which-player-MO
 kata-na-katta.
 win-NEG-PAST
 Intended: ‘No player who traded with anyone but Susi won.’

As was the case with universal quantifiers, adding a negation to the relative clause internal position licenses the *sika*-phrase.

- (25) Susi-to-sika kaado-o kookan-si-naka-tta dono-pureeyaa-mo
 Susi-with-SIKA card-ACC trade-do-not-PAST which-player-MO
 kata-na-katta.
 win-NEG-PAST
 ‘No player who didn’t trade with anyone but Susi won.’

2.2.3 Scope of free choice items

Free choice *any/anyone* licenses *but*-exceptives, whether they are in the subject position, as in (26), or the rest of the clause, as in (27).

⁵The negative quantifier in (23) can be distinguished from a universal quantifier by the absence of a case marker and the prosody of the quantifier. See the further discussion in §2.3.

- (26) Anyone but Susi would take the resource with 6 over 11.
(27) Susi would trade a card for two cards with anyone but Uli.

Example (28) exemplifies free choice in Japanese. The counter part of free choice *any* can be created by combining an indeterminate pronoun with the suffix *demo*.

- (28) Susi-wa dare-to-demo iti-mai-no kaado-o ni-mai-no kaado-to
Susi-TOP who-with-DEMO 1-CL-GEN card-ACC 2-CL-GEN card-with
kookan-suru.
exchange-do
'Susi trades a card with two cards with anyone.'

But free choice does not license *sika*-phrases. Specifically, when we add a *sika*-phrase to (28), the sentence becomes ungrammatical:

- (29) *Susi-wa dare-to-demo Uli-to-sika iti-mai-no kaado-o ni-mai-no
Susi-TOP who-with-DEMO Uli-with-SIKA 1-cl-GEN card-ACC 2-cl-GEN
kaado-to kookan-suru.
card-with exchange-do
Intended: 'Susi trades one card for two cards with anyone but Uli.'

Since (29) may be ungrammatical for independent reasons, consider also (30), where the *sika*-phrase occurs in a relative clause inside the restrictor of free-choice *demo*. Since (30) is also ungrammatical, we conclude that *sika*-phrases are never licensed in the restrictor of free choice items.

- (30) *Susi-wa [hituzi-sika motteiru] dare-to-demo kaado-o kookan-suru.
Susi-TOP sheep-SIKA have who-with-DEMO card-ACC exchange-do
Intended: 'Susi would trade with anyone who has any card but sheep.'

The grammaticality improves with a relative clause-internal negation, as shown below.

- (31) Susi-wa [hituzi-sika motte-inai] dare-to-demo kaado-o
Susi-TOP sheep-SIKA have-NEG who-with-DEMO card-ACC
kookan-suru.
exchange-do
Intended: 'Susi would trade with anyone who has any card but sheep.'

2.2.4 Conditionals

Conditional clauses are another environment where a *but*-exceptive is licensed like other weak NPIs.

- (32) If any number but 7 is rolled, Susi will win.

But the Japanese counterpart of (32) in (33) is ungrammatical. Again the *sika*-phrase patterns with strong NPIs rather than weak NPIs.

- (33) * Suuzi-wa 7-sika de-tara, Susi-ga katu.
 number-TOP 7-SIKA come.out-COND Susi-NOM wins
 Intended: 'If any number but 7 is rolled, Susi wins.'

2.2.5 Questions

Questions are another environment where weak NPIs can be licensed, but strong NPIs never are.⁶ In questions, too, *but*-exceptives can be licensed, as shown in (34).

- (34) Does Jonathan need any other cards but sheep?

The ungrammaticality of (35), which is the Japanese counterpart of (34), shows that questions do not license a *sika*-phrase.

- (35) * Jonathan-wa hituzi-no kaado-sika iri-masu-ka?
 Jonathan-TOP sheep-GEN card-SIKA need-polite-Q
 Intended: 'Does Jonathan need any other cards but sheep?'

2.3 Negative quantifiers

Aoyagi & Ishii (1994), Kawahara (2008), Tanaka (1997), Yoshimura (2007), among others, draw parallels between the distribution of *sika* and negative concord in Japanese. Moreover, the data we have reviewed so far have shown a number of similarities between the two phenomena: both *sika*-phrases and negative concord items are licensed in the immediate scope of a clausal negation ((36) and (37) can be licensed when they occur in subject position (38)).

⁶The licensing of NPIs in questions presents several theoretical complications. See Nicolae (2015) for an account in terms of monotonicity.

- (36) Susi-wa dare-to-mo kaado-o kookan-si-na-katta.
 Susi-TOP who-with-MO card-ACC exchange-do-NEG-PAST
 ‘Susi didn’t exchange cards with anyone.’
- (37) *Susi-wa dare-to-mo kaado-o kookan-si-ta.
 Susi-TOP who-with-MO card-ACC exchange-do-PAST
- (38) Dare-mo Uli-to kaado-o kookan-si-na-katta.
 who-MO Uli-with card-ACC exchange-do-NEG-PAST
 ‘Nobody exchanged cards with Uli.’

Additionally, both types of items cannot be licensed by weak NPI licensing environments. Furthermore, the class of expressions that license *sika* and negative concord items exhibit further overlap. Namely, the expressions *nasi* (‘without’), *iya* (‘hate’), and *dame* (‘not good’) license both *sika* and negative concord items.

Example (11) above showed that *nasi* (‘without’) can license *sika*-phrases. *Nasi* can also license negative concord items in Japanese:

- (39) Kyoo-no geemu-wa hituji-igai [nani-mo nasi] datta.
 today-GEN game-TOP sheep-other.than what-MO without was
 ‘Today’s game was without anything other than sheep’

Hasegawa (2010) observes also that *iya* (‘dislike/hate’) licenses *sika*-phrase:

- (40) Rokku-sika iya.
 rokku-SIKA hate
 ‘I only like rock.’

We add to this the observation that *dame* (‘not good’) also licenses a *sika*-phrase, as shown in (41).⁷ *Dame* (‘not good’) also licenses negative concord items:

⁷Other predicates like *kirai* (‘dislike’) and *warui* (‘bad’) do not license a *sika*-phrase even though they have similar meanings to *iya* and *dame*, respectively. Their inability to license *sika* is shown by the following two examples:

- (i) *Otya-sika kirai.
 green.tea-SIKA hate
 Intended: ‘I only like green tea.’ (from Hasegawa 2010)
- (ii) *Hituzi-sika warui-desu.
 sheep-SIKA bad-copular
 Intended: ‘Nothing but sheep is good.’

- (41) Nani-mo iya / dame-desu
 what-MO hate / not.good-COP

Nevertheless, we think an account of *sika*-phrases as a negative concord item is not viable because there are also differences in the distributions of the two types of items. The parallels we just observed, we attribute to the presense of a silent negative marker licensing negative concord in the above. The main difference between *sika*-phrases and negative concord lies in how many *sika*-phrases and negative concord items can be licensed by a single negation. Namely, a single negation can license multiple negative concord items. But we show in the following that, if a negation licenses one *sika*-phrase, it cannot license any other *sika*-phrases. Example (42) illustrates that a single negation can license multiple negative concord items.

- (42) Dare-mo nani-mo tabe-na-katta.
 who-MO what-MO eat-NEG-PAST
 ‘Nobody ate anything.’ (literally: ‘Nobody didn’t eat nothing.’)

A single sentential negation, however, cannot license two *sika*-phrases, as Aoyagi & Ishii (1994), Kawahara (2008), Miyagawa et al. (2016) and others observe. For example, (43) is unacceptable.⁸

- (43) * Susi-sika 11-sika eraba-na-katta.
 Susi-SIKA 11-SIKA choose-NEG-PAST
 ‘Intended: Nobody but Susi chose nothing but 11.’

When either one of the occurrences of *sika* is replaced by another particle that means *only*, such as *dake* (‘only’), the sentence becomes grammatical again.⁹

⁸Miyagawa et al. (2016: (28b)) claim that two occurrences of *sika* can be licensed in a syntactic adjunct configuration. But the translation they offer reveals that the structure must be bi-clausal. If multiple licensing of *sika* was possible in (i), it should be understood similar to ‘I have been to Karaoke with Shiori alone only once’.

- (i) Karaoke-e-wa itido-sika Shiori-to-sika it-ta koto-ga nai.
 karaoke-to-TOP one.time-SIKA Shiori-with-SIKA go-PAST experience-NOM NEG
 ‘I have been to karaoke only once, only with Shiori.’

⁹Furthermore, *dake* can be suffixed to both subject and object.

- (i) Susi-dake-ga 11-dake-o eran-da.
 Susi-DAKE-NOM 11-DAKE-ACC choose-PAST
 ‘Only Susi chose only 11.’

- (44) Susi-sika 11-dake-o eraba-na-katta.
 Susi-SIKA 11-DAKE-ACC choose-NEG-PAST
 ‘Nobody but Susi chose only 11.’
- (45) Susi-dake-ga 11-sika eraba-na-katta.
 Susi-DAKE-NOM 11-SIKA choose-NEG-PAST
 ‘Only Susi didn’t choose anything but 11.’

These data show, then, that the reason the sentence in (43) is ungrammatical is because the sentential negation fails to license two *sika*-phrases. Furthermore, example (13) shows that a single negation cannot license both a negative concord item and a *sika*-phrase.

As we have seen above, the licensing environment of *but*-exceptives and *sika*-phrases are different: *sika*-phrases are licensed only in contexts that license strong NPIs, while *but*-exceptives can occur in both strong and weak NPI-licensing environments. In the next section, we propose a theoretical analysis of this generalization.

3 Analysis

In this section, we propose an account of the distribution of *sika* on the basis of an exceptive semantics. We first summarize a version of the analysis of *but*-exceptives in English that accounts for their weak NPI status. We then present a modification of that analysis to account for the strong NPI distribution of *sika*-exceptives. In a nutshell, we propose that, while both exceptives require obligatory exhaustification, they select for different exhaustification operators.

We adopt the analysis of Hirsch (2016) for *but*-exceptives, which integrates the insights of von Stechow (1993) and Gajewski (2008). The concept for *but* Hirsch proposes is the following:¹⁰

- (46) $\text{but} = \lambda x^e \lambda y^e . x \text{ and } y \text{ do not overlap.}$

In what follows, primarily one special case is relevant. Namely, if exceptive *but* applies to two atomic individuals, *x* and *y*, it requires that the two individuals be non-identical. Consider again the example (16) repeated in (47).

¹⁰We adapted the analysis of Hirsch (2016) to the meaning first approach (Sauerland & Alexiadou 2020), and assume that a concept *but* exists that is (at least frequently) realized by ‘but’ in English (i.e. *but* → ‘but’). This corresponds to the statement ‘[[*but*]] = but’ in an interpretive approach such as that of Heim & Kratzer (1998).

(47) Every player but Susi has access to the ocean.

According to (46), which atomic individuals satisfy the scope of the quantifier *every*? The intersection of the two *et*-predicates expressed by *player* and *but Susi* results in the predicate $\lambda x . \text{player}(x) \wedge x \neq \text{Susi}$. Concretely, if the set of players is $\{j, u, k, \text{Susi}\}$, *player but Susi* is true only of *j*, *u*, and *k*. For the sentence (47), we therefore derive the inference that *j*, *u*, and *k* each have access to the ocean. But this inference captures only part of the meaning of (47). The full meaning contribution of the exceptive amounts at least to the following three inferences:

- (48) 1. Every player other than Susi has access to the ocean.
 2. Susi is a player.
 3. Susi does not have access to the ocean.

The lexical meaning of *but* and the other sentence parts only predict inference 1 of this list. To capture inferences 2 and 3, Hirsch (2016) adopts the exhaustification operator **exh** (Chierchia 2013, Fox 2007). At this time, several different versions of **exh** are being discussed in the literature, including operators with different acronyms but a similar core semantics. We focus on the version in (49). For our purposes in this paper, **exh** takes a set of alternatives *A* and a proposition *p*, and asserts *p* while it negates all excludable alternatives to *p*.

(49) $\text{exh}(A)(p) \Leftrightarrow p \wedge \forall q \in \text{excludable}(p, A) \neg q$

The set of alternatives is, we assume, determined as in focus semantics since the set of focus alternatives and scalar alternatives are closely related to each other (Gotzner 2019 and others). The concept *excludable* is one of the major points of contention in the theory of exhaustification, and some aspects of the controversy are relevant to the understanding of polarity licensing. Specifically, Chierchia (2013) proposes that NPIs are ungrammatical outside of antitone environments because the application of **exh** gives rise to obligatory logical contradictions (cf. Crnič 2014). But **exh** can only give rise to logical contradictions if the notion of excludability is sufficiently lax. For concreteness, we adopt the idea that all non-weaker alternatives are excludable:

(50) $\text{excludable}(p, A) = \{q \in A \mid p \nrightarrow q\}$

Consider now how the addition of **exh** completes the account of (47) on the basis of the following representation:

(51) $\text{exh}(A) [\text{every player but Susi}_F \text{ has access to the ocean}]$

Assume still that the set of players is $\{s, j, k, u\}$ and that these also determine the alternatives under consideration. j, k and u all lead to excludable alternatives, and therefore the following truth/falsity requirements arise:

- (52) true: $\forall x: [\text{player}(x) \wedge x \neq s] \rightarrow \text{ocean-access}(x)$
 false: $\forall x: [\text{player}(x) \wedge x \neq j] \rightarrow \text{ocean-access}(x)$
 false: $\forall x: [\text{player}(x) \wedge x \neq k] \rightarrow \text{ocean-access}(x)$
 false: $\forall x: [\text{player}(x) \wedge x \neq u] \rightarrow \text{ocean-access}(x)$

If we compare the requirements in (52) to the three inferences in (48), the first line accounts directly for the inference 1 of (48) while inferences 2 and 3 follow from (52) in a less direct fashion. For inference 2, consider that the inference 1 would entail that all players have access to the ocean if Susi was not a player. But then none of the falsity-requirements in (52) could be false. Therefore, Susi must be a player. By the same line of reasoning, we can also infer from (52) that Susi must not have access to the ocean, i.e. inference 3 of (48).

In this way, the addition of **exh** completes the account of the meaning of (47). But **exh** also provides an account of the restricted distribution of *but*-exceptives. Consider for example the following:

- (53) * Some player but Susi has access to the ocean.

The truth and falsity conditions derived in the same scenario as above have existential quantifiers in the place of the universals of (52):

- (54) true: $\exists x: [\text{player}(x) \wedge x \neq s] \wedge \text{ocean-access}(x)$
 false: $\exists x: [\text{player}(x) \wedge x \neq j] \wedge \text{ocean-access}(x)$
 false: $\exists x: [\text{player}(x) \wedge x \neq k] \wedge \text{ocean-access}(x)$
 false: $\exists x: [\text{player}(x) \wedge x \neq u] \wedge \text{ocean-access}(x)$

It is easy to see that the four requirements cannot be simultaneously satisfied, i.e. they are logically contradictory.

Consider how the account extends to an example with an existential quantifier like *any*, as in (55), on the basis of representation (56). Though the exceptive is also attached to an existentially quantified nominal, namely *any player*, **exh** can take scope above the negation and therefore a contradiction does not arise.

- (55) Susi didn't trade with any player but Jonathan.
 (56) **exh**(A) [Susi didn't trade with any player but Jonathan_F]

To see that (56) is not contradictory, assume the same set of players as above with j representing Jonathan and that *Susi-trade-with* is the predicate λx . Susi traded with x . Then (56) amounts to the following truth and falsity requirements, which are structurally parallel to (54), but because of the negation the opposite truth values are required in each of the four lines. Therefore, the requirements (57) are logically consistent, and require that Susi traded with Jonathan and did not trade with any of the other players.

- (57) false: $\exists x: [\text{player}(x) \wedge x \neq j] \wedge \text{Susi-traded-with}(x)$
 true: $\exists x: [\text{player}(x) \wedge x \neq s] \wedge \text{Susi-traded-with}(x)$
 true: $\exists x: [\text{player}(x) \wedge x \neq k] \wedge \text{Susi-traded-with}(x)$
 true: $\exists x: [\text{player}(x) \wedge x \neq u] \wedge \text{Susi-traded-with}(x)$

Let us now turn to *sika*. As we saw in §2, *sika*-phrases can occur both with an associated noun or without any associated noun, but they cannot occur with a quantified noun phrase. This suggests that *sika*-phrases have a quantificational force as part of their lexical meaning, unlike *but*. Alonso-Ovalle & Hirotani (2004), Kawahara (2008) and Yoshimura (2007) suggest that *sika* has universal quantificational force. But we instead will assume *sika* has existential force, i.e. along the lines of English (5) just as e.g. Wurmbrand (2008) reconsidered the logical force of *nor*. The lexical entry in (58) provides an argument position for the associated noun phrase R , which we assume is filled by a null general noun when there is no overt associate.¹¹

- (58) $\text{sika} = \lambda x \in D_e \lambda R \in D_{et} \lambda S \in D_{et} \exists y \in D_e . x \neq y \wedge R(y) \wedge S(y)$

Consider how (58) accounts for the interpretation of (3), repeated in (59).

- (59) Pureeyaa-wa Susi-sika umi-ni akusesu-ga nai.
 player-wa Susi-SIKA ocean-to access-NOM NEG
 ‘No player but Susi has access to the ocean.’

To be non-contradictory, the negation must take scope above *sika* as sketched in (60) where we abstract away from aspects of (59) that are not relevant for our purposes such as tense, topic marking and the internal structure of the verbal complex. Note that our interpretation of the constituent *player-wa Susi-sika* is identical to the English *any player but Susi*. We assume, following the work on

¹¹Specifically, we assume that there is a concept general-noun = $\lambda x \in D_e . x$ which is realized by a null phoneme. If the content of the R -argument of *sika* is unpronounced, general-noun must occupy that position.

but-exceptives, that *sika* must be associated with an occurrence of **exh** and that the noun that *-sika* attaches to must receive focus, which **exh** must obligatorily associate with.

(60) **exh**(A) [*-sika* (Susi_F) (player) λx [x umi-ni akusesu-deki]] nai

The interpretation of (60) is parallel to that of (56) in the aspects relevant to the acceptability of *sika*. The truth and falsity requirements of (60) are shown in (61). The expressions in (61) are consistent; namely, a scenario where Susi has access to the ocean, and none of the other players does, satisfies all four requirements.

(61) false: $\exists x$: [player (x) $\wedge x \neq s$] & ocean-access(x)
 true: $\exists x$: [player (x) $\wedge x \neq j$] & ocean-acces(x)
 true: $\exists x$: [player (x) $\wedge x \neq k$] & ocean-acces(x)
 true: $\exists x$: [player (x) $\wedge x \neq u$] & ocean-acces(x)

The existential lexical entry for *sika* directly predicts that the version of (3) without negation in (4) is ungrammatical by virtue of being an obligatory contradiction. In contrast, a lexical entry for *sika* with universal force (Alonso-Ovalle & Hirotsu 2004, Kawahara 2008, Yoshimura 2006) would lead us to expect that a *sika*-phrase should be acceptable even when there is no negation in the sentence since the restrictor of a universal can license *but*-exceptives.¹²

The analysis up to now predicts the same distributional restriction for *but*-exceptives and *sika*-phrases. But the environments where *but*-exceptives and *sika*-phrases can occur are not exactly the same, as we discussed in §2. Specifically, we showed that *sika*-phrases are restricted to strong NPI licensing environments. For example, while a *but*-exceptive can occur in the restrictor of a universal quantifier (see (62)), a *sika*-phrase cannot.

(62) Every player who rolled anything but seven built a city.

Why do English and Japanese differ with respect to examples like (62)? We think the answer to this question lies in work on the distinction between weak and strong NPIs by Gajewski (2011) and Chierchia (2013). In the following, we present an application of their ideas to exceptives.

The central insight of Gajewski (2011) is that the distinction between the pre-supposition and the assertion component of meaning plays a role in the distinction between weak and strong NPIs (see also Homer 2008). We use the *fraction* notation in the following to designate a proposition, following Harbour (2014): the

¹²Shimoyama (2011) also associates *sika* with universal force, but stipulates that it is a negative concord universal. Sells (2001) and von Stechow & Iatridou (2007) assume existential force for the Korean and French exceptives *pakkey* and *que*, respectively.

fraction a/p with numerator a and denominator p denotes the trivalent proposition with presupposition p and truth condition a .¹³ Using this notation, the lexical entry for English *every* in (63) captures that the universal quantifier carries an existential presupposition.

$$(63) \quad \text{every} = \lambda R \lambda S \frac{\forall x [R(x) \rightarrow S(x)]}{\exists x R(x)}$$

We furthermore adopt from Chierchia (2013) the proposal that two different exhaustification operators predict the distribution of strong and weak NPIs. We recast this implementation by replacing excludability as defined in (50) with the following two notions for exh_S and exh_W , respectively. The two are distinct only with respect to the concept of excludability, which we define as excludable_S and excludable_W respectively.¹⁴

$$\begin{aligned} \text{excludable}_S \left(\frac{a}{p}, A \right) &= \left\{ \frac{a'}{p'} \in A \mid p \nrightarrow p' \right\} \\ \text{excludable}_W \left(\frac{a}{p}, A \right) &= \left\{ \frac{a'}{p'} \in A \mid a \wedge p \wedge p' \nrightarrow a' \wedge p \wedge p' \right\} \end{aligned}$$

The two operators exh_S and exh_W replacing exh from (49) above are defined on the basis of these notions, but both specify the presuppositional and assertive component separately. The strong notion applies exclusion only in the presuppositional component.

$$\text{exh}_S(A) \left(\frac{a}{p} \right) \Leftrightarrow \frac{a}{p \wedge \forall \frac{a'}{p'} \in \text{excludable}_S \left(\frac{a}{p}, A \right) \neg p'}$$

¹³The role of numerator and denominator is the inverse of the notation one of us used in earlier work (Sauerland 2005). As Harbour notes, the inversal leads to the mnemonic corollarries that $a/1 = a$ and that $a/0$ is undefined.

¹⁴In this definition, the strong notion doesn't always denote a superset of the weak one (i.e. $\text{excludable}_S(a/p, A) \supset \text{excludable}_W(a/p, A)$; also, no superset relationship obtains in the opposite direction, but that is desirable). For example, if $p = p' = x \vee y$, $a = x$, and $a' = y$ for two logically independent propositions x and y with a'/p' in the alternative set A of a/p , then $a'/p' \notin \text{excludable}_S(a/p, A)$, but $a'/p' \in \text{excludable}_W(a/p, A)$. Because only a superset relationship would make a contradiction more likely to arise, Chierchia (2013) doesn't predict that strong NPIs necessarily occur in a proper subset of the environments that license weak NPIs. We leave the question whether such environments can be constructed to be explored in future work.

The weak notion, on the other hand, applies exclusion in the assertive component only.

$$\mathbf{exh}_W(A) \left(\frac{a}{p} \right) \Leftrightarrow \frac{a \wedge \forall \frac{a'}{p'} \in \text{excludable}_W \left(\frac{a}{p}, A \right) \neg a'}{p}$$

To understand the distribution of NPIs, we need to understand under what conditions \mathbf{exh}_S and \mathbf{exh}_W give rise to a contradiction and more specifically, how this contradiction can be resolved. Before we look at the concrete case, some general considerations: We only need to consider an item that is blocked in an isotone environment – i.e. gives rise to a contradiction. The exclusion of a single alternative must be consistent with assertion or presupposition of the uttered sentence by the definitions of excludability. Therefore, the contradiction must derive from multiple alternatives. Furthermore the contradictory alternatives cannot stand in a logical entailment relation to each other since otherwise one would be sufficient to trigger a contradiction.

Concretely, consider (62) now. From (63), the sentence meaning prior to exhaustification (64) follows, where we indicate a and p corresponding to the preceding discussion.

$$(64) \quad \frac{a}{p} = \frac{\forall x [\exists n \neq 7 \text{ roll}(n)(x) \rightarrow \text{build}(\text{city})(x)]}{\exists x \exists n \neq 7 \text{ roll}(n)(x)}$$

The relevant alternatives for the exhaustification of (64) are of the form (65), corresponding to a' and p' as indicated for an $m \in \{2, \dots, 12\}$ with $n \neq 7$.

$$(65) \quad \frac{a'(m)}{p'(m)} = \frac{\forall x [\exists n \neq m \text{ roll}(n)(x) \rightarrow \text{build}(\text{city})(x)]}{\exists x \exists n \neq m \text{ roll}(n)(x)}$$

For example with $m = 11$, the negation of the presupposition of (65), $\neg p'(11)$ can be paraphrased as ‘Nobody rolled anything but 11.’ It is possible to see that the conjunction of all $\neg p'(m)$ with $m \neq 7$ contradicts the presupposition p of (64). At the same time, the negated assertion $\neg a'(11)$ is paraphraseable as ‘Somebody rolled a number other than 11 and didn’t built a city.’ The conjunction of all $\neg a'(m)$ with $m \neq 7$ is consistent with a of (64), as can be seen from a scenario where somebody rolled a 7 and didn’t build a city.

In sum, we have shown that exceptives are expected to be licensed in an environment when they associate with \mathbf{exh}_W , but not when they associate with \mathbf{exh}_S . We showed this only for the specific case of the restriction of a presuppositional universal quantifier, but this suffices for our purposes here. We showed

that despite the same lexical meaning, different distributions are predicted for exceptives if they select different **exh** operators. In other words, the difference between English *but*-exceptives and Japanese *sika*-phrases relates to the still unexplained differences in the **exh**-operator selection properties of strong and weak NPIs. We can hope therefore that the different exceptives may help us to understand this difference even better in the future.

We think our proposal can also shed light on the one difference between negative concord items in Japanese and *sika*-phrases. Specifically, we noted that a single negation cannot license multiple *sika* phrases in the following Japanese example (repeated from 43 above):

- (66) *Susi-sika 11-sika eraba-na-katta.
 Susi-SIKA 11-SIKA choose-NEG-PAST
 Intended: ‘Nobody but Susi chose nothing but 11.’

The ungrammaticality of (66) follows from our proposal if the *sika*-phrase itself intervenes for the licensing of strong NPIs, i.e. if the semantics of *sika* imposes a presupposition on their scope. A presuppositional semantics is indeed what von Stechow & Iatridou (2007: 461–462) for independent reasons propose for the French exceptive *que*. We propose the following revised lexical entry for *sika* to replace (58):¹⁵

$$(67) \quad \text{sika} = \lambda x \in D_e \lambda R \in D_{et} \lambda S \in D_{et} \frac{\exists y \in D_e . x \neq y \wedge R(y) \wedge S(y)}{\exists y \in D_e S(y)}$$

Adding the presupposition predicts that in the configuration sketched below the lower *sika*-phrase is not licensed.

- (68) **exh**_S [¬ [Susi-sika [11-sika ...]]]

In sum, our account of *sika* as an exceptive with existential force predicts the strong-NPI distribution of *sika*-phrases and also the difference between negative concord items and *sika*-phrases.

¹⁵von Stechow & Iatridou (2007) discuss two different proposals and we follow the second suggestion here for reasons of concreteness. Their other proposal would adopt the presupposition $S(x) = 1$, as outlined in (67). Neither the evidence they present nor ours provides decisive evidence to distinguish between the proposals.

4 Conclusion

In this paper, we argued that *sika*-phrases in Japanese should be analyzed as exceptives associated with existential force. While this proposal is new for Japanese *sika*, similar proposals have been made for *pukkey* in Korean (Sells 2001) and for *que* in French (von Stechow & Iatridou 2007). Furthermore, our focus has been to derive the distribution of *sika*-phrases from this proposal. We have shown that *sika*-phrases have the distribution of strong NPIs in contrast to *but*-exceptives in English, which have the distribution of weak NPIs. We also showed that the distribution of *sika*-phrases is different from that of negative concord items in Japanese. To derive the basic properties of *sika*-phrases and their distribution within the theory of NPI licensing of Gajewski (2011) and Chierchia (2013), we introduced the following four stipulations:

- the restrictor of *sika*-phrases can remain silent,
- the quantificational force associated with *sika*-phrases must remain silent and is always existential,
- *sika* must be related to strong exhaustification operator exh_S , and
- *sika* introduces an existential presupposition on scope.

At least the first three, and possibly all four stipulations do not apply to English *but*-exceptives, while at least three of the stipulations apply also to Korean *pukkey* and French *que*.

In future work, we hope to understand whether the four stipulations above can be derived from fewer assumptions. We think the contrast between the *but*- and *sika*-exceptives is a novel case of a pair of strong and weak NPIs that seem to have the same core meaning, perhaps even more so than English NPI pairs such as the strong *in weeks* and the weak *ever*. The case discussed in this paper may be of further theoretical interest since exceptives give rise to their polarity property in a more transparent fashion than other NPIs.

Abbreviations

ACC	Accusative	GEN	genitive	NOM	nominative
CL	classifier	IND	indeterminate	NPI	negative polarity
COMP	complementizer		pronoun		item
COP	copular	NEG	negation	TOP	topicalization

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References

- Alonso-Ovalle, Luis & Masako Hirotani. 2004. *A negative concord exceptive: Japanese sika*. Poster, NELS 35.
- Aoyagi, Hiroshi & Toru Ishii. 1994. On NPI licensing in Japanese. In *Japanese/Korean linguistics 4*, 295–311. Stanford, Calif.: CSLI Publications.
- Birkhoff, Garrett. 1940. *Lattice theory* (Colloquium Publications 25). Providence, R.I.: American Mathematical Society.
- Chierchia, Gennaro. 2013. *Logic in grammar: Polarity, free choice, and intervention*. Oxford, UK: Oxford University Press. DOI: 10.1093/acprof:oso/9780199697977.001.0001.
- Crnič, Luka. 2014. Non-monotonicity in NPI licensing. *Natural Language Semantics* 22. 1–49. DOI: 10.1007/s11050-014-9104-6.
- Fox, Danny. 2007. Free choice and the theory of scalar implicatures. In Uli Sauerland & Penka Stateva (eds.), *Presupposition and implicature in compositional semantics*, 71–120. Basingstoke, UK: Palgrave Macmillan. DOI: 10.1057/9780230210752.
- Gajewski, Jon. 2008. NPI *any* and connected exceptive phrases. *Natural Language Semantics* 16. 69–110. DOI: 10.1007/s11050-007-9025-8.
- Gajewski, Jon. 2011. Licensing strong NPIs. *Natural Language Semantics* 19. 109–148. DOI: 10.1007/s11050-010-9067-1.
- Gotzner, Nicole. 2019. The role of focus intonation in implicature computation. *Natural Language Semantics* 27. 189–226. DOI: 10.1007/s11050-019-09154-7.
- Harbour, Daniel. 2014. Paucity, abundance, and the theory of number. *Language* 90. 185–229. DOI: 10.1353/lan.2014.0003.

- Hasegawa, Akio. 2010. *The semantics and pragmatics of Japanese focus particles*. Buffalo, N.Y.: State University of New York. (Doctoral dissertation).
- Heim, Irene & Angelika Kratzer. 1998. *Semantics in generative grammar*. Oxford, UK: Blackwell.
- Hirsch, Aron. 2016. An unexceptional semantics for expressions of exception. *University of Pennsylvania Working Papers in Linguistics* 22. Article 16. <http://repository.upenn.edu/pwpl/vol22/iss1/16>.
- Hoeksema, Jack. 2005. *In days, weeks, months, years, ages*: A class of temporal negative polarity items. In Dicky Gilbers & Petra Hendriks (eds.), *Rejected papers: Feestbundel voor Ron van Zonnevel*, 72–85. Groningen, Netherlands: University of Groningen.
- Homer, Vincent. 2008. Disruption of NPI licensing: The case of presuppositions. In *Semantics and linguistic theory*, vol. 18, 429–446. DOI: 10.3765/salt.v18i0.2483.
- Kawahara, Koji. 2008. A new perspective on Japanese *sika-nai* construction. In Martin Walkow & Emily Elfner (eds.), *Proceedings of NELS 37*, vol. 2, 1–14.
- Kawamori, Masahito & Akira Ikeya. 2001. Japanese negative polarity items and negative concord. In *Proceedings of the 15th Pacific Asia conference on language, information and computation*, 85–96. Chinese & Oriental Languages Information Processing Society. <http://hdl.handle.net/2065/12103>.
- Miyagawa, Shigeru, Nobuaki Nishioka & Hedde Zeijlstra. 2016. Negative sensitive items and the discourse-configurational nature of Japanese. *Glossa* 1(33). DOI: 10.5334/gjgl.6.
- Muraki, Masatake. 1978. The *sika nai* construction and predicate restructuring. In John Hinds & Irwin Howard (eds.), *Problems in Japanese syntax and semantics*, 155–177. Tokyo: Kaitakusha.
- Nicolae, Andreea C. 2015. Questions with NPIs. *Natural Language Semantics* 23. 21–76. DOI: 10.1007/s11050-014-9110-8.
- Nishigauchi, Taisuke. 1990. *Quantification in the theory of grammar*. Dordrecht, Netherlands: Kluwer Academic Publishers. DOI: 10.1007/978-94-009-1972-3.
- Sauerland, Uli. 2005. Don't interpret focus! why a presuppositional account of focus fails and how a presuppositional account of givenness works. In Emar Maier, Corien Bary & Janneke Huitink (eds.), *Proceedings of Sinn und Bedeutung 9*, 370–384. Nijmegen: Radboud University Nijmegen. DOI: 10.18148/sub/2005.v9i0.775.
- Sauerland, Uli & Artemis Alexiadou. 2020. Generative grammar: a meaning first approach. *Frontiers in Psychology* 11. 3104. DOI: 10.3389/fpsyg.2020.571295.
- Sells, Peter. 2001. Negative polarity licensing and interpretation. *Harvard studies in Korean linguistics* 9. 3–22.

- Shimoyama, Junko. 2006. Indeterminate phrase quantification in Japanese. *Natural Language Semantics* 14. 139–173. DOI: 10.1007/s11050-006-0001-5.
- Shimoyama, Junko. 2011. Japanese indeterminate negative polarity items and their scope. *Journal of Semantics* 28. 413–450. DOI: 10.1093/jos/ffr004.
- Tanaka, Hidekazu. 1997. Invisible movement in *sika-nai* and the linear crossing constraint. *Journal of East Asian Linguistics* 6. 143–188. DOI: 10.1023/A:1008202213790.
- Uribe-Etxebarria, Myriam. 1995. Negative polarity item licensing, indefinites and complex predicates. In *Proceedings of SALT 5*, 346–361. Linguistic Society of America. DOI: 10.3765/salt.v5i0.2697.
- von Stechow, Kai. 1993. Exceptive constructions. *Natural Language Semantics* 1. 123–148. DOI: 10.1007/BF00372560.
- von Stechow, Kai & Sabine Iatridou. 2007. Anatomy of a modal construction. *Linguistic Inquiry* 38. 445–483. DOI: 10.1162/ling.2007.38.3.445.
- Wurmbrand, Susanne. 2001. *Infinitives: Restructuring and clause structure* (Studies in Generative Grammar 55). Berlin: Mouton de Gruyter. DOI: 10.1515/9783110908329.
- Wurmbrand, Susi. 2006. Licensing case. *Journal of Germanic Linguistics* 18. 175–236. DOI: 10.1017/S1470542706000079.
- Wurmbrand, Susi. 2008. *Nor*: neither disjunction nor paradox. *Linguistic Inquiry* 39(3). 511–522. DOI: 10.1162/ling.2008.39.3.511.
- Yatsushiro, Kazuko. 2009. The distribution of quantificational suffixes in Japanese. *Natural Language Semantics* 17. 141–172. DOI: 10.1007/s11050-009-9044-8.
- Yoshimura, Keiko. 2006. The semantics of focus particle *shika* ‘only’ in Japanese. In Erin Bainbridge & Brian Agbayani (eds.), *Proceedings of the thirty-fourth Western conference on linguistics*, 499–512.
- Yoshimura, Keiko. 2007. *Focus and polarity: Even and only in Japanese*. The University of Chicago. (Doctoral dissertation).
- Zwarts, Frans. 1998. Three types of polarity. In Fritz Hamm & Erhard W. Hinrichs (eds.), *Plurality and quantification*, 177–238. Kluwer. DOI: 10.1007/978-94-017-2706-8_5.

