Negative concord vs. negative polarity in Japanese: Focusing on argument-adjunct asymmetry*

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Park, Kang-Hun. 2017. Negative concord vs. negative polarity: Focusing on argument-adjunct asymmetry. Linguistic Research 34(2), 225-246. This paper aims to explore some of the behaviors observed in Negative Sensitive Items (NSI) in Japanese. In particular, my main focus is placed on sika, which is one of Japanese NSIs. Whether sika can be regarded as an Negative Concord Item (NCI) or not has hitherto been a controversial issue. I argue that sika should be categorized into an NCI. Sika has interesting syntactic asymmetries, i.e. the asymmetries between sika with a hidden Case-marker (i.e. argument) and sika accompanied by a postposition (i.e. adjunct) in multiple NCI constructions. One of my empirical findings with respect to this asymmetry is that sika can co-occur with other NSIs such as wh+mo or 1+Classifier+mo only when the sika phrase is marked with a postposition but not with a hidden Case-marker. To resolve this problem, this paper proposes two different theoretical frameworks, i.e. similarity-based interference and prosody-syntax interaction in sentence comprehension. (Jeonju University)

Keywords negative concord item, negative polarity item, argument/adjunct asymmetry, similarity-based interference, prosody-syntax interaction

1. Introduction

In recent years, there has been a great deal of cross-linguistic research devoted to demonstrating the nature of Negative Sensitive Items (NSIs, henceforth). In

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1 This paper employs the terminology Negative Sensitive Item (Sells 2001) as a cover term referring to any element which is sensitive to the presence of negative items, although traditionally Negative
particular, the differences between Negative Polarity Items and Negative Concord Items have been widely explored in several languages (e.g., Vallduví 1994 on Catalan, Watanabe 2004 on Japanese among others).

In this study, I am primarily concerned with Japanese NSIs of three types, as shown in (1).

(1) Three types of Japanese NSIs
   a. *sika* (with negation, this forms a construction with the meaning of ‘only’)
   b. *wh+mo*: *dare-mo* ‘anyone’, *nani-mo* ‘anything’
   c. 1+Classifier+*mo* (Minimizers): *hitori-mo* ‘even one person’, *hitotu-mo* ‘even one thing’

Given this, the goal of the current study is to present some unique grammatical behavior observed in *sika* and also to demonstrate that *sika* can be categorized as a type of Negative Concord Items just like *wh+mo*.

The paper is organized as follows: Section 2 reviews some previous analyses on two different approaches to NSIs which are analyzed as Negative Polarity Items or Negative Concord Items. Section 3 clarifies the problems for those previous approaches in the case of the Japanese *sika* and show the argument-adjunct asymmetry. Section 4 specifically focuses on theoretical implications in regard to co-occurrence restrictions on Negative Concord Items. Section 5 concludes this study.

2. Previous studies: Negative polarity vs. negative concord

Japanese NSIs as seen in (1) have been assumed to be analyzed as Negative Polarity Items (NPIs, henceforth) following Klima (1964) (see Kato 1985; Kawashima and Kitahara 1992; Aoyagi and Ishii 1994 and the references cited there). NPIs are a class of expressions whose distribution is restricted to affective contexts, particularly to the negative context (see Kato 1985). However, Nishio
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(2000), Furukawa (2001), Watanabe (2004) and Park (2007) argue that Japanese NSIs are better viewed as Negative Concord Items (NCIs, henceforth) following Haegeman and Zanuttini (1991, 1996). Negative concord is a set of phenomena, mainly found in Romance languages, such as Italian and Catalan, in which multiple negative elements denote a single negative proposition, no matter how many negative elements appear in the sentence. Nishioka (2000), Furukawa (2001), Watanabe (2004) and Park (2007) show that both syntactically and semantically, Japanese NSIs behave as NCIs based on several diagnostics designed to draw distinctions between NPIs and NCIs. Watanabe (2004) claims that \(wh+mo\) and \(1+\text{Classifier}+mo\) should be classified as NCIs according to the diagnostics proposed by Vallduví (1994) and Giannakidou (2000) in order to distinguish NPIs and NCIs. The diagnostics in question are as follows:

3. The \textit{sika–nai} constructions in Japanese

3.1 Previous analyses: Is \textit{sika} NPI or NCI?

This study agrees with Watanabe’s (2004) line of reasoning which claims that \(wh+mo\) and \(1+\text{Classifier}+mo\) should be better viewed as NCIs; nevertheless he does not deal with other NSIs such as \textit{sika}. In fact, whether \textit{sika} can be analyzed as an NCI or not is a controversial issue. Nishioka (2000) and Furukawa (2001) argue that \textit{sika} should be diagnosed as an NCI because it behaves like NCIs in Romance languages.
However, it seems that their argument in terms of multiple NCI constructions is not a simple matter. NCIs in many languages can co-occur in the same clause; moreover, NCIs do not cancel each other out, but yield one semantic negation only, as shown in (3) (Haegeman 1995; Zeijlstra 2004; Watanabe 2004; Haegeman and Lohndal 2010). In other words, multiple NCIs can be licensed by the same neg-head.

(3) a. Da Vale’re an niemand niets nie gezeid (en)-oat. [West Flemish]
    ‘that Vale’re had not said anything to anyone.’
    (Haegeman 1995: 133)

b. Nikdo neda nikomu nic. [Czech]
   N-body.NOM neg gives n-body.ACC n-thing.DAT
   ‘Nobody gives anything to anybody.’ (Zeijlstra 2004: 62)

c. Mario non ha parlato di niente con nessuno. [Italian]
   ‘Mario hasn’t spoken with anyone about anything.’

d. Maria didn’t say nothing to nobody. [Non-Standard English]
   ‘Maria didn’t say anything to anyone.’ (Ladusaw 1992: 237)

In fact, Japanese wh+mo and I+Classifier+mo can co-occur in the same clause, as illustrated in (4).

(4) a. Dare-mo nani-mo tabe-nak-atta.
    who-MO what-MO eat-NEG-PAST
    ‘No one ate anything.’ (Park 2007: 156)

b. Dare-mo hon-o isa-ttu-mo kawa-nak-atta.
    who-MO a book-ACC 1-CL-MO buy-NEG-PAST
    ‘No one bought even a book.’ (Kato 1985: 155)

    student-NOM one-CL-MO beer-ACC 1-CL-MO drink-NEG-PAST
    ‘(Lit.) Not even one student drank even one glass of beer.’

Nonetheless, sika cannot occur with other NCIs such as wh+mo or I+Classifier+mo in the same clause, as shown in (5a) and (5b). Moreover, it is said
that multiple sikas are never allowed, as illustrated in (5c).

   John- SIKA what-MO eat-NEG-PAST
   ‘(Lit.) Only John ate nothing.’ (Aoyagi and Ishii 1994: 297)

   one-CL-MO apple-SIKA eat-NEG-PAST
   ‘(Lit.) Even a single person didn’t eat only apples.’ (Kato 1985: 155)

   John-SIKA apple-SIKA eat-NEG-PAST
   ‘(Lit.) Only John ate only apples.’ (Aoyagi and Ishii 1994: 297)

For such reason, sika cannot co-occur with wh+mo, I+Classifier+mo, or sika. Aoyagi and Ishii (1994) proposes a syntactic condition on sika as described below.

(6) Sika must have one-to-one relation with NEG.

According to the results of (3)-(6), it seems that sika cannot be analyzed as NCIs. However, I make new observations in order to show that sika behaves differently in multiple NCI constructions depending on what markers are attached: Case-markers or postpositions. So far, past studies have mainly focused on sika attached to Case-markers (i.e. argument). Now, it is time to examine sika attached to postpositions (i.e. adjunct). This leads us to conclude that sika should be analyzed as an NCI.

3.2 Empirical differences of sika: Case-markers vs. postpositions

This section clarifies that sika behaves differently depending on what markers are involved in multiple NCI constructions. Sika can be accompanied by a covert Case-marker and sika can also be accompanied by a postposition, as shown in (7) and (8).

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3 It seems that some researchers disagree on this (see Shimoyama (2011: 442)). However, most of my Japanese informants agree that sika, as shown in (5) cannot occur with other NCIs. The Japanese data that is reported here is based primarily based on judgments I received from up to fifty Japanese native linguists and fifty non-linguists.
(7) a. Taroo-sika ringo-o tabe-nak-atta.
   Taro-SIKA apple-ACC eat-NEG-PAST
   ‘Only Taro ate apples.’

   b. Taroo-wa ringo-sika tabe-nak-atta.
   Taro-TOP apple-SIKA eat-NEG-PAST
   ‘Taro ate only apples.’

    cottage-TOP here-from-SIKA see-NEG-PAST
    ‘We can see the cottage only from here.’

   b. Kono susi-wa kono shokudō-de-sika ajiwa-e-nai.
    this Sushi-TOP this restaurant-at-SIKA taste-can-NEG
    ‘(Lit.)We can eat this Sushi only at this restaurant.’

In (7), sika is attached to an element marked with nominative Case and is also accompanied by accusative Case (see Konomi (2000) for more details). On the other hand, sika in (8) is followed by postpositions -kara (from) or -de (at) (see Miyagawa 1989; Watanabe 2009 etc. concerning how Case-markers and postpositions are distinguished). When sika is attached to an element marked either with nominative Case or with accusative Case, those Case-markers are phonologically dropped, as in (9). When sika is attached to an element marked with postpositions, those markers have to be maintained, as in (10):

    John-Nom

    John-from

It has hitherto been assumed that both sika with a hidden Case-marker and sika attached to a postposition are identical. This is because sika has the same syntactic and semantic features wherever it is attached. However, these two types
distinguished by the attached markers behave differently in multiple NCI constructions.

3.2.1 *Sika* with postpositions

In Section 2, I reviewed some previous studies, where *wh+mo* in Japanese is categorized as NCIs but not as NPIs. Here, I use some of the tests of those previous studies used to clarify that *sika* attached to postpositions behaves like an NCI.

First, let us see multiple NCI test. *Sika* accompanied by a postposition can co-occur with other NCIs, such as *wh+mo*, *1+Classifier+mo*, or *sika* with postpositions, but *sika* with a hidden Case-marker\(^4\) cannot.

(11) a. Chika 5-kai-made-sika dare-mo itta-koto-ga nai
    basement 5th-floor-up-to-SIKA who-MO go-experience-NOM NEG
    ‘Everyone has been down only to 5th floor underground.’

b. Watasitati-wa uta-de-sika nani-mo kaese-nai.
    ‘We can’t pay [them] back with anything but a song.’ (Park 2014: 156)

(12) *(Lit.) Only John ate nothing.*

(13) a. Watasi-wa nonda-toki-ni-sika hitokoto-mo monku-o ie-nai
    I drunk-time-in-SIKA 1-CL-MO complaint-Acc say-can-NEG
danna-ga iya-desu.
    husband-Nom hate-Pres
    ‘I don’t like my husband who can’t [express] even one word of complaint except when he was drunk.’

b. Kanada-toka-wa-desune, chanto haizara-ga aru tokoro-de-sika
    canada-etc-TOP properly ashtray-NOM exist place-at-SIKA

\(^4\) Interestingly enough, there exist some constraints on multiple NCI constructions as follows: first, *sika* must precede *nani-mo*, and second, the host-NP of *1+Classifier+mo* must appear when it co-occurs with *sika*. See Park (2007) for more details.
In Canada, every man smokes only in the place where there are ashtrays. 'In Canada, every man smokes only in the place where there are ashtrays. ' (Park 2007: 167)

\[(14) \quad \text{*Hitori-mo ringo-sika tabe-nak-atta.} \]
\[1-CL-MO apple-SIKA eat-NEG-PAST \]
\[\text{‘(Lit.) Even a single person didn’t eat only apples.’} \quad (=(5b))\]

(15) a. (?)Hanako-wa itumo omaturi-no-toki-ni-sika jibun-no otōsan-to-sika
\[\text{Hanako-TOP always festival-GEN-time-at-SIKA her-GEN-dad-with-SIKA go} \]
\[\text{dekake-nai} \]
\[\text{out-NEG} \]
\[\text{‘(Lit.) Hanako always goes out only with her father only in a festival.’} \]

b. (?)Sui -tai -toki –ni-sika soko-de-sika tabako-o suwa-nai.
\[\text{smoke-want-when-at-SIKA there-in-SIKA cigarette-ACC smoke-NEG} \]
\[\text{‘(Lit.) I smoke only there only when I want to smoke.’} \quad \text{(Park 2007: 167)}\]

\[\text{John-SIKA apple-SIKA eat-NEG-PAST} \]
\[\text{‘(Lit.) Only John ate only apples.’} \quad (=(5c))\]

As mentioned in Section 3.1, NCIs are allowed to occur with other types of NCIs. Let us see how \textit{sika} behaves. (11), (13) and (15) are examples of how \textit{sika} with postpositions occurs with other NCIs: \textit{wh+mo} in (11), \textit{1+Classifer+mo} in (13) and \textit{sika} in (15). These examples are all acceptable. On the other hand, (12), (14) and (16) are the cases that \textit{sika} with hidden Case-markers occurs with other NCIs and these examples are unacceptable.

With respect to the other tests listed in (2), \textit{sika} with postpositions also meets some criteria for NCIs. First, let us see the elliptical answer test.

[Ability to be used as an elliptical answer]

(17) a. Q: Barentain dē-ni minna-kara chokorēto mora-tta no?

\[\text{Double sika constructions are marginal, as illustrated in (15); however, the constructions are much more natural than when they are attached to a Case-marker, as shown in (16).}\]
Valentine’s day-on everyone-from chocolate get-PAST-Q
‘Did you get chocolate from everyone on Valentine’s day?’
A: (Iya\(^6\)) Hanako-kara -sika.
   no   Hanako-from -SIKA
   ‘(No) Only from Hanako.’

b. Q: Ano nichiyōbi minna-to yūenchi-ni it-ta no?
    that Sunday everyone-with amusement park-LOC go-PAST Q
    ‘Did you go to the amusement park with everyone that
    Sunday?’
A: (Iya) Hanako-to-sika.
   no   Hanako-with-SIKA
   ‘(No) Only with Hanako.’

(17) is based on one of the diagnostics listed in (2d) in order to distinguish an NCI from an NPI: Only NCIs allow elliptical answers. What about the case of \textit{sika} with postpositions? \textit{Sika} can be used as an elliptical answer, as shown in (17). These examples imply that \textit{sika} accompanied by postpositions behaves similarly to NCIs.

Furthermore, \textit{sika} accompanied by a postposition cannot appear in nonnegative contexts, as in (18), just like NCIs, which is based on the test listed in (2a).

\begin{enumerate}
\item \textbf{[Ability to appear in nonnegative contexts]}
\item (18) a. *Hanako-wa Taro-to-sika osake-o non-da-no?
                 Hanako-TOP Taro-with-SIKA alcohol-ACC drink-PAST-Q
                 ‘Did Hanako drink alcohol only with Taro?’
\item b. *Mosi Hanako-ga Taro-to-sika osake-o non-dara,
\quad If  Hanako-NOM Taro-with-SIKA alcohol-ACC drink-COND
\quad watasi-ga okoru-deshō.
\quad I-NOM get angry-will
\quad ‘If Hanako drinks alcohol only with Taro, I will get angry.’
\end{enumerate}

\(^6\) The acceptability is slightly lower without \textit{iya} ‘no’. However, note that English NPI \textit{any} is totally unacceptable even with \textit{no}, as in (i).

(i) Q: Have you eaten something?
Moreover, *sika* attached to a postposition can appear in the subject (preverbal) position, as seen in (19), which is based on the test listed in (2b).

[Ability to appear in the subject (preverbal) position]

(19) Taroo-ni-sika eigo-ga wakara-nai.
    Taro-DAT-SIKA English-NOM understand-NEG
    ‘Only Taro understands English.’

Also, *sika* accompanied by a postposition can be modified by ‘almost’, as shown in (20), similar to NCIs, which is based on the test listed in (2c):

[Ability to be modified by expressions like ‘almost’]

(20) Taroo-wa hotondo sono hito-tati-to-sika shabera-nak-atta.
    Taro-TOP almost the person-PL-with-SIKA speak-NEG-PAST
    ‘(Lit.) Taro spoke almost only with them.’

Based on the test listed in (2e), *sika* accompanied by a postposition obeys the clause-mate condition, as shown in (21).

[Clause-boundedness]

(21) a. *Boku-wa [Taroo-ga Hanako-to-sika kōen-ni itta-to]
    I-TOP Taro-NOM Hanako-with-SIKA park-LOC go-PAST-COMP
    iwa-nak-atta.
    say-NEG-PAST
    ‘I said that Taro went to park only with Hanako.’

    I-TOP Taro-NOM Hanako-with-SIKA park-LOC go-NEG-PAST-COMP say-PAST

3.2.2 *Sika* with hidden Case-markers

It seems that *sika* attached to a hidden Case-marker is not as an NCI, because it is not allowed to co-occur with other NCIs, as already seen in (12), (14) and (16)7.

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7 Based on this result, Park (2007) argues that it is possible *sika* has two different types, which are
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However, it meets the other five criteria as an NCI. First, *sika* with a hidden Case-marker can be used as an elliptical answer, as shown in (22)8.

[Ability to be used as an elliptical answer]

(22) Q: Minna-ga ki-ta-no?
   Everyone-NOM come-PAST
   ‘Did everyone come?’
A: Hanako-sika.
   Hanako-SIKA
   ‘Only Hanako.’

Second, *sika* attached to a hidden Case-marker cannot appear in nonnegative contexts such as yes-no questions and conditionals, as shown in (23).

[Ability to appear in nonnegative contexts]

(23) a. *Hanako-wa Taroo-to osake-sika non-da-no?*
   Hanako-TOP Taro-with alcohol-SIKA drink-PAST-Q
   ‘Did Hanako drink alcohol only with Taro?’

b. *Mosi Hanako-ga Taroo-to osake-sika non-dara,*
   If Hanako-NOM Taro-with alcohol-SIKA drink-COND
   watasi-ga okoru-deshō.
   I-NOM get angry-will
   ‘If Hanako drink alcohol only with Taro, I will get angry.’

an NCI and non-NCI, depending on where it syntactically appears. However, this paper proposes new findings of *sika* and argues that *sika* has only one type, which is an NCI.

Some past studies such as Kataoka (2006) and Nakao and Obata (2007) indicate that *sika* with hidden Case-markers cannot be used as an elliptical answer, as shown in (i).

(i) Q: John-wa nani-o tabe-masi-ta ka?
   John-TOP what-ACC eat-POL-PAST Q
   ‘Didn’t anybody else come?’
A: *Ringo sika.
   apples SIKA
   ‘Only apples.’ (Nakao and Obata 2007: 107)

Based on this observation, Kataoka (2006) and Nakao and Obata (2007) argue that *sika* cannot be categorized into NCIs. However, it can be used as an elliptical answer using the universal quantifier *minna* ‘everyone’, in spite of *sika* with Case-markers, as shown in (22). This might be a result from the semantic feature of *sika*, which is called *toritatesi* ‘focus-sensitive particles’. However, further research is needed.
Moreover, *sika* with a hidden Case-marker can appear in subject position, as illustrated in (24).

(24) Taro-sika  ringo-o    tabe-nak-atta.
Taro-SIKA apple-ACC eat-NEG-PAST
‘Only Taro ate apples.’

Fourth, *sika* with a hidden Case-marker can be modified by expressions like ‘almost’, as seen in (25).

party-LOC-TOP almost  student-PL-SIKA come-NEG-PAST
‘(Lit.) Almost only students came to the party.’

Furthermore, *sika* with a hidden Case-marker obeys the clause-mate condition, as shown in (26).

(26) a. boku-wa [Hanako-ga   wain-sika nomu]-to     iwa-nak-atta.
I-TOP   Hanako-NOM wine-only drink-COMP say-NEG-PAST
‘I said that Hanako drinks only wine.’

b. *boku-wa [Hanako-ga   wain-sika nomu]-to     iwa-nak-atta.
I-TOP   Hanako-NOM wine-only drink-COMP say-NEG-PAST

**3.3 Section summary**

Based on the examples that I have discussed so far, I can suggest the following descriptive generalization regarding *sika*:

(27) *Sika* behaves differently depending on what markers, Case-markers or postpositions, are involved in multiple NCIs: *Sika* accompanied
by a postposition is allowed in multiple NCIs, whereas *sika* attached to hidden Case-markers is not.

Considering the contrast between *sika* accompanied by a postposition and one accompanied by a hidden Case-marker, a question arises with respect to whether *sika* accompanied by a hidden Case-marker is an NPI or an NCI. In fact, it meets five criteria for NCIs based on the diagnostics employed in (2); specifically, (i) it cannot appear in non-negative contexts, (ii) it can appear in subject position, (iii) it can be modified by expressions like ‘almost’, (iv) it can be used as an elliptical answer, and (v) it can be clause-boundedness. On the other hand, it does not satisfy the criteria for NCIs as follows: (vi) it cannot co-occur with other NCIs in the same clause. The following table summarizes the contrast between *sika* marked with a postposition and that accompanied by a hidden Case-marker:

<table>
<thead>
<tr>
<th></th>
<th><em>wh+mo</em></th>
<th>Postposition</th>
<th><em>Case+sika</em></th>
<th><em>any</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to appear in non-negative contexts</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Ability to appear in preverbal position</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Ability to be modified by ‘almost’</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Clause-boundedness</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Ability to occur as an elliptical answer</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Ability to co-occur with other NCIs</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>

Based on the discussion so far, it seems reasonable to conclude that *sika* marked with a postposition can be classified into NCIs. However, a question arises here: Is *sika* with a hidden Case-marker an NCI or not? I consider it as an NCI. Specifically, an independent factor could cause the asymmetry of *sika* in multiple NCIs. This issue will be discussed in the next section in detail.

I have demonstrated that *sika* shows the Case/postposition asymmetry, which is one of my new findings. Also, the current discussion shows a possibility regarding one of the controversial issues: if my study is on the right track, *sika* can be viewed as an NCI which lends further support to Nishioka (2000) and Furukawa (2001), in which *sika* is analyzed as an NCI, contrast to Kataoka’s (2006) analysis as an NPI.
4. Theoretical implications: What constrains multiple NCIs?

The next question to be asked is why only the Case-sika type disallowed to occur with wh+mo is.

4.1 Similarity-based interference

The crucial difference between sika with hidden Case-markers and sika with postpositions is whether markers are phonologically realized or not. What does this difference cause? One of the possibilities is that grammatical functions become obscure in sentence comprehension by losing phonological realization of Case-markers. If sika is attached to a phrase, Case-markers -ga (Nom) or -o (Acc) are phonologically unrealizable. In a language like Japanese, the word order does not tell us which phrase is the subject or has nominative Case, unlike in a language like English. If we cannot “hear” Case, that is, we need to judge what grammatical functions the phrase has by means of comparing with other phrases marked with overt Case-markers. Consider the following examples:

(28) Hanako-wa Taro-sika mi-nak-atta.
    Hanako-TOP Taro-sika see-NEG-PAST
    Interpretation1: ‘Hanako saw only Taro.’
    Interpretation2: ‘Only Taro saw Hanako.’

(29) Hanako-wa Taro-to-sika awa-nak-atta.
    Hanako-TOP Taro-with-sika meet-NEG-PAST
    ‘Hanako met only with Taro.’

The topic marker -wa also disallows Case-markers to be phonologically realized as sika does. The Case-markers on the DPs in (28) are both phonologically dropped. As a result, the sentence becomes ambiguous because it is unclear which DP is originally the subject or object. On the other hand, (29) is not ambiguous because the postposition -to (with) tells us its grammatical function and also it helps us to know that Hanako-wa is originally the subject. Therefore, only one reading is possible. By dropping Case-markers, grammatical functions DPs originally have are
hidden on the surface causing processing difficulties. In other words, the more Case-markers are dropped, the more processing difficulties are caused.

This observation is, in fact, explained by one of the approaches in sentence processing called similarity-based interference discussed in Lewis and Nakayama (2002) and Lewis et al. (2006). They suggest that similar items interfere with each other more than dissimilar items in sentence processing because of more working memory load. When the subject-verb dependency is established, for example, all the elements other than the subject and verb work as potential distractors. Consider the following case which Lewis and Nakayama (2002) discuss:

(30) Taroo-ga [Hanako-ga eigo-ga wakaru-to] it-ta.
    Taro-NOM Hanako-NOM English-NOM understand-COMP say-PAST
    ‘Taro said that Hanako understood English.’

(31) Taroo-ga [Hanako-ga eigo-o hanasu-to] it-ta.
    Taro-NOM Hanako-NOM English-ACC speak-COMP say-PAST
    ‘Taro said that Hanako spoke English.’

(32) Taroo-ga Hanako-NOM English-NOM V
    English-ACC

When the subject-verb dependency is constructed in the embedded clause, the embedded object and the matrix subject are potential distracters, as illustrated in (32). In (30), the object is marked with nominative case, which is called the nominative object. In (31), the object is marked with accusative case. Lewis and Nakayama (2002) suggest that, in (30), the Case-markers on the embedded subject and the embedded object are morpho-phonologically identical, but not in (31). That is, the object in (30) interferes with establishing the subject-verb dependency more than the object in (31) does because the degree of similarity is higher in (30) than in (31). Lewis and Nakayama (2002) test this type of sentences in the experiment and their prediction is upheld. The similarity-based interference approach has been studied also in Baddeley (1966), Gordon et al. (2002) and Van Dyke and Lewis (2003) among others and seems to be well grounded.
Now, let us apply the similarity-based interference approach to the Case/postposition asymmetry in co-occurrence restrictions on NCIs. (5a) and (11b) are repeated below as (33) and (34) respectively.

(33) *John-sika nani-mo tabe-nak-atta.
John-only what-mo eat-NEG-PAST
‘(Lit.) Only John ate nothing.’ (Aoyagi and Ishii 1994: 297)

(34) Watasitati-wa  uta-de-sika      nani-mo  kaese-nai.
we      -TOP song-with-SIKA what-MO pay back-Neg
‘We can’t pay [them] back with anything but a song.’ (Park 2014: 156)

In (33), sika is attached to the subject and occurs with nani-mo, which is the object. In (34), sika is attached to the adjunct phrase marked with the postposition -de (with).

(33’) *John-sika nani-mo

(34’) uta-de-sika nani-mo

In terms of degree of similarity, two DPs in (33) are higher than two DPs in (34) in that both DPs in the former lack phonological realization of markers. When the verb establishes some dependencies either with the subject or object, that is, two DPs compete with each other because markers are dropped. In the case of (34), on the other hand, one is marked with the postposition but the other is not. Since uta-de-sika is marked with the postposition and shows its grammatical function, it is clear that the phrase is neither the subject nor object. Therefore, it does not compete with other DPs. This is why (33) involves more processing difficulty than (34) does causing low acceptability.

If the proposed analysis is on the right track, the Case/postposition asymmetry in co-occurrence restrictions results in processing difficulties because of phonologically-dropped Case-markers. The asymmetry reported here provides us important implications not only for syntactic theories but also for syntactic processing.
4.2 Syntax–prosody interface

This line of reasoning is also supported by the fact that there exists the Case/postposition asymmetry in terms of their prosodic structure. Uechi (1998) and Shinya (2005) argue based on the results of experiments that there is a systematic difference between the properties of Case-markers and postpositions in the Japanese intonation system. They argue that a head is pronounced higher when it is preceded by an adjunct than by an argument. Consider the following examples:

(35) Context: What did John do?

a. Zyo’n-wa ha’mma-o kowa’si-ta.
   John-Nom hammer-Acc break-past
   ‘John broke a hammer.’
   (Pitch accents are denoted by the apostrophes.)

b. Zyo’n-wa ha’mma-de kowa’si-ta.
   John-Nom hammer-with break-past
   ‘John broke (something) with a hammer.’

(35a) and (35b) have three accented parts: ‘Zyon-wa’, ‘hamma-o(de)’ and ‘kowasi-ta’. As we can see, the pitch peak on the head verb concerning the one on the preceding item is higher when it is an adjunct than when it is an argument. Interestingly enough, Uechi (1998) and Shinya (2005) also mention that the ways in which Case-markers and postpositions are distinguished intonationally between Japanese and English are parallel to one another9, as shown in (36).

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9 Similarly, Dutch and German also have the Case/preposition asymmetry in terms of their prosodic structure. See Wagner (2005) for more details.
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[Case/preposition asymmetry]

(36) a. We discuss GHAna.
    b. We TEACH in GHAna. (Shinya 2005: 186)

(The capitalization indicates the presence of a pitch accent on the syllable.)

The pitch accent in (36a) is placed only in ‘Ghana’, whereas the pitch accent in
(36b) needs to be placed in both ‘teach’ and ‘Ghana’. This is because ‘Ghana’ is a
Case-marker (i.e. argument) of ‘discuss’ in (36a) and ‘Ghana’ is a preposition (i.e.
adjunct) of ‘teach’ in (36b). Shinya (2005) argues that argument is strongly associated
with the previous verb and it forms as a whole verb phrase, while a preposition has
weak association with the verb and it becomes more independent than a Case-marker.

Now, let us apply Case/postposition asymmetry in intonation system approach to
the Case/postposition asymmetry in co-occurrence restrictions on NCIs. I argue that
there is a kind of a prosodic phrasal boundary, which is VP boundary between
uta-de-sika ‘with song’ and nani-mo ‘anything’, as seen in (37). This causes
Japanese speakers interpret the double NCIs and accept them.

(37) [NegP [NP Watasitati-ga] [VP [PP uta-de-sika] [VP [NP nani-mo]
       we-NOM song-with-sika what-mo
       [V kaese-nai-kara..]]]
          pay back-Neg-because
          ‘..because we can’t pay [them] back with anything.’

In contrast, there is no prosodic phrasal boundary between John-sika and nani-mo
‘anything’, as shown in (38). This causes Japanese speakers feel ambiguous to
interpret the double NCIs and fail to accept them.

(38) *[NegP [NP John-sika] [VP [NP nani-mo] [V tabe-nak-atta]].]
       John- sika what-mo eat-NEG-PAST
       ‘(Lit.) Only John ate nothing.’

In fact, there are many previous works on the syntax-prosody interaction in
sentence comprehension (see Selkirk (1984), Warren (1999), Kang and Speer (2005),
Jun (2005) for more details).
5. Conclusion

This work considers some of the behaviors observed in *sika*, which is one of the NSIs in Japanese. I argue that *sika* should be categorized into an NCI. Furthermore, my main focus is placed on the asymmetries between *sika* with a hidden Case-marker and *sika* accompanied by a postposition in multiple NCI constructions. One of my empirical findings with respect to this asymmetry is that *sika* can co-occur with other NSIs such as *wh+mo* or *1+Classifier+mo* only when the *sika* phrase is marked with a postposition but not with a hidden Case-marker. To resolve this problem, this paper proposes two different theoretical frameworks, i.e. similarity-based interference and prosody-syntax interaction in sentence comprehension.

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