

## Revisiting Subject-Object Asymmetry: Subextraction in Japanese\*

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### 1 Introduction

Recent comparative work on subextraction out of subjects has revealed considerable cross-linguistic variation. While in English, subextraction out of subjects is significantly degraded compared to subextraction out of objects, subject transparency in Russian and German is modulated by at least two factors: (i) the internal/external argument distinction and (ii) the *in situ*/moved constituent distinction. In these languages, external arguments are more opaque to subextraction than internal arguments, and moved arguments are more opaque than *in situ* arguments.

Japanese appears to represent yet another type of language. Since Ross (1967), the widespread view in the literature has been that Japanese subjects and objects are symmetrical with respect to subextraction (Kuno 1973; Saito 1985, 1992; Kikuchi 1987; Nishigauchi 1990; Lasnik and Saito 1992; Watanabe 1992; Takahashi 1994; Ishii 1997; Richards 2000; Stepanov 2007, a.o.).<sup>1</sup> Recently, however, Jurka (2010) and Jurka et al. (2011) have challenged this claim:

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based on experimental evidence, these studies argue that subextraction out of complex NP subjects in Japanese is less acceptable than subextraction out of complex NP objects. This led Jurka and his colleagues to argue that Japanese subjects are islands. The work presented here reexamines the experimental evidence in Jurka (2010) and Jurka et al. (2011), and shows that Japanese subjects are not islands after all. Instead, we propose an account of cross-linguistic variation in extraction out of subjects, incorporating recent empirical findings and theoretical developments in the domain of argument licensing. Section 2 reviews recent comparative experimental studies on the subject-object asymmetry in subextraction, and Section 3 critically examines Jurka (2010) and Jurka et al. (2011). We show that the experimental sentences used in these studies fall victim to the “long-before-short preference” problem (Yamashita and Chang 2001, Yamashita 2002). Our new experiment, presented in Section 4, controls for this processing constraint, and presents evidence that there is no subject-object asymmetry in subextraction in Japanese. Section 5 discusses the implications of our findings and lays out our analysis of cross-linguistic variation in extraction out of subjects. Section 6 presents our conclusions.

## **2 Subextraction in English, Russian and German**

### **2.1 English, Russian and German: Empirical studies of subextraction**

The robust contrast between English subjects and objects with respect to subextraction has been confirmed in several studies using acceptability judgment experiments, self-paced reading tests, and other measures (Hiramatsu 1999, 2000; Sprouse 2007; Kravtchenko et al. 2009; Fukuda et al. 2012; and Polinsky et al. 2013). Reading-time studies also suggest a significant difference

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<sup>1</sup> Similar claims have been made for Navajo (Barss, Hale, Perkins and Speas 1991) and Turkish (Hankamer and Knecht 1976).

between the acceptability of subextraction out of unaccusative subjects as compared to unergative/transitive subjects, which indicates that unaccusative subjects are more transparent.

Kravtchenko et al. (2009) and Polinsky et al. (2013) investigate subextraction in Russian using an acceptability judgment task. Focusing on long-distance scrambling of *wh*-phrases, they examine subextraction out of transitive subjects, unergative subjects, unaccusative subjects, and objects. Under the assumption that arguments in pre-verbal positions undergo movement while those in post-verbal positions remain *in situ*, these two studies also manipulate the argument position, comparing *in situ* vs. movement conditions to examine the freezing effects that render moved arguments opaque. Both studies report a significant difference between unergative and unaccusative subjects in the postverbal condition, where unaccusatives are rated significantly more acceptable than unergatives; in the preverbal condition, by contrast, this difference was only marginal. In addition, Russian unaccusative subjects are found to be more transparent than transitive subjects. However, only the object subextraction sentences demonstrate degradation in the movement condition versus the *in-situ* condition. This suggests that freezing effects do not play a major role in subextraction out of subjects in Russian.

Turning now to German subextraction, Jurka (2010) and Jurka et al. (2011) examine whether subextraction interacts with the external vs. internal argument contrast, on the one hand, or the *in situ* vs. moved contrast, on the other hand, in transitive sentences. The results suggest that both the external-internal contrast and the *in situ*-moved contrast play important roles in German. Jurka and his colleagues observe that subextraction out of unmoved subjects is significantly better than subextraction out of moved subjects, and also, subextraction out of unmoved objects is significantly better than subextraction out of unmoved subjects. In a second experiment, they investigate subextraction out of *in situ* transitive, unergative, passive and

unaccusative subjects, as well as out of objects. The results show that subextraction out of *in situ* transitive subjects is significantly worse than extraction out of all other argument types.

## 2.2 Implications of the English, Russian and German data

The findings discussed above point to considerable cross-linguistic variation in subject permeability. In English, subjects are opaque to subextraction across the board, with unaccusative subjects exhibiting a marginal advantage over other subject types. In Russian, the external vs. internal argument distinction plays a crucial role, while the *in situ* vs. moved distinction is irrelevant to subject transparency. Finally, in German, both the external–internal distinction and the *in situ*–moved distinction have a significant impact on the availability of subextraction out of arguments.

How can these differences be accounted for under a unified analysis of subextraction?

Currently, there are two major approaches to the subject–object asymmetry in subextraction, or the Condition on Extraction Domain (CED) effects (Huang 1982): *freezing* accounts, and *structure-building* accounts. Freezing accounts postulate that arguments become opaque to subextraction after undergoing syntactic movement (Wexler and Culicover 1981, Takahashi 1994, Stepanov 2007 among many others); that is, the opacity of subjects is attributed to their movement to [Spec, TP]. In structure-building accounts, the subject-object asymmetry follows from the way subjects and objects are introduced in syntactic derivation (Nuñez and Uriagareka 2000, Jurka 2010). Nuñez and Uriagareka (2000) (henceforth NU) argue that, when a subject merges with  $v'$ , it must undergo spell-out in order to establish an asymmetrical c-command relation between its internal constituents and  $v'$ , which in turn determines the linear order of relevant constituents in the structure (Kayne 1994, Uriagareka 1999). This obligatory spell-out makes the constituents inside subjects inaccessible to any syntactic operations, including

subextraction. On the other hand, when objects and transitive verbs merge, no such spell-out is necessary, because asymmetric c-command is inherent in the verb–object structure.

Stepanov (2007) adjudicates between freezing and structure-building accounts and argues for the former. He criticizes NU's model, in particular, for its failure to account for the lack of subject-object asymmetry in languages like Japanese. Under NU's approach, subjects in such languages must be analyzed as sisters to the verb, in order for their constituents to remain accessible to syntactic operations. This amounts to claiming that languages like Japanese are non-configurational. Citing empirical evidence against NU's prediction, Stepanov (2007) concludes that NU's structure-building account is untenable. Freezing accounts, on the other hand, can accommodate the lack of subject-object asymmetry in subextraction in languages like Japanese by capitalizing on the fact that subjects can remain *in situ*. Subjects are transparent in these languages because they do not undergo syntactic movement prior to sub-extractions.

Jurka et al (2011) present experimental evidence against Stepanov's (2007) conclusion, claiming that Japanese does not lack a subject-object opacity asymmetry in the first place (see Section 3). Moreover, Jurka (2010) and Polinsky et al. (2013) both conclude that freezing-effects-based accounts such as Stepanov's (2007) cannot account for the external vs. internal argument distinction that plays an important role in explaining the subject opacity in Russian and German. Jurka (2010) goes on to argue for the reinstatement of structure-building accounts of moved-object opacity by proposing that the movement operation triggers objects to undergo spell-out prior to subextraction. However, even under Jurka's (2010) analysis, the freezing effects observed with external arguments are problematic; it is not clear why moved external arguments should be more opaque than *in situ* external arguments in German if the spell-out of the external argument has already taken place at the time of the merging of that argument and  $v'$ .

Before searching for a unified explanation, it is important to reexamine the controversial data first and clarify where the actual language variations reside. In particular, Jurka et. al. (2011) and Stepanov (2007) do not agree on whether Japanese subjects are islands. Below, we review methodological problems in Jurka et. al.’s experiment (2011), and report a new experiment to establish the islandhood of Japanese subjects.

### 3 Jurka (2010) and Jurka et al. (2011): Japanese Subjects as Islands

Many scholars have argued that there is no subject-object asymmetry in subextraction in Japanese. Lasnik and Saito (1992), for instance, compare subextraction from within complex NP subjects (1) and objects (2):

- (1) ??*Dono hon-o<sub>i</sub>* Mary-ga [[*John-ga t<sub>i</sub> katta koto*]-ga  
 which book-ACC<sub>i</sub> M-NOM [[J-NOM t<sub>i</sub> bought fact]-NOM  
 mondai da to] omotteru no  
 problem be COMP] think Q

Lit. ‘Which book is it that Mary thinks that the fact that John bought it is a problem?’

- (2) ??*Dono hon-o<sub>i</sub>* Mary-ga [*John-ga t<sub>i</sub> katta koto*]-o  
 which book-ACC<sub>i</sub> M-NOM [J-NOM t<sub>i</sub> bought fact]-ACC  
 mondai-ni shiteru no  
 problem-to making Q

Lit. ‘Which book is it that Mary is calling the fact that John bought it into question?’

Both (1) and (2) involve scrambling of the *wh*-phrase *dono hon-o* ‘which book-ACC’ out of a complex NP. Lasnik and Saito judge both examples as marginal, indicated by “??”, due to a violation of the Complex NP Constraint. However, they contend that (1) is “no worse than” (2), suggesting that there is no subject-object asymmetry in Japanese subextraction.

Jurka (2010) and Jurka et al. (2011) present several arguments challenging this claim. First, they point out that there are non-trivial structural differences between (1) and (2). While (2) involves no additional embedding other than the complex NP itself, (1) involves a center-embedded CP, which “notoriously incur[s] a higher processing cost that leads to a lower acceptability” (Jurka et al. 2011: 129). Therefore, the acceptability of the baseline sentences without subextraction may be different for (1) and (2). Thus judging the empirical data in previous studies insufficient, Jurka and colleagues conducted an acceptability judgment experiment to investigate the issue, using a 2 x 3 experiment design with ARGUMENT (subject vs. object) and EXTRACTION (*in situ*, scrambling or clefting). Here, we discuss only the results of their *in situ* and scrambling conditions; the clefting condition results were very similar to those of the scrambling condition. Examples of Jurka et al.’s experimental sentences are listed in (3). These examples involve three levels of embedding in both the complex NP subject sentences (henceforth the *subject sentences*) (3a, c) and the complex NP object sentences (henceforth the *object sentences*) (3b, d).

(3) a. SUBJECT, IN SITU

Sono syouzyo-wa [[iziharuna ane-ga kuma-no-nuigurumi-o suteta  
the girl- TOP mean sister-NOM teddy.bear-ACC dumped  
koto]-ga kenka-no gen'in da to] uttaeta.  
fact- NOM fight-GEN cause be COMP claimed

‘The girl claimed [that [the fact that her mean sister dumped her teddy bear] is the cause of the fight].’

b. OBJECT, IN SITU

Sono syouzyo-wa [iziiwaruna ane<sub>i</sub>-ga [PRO<sub>i</sub> kuma-no-nuigurumi-o  
the girl- TOP mean sister<sub>i</sub>-NOM teddy.bear-ACC  
suteta koto]-o naisyo-ni siteita to] uttaeta.  
dumped fact- ACC secret-DAT kept COMP claimed

‘The girl claimed [that her mean sister<sub>i</sub> kept as a secret [the fact that she<sub>i</sub> dumped her teddy bear]].’

c. SUBJECT, SCRAMBLING (meaning = 3a)

Kuma-no-nuigurumi<sub>k</sub>-o sono syouzyo-wa [[iziiwaruna ane-ga t<sub>k</sub>  
teddy.bear<sub>k</sub>-ACC the girl-TOP mean sister-NOM t<sub>k</sub>  
suteta koto]-ga kenka-no genin da to] uttaeta  
dumped fact- NOM fight-GEN cause be COMP claimed

d. OBJECT, SCRAMBLING (meaning = 3b)

Kuma-no-nuigurumi<sub>k</sub>-o sono syouzyo-wa [iziiwaruna ane-ga  
teddy.bear<sub>k</sub>-ACC the girl-TOP mean sister<sub>i</sub>- NOM  
[pro<sub>i</sub> t<sub>k</sub> suteta koto]-o naisyo-ni siteita to] uttaeta.  
t<sub>k</sub> dumped fact-ACC secret- DAT kept COMP claimed

The results of this experiment found no significant difference between the scrambling conditions (3c) and (3d), thus confirming the intuition reported in Lasnik and Saito (1992). However, they did reveal a significant difference between the subject and object sentences within the *in situ* conditions: the means of the subject sentences (3a) were significantly higher than those of the object sentences (3b). Jurka et al. (2011) interpreted this finding to indicate that scrambling disproportionately affects subjects in Japanese, causing a greater degradation in acceptability with



the subject sentences between the *in situ* and scrambling conditions. The authors concluded that subjects are islands in Japanese.

However, Jurka et al.'s study has a confounding factor: the judgments provided by the participants could have been influenced by a well-known preference among Japanese speakers to place longer constituents before shorter constituents (Hawkins 1994, Yamashita and Chang 2001, Yamashita 2002). While the effects of this *long-before-short preference* have not been tested in acceptability judgment studies or sentence comprehension studies, it is possible that Japanese speakers judge sentences that do not conform to this preference as less acceptable. In the subject condition in (3a), the complex subject NP is the first element within the embedded clause, which is consistent with the long-before-short preference within the embedded clause. When the entire sentence is taken into consideration, the complex NP is the second item of the whole sentence, following only the matrix topic phrase *sono syouzyo-wa* 'they girl-TOP'. In contrast, in the object condition in (3b), the complex object NP is the second element in the embedded clause and the third element in the entire sentence. Thus, in terms of the long-before-short preference, the complex NP object sentence in (3b) is less optimal than the complex NP subject sentence in (3a). In the scrambling conditions, however, scrambling effectively neutralizes the differences in the weight of the relevant constituents. When the embedded direct object is scrambled to the sentence-initial position in (3c-d), it splits the complex NP in two, resulting in a large reduction in the weight of the complex NP. As a result, the complex NP object sentences in the scrambling condition in (3d) are more consistent with the long-before-short preference. It is conceivable that the results of Jurka et al. (2011) were affected by differences in the relative weights and order of the constituents in their experimental sentences. If so, we predict that the significant difference between the subject and object sentences in the in-situ condition observed by Jurka et al. (2011)

would disappear if the relative weight and order of the constituents were properly controlled. In what follows, we will test this hypothesis in a controlled experiment.

## 4 Experiment

The goal of the experiment is to determine whether the subject-object asymmetry in subextraction out of Japanese complex NPs, reported in Jurka (2010) and Jurka et al. (2011), would remain when the relative weight and order of the constituents is properly controlled to conform to the long-before-short preference.

### 4.1 Stimuli

In order to construct sentence pairs with complex NP subjects and objects that are as close to minimal pairs as possible, we used eight sets of psychological verbs that alternate between subject experiencer and object experiencer verbs via inchoative-causative alternations.

(4)	SUBJECT EXPERIENCER	OBJECT EXPERIENCER
1.	<i>okor-u</i> ‘become angry’	<i>okor-ase-ru</i> ‘anger’
2.	<i>rakutan su-ru</i> ‘become disappointed’	<i>rakutan s-ase-ru</i> ‘disappoint’
3.	<i>yorokob-u</i> ‘rejoice’	<i>yorokob-ase-ru</i> ‘please’
4.	<i>odorok-u</i> ‘become surprised’	<i>odorok-ase-ru</i> ‘surprise’
5.	<i>shitsuboo su-ru</i> ‘despair’	<i>shitsuboo s-ase-ru</i> ‘make despair’
6.	<i>anshin su-ru</i> ‘become relieved’	<i>anshin s-ase-ru</i> ‘relieve’
7.	<i>shimpai su-ru</i> ‘be worried’	<i>shimpai s-ase-ru</i> ‘worry’
8.	<i>nayam-u</i> ‘be tormented’	<i>nayam-ase-ru</i> ‘torment’

Subject experiencer verbs such as *okor-u* ‘become angry’ select for a nominative-marked experiencer and either a dative- or accusative-marked complex NP. Their object experiencer counterparts, such as *okor-ase-ru* ‘anger’, select a nominative-marked complex NP and an

accusative-marked experiencer. Following previous studies on experiencer verbs (Belletti and Rizzi 1988, Pesetsky 1995, Iwata 1995, Landau 2010, among others), we assume that subject experiencer verbs have the nominative experiencer as an external argument and the dative or accusative complex NP as a complement, while object experiencer verbs have the nominative complex NP as an external argument, i.e. a causer, and the accusative experiencer as a complement. These eight sets of verbs allowed us to create pairs of sentences where the same participants reverse their roles, functioning as subjects in one structure but complements in the other. Importantly for the purpose of our experiment, one of the arguments is always a complex NP.

Our experiment had a 2 x 2 design with ARGUMENT (subject vs. object) and SCRAMBLING (scrambling vs. *in situ*). Examples of the experimental sentences are presented in (5) and (6).

(5) a. COMPLEX SUBJECT NP + No SCRAMBLING

Syuzai-ni itta kisyai-ni yoruto  
 cover-LOC went reporter-DAT according\_to  
 [ooyasan-ga ziken-no atta apaarto-no doa-o subete torikaeta  
 [landlord-NOM incident-GEN occurred apartment-GEN door-ACC all changed  
 koto-ga] [zyuumin-tati-o] ansins-ase-ta yooda.  
 fact-NOM] [resident-PL-ACC] relieve-CAUS-PST seem

‘According to the reporter who investigated, that the landlord changed all the doors of the apartment where the incident occurred seemed to have relieved the residents.’

b. COMPLEX SUBJECT NP + SCRAMBLING (meaning = (5a))

Ziken-no    atta    apaarto-no    doa-o; syuzai-ni    itta    kisyai-ni  
incident-GEN occurred apartment-GEN door-ACC; cover-LOC    went    reporter-DAT

yoruto [ooyasan-ga  $t_i$ ] subete torikaeta koto-ga]  
 according\_to [landlord-NOM  $t_i$ ] all changed fact-NOM]  
 [zyuumin-tati-o] ansins-ase-ta yooda  
 [resident-PL-ACC] relieve-CAUS-PST seem

(6) a. COMPLEX OBJECT NP + NO SCRAMBLING

Syuzai-ni itta kisyai-ni yoruto  
 cover-LOC went reporter-DAT according\_to  
 [ooyasan-ga ziken-no atta apaarto-no doa-o subete torikaeta  
 [landlord-NOM incident-GEN occurred apartment-GEN door-ACC all changed  
 koto-ni] [zyuumin-tati-ga] ansinsi-ta yooda  
 fact-DAT] [resident-PL-NOM] relieve-PST seem

‘According to the reporter who investigated, the residents seemed relieved with the fact that the landlord changed all the doors of the apartment where the incident occurred.’

b. COMPLEX OBJECT NP + SCRAMBLING (meaning = (6a))

Ziken-no   atta   apaarto-no   doa-o<sub>i</sub> syuzai-ni   itta   kisyai-ni  
incident-GEN occurred apartment-GEN door-ACC<sub>i</sub> cover-LOC   went   reporter-DAT  
 yoruto [ooyasan-ga  $t_i$ ] subete torikaeta koto-ni]  
 according\_to [landlord-NOM  $t_i$ ] all changed fact-DAT]  
 [zyuumin-tati-ga]ansinsi-ta yooda  
 [resident-PL-NOM] relieve-PST seem

To control for the long-before-short preference, the experimental sentences are constructed with the heavy argument (the complex NP) as close to the initial position of the control sentences as possible. For the complex NP object sentences (henceforth, “object sentences”) with subject

experiencer verbs, illustrated in (6), this means that the complex NP must be fronted to linearly precede the experiencer subject. The fronting of the complex NP may introduce two potential confounds: first, since the complex NP subject sentences (henceforth, “subject sentences”) (5) do not require fronting, speakers may find them inherently more acceptable; second, fronting the complex NP in the object sentences makes the complex NP opaque to subextraction. However, these potential confounds do not undermine our experiment because, as will be shown below, the judgment data from (5a) and (6a) are comparable, which suggests that these potential confounds did not lead to measurable degradation. We needed to make it clear to our participants that scrambling out of a complex NP was taking place, while simultaneously avoiding the higher processing costs incurred by multiple embedding. To achieve this balance, we began all our test sentences with the same type of adjunct (“according to X”). Using this structure ensured that the scrambled constituent could move across the adjunct to clause-initial position, as in (5b) and (6b), without crossing more than one clausal boundary.

Two lexicalizations were created for each of the eight sets of experiencer verbs for each of the four conditions (8 verbs x 4 conditions x 2 lexicalizations = 64 sentences). These 64 sentences were divided into four lists using a Latin Square design and the resulting 16 sentences from each list were mixed with the same 24 fillers of various constructions and acceptability (16 + 24 = 40). The order of the sentences was pseudo-randomized.

## **4.2 Predictions**

Under the hypothesis that subjects are islands in Japanese (*SUBJECT ISLAND HYPOTHESIS, SIH*), the mean acceptability of the object sentences under the scrambling condition should be significantly higher than that of the subject sentences under the same condition. On the other hand, under the hypothesis that Japanese subjects are not islands (*NO SUBJECT ISLAND HYPOTHESIS, NSIH*), the

mean acceptability of the subject and object sentences in the scrambling condition should be the same. We also expect the following two patterns. First, all the scrambling sentences involve a violation of CNPC. This suggests that the mean acceptability of the sentences in the scrambling condition should be significantly lower than that of the sentences in the *in situ* condition, regardless of the subject-object distinction. Second, under the assumption that both the weight of the constituents and their relative linear order were properly controlled in our experimental sentences, subject and object sentences in the *in situ* condition should receive comparable ratings. In other words, the SIH predicts a significant interaction of argument type and scrambling. The predictions of each hypothesis are illustrated in Figure 1 (SIH) and Figure 2 (NSIH).

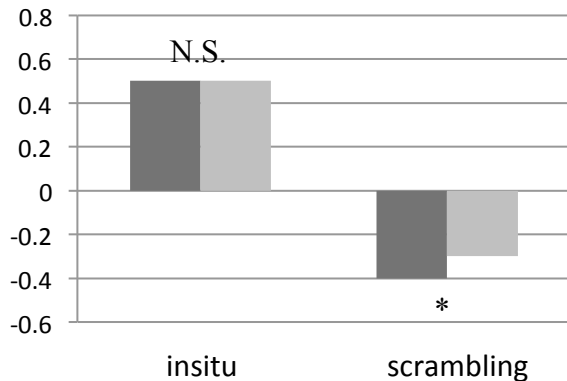


Figure 1: Predictions by the SIH

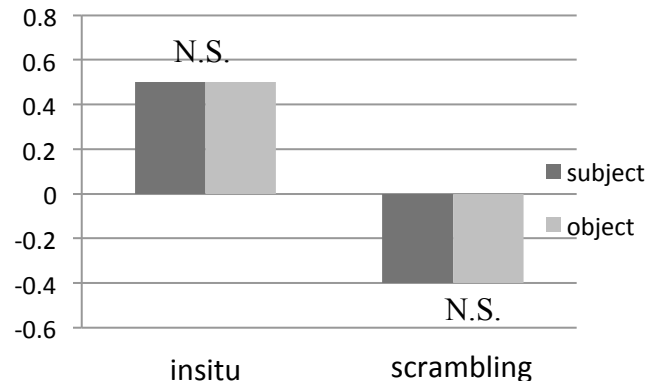


Figure 2: Predictions by the NSIH

### 4.3 Methods and Participants

This study used an acceptability judgment task. The participants were instructed to use a 7-point scale to provide their judgments, with 7 being “completely natural” and 1 being “completely unnatural”. The experiment was presented as an off-line paper survey. 53 university students in Tokyo, Japan, participated in this study. Three participants’ results were excluded from the analyses because either they were non-native speakers of Japanese or they did not complete the task as instructed. The raw ratings provided by the remaining 50 participants were transformed

into z-scores prior to analysis. The results were analyzed using linear mixed-effects models, with ARGUMENT (subject vs. object) and SCRAMBLING (scrambling vs. in-situ) encoded as fixed effects and PARTICIPANTS and ITEMS as random effects. Two planned pairwise comparisons were also conducted to isolate the effect of SCRAMBLING within each of the argument types. All  $p$ -values were estimated using the MCMC method in the languageR package for R (Baayen 2007; Baayen et al 2008).

#### 4.4 Results

The results of the experiment support the predictions of NSIH: there was no significant interaction of argument type and scrambling. Figure 3 presents the results.

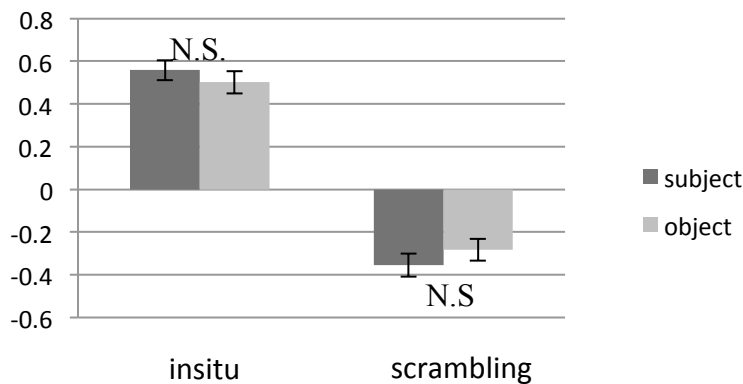


Figure 3: The results of Experiment

Overall, SCRAMBLING was a significant factor for predicting the acceptability of the experimental sentences (Estimate = -0.426, SE = 0.034,  $t = -12.4$ ,  $p = .0001$ ), while ARGUMENT was not (Estimate = -0.0036, SE = 0.034,  $t = -0.104$ ,  $p = .9160$ ). The interaction between the two factors was not significant (Estimate = 0.031, SE = 0.034,  $t = -0.9$ ,  $p = .3320$ ). Pair-wise comparisons show that SCRAMBLING was significant both with the subject sentences (Estimate = -0.457, SE = 0.044,  $t = -10.4$ ,  $p = .0001$ ) and the object sentences (Estimate = -0.396, SE = 0.053,  $t = -7.5$ ,  $p = .0001$ ). Thus, our results point to clear effects of CNPC violations. Pair-wise comparisons also reveal that ARGUMENT was not a significant factor in either *in situ* (Estimate = 0.027, SE = 0.053,

$t = 0.5, p = .385$ ) or scrambling conditions (Estimate =  $-0.035$ , SE =  $0.044$ ,  $t = -0.8, p = .5738$ ).

Thus, we found no significant difference between extractability out of complex-NP subjects and extractability out of complex-NP objects in Japanese.

## 5. Discussion

Our study shows that, once relative constituent weight and linear order of constituents are properly controlled for, no significant difference in acceptability exists between subject and object sentences. These results support our hypothesis that the alleged subject island effect reported in Jurka (2010) and Jurka et al. (2011) was due to the effects of the independently motivated long-before-short preference in Japanese.

Moreover, we found that the transparency of arguments in Japanese was not affected by either the external vs. internal contrast or the *in situ* vs. moved contrast. In other words, the Japanese results diverge from those from English, Russian, and German. Data from the four languages together suggest that objects are universally transparent to subextraction, whereas there is cross-linguistic variation in the permissibility of subextraction out of subjects. The results summarized in this paper suggest the following taxonomic divisions: (a) an English type, in which subjects are never transparent, (b) a German/Russian type, in which only *in situ* subjects are transparent, and (c) a Japanese type, in which subjects are always transparent.

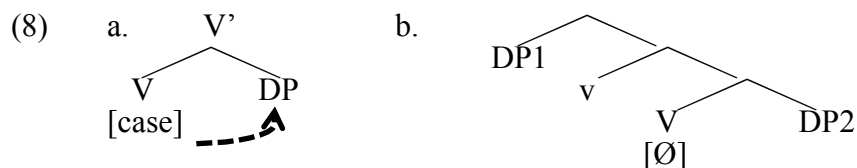
In order to account for this parametric variation, we need a theory that differentiates subjects from objects in such a way that objects receive the same treatment cross-linguistically, while the treatment of subjects is left open to variation. Here, we propose that extractability correlates with the existence of subject Agreement and the EPP. The first ingredient in this proposal is the disjunctive Case hierarchy presented in Marantz (1991).

(7) *Case realization disjunction hierarchy* (Marantz 1991: 247, (29))



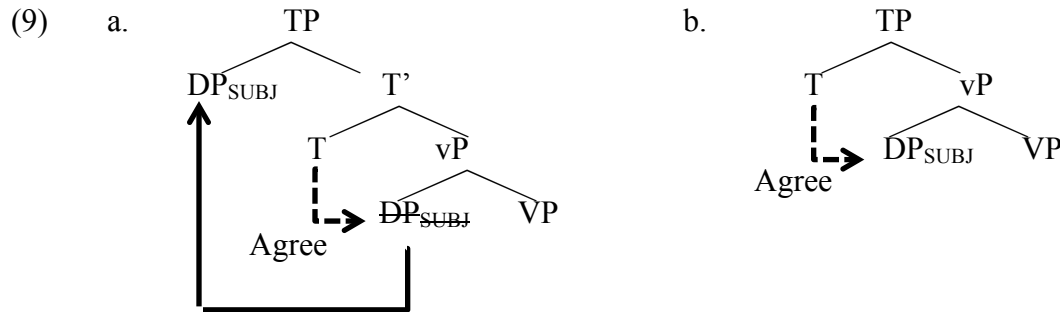
lexically governed Case > dependent Case > unmarked/default Case

Although Marantz (1991) applies this hierarchy to the morphological (post-syntactic) component of the grammar, recent work has suggested that the hierarchy might apply earlier in the derivation, within the syntactic component itself (Preminger 2014; Levin and Preminger in press). In this system, lexically governed Case, such as oblique Case, is assigned by a predicate to its complement when the two are first merged (8a). If the predicate does not dispense lexical Case, then the next opportunity for Case assignment arises through ‘Case competition’ between two DPs that are in an asymmetrical c-command relation, as shown for DP1 and DP2 in (8b). Depending on the parameterized direction of dependent Case, ergative Case will be assigned to DP1 or accusative Case will be assigned to DP2 (8b).



Finally, if a DP emerges from the derivation without having been assigned a lexically governed Case or a dependent Case, then that DP remains unvalued and bears a ‘default’ morphological form, i.e. nominative or absolutive. Now, given the generalization that objects are transparent to subextractions (unless they undergo syntactic movement for independent reasons), we assume that the assignment of the accusative does not interfere with extractability out of objects. The Case of subjects, on the other hand, is left unvalued, and this is where cross-linguistic variation arises. In languages like English, subjects have to undergo a two-step process during derivation. First, the subject enters into an Agree relation with a finite T; next, it moves to [Spec, TP] due to an EPP on T (9a). While this is the only possibility for subjects in English, subjects in Russian and German have an alternative derivational option: they may choose to enter into Agreement

with finite T *without* the subsequent movement (Wurmbrand 2006 for German; Kallestinova 2007 for Russian) (9b).



Japanese realizes a third option: once Japanese subjects have gone through the disjunctive Case-value system, their merge is complete (see Kornfilt and Preminger, to appear, for a related proposal concerning subjects in the Turkic language Sakha). These subjects do not establish an Agree relation with T and do not undergo EPP-driven movement. This gives us the following three-way distinction.

(10) Cross-linguistic variation in the syntactic property of subjects

	Case valued?	Agree with T?	EPP movement?
English	NO	YES	REQUIRED
Russian & German	NO	YES	NOT REQUIRED
Japanese	NO	NO	NOT REQUIRED

We have good reasons to assume that the EPP-driven movement required of English subjects contributes to their opacity to subextraction, and a similar assumption can be made for those subjects in Russian and German that undergo syntactic movement (Takahashi 1994; Stepanov 2007). On this account, then, the difference between subjects in Russian and German on the one hand and Japanese on the other is due to the presence/absence of subject Agreement with a finite

T (see Kuroda 1988). At this point, the question of how or why an Agree relation between a finite T and its subject affects extractability out of subjects must await future studies.

## 6. Conclusions

This study investigated cross-linguistic variation in extractability out of subjects. Our new acceptability judgment experiment, which controlled for a ‘long-before-short’ preference in Japanese, showed that Japanese subjects are as transparent to extraction as objects. Based on this finding, we classified languages into three subtypes with respect to subject opacity: (a) languages in which subjects are never transparent (English), (b) languages in which only *in situ* subjects are transparent (Russian, German), and (c) languages in which subjects are always transparent (Japanese). To account for these data, we gave a preliminary formal analysis that links this typology to the existence of subject Agreement and the EPP: (a) languages where subjects undergo Agreement and EPP movement, (b) languages where subjects only undergo Agreement, and (c) languages where subjects do not undergo either operation.

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