

Scrambling and the Structure of TP: Remarks on Miyagawa (2001)

Mizuguchi Manabu

Abstract:

This brief article considers the structure of TP in scrambling, focusing on Miyagawa (2001). With theoretical and empirical arguments, we argue against Miyagawa’s “raising” analysis of scrambling, where a scrambled object moves to [Spec, TP] instead of a subject. Based on our discussions, we claim that scrambling is “quasi-raising” (Mizuguchi (2010)), which, we argue, is deducible from a minimalist theory of movement and a lexical property of Japanese, which is a source of typological differences between Japanese and English.

Keywords: Japanese, scrambling, raising analysis, TP, EPP, layered specifiers

1. Introduction

Scrambling, which reorders phrases in sentences, has long been a major topic of inquiry in Japanese linguistics. For example, in (1a) the object *ringo-o* ‘apple-Acc’ is scrambled to the front of the sentence from its object position in VP, which produces a derived OSV order from a canonical SOV order:¹

- (1) a. *Ringo-o_i [Taroo-ga *t_i* tabeta] (koto) (OSV)*
 apple-Acc Taroo-Nom ate (fact)
 ‘(the fact that) an apple_i, Taroo ate *t_i*.’
- b. *Taroo-ga ringo-o tabeta (koto) (SOV)*

One of the issues of scrambling has been its landing site. In the case of clause-internal scrambling such as (1a), it has been argued that the landing site is [Spec, TP]. One piece of evidence for this assumption is that scrambling, as shown in (2), can be considered as A-movement (e.g., Saito (1992)):

- (2) a. *Taroo-to Hanako-o_i [otagai-no sensei-ga *t_i* hometa]*
 Taroo-and Hanako-Acc each other-Gen teacher-Nom praised
 ‘Taroo and Hanako_i, each other’s teachers praised *t_i*.’
- b. **Otagai-no sensei-ga Taroo-to Hanako-o hometa*
 each other-Gen teacher-Nom Taroo-and Hanako-Acc praised
 ‘Each other’s teachers praised Taroo and Hanako.’

(2a) shows that the scrambled object *Taroo-to Hanako-o* ‘Taroo and Hanako-Acc’ can be an antecedent of the anaphor *otagai-no* ‘each other-Gen’ embedded in the subject. This means that the object

scrambles to a position where binding is possible (hence, [Spec, TP]). As shown in (3), raising to [Spec, TP] can feed binding, and a raised subject can bind an anaphor it has moved over:

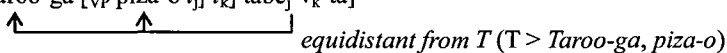
- (3) John_i seems to himself [to be t_i intelligent]

The purpose of this paper is to critically examine Miyagawa's analysis of scrambling, which claims that scrambling is "raising" to [Spec, TP], and to consider the TP structure of scrambling. We will demonstrate that his analysis is faced with theoretical and empirical problems. We claim that scrambling creates layered specifiers in TP, and that scrambling is not raising but quasi-raising to an outer [Spec, TP] as proposed in Mizuguchi (2010), which we argue follows from a minimalist theory of movement and a lexical property specific to Japanese and other languages.

2. Raising Analysis of Scrambling

Miyagawa (2001) proposes that in scrambling, the scrambled object moves to [Spec, TP] for an EPP in T, with the subject staying in [Spec, vP] throughout the derivation since the EPP is satisfied by the object via its scrambling. Under the assumption that the subject is Externally Merged in a position which is higher than where the object is Externally Merged, Miyagawa argues that verb movement to T makes the subject and the object equidistant from T, allowing both of them to Agree with T (or more precisely, T-v-V complex) in ϕ -features. Given that movement (now considered as Internal Merge) presupposes Agree relations, either one of them can move to [Spec, TP] for an EPP in T via its Agree relation with T. For instance, object scrambling is analyzed as (4) under Miyagawa's proposal:²

- (4) [TP Ringo-o_i [vP Taroo-ga [vP t_i t_j] t_k] tabe_j-v_k-ta]
 apple-Acc Taroo-Nom eat-v-Past
 'Pizza_i, Taroo ate t_i .'

- (5) [TP [vP Taroo-ga [vP piza-o t_j] t_k] tabe_j-v_k-ta]


Under this analysis, object scrambling is equated with subject raising: either the subject or the object raises to [Spec, TP] for an EPP in T.

One argument for this analysis of scrambling, Miyagawa argues, comes from scope relations between a quantified subject and negation. Provided that negation is placed between T and vP (Chomsky (1995), Laka (1990), Pollock (1989)), the subject will fall in the scope of negation when the object scrambles under the raising analysis. This is supported by (6):

- (6) a. Zen'in-ga sono tesuto-o uke-nakat-ta (yo/to omou)
 all-Nom that test-Acc take-Neg-Past
 'All did not take that test.' (*Neg > all, all > Neg)
 b. Sono tesuto-o_i zen'in-ga t_i uke-nakat-ta (yo/to omou)
 that test-Acc all-Nom take-Neg-Past
 'That test, all did not take.' (Neg > all, [all > Neg]) (Miyagawa (2001: 299))

As shown in (6), the quantified subject takes scope under negation when the object scrambles (= (6b)) while it does not when the object does not scramble (= (6a)). The above contrast will straightforwardly follow from Miyagawa's analysis.

Miyagawa's raising analysis, however, is faced with theoretical and empirical problems. In the following sections, we will critically examine his analysis and consider the structure of TP in scrambling.

3. Problems with Miyagawa (2001)

In the present section, we discuss in some detail the problems surrounding Miyagawa's analysis, showing that object scrambling cannot be equated with subject raising.

3.1. Scrambling and Cyclicity

The cyclic nature of derivations poses a theoretical problem to Miyagawa's analysis. Miyagawa assumes, following Chomsky (2000), that the EPP satisfaction (that is, movement or Internal Merge) presupposes Agree relations. Given that the object must Agree with T in order to move (scramble) to [Spec, TP] for its EPP, Miyagawa assumes that *v* Agrees with the object in ϕ -features not when it is Merged with VP but when the verbal complex (V-*v*) has raised to T; the object Agrees with T in ϕ -features of *v*, which have been moved to T via verb movement. Thus, ϕ -feature Agree by *v* must be suspended when the head is Merged to VP, and must wait until V-*v* moves to T. This allows the V-*v*-T complex to Agree with both the subject and the object in ϕ -features at the same time after the head movement (because they are equidistant from T), and either the subject or the object can move to [Spec, TP] for an EPP in T thanks to a ϕ -feature Agree relation with the derived complex head, V-*v*-T.

This assumption, however, is theoretically undesirable in terms of derivational computation. Given that C_{HL} proceeds cyclically, which follows from efficient computation, then the uninterpretable properties of *v* must be satisfied via Agree at the point when they are introduced into the derivation, and operations must not wait, which involves an element of look-ahead. From operative complexity considerations, it follows that derivations must meet a condition like (7) (Chomsky (1995, 2000), Richards (1999); cf. Pesetsky (1989)):

- (7) Properties of the probe/selector α must be satisfied before new elements of the lexical subarray are accessed to drive further operations. (Chomsky (2000: 132))

Since *v* does not Agree with the object in ϕ -features when it is introduced into the derivation, the raising analysis violates this condition, which is problematic in light of cyclic applications of operations (i.e., efficient computation).

3.2. Empirical Problems

In addition to the above mentioned problem related to cyclicity, the raising analysis has empirical

problems as well. In the rest of this section, we will discuss them in turn.

The first problem is concerned with verb movement, which is a crucial element in Miyagawa's analysis. The status of head movement in the narrow syntax has been much debated in the recent syntactic literature, and there have been arguments that head movement is an operation in the phonological component (e.g., Abels (2003), Boeckx and Stjepanović (2001), Brody (2000), Chomsky (2001), Wilder and Čavar (1994)). In fact, there are arguments from Japanese that verb movement to T does not take place (Fukui and Takano (1998), Fukui and Sakai (2003), Kishimoto (2001, 2007), Sakai (1998), Takano (2002)). For instance, Kishimoto (2001) argues, based on the interaction of the Q particle *-mo* with intermediate pronouns, that verbs do not move to T. To see this, consider (8), where the subject and the object show an asymmetry as regards *-mo* binding:

- (8) a. *Dare-ga Hanako-o home-mo si-nakat-ta
 anyone-Nom Hanako-Acc admire-Q do-Neg-Past
 'Anyone did not admire Hanako.'
- b. Hanako-ga dare-o home-mo si-nakat-ta
 Hanako-Nom anything-Acc admire-Q do-Neg-Past
 'Taroo did not admire anyone.'

An intermediate pronoun, *dare* is interpreted as a negative polarity item 'anyone' if it is bound by *-mo* in the projection to the head of which the particle is attached. The negative polarity interpretation is possible in (8b) but not in (8a). With verb movement to T, the scope of *-mo* (as well as that of negation) would be extended over TP, and *dare* would fall within its scope to be bound by the particle in (8a) as well as in (8b); on the other hand, if there is no verb movement, the subject-object asymmetry in (8) is straightforward: the Q particle takes scope over the domain of vP by being attached to v and the object *dare* falls within the scope of *-mo* and that of negation, while the subject *dare* gets out of the scope domains due to subject raising. Thus, the asymmetry in (8) suggests that there is no verb movement in Japanese. If head movement is not part of the narrow syntax, then the object will never be equidistant from T. Since the object is Externally Merged lower than the subject, it cannot Agree with T and cannot move over the subject. The proposed derivation (5) will then be ruled out.

The raising analysis of scrambling also faces an empirical problem in *zibun* 'self' binding. *Zibun* is an anaphor which must be bound in the domain of TP by its c-commanding antecedent. Moreover, its antecedent must be the "subject" (cf. Kuno (1973), Ura (2000)). To see this, consider (9):

- (9) a. Taroo-ga zibun-no heya de sono hon-o yonda
 Taroo-Nom self-Gen room in the book-Acc read
 'Taroo read the book in his room.'
- b. Taroo-ga Hanako-ni zibun-no syasin-o miseta
 Taroo-Nom Hanako-Dat self-Gen photo-Acc showed
 'Taroo showed Hanako his photos.' / *'Taroo showed Hanako her photos.'

The subject *Taroo-ga* can bind *zibun* in (9a,b), while in (9b), the indirect object *Hanako-ni* cannot be a binder of *zibun*, even though it is high enough to c-command the anaphor and can be a potential binder of the anaphor in the TP domain (Barss and Lasnik (1986)). Thus, it can be said that the “subject” is crucially relevant to *zibun* binding. Under current theoretical assumptions, the “subject” can be reinterpreted as a DP which moves to [Spec, TP] (the “subject” position) by entering into a ϕ -feature Agree relation with T.

With this background in mind, Miyagawa’s analysis predicts that object scrambling can affect *zibun* binding. Recall that object scrambling is equated with subject raising under his analysis: in scrambling, the object, instead of the subject, moves to [Spec, TP] thanks to a ϕ -feature Agree relation with the derived complex head (V-v-T). Then, it will be predicted that the object can be a binder of *zibun* in object scrambling. This prediction, however, is not borne out. Consider (10):

- (10) **Taroo-o_i* *zibun-no* *hahaoya-ga* *t_i* *aisiteiru*
 Taroo-Acc *self-Gen* *mother-Nom* *love*
 ‘*Taroo_i*, his mother loves *t_i*.’

The sentence does not have the interpretation that *Taroo-o* binds *zibun*. This shows that the scrambled object cannot bind *zibun* embedded in the subject phrase even though it has moved to [Spec, TP]. The ungrammaticality of (10) suggests that the object does not move to [Spec, TP] through its ϕ -feature Agreement with T. Hence, object scrambling cannot be on a par with subject raising.

Another argument against Miyagawa’s analysis of scrambling comes from scope relations between a quantified subject and negation. Recall that the subject falls under the scope of negation in object scrambling under the analysis in question, because it stays in [Spec, vP]. The relevant data are repeated from (6) below:

- (6) a. *Zen’in-ga* *sono* *tesuto-o* *uke-nakat-ta* (*yo/to omou*)
 all-Nom *that* *test-Acc* *take-Neg-Past*
 ‘All did not take that test.’ (**Neg > all*, *all > Neg*)
 b. *Sono* *tesuto-o_i* *zen’in-ga* *t_i* *uke-nakat-ta* (*yo/to omou*)
 that *test-Acc* *all-Nom* *take-Neg-Past*
 ‘That test, all did not take.’ (*Neg > all*, [*all > Neg*]) (Miyagawa (2001: 299))

The interpretive judgment of (6a) seems uncontroversial; on the other hand, the judgment of (6b) is quite debatable.³ To me, the reading (*Neg > all*) is not available, and only the other reading (*all > Neg*) is allowed. Furthermore, the native speakers I have consulted also shared this judgment, saying that the dominant reading for (6b) and other related examples Miyagawa discusses is that the subject *zen’in* does not fall in the scope of negation, just as for their non-scrambling counterparts; or at least, the *Neg > all* reading is very difficult to obtain. From this, it can be concluded that Miyagawa’s data are empirically questionable and do not provide persuasive grounds for the raising analysis.

As shown in (6b), Miyagawa notes that there are cases when the subject *zen’in* does not fall under

the scope of negation in scrambling. This means that it has moved to [Spec, TP] and gets out of the scope domain of negation. The following example in (11) demonstrates that subject movement to [Spec, TP] is possible even when the object undergoes scrambling: the *zen'in* subject is to the left of a sentential adverb *saiwaini* 'fortunately,' which occurs high in TP. If the subject is to the left of this adverb, it has moved out of vP to [Spec, TP] and does not stay in [Spec, vP]. In this case, the subject cannot be in the scope domain of negation, and the *Neg > all* reading is excluded unlike in (6b):

- (11) Kono ronbun-o_i zen'in-ga saiwaini t_i yoma-nakat-ta (yo/to omou)
 this article-Acc all-Nom fortunately read-Neg-Past
 'This article, all did not fortunately read.' (*Neg > all, all > Neg) (Miyagawa (2001: 301))

Miyagawa argues that in (11), since an EPP in T is satisfied by the subject, the object is scrambled due to focus. Thus, the object scrambling in (11) does not count as A-movement but as A'-movement (cf. Rochement (1986)); in cases where the *all > Neg* reading is observed in scrambling, the object is not A-moved to [Spec, TP] but A'-moved to a focus projection in CP (Rizzi (1997)).

This proposal is empirically questionable, however. It has been known that clause-internal scrambling can show A-movement properties. Recall from (2a) that the scrambling can feed anaphor binding. Consider once again (2a), which is repeated below as (12):

- (12) Taroo-to Hanako-o_i [otagai-no sensei-ga t_i hometa]
 Taroo-and Hanako-Acc each other-Gen teacher-Nom praised
 'Taroo and Hanako_i, each other's teachers praised t_i.'

If the scrambling in (11) is focus-driven, A'-movement as Miyagawa claims, then it will be predicted that the scrambled object is not allowed to bind an anaphor embedded in the subject when sentential adverbs such as *saiwaini* intervene as in (11). This empirical prediction is not borne out. Consider (13):

- (13) Taroo-to Hanako-o_i [otagai-no sensei-ga saiwaini t_i hinansi-nakat-ta]
 Taroo-and Hanako-Acc each other-Gen teacher-Nom fortunately criticize-Neg-Past
 'Taroo and Hanako_i, each other's teachers fortunately did not criticize t_i.'

In (13), the subject moves to [Spec, TP] since it is to the left of the adverb *saiwaini*. However, the scrambled object can bind the anaphor embedded in the subject, just as in (12). This suggests that the scrambling in (13) is an instance of A-movement, not A'-movement. Hence the well-formedness of (13) poses a problem to Miyagawa's analysis.

4. TP Structure of Scrambling

In the last section, we have critically considered Miyagawa's "raising" analysis of scrambling, arguing that the analysis faces non-trivial theoretical and empirical problems. These problems suffice to cast doubt on the analysis in question, and it can be concluded that (clause-internal) scrambling cannot be analyzed as raising.

This conclusion brings back to us the question of the structure of scrambling, or where scrambling

moves to and how it is implemented. We basically agree with Miyagawa that scrambling is movement to [Spec, TP]; as we have discussed with (2), provided that scrambling (especially, clause-internal scrambling) shows properties of A-movement, this assumption is the most reasonable. We argue, however, that the movement is not raising but a Match-based movement to an outer [Spec, TP]. It has long been observed that Japanese allows the so-called Multiple Subject Construction (MSC), which is illustrated in (14) below:

- (14) Zoo-ga hana-ga naga-i
 elephant-Nom nose-Nom long-Pres
 ‘Elephants’ noses are long.’

We assume, following Fukui (1988) and Saito (1989) among others, that scrambling in Japanese correlates with the MSC. The MSC suggests that there are multiple subject positions in the left edge of TP. Under current theoretical assumptions, this means that extra specifiers are available for T in Japanese. Given that T’s specifier is generated thanks to an EPP in T, it can be considered that multiple EPPs are available for T in Japanese as one of its lexical properties, which leads to typological differences between Japanese (with the MSC, scrambling) and English (without the MSC or scrambling) (cf. Fukui (1988)).

Provided that movement in general (i.e., Internal Merge) is driven by an EPP (more generally, edge feature (Chomsky (2007, 2008))), we argue that scrambling is driven by an extra EPP in T, which creates an outer [Spec, TP].⁴ In the minimalist theory of movement, it has standardly been assumed that Agree is essential to movement in determining or identifying what kind of category an EPP-bearing head seeks as a goal for the probe, because an EPP, unlike other features, is unspecified and does not probe for a specific goal. Elsewhere (Mizuguchi (2010)), I have claimed that it is not Agree but Match, which underlies Agree, that plays a role in goal identification in movement. Under this proposal, scrambling is generated through T Matching with a scrambled phrase in ϕ -features. This theory of movement and the lexical property of Japanese which allows multiple EPPs in T, lead to the proposal that scrambling is “quasi”-raising: that is, scrambling is movement to (an outer) [Spec, TP] (hence, like raising), but is different from raising in that Match in ϕ -features does not lead to Agree in ϕ -features (see Mizuguchi (2010) for details). Thus, scrambling is analyzed (schematically) as follows, where SU is the subject and XP is a scrambled phrase, which is, in our case, the object:

- (15) [TP XP_j [T SU_i [T [VP t_i [v [VP ... t_j ...] v]] T]]]

As shown in (15), both the subject and a scrambled object move to [Spec, TP], forming layered specifiers of T.

One piece of evidence for the proposed structure in (15) comes from so-called “Lethal Ambiguity” (McGinnis (2004)). Lethal Ambiguity is a locality condition imposed on anaphor binding, and states that an anaphoric dependency cannot be established if an anaphor and its antecedent are multiple specifiers of the same head. In (16), where two phrases, XP and an anaphor YP, are specifiers of α , XP cannot be

an antecedent of YP even if XP can potentially bind YP:

- (16) * $[_{aP} XP [_{a'} YP_{anaphor} [_{a'} \alpha \dots]]]$

Given Lethal Ambiguity, the proposed structure predicts that a scrambled object cannot be a binder of a subject anaphor. This prediction is in fact borne out. Consider (17) below (cf. (2a)):

- (17) * $[_{TP} \underline{Taroo-to Hanako-o}_i [_T \underline{otagai-ga}_j [_{VP} t_j [_{VP} t_i \text{ hihansita}] v] T]]$
 Taroo-and Hanako-Acc each other-Nom criticized
 ‘Taroo and Hanako_i, each other criticized t_i.’

On the other hand, the data above is unfavorable to Miyagawa’s raising analysis of scrambling, under which (17) is analyzed as (18): the scrambled object and the subject are specifiers of two distinct heads (i.e., T and v, respectively). The raising analysis would wrongly predict the absence of Lethal Ambiguity in scrambling, ruling in (17).

- (18) $[_{TP} \underline{Taroo-to Hanako-o}_i [_{VP} \underline{otagai-ga} [_{VP} t_i \text{ hihansita}] v] T]$

Our argument is further strengthened by the fact that a raised subject can be an antecedent of an object anaphor in VP. Consider (19):

- (19) $[_{TP} \underline{Taroo-to Hanako-ga}_i [_{VP} t_i [_{VP} \underline{otagai-o} \text{ hihansita}] v] T]$
 Taroo-and Hanako-Nom each other-Acc criticized
 ‘Taroo and Hanako criticized each other.’

Since the antecedent *Taroo-to Hanako* and the anaphor *otagai* are linearly adjacent to each other in both (17) and (19), the well-formedness of the anaphor binding in question is structurally determined: an antecedent cannot bind an anaphor if they are specifiers of the same head. Thus, Lethal Ambiguity supports the proposed structure in (15), where the scrambled object moves over the subject at [Spec, TP], with the two forming layered specifiers of T.

In this section, we have claimed that scrambling is quasi-raising, proposing (15) as the structure of TP in scrambling. It should be noted that the proposed analysis is free from the problems facing Miyagawa’s analysis, and provides a theoretically and empirically adequate explanation of scrambling.

5. Conclusion

In this paper, we have argued, with theoretical and empirical discussions, that scrambling cannot be analyzed as raising. We have demonstrated that Miyagawa’s analysis is faced with a number of problems, which make it questionable. We have claimed that scrambling is not raising but quasi-raising (Mizuguchi (2010)), which is straightforwardly deducible from a minimalist theory of movement and a lexical property of Japanese. We conclude that the structure of TP in scrambling is not (4) but (15).

Notes

- 1 The following abbreviations are used in this paper: Nom = nominative case, Acc = accusative case, Dat = dative case, Gen = genitive case; Pres = present tense, Past = past tense; Neg = negation. *Koto* ‘fact’ is often added at the end of Japanese sentences so as to avoid the unnaturalness following

from the lack of a topic phrase in matrix clauses. With this in mind, we omit *koto* from the rest of the examples in this paper.

- 2 Provided that Japanese is a head-final language, head final structures are adopted in this paper. As a reminder, linear orders are irrelevant to the narrow syntax.
- 3 Saito (2009) argues that (6a) is not unambiguous, saying that the *Neg > all* interpretation is also possible. There are native speakers, however, who do not share this judgment. In this paper, we assume that (6a) only allows the interpretation that *all* is outside the scope of *Neg*.
Kishimoto (2007) says that even though the universal quantifier *zen'in* falls in the scope of negation in (6a), its special property makes the *Neg > all* interpretation somehow unavailable. If his argument is correct, then the interpretation would also be unavailable for (6b), and the data in (6) would not be evidence for Miyagawa's analysis.
- 4 Thus, an EPP in T can be considered as one specific instance of an edge feature (EF). EF has been assumed to be undeletable (Chomsky (2007, 2008)). Multiple EPPs in Japanese can be thought of as a straightforward reflex of this property of EF (cf. Fukui (2011)).

References

- Abels, Klaus. 2003. *Successive cyclicity, anti-locality, and adposition stranding*. Storrs, CT: University of Connecticut dissertation.
- Barss, Andrew and Howard Lasnik. 1986. A note on anaphora and double objects. *Linguistic Inquiry* 17(2), 347-354.
- Boeckx, Cedric and Sandra Stjepanović. 2001. Head-ing toward PF. *Linguistic Inquiry* 32(2), 345-355.
- Brody, Michael. 2000. Mirror theory: Syntactic representation in perfect syntax. *Linguistic Inquiry* 31(1), 29-56.
- Chomsky, Noam. 1995. *The minimalist program*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. In Roger Martin, David Michaels and Juan Uriagereka (eds.), *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89-155. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In Michael Kenstowicz (ed.), *Ken Hale: A life in language*, 1-52. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2007. Approaching UG from below. In Uli Sauerland and Hans-Martin Gärtner (eds.), *Interfaces + recursion = language?: Chomsky's minimalism and the view from syntax-semantics*, 1-29. Berlin: Mouton de Gruyter.
- Chomsky, Noam. 2008. On phases. In Robert Freidin, Carlos P. Otero and Maria Luisa Zubizarreta (eds.), *Foundational issues in linguistic theory*, 133-166. Cambridge, MA: MIT Press.
- Fukui, Naoki. 1988. Deriving the Differences between English and Japanese: A Case Study in Parametric Syntax. *English Linguistics* 5, 249-270.
- Fukui, Naoki. 2011. Merge and bare phrase structure. In Cedric Boeckx (ed.), *The Oxford handbook of linguistic minimalism*, 73-95. Oxford: Oxford University Press.
- Fukui, Naoki and Yuji Takano. Symmetry in syntax: Merge and demerge. *Journal of East Asian Linguistics* 7, 27-86.

- Fukui, Naoki and Hiromu Sakai. The visibility guidance for functional categories: Verb raising and related issues. *Lingua* 113, 321-375.
- Kishimoto, Hideki. 2001. Binding of intermediate pronouns and clause structure in Japanese. *Linguistic Inquiry* 32(4), 597-633.
- Kishimoto, Hideki. 2007. Negative scope and head raising in Japanese. *Lingua* 117, 247-288.
- Kuno, Susumu. 1973. *The structure of the Japanese language*. Cambridge, MA: MIT Press.
- Laka, Itziar. 1990. *Negation in syntax: On the nature of functional categories and projections*. Cambridge, MA: MIT dissertation.
- McGinnis, Martha. 2004. Lethal ambiguity. *Linguistic Inquiry* 35(1), 47-95.
- Miyagawa, Shigeru. 2001. The EPP, scrambling, and *wh*-in-situ. In Michael Kenstowicz (ed.), *Ken Hale: A life in language*, 293-338. Cambridge, MA: MIT Press.
- Mizuguchi, Manabu. 2010. On A- and A'-movement properties of scrambling. *English Linguistics* 27(1), 60-79.
- Pesetsky, David. 1989. Language-particular processes and the earliness principle. Ms., MIT.
- Pollock, Jean-Yves. 1989. Verb movement, universal grammar and the structure of IP. *Linguistic Inquiry* 20(3), 365-424.
- Richards, Norvin. 1999. Featural cyclicity and the ordering of multiple specifiers. In Samuel David Epstein and Norbert Hornstein (eds.), *Working minimalism*, 127-158. Cambridge, MA: MIT Press.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In Lilian Haegeman (ed.), *Elements of grammar*, 281-337. Dordrecht: Kluwer Academic Publishers.
- Rochemont, Michael. 1986. *Focus in generative grammar*. Amsterdam: John Benjamins.
- Saito, Mamoru. 1989. Scrambling as semantically vacuous A'-movement. In Mark R. Baltin and Anthony Kroch (eds.), *Alternative conceptions of phrase structure*, 182-200. Chicago: the University of Chicago Press.
- Saito, Mamoru. 2009. Optional A-scrambling. In Yukinori Takubo, Tomohide Kinuhara, Szymon Grzelak and Kayo Nagai (eds.), *Japanese/Korean linguistics* 16, 44-63.
- Sakai, Hiromu. 1998. Feature checking and morphological merger. In David Silva (ed.), *Japanese/Korean linguistics* 8, 189-201.
- Takano, Yuji. 2002. Surprising constituents. *Journal of East Asian Linguistics* 11, 243-301.
- Ura, Hiroyuki. 2000. *Checking theory and grammatical functions in universal grammar*. Oxford: Oxford University Press.
- Wilder, Chris and Damir Ćavar. 1994. Word order variation, verb movement, and economy principles. *Studia Linguistica* 48(1), 46-86.

Nagano National College of Technology
mizuguchi@ge.nagano-nct.ac.jp