What Sluicing Tells about Imperatives*

YUYA NOGUCHI
University of Connecticut

SHUN IHARA
Osaka University / Japan Society for the Promotion of Science

1 Introduction

Focusing on Japanese (standard) imperatives like (1) as a case study, this paper sheds a new light on the controversial issue what semantic and syntactic structure imperatives have.

(1) Hayaku hasir-e!
quickly run-IMP
'Run right away!'

* We would like to thank Magdalena Kaufmann and the audience at the 27th Japanese/Korean Linguistic Conference for valuable comments and suggestions. All remaining errors are, of course, our own. This research has been supported by the Japan Society for the Promotion of Science KAKENHI (17J03552).

Japanese/Korean Linguistics 27.
Edited by Michael Barrie.

Specifically, we provide a novel observation of how they behave with respect to sluicing and show that our observation supports the view that (i) the semantic structure of imperatives includes an imperative (or a necessity) modal and that (ii) the syntactic structure of imperatives is not so defective.

This paper is organized as follows: in Section 2 we provide an overview of the controversial status of the semantic and syntactic structure of imperatives. Section 3 lays out our assumption of how to analyze sluicing constructions in Japanese. Based on the discussion in these two sections, in Section 4 we present a novel data which exhibits an interaction between an imperative and a sluicing construction, and show that this data counts as a new argument for a particular view of the semantic and syntactic structure of imperatives. Section 5 concludes the paper, discussing a possible alternative view for our data.

2 Background of the Structrue of Imperatives

This section gives an overview of controversial views in previous works regarding the structure of imperatives. The following two subsections exhibit two conflicting views on what semantic and syntactic structure imperatives have.

2.1 Semantics of Imperatives

In this paper, we focus on the two competitive semantic theories which are called the "strong" (or "modal"/"truth-conditional") theories and the "minimal" (or "dynamic"/"non-modal") theories. We start with the strong theories, and then give the introduction of the minimal view.[1]

The hallmark of the strong view of imperatives is that they denote imperative modal operators (Han 1998, Schwager 2006/Kaufmann 2012, Condoravdi & Lauer 2012, among many others). Kaufmann relies on a version of Kratzer's (1981) semantics for modality in possible world semantics. Kratzer employs conversational backgrounds, which are functions from worlds to sets of propositions that describe what is known to an agent, what is desired by an agent, what the law says, etc. Modal expressions can then be interpreted as quantifiers over the sets of possible worlds compatible with such a background (i.e. the intersection of the set of propositions that the conversational background assigns to the world of evaluation). By

[1] (What we labeled) Intermediate theories have recently been proposed. For example, Oikonomou (2016) assumes that an imperative morphology requires licensing modal operators but is not modal itself, and Ihara (2020) proposed that an imperative morphology in Japanese denotes a modal meaning by itself but does not encode imperative presuppositions (or imperative speech acts). These approaches could come close to the strong theories rather than the minimal ones, in the sense that they assume a modal operator to be encoded in the semantics of imperatives.

adopting Kratzer's framework of modals, Kaufmann derives the meaning of imperatives from a modal layer in the semantics of imperatives, i.e., imperatives have almost the same truth-condition as sentences with deontic modal expressions like *should* or *must*, which allows us to analyze imperatives on a par with performative deontic modals. Simplifying significantly, this line of analysis assumes that imperatives are interpreted as (2).[2]

(2) "Go to bed!" in Kaufmann (2012):
   a. $[\![$ Go to bed! $]\!]^w = [\![$ You should/must go to bed! $]\!]^w$
   b. $[\ OP^{imp}\ ([\![\ p$ = the addressee goes to bed $]\!])\ ]$
   $= \lambda w.$ at all worlds w' that are optimal according to conversational backgrounds evaluated at w, the addressee goes to bed in w'.

We do not go into further details of her model due to space limitations, but we will show in Section 4 that this line of analysis works well enough to capture an interaction between imperatives and sluicing constructions.

Portner (2004, 2007), on the other hand, proposes the minimal denotational semantics, according to which imperatives denote a property (rather than a proposition) that is restricted to the addressee, and update a context by adding the property to the discourse component called the To-Do Lists (TDLs): for every individual, the TDL contains a list of properties that discourse agents should make true of themselves. This approach, for instance, derives the meaning of imperatives as follows.

(3) "Go to bed!" in Portner (2004, 2007):
   $[\![$ Go to bed! $]\!]^c$
   $= \lambda w \lambda x$: x = the addressee in c. [x goes to bed at w]
   if defined, the property [the addressee goes to bed at w] goes to the addressee's TDL.

In this way, the minimal theories provide a uniform analysis of speech acts in terms of dynamic semantics: the function of assertions is to update a

[2] It is worth noting that Kaufmann moreover proposes that the imperative operator enforces the following presuppositions: (i) temporal restriction: an imperative is satisfied at or following utterance time, (ii) authority condition: the speaker is in an epistemically privileged position with respect to the conversational backgrounds, (iii) epistemic uncertainty condition: the speaker believes that the uttered proposition can either be true or false, and (iv) ordering source restriction: the ordering source must be prioritizing or speaker bouletic. The semantics introduced here also ignores several complications and contains only notions relevant to the following discussion for the sake of simplicity. Refer to Kaufmann (2012, Ch. 3–4) for the complete version.

context by adding a proposition to the Stalnaker's (1978) common ground, the function of questions is to update a context by adding a question (a set of propositions) to the stack of questions (the question under discussions; Roberts 1996), and imperatives update the context by adding a property to the addressee's To-Do Lists. For Portner, then, the heavy lifting of imperatives is done in the pragmatics: the flavor of necessity modality that we associate with imperatives is not encoded in the syntax-semantics but is part of the relevant discourse component which is assumed in pragmatics.

2.2 Syntax of Imperatives

There are different views on what syntactic structure imperatives have, at least in Japanese. More specifically, some previous studies (e.g., Mihara & Ebara 2012, Mihara 2015) argue that imperatives have a defective syntactic structure, while others (e.g., Hasegawa 2008, Tagawa 2009) argue that their structure is as rich as other constructions such as declaratives.

One of the previous works arguing for the former view is Mihara (2015). Considering the morphological status of Japanese imperatives (cf. Shirota 1998), he argues that they have a poor syntactic structure compared with other constructions. More specifically, he argues that Japanese imperatives have a *v*P-size structure, lacking projections above it such as IP and CP, and that the imperative morpheme is right-adjoined to *v*P. Based on this view, the structure of (1), for example, is represented as in (4).

(4) $[_{vP}\,[_{vP}$ [hayaku hasir] *v*] -e]

According to the latter view, on the other hand, imperatives have a richer structure than (4). Based on proposals in such previous studies as Han (1998), Tagawa (2009), for example, proposes the structure in (5) for Japanese imperatives.

(5) $[_{\text{ForceP}}\,[_{\text{MP}}\,[_{\text{FinP}}\,[_{\text{IP}}\,[_{\text{VP}}\,\text{V}]\,\text{I}_{[\text{-Past}]}]\,\text{Fin}_{[\text{+Irrealis}]}]\quad \text{M}_{[\text{+Imp}]}]\qquad \text{Force}_{[\text{+Direct}]}]$

	(p)	*irrealis update plan set*	*instruction*
		sentence radical	speech act

With the framework of Distributed Morphology, he claims that the feature complex of [+V], [+Irrealis] and [+Imp] in (5) is realized as the imperative morpheme.

3 Sluicing in Japanese

Before discussing the main data, we present our assumption on how to analyze sluicing constructions. Sluicing refers to IP-deletion in wh-questions, such as in the English example in (6).

(6) John ate something, but I don't know [$_{CP}$ what$_i$ [$_{IP}$ ~~John ate t$_i$~~]].

It has been widely assumed that the identity condition proposed by Merchant (2001), which is shown in (7), is crucial in determining interpretations of sluicing constructions. Notions relevant to (7) are exhibited in (8) and (9).[3]

(7) Focus condition on IP-ellipsis
An IP α can be deleted only if α is e-GIVEN. (Merchant 2001: 31)

(8) e-GIVENness
An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo ∃-type shifting, (i) A entails F-clo(E), and (ii) E entails F-clo(A).
(ibid: 31; cf. Schwarzchild 1999)

(9) F-closure
The F-closure of α, written F-clo(α), is the result of replacing F-marked parts of α with ∃-bound variables of the appropriate type (modulo ∃-type shifting).
(ibid: 14)

The condition in (7) captures the fact that (11a), rather than (11b), underlies the sentence in (10).

(10) I know she called some politicians idiot, but I don't know WHICH.

(11) a. I know she called some politicians idiot, but I don't know [WHICH (politician) [~~she called t an idiot~~]].
b. *I know she called some politicians idiot, but I don't know [WHICH (politician) [~~she insulted t~~]].
(cf. ibid: 31)

---

[3] The notion of F-closure is relevant to sluicing particularly when an item in an antecedent clause is F-marked, or focalized, as exemplified in (i).

(i) Abby called BEN$_F$ an idiot, but I don't know [$_{CP}$ who else [$_{IP}$ ~~Abby called t an idiot~~]].
(cf. Merchant 2001: 35)

With (9), the F-closure of the antecedent and elided clause in (i) can be shown as below:

(ii) a. F-clo(IP$_A$) = ∃x.Abby called x an idiot
b. IP$_E$ (or F-clo(IP$_E$)) = ∃x.Abby called x an idiot

(ii) shows that the elided clause counts as e-GIVEN and thus it is allowed to be deleted, given the condition in (7). The notion of F-closure is irrelevant to this paper, since we do not handle cases where an element is F-marked.

The semantic representation of the deleted IP and its antecedent IP in (11a) and (11b) is shown below:[4]

(12) e-GIVENness in (11a)
  a. IP_A (or F-clo(IP_A)) = ∃x.she called x an idiot
  b. IP_E (or F-clo(IP_E)) = ∃x.she called x an idiot

(13) e-GIVENness in (11b)
  a. IP_A (or F-clo(IP_A)) = ∃x.she called x an idiot
  b. IP_E (or F-clo(IP_E)) = ∃x.she insulted x an idiot

Note that (12a) and (12b) entail each other, while (13a) and (13b) do not. It follows then that the deleted IP in (11a) counts as e-GIVEN while that in (11b) does not, which is why only to (11a) can sluicing apply.[5]

Japanese has a construction which looks like a sluicing construction in English, as shown in (14). To simplify the discussion, we refer to such a fragmental wh-question as in (14) as a sluicing construction as well.

(14) Hanako-ga nanika-o katta sooda ga, boku-wa
  Hanako-NOM something-ACC bought I.hear but I-TOP
  [nani-o (da) ka] siranai.
  what-ACC COP Q know.not
  'I hear that Hanako bought something, but I don't know what.'

It has been argued in many previous works that a sluicing construction like (14) is derived by deleting the presupposition clause of a cleft (see, e.g., Nishiyama et al. 1996, Fukaya & Hoji 1998, Hiraiwa & Ishihara 2002, 2012, Abe 2015, among others; but see Takahashi 1994 and Kimura & Takahashi 2011 for different analyses). According to this analysis, for example, the sluicing construction in (14) is obtained by eliding the presupposition clause of the cleft in (15), which is headed by the complementizer *no*.

[4] Merchant (2001) assumes a trace of wh-movement as an existentially-bound variable, which he interprets as a convenient oversimplification.

[5] We note here that the updated version of Merchant's (2001) identity condition proposed by Barros & Kotek (2019) is also compatible with our argument in this paper. See also their paper for problems in another approach to the identity condition, namely the Q-equivalence approach (e.g. AnderBois 2014).

(15) (Hanako bought something, but)
boku-wa [[Hanako-ga e_i katta no]-wa nani-o_i (da) ka]
I-TOP Hanako-NOM bought C-TOP what-ACC COP Q

siranai.
know.not
'I don't know what it was that Hanako bought.'

We adopt this analysis for the purpose of the current paper.

There are few previous studies, on the other hand, that deal with the identity condition of sluicing constructions in Japanese, including Nishigauchi & Fujii (2006) and Abe (2015). For the purpose of the current discussion, we adopt Nishigauchi & Fujii's (2006) view. They basically follow Merchant's (2001) identity condition; based on the cleft analysis of Japanese sluicing constructions, they claim that ellipsis of the presupposition clause of clefts is licensed only if the semantic content of the presupposition clause and that of its antecedent clause entail each other.[6] For example, the sluicing construction in (16) is interpreted to have the propositional meaning of the cleft (17a) but not that of (17b) and thus is analyzed to be derived from (17a), rather than (17b).

(16) Mari-ga dareka-o karakatta sooda ga, boku-wa [dare-o
Mari-NOM someone-ACC made.fun I.hear but I-TOP who-ACC
(da) ka] siranai.
COP Q know.not
'I hear that Mari made fun of someone, but I don't know who(m).'
(cf. Nishigauchi & Fujii 2006: 14)

(17) (I hear that Mari made fun of someone, but)
a. boku-wa [[Mari-ga e_i karakatta no]-wa dare-o_i (da) ka]
I-TOP Mari-NOM made.fun C-TOP who-ACC COP Q
siranai.
know.not
'I don't know who it was that Mari made fun of.'

[6] Abe's (2015) proposal of the identity condition is also based on entailment but is looser than Merchant's and Nishigauchi & Fujii's. In this paper, however, the latter proposal suffices for the current purpose, unless a wider range of data is considered.

b. boku-wa [[Mari-ga e_i chibi-to itta no]-wa dare-o_i (da) ka] siranai.
I-TOP Mari-NOM shorty-as called C-TOP who-ACC COP Q know.not
'I don't know who it was that Mari called shorty.' (cf. ibid: 14-15)

The semantic representation of the antecedent clause in (16) and that of the presuppositional clause in (17a) and (17b) are shown in (18).

(18) a. antecedent clause of (16): ∃x.Mari made fun of x
b. presupposition clause of (17a): ∃x.Mari made fun of x
c. presupposition clause of (17b): ∃x.Mari called x shorty

Note that mutual entailment is observed between (18a) and (18b) but not between (18a) and (18c). Given that the sluicing construction in (16) has the meaning of (17a) but not of (17b), this observation thus suggests that it is not implausible to assume the mutual entailment relationship as the identity condition for sluicing constructions in Japanese, as claimed by Nishigauchi & Fujii (2006).

4 Imperatives and Sluicing

Bearing the discussion in the last two sections in mind, let us now witness the core data in (19), where an imperative is taken as the antecedent clause of the sluicing construction.

(19) [Context: The manager of the baseball team finds that one member John has not run for warming-up. He orders the captain to tell John to run somewhere. The captain says to John:]
Hayaku dokoka-o hasir-e! [Doko-o ka]-wa siranai kedo.
quickly somewhere-ACC run-IMP where-ACC Q-TOP know.not though
'Run somewhere right away! I don't know where, though.'

Of importance in (19) is how the sluicing construction is interpreted. In fact there are several possible ways to make that sentence a complete wh-question. Some of them are shown in (20).

(20) (as the interpretation of the elided clause in (19),)
[Omae-ga doko-o {hasir-anaitoikenai / hasir-ubeki / hasir-ebayoi}
you-NOM where-ACC run-must run-should run-should
ka]-wa siranai kedo.
Q-TOP know.not though
'I don't know where you must/should run.'

Note that all the possible interpretations in (20) contain a necessity modal element, namely *must* and *should*. If such an element is lacked, the sentence is infelicitously interpreted in the context of (19), as shown in (21).

(21) (as the interpretation of the elided clause in (19),)
#[Omae-ga doko-o hasir-u ka]-wa siranai kedo.
you-NOM where-ACC run-PRES Q-TOP know.not though
'I don't know where you will run.'

With these observations in mind, let us now consider the identity condition of the sluicing construction in (19). Given the aforementioned fact that the sluicing construction in (19) is interpreted to have a necessity modal element, the elided presupposition clause of the cleft underlying it can be semantically represented as in (22).

(22) the semantic representation of the elided presupposition clause
∃x.you(/John) **must/should** run x

Recall here that, for sluicing constructions to be licensed in Japanese, a mutual entailment relationship must hold between an elided presuppositional clause of an underlying cleft and its antecedent clause, as Nishigauchi & Fujii (2006) claim. In order for this condition to be satisfied, its antecedent clause, namely the imperative in (19), should have the semantic representation in (23).

(23) the semantic representation of the imperative antecedent clause
∃x.you(/John) **must/should** run x

Notice that, crucially, the representation in (23) includes the necessity modal. This point indicates that the semantics of imperatives should include a necessity modal element, which counts as evidence for the strong theories of the imperative semantics. With the minimal theories, on the other hand, it would be expected that the semantic representation of the antecedent imperative is (24a) and thus that of the elided clause is (24b), which yields an infelicitous interpretation in the context of (19).

(24) a. the expected semantic representation of the imperative antecedent in (19), under the minimal theories:
∃x.you(/John) runs x
b. the expected semantic representation of the elided presupposition clause in (19), under the minimal theories:
∃x.you(/John) runs x

Furthermore, the existence of a modal element in imperatives suggests that their syntactic structure should include IP, given the widely-accepted assumption that a modal element is located in the area of IP (see, e.g., Cinque 1999). Hence the syntactic structure of imperatives is not so defective as that proposed Mihara (2015), in that it should contain IP.

5 Conclusion and Discussion

Given the controversial status of the structure of imperatives, this paper has given a novel observation of how an imperative behaves with respect to sluicing and has shown that imperatives should have a necessity modal element. This observation counts as an argument for the view that (i) the semantic structure of imperatives includes a modal element (i.e. the strong theories) and that (ii) the syntactic structure of imperatives is not so defective.

Finally, we here discuss a potentially alternative view for the key data in the current paper, namely (19). Rudin (2019) observes mismatch phenomena in sluicing. Specifically, he points out that, in some languages, some left-peripheral elements such as tense, finiteness, polarity and modal (i.e., those above *v*P of an event-introducing predicate) are allowed to be interpreted in sluicing constructions even though those elements are not included in their antecedent clause, as long as their interpretation fits the context (see, e.g., Kroll & Rudin 2017 for a pragmatic condition for polarity mismatch phenomena). Among such mismatch phenomena is modal mismatch. This is observed in English, for example, as exemplified in (25).

(25) Mary **must/has to** solve the problem, but she does not see [how ~~she can solve the problem~~].

(25) shows that a sluicing construction can be felicitously interpreted to contain a modal element which its antecedent clause does not have (e.g. *must/have to* vs. *can* in (25)), violating Merchant's (2001) identity condition (see (7), (8) and (9)).

If such mismatch is allowed in Japanese as well, it will be difficult to firmly conclude that the observation in Section 4 is ascribed to the existence of a modal element in imperatives. Against this backdrop, we here consider sluicing constructions which include a wh-phrase *doosureba* 'how', which

we believe counts as a potential argument for the lack of mismatch in Japanese sluicing constructions.[7] One peculiar property of this phrase is that it is compatible with a potential modal element which corresponds to *can* and *be able to* in English, but not with a necessity modal element like *must* and *have to*, as shown in (26).

(26) a. Mary-wa [{doosureba / doo} kono mondai-o {tok-eru /
Mary-TOP how how this problem-ACC solve-can
tok-ukotogadekiru} ka] wakaranai sooda.
solve-can Q know.not I.hear
'(I hear that) Mary doesn't know how she can solve the problem.'

b. Mary-wa [{*doosureba / doo} kono mondai-o
Mary-TOP how how this problem-ACC
tok-anaitoikenai ka] wakaranai sooda.
solve-must Q know.not I.hear
'(I hear that) Mary doesn't know how she must solve the problem.'

Note that *doosureba* is compatible with a sluicing construction, as shown in (27), where the sluicing construction is interpreted as *how a scholarship can be got at this graduate school*.

(27) Kono daigakuin-de-wa shoogakukin-ga mora-eru sooda ga,
this graduate.school-in-TOP scholarship-NOM get-can I.hear but
[doosureba ka]-wa wakaranai.
how Q-TOP know.not
'A scholarship can be got at this graduate school, but I don't know how.'

With these facts in mind, let us now consider a case where the antecedent clause of a sluicing construction including *doosureba* has a necessity modal element. If modal mismatch is allowed in Japanese, as well as in English (see (25)), it is expected that that sluicing construction can be interpreted as having a potential modal element, rather than a necessity one, thus judged as grammatical. This expectation is not attested, as shown in (28); the weirdness of (28) suggests that the sluicing construction is interpreted only as having a necessity modal, strictly following the identity condition.

[7] More precisely, *doosureba* 'how' can be morphologically decomposed into *doo* 'how', *sure* 'do' and *ba* 'if'.

(28) *Mary-wa kono mondai-o tok-anaitoikenai sooda ga,
Mary-TOP this problem-ACC solve-must I.hear but
(Mary-wa) [doosureba ka]-wa wakaranai sooda.
Mary-TOP how Q-TOP know.not I.hear
'I hear that Mary must solve the problem but that she doesn't know how.'

This data thus indicates that at least modal mismatch is not allowed in Japanese. Even though more extensive investigation is necessary, the current observation suggests the possibility that sluicing constructions in Japanese do not allow mismatch phenomena. It, in turn, potentially reinforces our claim that the sluicing data in (19) indicates the existence of a modal element in imperatives.

References

Abe, J. 2015. *The In-situ Approach to Sluicing*. Amsterdam: John Benjamins.

AnderBois, S. 2014. The Semantics of Sluicing: Beyond Truth Conditions. *Language* 90: 887–926

Barros, M. & H. Kotek. 2019. Ellipsis Licensing and Redundancy Reduction: A Focus-based Approach. Ms., Washington University and Yale University.

Cinque, G. 1999. *Adverbs and Functional Heads: A Cross-linguistic Perspective*. Oxford: Oxford University Press.

Condoravdi, C. & S. Lauer. 2012. Imperatives: Meaning and Illocutionary Force. *Empirical Issues in Syntax and Semantics* 9: 37–58. http://www.cssp.cnrs.fr/eiss9/eiss9 condoravdi-and-lauer.pdf.

von Fintel, K. & S. Iatridou. 2017. A Modest Proposal for the Meaning of Imperatives. *Modality across Syntactic Categories*, ed. A. Arregui, M.-L. Rivero, and A. Salanova, 288–319. Oxford: Oxford University Press.

Fukaya, T. & H. Hoji. 1998. Stripping and Sluicing in Japanese and Some Implications. In *WCCFL 18: Proceedings of the 18th West Coast Conference on Formal Linguistics*, ed. S. Bird, A. Carnie, J. D. Haugen & P. Norquest, 145–158. Somerville, MA: Cascadilla Press.

Han, C-H. 1998. The Structure and Interpretation of Imperatives: Mood and Force in Universal Grammar. Doctoral dissertation, University of Pennsylvania.

Hasegawa, N. 2008. Licensing a Null Subject at CP: Imperatives, the 1st Person, and PRO. *Scientific Approaches to Language* 7: 131–152.

Hiraiwa, K. & S. Ishihara. 2002. Missing Links: Cleft, Sluicing, and "No Da" Construction in Japanese. In *Proceedings of the 2nd HUMIT Student Conference in Language Research*, (MIT Working Papers in Linguistics 43), ed. T. Ionin, H. Ko & A. Nevins, 35–54. Cambridge, MA: MITWPL.

Hiraiwa, K. & S. Ishihara. 2012. Syntactic Metamorphosis: Clefts, Sluicing, and In-situ Focus in Japanese. *Syntax* 15: 142–180.

Ihara, S. 2020. Decomposing Directive Strategies. Doctoral dissertation, Osaka University.

Kaufmann, M. 2012. *Interpreting Imperatives*. New York: Springer.

Kimura, H. & D. Takahashi. 2011. NPI and Predicative Remnants in Japanese Sluicing. In *Japanese/Korean Linguistics 19*, ed. H.-M. Sohn, H. Minegishi Cook, W. O'Grady, L. Serafim, & S. Y. Cheon, 141–154. Stanford: CSLI Publications.

Kratzer, A. 1981. The Notional Category of Modality. In *Words, Worlds, and Contexts. New Approaches to Word Semantics*, ed. H. J. Eikmeyer & H. Rieser, 38–74. Berlin: Mouton de Gruyter.

Kroll, M. & Rudin, D. 2017. Identity and Interpretation: Syntactic and Pragmatic Constraints on the Acceptability of Sluicing. In *NELS 47: Proceedings of the Forty-Seventh Annual Meeting of the North East Linguistic Society*, ed. A. Lamont & K. Tetzloff, 177–190. Amherst, MA: GLSA.

Merchant, J. 2001. *The Syntax of Silence: Sluicing, Islands, and the Theory of Ellipsis*. Oxford: Oxford University Press.

Mihara, K. & M. Ebara. 2012. Tizu Seisaku Keikaku ni okeru Nihongo no Meireibun [Japanese Imperatives in the Cartographic Project]. *Studies in Japanese Language and Culture* 22: 1–16.

Mihara, K. 2015. *Nihongo no Katuyoo Genshoo* [Inflectional Phenomena in Japanese]. Tokyo: Hituzi Shobo.

Nishigauchi, T. & T. Fujii. 2006. Short Answers: Ellipsis, Connectivity, and Island Repair. Ms., Kobe Shoin Graduate School and University of Maryland.

Nishiyama, K., J. Whitman & E.-Y. Yi. 1995. Syntactic Movement of Overt Wh-phrases in Japanese and Korean. In *Japanese/Korean Linguistics 5*, ed. N. Akatsuka, S. Iwasaki & S. Strauss, 337–351. Stanford, CA: CSLI Publications.

Oikonomou, D. 2016. Covert Modals in Root Contexts. Doctoral dissertation, MIT.

Portner, P. 2004. The Semantics of Imperatives within a Theory of Clause Types. *Proceedings of SALT* 14: 235–252. New York: CLC Publications.

Portner, P. 2007. Imperatives and Modals. *Natural Language Semantics* 15: 351–383. http://dx.doi.org/10.1007/s11050-007-9022-y.

Roberts, C. 1996. Information Structure in Discourse: Towards an Integrated Formal Theory of Pragmatics. In *OSU Working Papers in Linguistics* 49. Papers in Semantics, ed. J. H. Yoon & A. Kathol. 91–136. Ohio: Ohio State University.

Rudin, D. 2019. Head-based Syntactic Identity in Sluicing. *Linguistic Inquiry* 50: 253–283.

Schwager, M. 2005. Interpreting Imperatives. Doctoral dissertation, Johann-Wolfgang-Goethe Universitaet zu Frankfurt am Main.

Schwarzchild, R. 1999. GIVENness, AvoidF and Other Constraints on the Placement of Accent. *Natural Language Semantics* 7:141–177.

Shirota, S. 1998. *Nihongo Keitairon* [Japanese Morphology]. Tokyo: Hituzi Shobo.

Stalnaker, R. 1978. Assertion. *Syntax and Semantics* 9: 315–322. New York: Academic Press.

Tagawa, T. 2009. Bunsan Keitairon ni yoru Dooshi no Katuyoo to Gokeisei no Kenkyuu [Study on Verb Inflection and Word Formation in Distributed Morphology]. Doctoral dissertation, Tsukuba University.

Takahashi, D. 1994. Sluicing in Japanese. *Journal of East Asian Linguistics* 3: 265–300.