Functional Parametrization Hypothesis in the Minimalist Program*

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1 Introduction

- Recently, many studies in the current Minimalist Program have adopted the Externalization Hypothesis (**EH**) (Chomsky, 2010; Berwick and Chomsky, 2011, 2016; Boeckx, 2016, among others), which states that the cross-linguistic variation stems only at the PF-branch.
- I argue that the presence/absence of agreement features on functional categories in the lexicon yields certain parametric variation, which is part of the Functional Parametrization Hypothesis (**FPH**) (Fukui, 1988, 1990, 1995b, among others).
- I demonstrate that Japanese lacks [uϕ] in the lexicon with the support of several case studies and discussions from a comparative perspective.

1.1 Outline

- Section 1: I first review how the FPH emerged in the theory of language. Thereafter, I examine the literature on different approaches to the study of human language: Language Acquisition and Language Disorder. I argue that it is reasonable to claim that functional categories, unlike lexical categories, are subject to variation. Furthermore, I maintain that agreement features of functional categories may also be subject to variation, which is incompatible with the EH.
- Section 2: I propose an analysis of how several seemingly unlabelable constructions in Japanese are labeled in the framework of Chomsky (2013). The proposal is based on the argument that Japanese lacks [uϕ] in the lexicon. I show that canonical sentences, multiple nominative/genitive constructions, and (multiple) scrambling constructions in Japanese can all be derived without labeling failure by solving the {XP, YP} problem.
- Section 3: I propose an exploratory generalization that languages with object-verb ϕ-agreement cannot have productive lexical VV-compounds. Then, I provide a morphosyntactic analysis of why these compounds are absent in English and some other languages with object-verb ϕ-agreement. Furthermore, I discuss how Case is licensed in Japanese.
- Section 4: This section consists of extensive discussions on previous studies that argue for the presence of ϕ-agreement in Japanese. I carefully review five different arguments for ϕ-agreement in Japanese and offer rebuttals to each of them. Showing that there is little substantive evidence for ϕ-agreement in Japanese, Section 4 further supports the argument that Japanese lacks [uϕ].

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- Section 5: Overall, I argue that Japanese lacks [uϕ] in the lexicon, and that the presence/absence of agreement features in the lexicon yields certain parametric variation. This study provides a counterargument to the EH.

1.2 Lexical vs. Functional Categories

- I aim to contextualize the proposal made in this talk in the larger framework of linguistic theory, namely in the debate on the locus of linguistic variation.
  - This section provides conceptual and empirical support of the claim that some functional categories, unlike lexical categories, are subject to variation (Fukui, 1988, 1995b, among others).
  - I argue for the following statement, which is part of the FPH in (1) proposed by Fukui (1988, 1990, 1995b); Chomsky (1995):

(1) **Agreement Parametrization Hypothesis**:
The presence/absence of agreement features of functional categories in the lexicon yields certain parametric variation.

- Specifically, I argue that Japanese lacks [uϕ] in its lexicon (Fukui, 1986, 1988; Saito, 2007, 2016, among many others) and demonstrate that adopting this argument explains certain differences between Japanese and other languages, especially English.

1.2.1 The Lexical Parametrization Hypothesis

- Under the Principles and Parameters (**P&P**) approach, Language Acquisition comprises fixing a limited number of parameter values associated with the principles in UG. The early P&P theory assumed that all parameters were about the principles of Universal Grammar. Thus, they were attributed to the innate properties of the Faculty of Language.
  - This view has changed significantly since then. Early P&P did not answer the question about the kinds of parameters that were possible or impossible.
  - Apart from stating that all parameters were grammatical parameters, no formal property was provided to delineate the range of possible parameters. Therefore, the question of how to delimit the class of available parameters arose.

- In this context, Borer (1984) proposes that parametric variation is limited to the inflectional properties of languages. Wexler and Manzini (1987) (see also Manzini and Wexler, 1987) refine Borer's idea to propose that the parameter setting should be linked with the acquisition of lexical items in each language.
  - This is called *the Lexical Parametrization Hypothesis* (**LPH**) (Yang, 1983; Vikner, 1985; Manzini and Wexler, 1987; Wexler and Manzini, 1987; Baker, 1988, 2003, among others), as stated in (2) below:

(2) **Lexical Parametrization Hypothesis**:
Values of a parameter are associated not with particular languages, but with particular lexical items in a language. (Wexler and Manzini, 1987, p.55)

– Through observations of binding in English and Icelandic, Wexler and Manzini (1987) attempt to provide an answer to what the learnable (hence, possible) parameters in human languages are.

- A novelty and the moot point of the approach is the assumption that parameters are set for each lexical item (Naoki Fukui p.c.). In an extreme case, this should allow for more parameters than the number of lexical items in a language. As Safir (1987, pp.79-80) indicates, parameters as defined by Wexler and Manzini (1987) are incompatible with minimizing the number of crosslinguistic parameters.

1.2.2 The Functional Parametrization Hypothesis

- Around the same time, another dominant view appeared in the theory that attempted to limit the class of possible parameters. Fukui (1988) proposes that the locus of cross-linguistic parametric differences is restricted to functional categories. This is *the Functional Parametrization Hypothesis* (**FPH**) (Fukui, 1986, 1988, 1995a,b, 2006, among others), as described in (3):[1]

  (3) **Functional Parametrization Hypothesis**:
  Values of a parameter are associated not with particular languages, but with functional elements in the lexicon. (adapted from Fukui, 1988, pp.266-269)

- The FPH is conceptually preferable to the LPH in that only the former strictly restricts the set of possible parameters in the theory of language.

1.3 Language Acquisition and Language Disorder

- It is possible to *conceptually* distinguish functional categories from lexical categories. A question that arises is whether functional categories can be *empirically* distinguished from lexical categories.

- By reviewing the literature on different approaches to the study of language, we find that functional categories are empirically distinguishable from lexical categories in the lexicon since they are acquired later (Language Acquisition) and are subject to loss (Language Disorder: agrammatism).

1.3.1 Language Acquisition and Functional Categories

- It has been observed that in a developmental stage of children's language ability, their utterances lack functional categories (Radford, 1988, 1990; Lebeaux, 1988, 2000; Platzack, 1990; Poeppel and Wexler, 1993; Wexler, 1998; Crain and Lillo-Martin, 1999; Thornton and Tesan, 2007, among many others).

  – Categories such as D, T (originally, I), and C are acquired later in what Radford (1988, 1990) calls the functional stage.

[1] Fukui (1988, 1995a) implies that the Head Parameter is the only independent Macro-parameter that exists in UG. His original statements regarding a restrictive theory of parametric variation are as follows:

(i) a. Parametric variation outside of the lexicon must be limited to ordering restrictions ('linearity').
b. Inside the lexicon, only functional elements are subject to parametric variation.
c. Among the functional elements, only those that do not play any role in LF can be absent in the lexicon of a particular language. (Fukui, 1988, pp.266-269)

(4) Some characteristic traits of early child grammar:

a. Child clauses lack complementizers
b. Child clauses have no subject auxiliary inversion.
c. Child clauses have no preposed wh-phrases.
d. Child clauses lack infinitival *to*.
e. Child clauses lack modal auxiliaries.
f. Child clauses have negation by particles (*no*/*not*), not by auxiliaries.
g. Child clauses lack verbs marked for Tense.
h. Child clauses lack verbs marked for agreement.
i. Child clauses lack mastery of nominative case assignment.

(Radford, 1988, pp.27-28)

- The early-stage language of children lacks agreement features, since these features are related to the functional heads that are acquired in the later functional stage.
- The fact that functional categories and agreement features are acquired later than lexical categories during Language Acquisition indicates that lexical categories should be empirically distinguished from functional categories.

- Lebeaux (2000, p.155), among others, mentions that one might object to the above conclusion since a functional explanation could be provided.

  - Children have limited (working) memory in their early language development stages. Syntactic structures are created in a bottom-up manner.
  - Therefore, one might say that given such performative limitations, functional categories are not produced by young children since they are structurally higher than lexical categories:
  - Young children, with limited working memory, can have functional categories in their inventory but cannot construct the complete syntactic structures with them because of processing failure.

- I call this explanation *a functionalist approach* and will demonstrate that this counterargument cannot hold using the following two observations.

- First, Lillo-Martin (1994, pp.310-312) argues against such a functionalist approach. She conducted a longitudinal study of the acquisition of American Sign Language (ASL) by deaf children of different ages.

  - She observes two groups of deaf children: a group of younger deaf children of about two years old and a group of the older deaf children of around five to nine years old.
  - Lillo-Martin (1994, p.311) primarily studies the use of null arguments in ASL, but also observes that the latter group of children underwent stages without functional elements/inflectional properties.
  - The parents of the deaf children in the latter group are not native signers, and their children acquired ASL from native signers at a later age. Therefore, their general language-independent cognitive abilities were more developed when they went through the early stages of Language Acquisition than the former group of children.
  - Since the cognitive capacities of the older deaf children are likely to be far more mature than those of the younger children of around two years old, the fact that they underwent pre-functional stages before entering the functional stage strongly indicates that working

memory or processing ability is irrelevant to the lack of functional categories in early child grammar.

- Second, Jordens (2002) argues against the functionalist approach to the lack of functional categories in early child grammar.
  - He notes that young children do not use complementizers in the pre-functional stages. He argues that this is not because of a limited working memory or processing capacity.
  - It has been widely observed that young children in the pre-functional stages produce embedded clauses in Dutch (Jordens, 2002, p.690). However, these clauses systematically lack complementizers, which cannot be omitted in adult Dutch grammar, as illustrated in (5).

(5) The lack of null complementizers in adult Dutch grammar:

a. Vroeg je nou of die plaats vrij is (of dat ie bezet is).
asked you now if that seat free is or that it taken is
lit. 'Did you ask if that the seat is free (or that the seat is taken)?'

b. *Vroeg je nou of Ø plaats vrij is (of Ø ie bezet is).
asked you now if that seat free is or that it taken is

c. Hij zei [dat/*Ø Jan Komt] het feest wel zal opluisteren.
he said that John comes the party no-doubt will enhance
'He said that John's coming will certainly enhance the party.'

(Neeleman and van de Koot, 2006, pp.697-698)

  - The fact that early child grammar in Dutch produces embedded clauses without functional categories suggests that their exclusion is a principled one, not just a functional one concerning working memory or processing ability.[2]

- In summary, there are several counterarguments to the functionalist approach. Therefore, it is reasonable to claim that early child grammar lacks functional categories in the lexicon.
- The findings of Language Acquisition studies indicate that lexical categories must be empirically distinguished from functional categories.

1.3.2 Language Disorder (Agrammatism) and Functional Categories

- Language Disorder studies in the 1980s claimed that agrammatic speech lacked any functional categories (Grodzinsky, 1984). Grodzinsky (1984, p.106) claims that agrammatic patients omit free grammatical morphemes, such as determiners and auxiliaries.
  - Later, researchers found that agrammatism is a matter of degree: certain functional elements and agreement features are lost in agrammatic patients' speech according to the severity of the symptoms (Friedmann and Grodzinsky, 1997).
  - In principle, functional categories disappear from the speech of agrammatic patients while lexical categories do not. Based on these observations, it is natural to conclude that functional categories need to be empirically distinguished from lexical categories in the lexicon since only the former are subject to disappearance.
- Similar to the case of Language Acquisition, a functionalist approach to the lack of functional categories seems compatible with the observations of agrammatism.

[2]Note that V2 movement is absent in early child Dutch (Jordens, 2002, p.689).

- That is, due to deficits in working memory, agrammatic patients cannot produce functional categories, as they are structurally higher than lexical categories. I argue against such functionalist approaches by reviewing two different observations of agrammatism.

- First, Thompson et al. (2002) conducted qualitative research on an agrammatic patient. The patient was diagnosed as having no problem with working memory (Thompson et al., 2002, p.193).

  - They found that their patient produced complex structures with embedding, such as relative clauses with a relative pronoun *who*, such as *boy who stalk her*.[3]
  - Significantly, the patient's speech completely lacked the properties of T (i.e., Tense, Aspect, auxiliaries, and agreement features). The patient's knowledge of lexical categories remained intact throughout the study.
  - Since the patient had no working memory deficit, the complete lack of properties of T in the patient's production indicates that working memory deficits may not be crucial for the absence of functional categories.

- Second, Wenzlaff and Clahsen (2005), among others, report that the verb-second (V2) order is preserved in their German-speaking patients, who were diagnosed as agrammatic.

  - They conducted production tasks in German with their seven agrammatic patients, who are likely to have memory deficits (see Fiebach et al., 2005).
  - In German, V2 movement occurs only in the matrix clause. It is widely accepted that German V2 movement is an instance of verb movement to the functional C-domain (Wurmbrand, 2000, among others).
  - Placing an adverb sentence-initially, these patients produced complex sentences with correct V2 movement in German. They observe that the speech of their patients lacked T properties (i.e., Tense, Aspect, auxiliaries, and agreement features), but six out of the seven patients had high overall accuracy scores for V2 movement.[4]

- Since the German V2 movement is to the C-domain (Wurmbrand, 2000, among others), that V2 order is maintained in the agrammatic patients' speech indicates that they have C but lack properties of T.

  - Since syntactic structure is created in a bottom-up fashion, this fact is unexpected under the functionalist approach. Such an approach predicts that the agrammatic language lacks only (i) C or (ii) C and T together, but not (iii) lacking only T.
  - Such systematic absence, only of T, in the agrammatic patients' speech can serve as another counterargument to the functionalist approach.
  - Thus, it is reasonable to argue that the agrammatic language lacks functional categories. Observations of Language Disorder (agrammatism) studies imply that lexical categories must be empirically distinguished from functional categories.

[3] One may wonder where the relative pronoun *who* is in the structure. Although the patient's speech lacks the properties of T, I assume that there is C in the structure and that who remains in [Spec, CP]. In other words, I assume that C is merged with *v*/VP without T in the patient's grammar.

[4] The other patient's accuracy score for V2 movement was significantly higher than the chance level.

1.3.3 Interim Conclusion

- Discussions on Language Acquisition and Language Disorder indicate that functional categories are empirically distinct from lexical categories.
  - In the next section, I assert that they differ essentially in their functions in the design of human language:
  - Lexical categories are the basic units to express human thought (Fukui, 1988), as such, they are invariant across languages, while functional categories are secondary in the design of human language, and thus they are subject to variation.
  - This argument is supported by an analogy from a case of general biology (genetic variation).

1.4 Lexical Categories and Language as a System of Thought

- Fukui (1988) states that lexical categories are the basic units for expression of thought (Fukui, 1988, p.267).
  - The functions of functional categories are different from those of lexical categories.[5] Their basic role is to introduce agreement features and induce syntactic agreement.
  - Moreover, some of them, such as C and T, contribute to the duality of semantics.
- Agreement features are LF-uninterpretable and irrelevant to LF or human thought. In this study, I focus on unvalued ϕ-features and argue that Japanese lacks them in its lexicon.

1.4.1 Functions of Functional Categories

- I focus on two functions of functional categories in human languages: (i) contribution to the duality of semantics, and (ii) introduction of agreement features.
  - First, some functional categories, such as C and T, contribute to the duality of semantics. External Merge yields the argument structure, while internal Merge yields the discourse-related structure, such as new/old information, focus, and interrogatives (Chomsky, 2014).
  - The C and T heads create the C-T domain, in which discourse-related information is expressed. This function seems to be necessary for all languages since the duality of semantics is observed universally.
  - Thus, I assume that functional features that contribute to the duality of semantics (i.e., operator-variable/topic-comment features) are highly likely to be universal across languages.
- Second, functional categories are the loci of agreement features (Fukui, 1986, 1988, 1995a,b; Muysken, 2008, among others).

[5] One obvious question concerns the categorial status of small *v* in the theory. This head introduces an external argument (a lexical property) but has no substantive semantic content (a functional property). Chomsky (2000, 2001, 2008, *inter alia*) leaves it open whether *v* is a functional or lexical head. I assume with Travis (2014), among others, that small *v* is neither functional nor lexical, but is semi-functional. The discussions in Section 3 may imply that the small *v* is perhaps functional in that it introduces ϕ-features to the derivation, which are inherited by V. In this study, I leave it open whether small *v* is lexical or functional in nature.

- Functional categories introduce unvalued features to syntactic derivations. I argue that this function is not universally attested and that certain unvalued features need not be present in a language.
- Specifically, I focus on [uϕ] and argue that Japanese lacks [uϕ] in its lexicon. In this talk, I aim to demonstrate several empirical consequences of this proposal.

1.4.2 Primary vs. Secondary Categories and Variation in a Biological System

- Fukui and Sakai (2003, p.324) argue that lexical categories have substantive content, which eventually leads to the construction of a predicate-argument structure at LF.[6]
  - Functional categories, on the other hand, do not have such substantive content. Fukui (1988) claims that "[i]t is quite inconceivable that a language without lexical categories, the basic units of expression, can serve as a free instrument of thought and self-expression, an oft-cited function of human language" (Fukui, 1988, p.267).
  - Functional categories do not have their own semantic meaning parallel to that of lexical categories; hence, it is possible to form a basic unit of thought (i.e., predicate-argument structure) without functional categories (Fukui and Sakai, 2003, p.324).
  - Since it is understood that human language is optimally designed primarily as an instrument of thought (Chomsky, 2007b), I argue that in this respect lexical categories are primary within the design of human language.
- Furthermore, I argue that it is reasonable that functional categories are subject to variation in contrast to lexical categories.
  - Let us consider how being primary/secondary to the biological system/design relates to (in)variation.
  - Characters that are not crucial for life-maintenance are secondary in the whole system/design and subject to genetic variation (Lewontin, 1985; Biasetti, 2020, among others). These characters include skin and eye colors and types of hair (Otsuka, 2007; Walsh, 2003; Nakao, 2012, 2013, among others).
  - On the other hand, traits that are crucial for life-maintenance, for instance, traits of the heart and lungs, are in principle not subject to genetic variation among humans.
  - Through this analogy, I maintain that it is reasonable to assume that crucial/primary parts in a system of living creatures are not subject to variation, while the secondary parts are subject to variation.
- It is undeniable that there are variations in human languages. Moreover, human language is an organ (Chomsky, 1980). Therefore, it is not unnatural to attribute these variations to functional categories, which are secondary in the system of human language.
- In summary, I argue that the analogy from the general biology suggests that the primary lexical categories are not subject to variation, while there are variations in functional categories, which are secondary in the human thought system.
- Among the functional elements, some play a role in the human thought system (Naoki Fukui p.c.). For instance, Tense (taking an event) may play substantive roles in the human thought system beyond the predicate-argument structure. This functional element, whether or not it appears as a syntactic head in the computation of narrow syntax, can be universal and might not be susceptible to variation in human languages.

[6] I assume that modification by (attributive) adjectives is also a part of the basic unit of human thought.

- Even if a language has some functional features in its lexicon, it is unclear whether that element crystallizes as a syntactic head in the computation of narrow syntax.
  - There could be variation among languages regarding whether a functional feature, such as Tense and Q-related features, realizes as a syntactic head (Naoki Fukui p.c.).
  - For instance, a Q-feature realizes as a syntactic head *-ka/no* 'Q' in Japanese, whereas there is no such particle in English.
- Among the functional elements, unvalued ϕ-features are LF-uninterpretable and do not play any role in the human thought system. Therefore, I focus on unvalued ϕ-features in this study.[7]

1.4.3 Proposal

- As agreement features relate to functional categories, it is reasonable to assume that there is variation among them.
  - It is widely assumed that LF is uniform across languages (Chomsky and Lasnik, 1993). Certain agreement features (e.g., [uϕ]) are LF-uninterpretable; hence, it is natural to seek cross-linguistic variation in them (Fukui, 1988, pp.268-269).
  - Assuming this is correct, it is natural to claim that a language may lack [uϕ] in the lexicon.
- I situate the proposal in this study within the larger framework of linguistic theory to explain certain cross-linguistic differences and support the claim that there is variation in agreement features in the lexicon.
  - Therefore, this thesis presents a counterargument to the EH described in (6) (Chomsky, 2010; Berwick and Chomsky, 2011, 2016; Boeckx, 2011, 2014, 2016, among others).

(6) Externalization Hypothesis (**EH**):
Cross-linguistic differences only arise in the PF-branch. (Boeckx, 2016)

  - Boeckx (2016) argues that the theory of the lexicon is undeveloped; hence, it is not desirable to relegate explanations of language variations to the lexicon.[8]
  - Boeckx (2014) criticizes the LPH and the FPH as *lexiconcentric*. Assuming that narrow syntax is uniform, he proposes the Strong Uniformity Thesis (SUT), presented in (7), which consists of two parts.

(7) Strong Uniformity Thesis (**SUT**):
Principles of narrow syntax are not subject to parametrization; nor are they affected by lexical parameters. (Boeckx, 2011, 2014, 2016, p.73)

- In this section, I argued that there can be variation in agreement features of functional categories.
  - By reviewing the literature on Language Acquisition and Language Disorder, I concluded that functional categories are empirically different from lexical categories.

[7] Like [uϕ], [uCase] is LF-uninterpretable and irrelevant to the human thought system. Therefore, languages may also vary in the presence/absence of [uCase] in narrow syntax (Naoki Fukui and Toru Ishii p.c.). As this issue is beyond the scope of this study, which focuses on [uϕ], I leave this for future research.

[8] I deem the theory of externalization un/under-developed. Hence, it is unclear whether it is preferable to relegate the explanations of language variation to externalization than to the lexicon without a concrete discussion.

– Furthermore, I contended that functional categories are secondary in the design of human language by carefully reviewing differences in their functions in language.

– As functional categories are secondary, it is natural to claim that they and their agreement features are subject to variation, unlike lexical categories.

1.5 Review of Previous Studies on the FPH (Fukui, 1986, 1988, 1995a,b)

- See Kobayashi (2022, Section 1.5) for details.

1.6 Review of a Previous Study on the Lack of [uϕ] in Japanese (Saito, 2007, among others)

- See Kobayashi (2022, Section 1.6) for details.

1.7 Summary

- In summary, the discussions in this section strongly indicate variation in agreement features of functional categories, although many researchers have pursued the possibilities of the EH and the SUT in the current Minimalist program.

- Considering this, and based on the FPH (Fukui, 1990, 2013; Chomsky, 2015a, among others), I argue for the following statement in (8):

(8) **Agreement Parametrization Hypothesis**: (=(1))
The presence/absence of agreement features of functional categories in the lexicon yields certain parametric variation.

- Specifically, I argue that Japanese lacks [uϕ] in its lexicon (Fukui, 1986, 1988, 1995a,b; Saito, 2007, 2016, among many others) by examining a couple of differences between Japanese and other languages, particularly English, in the following sections.

2 Labeling the Unlabelable in Japanese

2.1 Introduction

- This section presents the argument that Japanese lacks [uϕ] in its lexicon based on labeling in Japanese.[9]

– Chomsky (2013, 2015b) has claimed that every Syntactic Object (**SO**) must be labeled for interpretation at the interfaces, as in (9).

– The label is determined by applying the Labeling Algorithm (**LA**) to an SO at the timing of Transfer phase by phase. There are two ways to label such a symmetric {XP, YP} constituent, as illustrated in (10).

(9) All SOs that reach the interfaces must be labeled for interpretation.
(Chomsky, 2013, p.44)

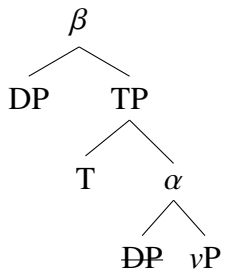
(10) Chomsky's (2013) Labeling Algorithm (LA):

[9]This section is a radically revised and extended version of Kobayashi (2018b).

a. In {H, XP}, LA selects the label H(ead).
b. In {XP, YP} ...,
   i movement of either XP or YP enables the lower copy to be invisible from LA, and the structure is labeled as the visible H(ead), X or Y; or
   ii the structure is labeled by the most prominent shared feature F on X and Y as <F, F>. (adapted from Chomsky, 2013, p.46)

– In (11), the label of α = {DP, vP} is determined because the DP internally merges with TP, rendering the lower copy invisible from LA, as in (10bi); hence, α is unambiguously labeled as *v*P.
– Another {XP, YP} problem arises with the merger of DP and TP in (11). The label of β is determined through labeling via feature-sharing in (10bii). D and T share ϕ-features, which undergo Agree, and β is labeled as <ϕ, ϕ>, as in (11).

(11)



- If Japanese lacks [uϕ] in its lexicon, then a canonical sentence cannot be labeled via feature-sharing in (10) without the {XP, YP} problem with Chomsky's (2013; 2015b) original LA.
  – This raises the question of what the labels of α and β in languages such as Japanese would look like. I propose an analysis to overcome this problem regarding labeling in a language without [uϕ].[10]
  – By doing so, I aim to demonstrate that Japanese lacks [uϕ] in its lexicon.

2.2 Timing Differences of Transfer

- In this section, I propose that Japanese makes extensive use of Transfer to determine the labels of SOs due to its lack of [uϕ].
  – The analysis incorporates the insight of Fukui and Kasai (2004) that the absence of uninterpretable features in Japanese makes the timing and domain of Spell-Out more flexible than in English.
  – Following Takita et al.'s (2016) claim that Spell-Out contributes to determining the labels of SOs, I propose a novel analysis of why multiple subject constructions and scrambling are possible in Japanese in light of labeling (Chomsky, 2013).

2.2.1 Labeling via Transfer (Narita, 2014; Takita et al., 2016)

- Let us briefly review Takita et al.'s (2016) argument below. They claim that Transfer (or Spell-Out, in their terms) determines the label of an otherwise unlabelable structure.

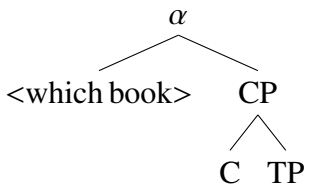
[10] See Saito (2014, 2016) and Narita and Fukui (2022) for alternative analyses.

– In (12), the label of the embedded clause α is not determined by LA since <which book> and $C_{[-Q]}$ do not share [+Q] or [-Q] features.

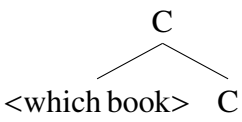
– Takita et al. (2016) suggest that Transfer applies to TP, which enables LA to detect $C_{[-Q]}$ as the label of α, as presented in (13a) and (13a).

(12) a. I wonder [$_{\alpha}$ which book Bob thinks John bought].
b. [$_{\alpha}$ <which book> [$_{XP}$ $C_{[-Q]}$ [$_{TP}$ ...]]].

(13) a.



b.



(adapted from Takita et al., 2016, p.9)

- What Transfer does in (13a) is that it makes TP invisible from Search in {C, TP} (cf. Shim and Epstein, 2015).

  – Following Narita (2014), Takita et al. (2016) assume that a head in an SO becomes a candidate of the label again when the complement is transferred.

  – This is compatible with Chomsky's assumption that a singleton set is equivalent to its member in syntax in (14) (Chomsky, 2012, p.66).[11]

(14) {X} = X

- Since Transfer "recycles" phasal C in CP as a lexical item again in (12), LA correctly determines the label of {{which book}, C} as C. This is the essence of their analysis that Transfer contributes to labeling an SO.[12]

2.2.2 On the Timing of Transfer (Fukui and Kasai, 2004)

- Chomsky (1995) suggests that Spell-Out may apply at any point through the derivation, but the existence of uninterpretable features restricts the range of timing (Fukui and Kasai, 2004).

  – Based on this, Fukui and Kasai (2004) claim that Spell-Out can apply far more freely in Japanese than in English, since the lack of uninterpretable features poses no constraint on the timing of the application of Spell-Out.

  – Although their assumptions might be incompatible with the current theory of labeling, I follow Fukui and Kasai's (2004) insightful proposal regarding the timing of Spell-Out, which states that the timing of Transfer is not restricted by unvalued ϕ-features in Japanese, as it lacks them.

  – Below, I combine the labeling via Transfer (Takita et al., 2016) and the insight of Fukui and Kasai (2004) and propose that Japanese makes extensive use of labeling via Transfer since the timing of Transfer is far less restricted than in English due to its lack of [uϕ].[13]

[11] Naoki Fukui (p.c.) points out that this is mathematically incorrect, as {Ø} is not equivalent to its member Ø. However, I follow Chomsky (2012) and assume that a singleton set is equivalent to its member *as far as syntactic structure is concerned* (Nagamori, 2020, p.16).

[12] Chomsky et al. (2019) claim that Transfer (TRANSFER) does not eliminate structure from the workspace but only makes the transferred domain inaccessible to subsequent manipulation (Chomsky et al., 2019, p.241).

[13] Regarding Case in Japanese, I argue that it is licensed with no recourse to ϕ-agreement. In this study, I follow Zushi's (2014; 2016) analysis of Case valuation via merger. Her original Case valuation rules presume that Case is valued when

2.2.3 Proposal

- I propose that the timing of Transfer is systematically conditioned by the presence/absence of [uϕ].
  - As Richards (2007) indicates, valuation of the uninterpretable features and Transfer must apply simultaneously; otherwise, they would become indistinguishable from the inherently valued features.
  - Chomsky (2015b), among others, claims that memory regarding syntactic derivations is phase-based. I assume that memory of syntactic derivation is based on the Transfer domain. In other words, derivational memory is maintained only in the single transferred domain; hence, the inherently and derivationally valued features can be distinguished only if they are transferred simultaneously.
- This study focuses on ϕ-features. The abovementioned Richards' (2007) problem does not arise concerning ϕ-features in Japanese, as its lexicon lacks [uϕ].
  - Here, I assume that Transfer can, in principle, apply at any point in derivation, but it must apply when [uϕ] is valued; otherwise, the problem pointed out by Richards (2007) arises.
  - Although the timing of Transfer itself is free, [uϕ] in English leads derivations to crash at the interfaces unless Transfer applies simultaneously with the feature valuation. On the other hand, Transfer may apply at any point in the derivation in Japanese, as demonstrated in (15).[14]
  - Therefore, it follows that in Japanese, the timing of Transfer is not restricted by the timing of ϕ-feature valuation.

(15) **Proposal**: The timing differences of Transfer in Japanese and in English
  a. Japanese: Transfer *may* apply at any point, due to its lack of [uϕ].
  b. English: Transfer *must* apply at the valuation of [uϕ].

2.3 Consequences

- I argue that the current analysis, which is based on the assumption that Japanese lacks [uϕ], resolves the labeling problem of {XP, YP} structures in Japanese.
  - First, I demonstrate how the {XP, YP} problem between External Argument (**EA**) and *v*P is solved in simple transitive sentences in Japanese.
  - Thereafter, we observe that the proposal in (15) accurately captures why multiple subject constructions in (16) and scrambling in (17) are available in Japanese.

---

a nominal phrase merges with a head (lexical or phasal). I slightly modify Zushi's rules below. How Case is licensed in Japanese is discussed in Section 3.

(i) The revised Case valuation rules in Japanese:
  a. When a nominal phrase becomes the sister of V, its Case feature is valued as accusative.
  b. When a nominal phrase becomes the sister of *v* or *n*, its Case feature is valued as nominative or genitive.
  c. Otherwise (i.e., when a nominal phrase becomes the sister of other heads), the Case feature of a nominal phrase is valued as dative. (cf. Zushi, 2016)

[14] I assume that Japanese has [uCase] though it lacks [uϕ] in the lexicon. For Case valuation in Japanese, see Section 3 for details. I claim that Richards' problem does not occur when [uCase] is valued in Japanese, since there is no corresponding [vCase] in the lexicon. Therefore, there is no need to distinguish derivationally valued features from inherently valued features as for Case features.

– Both create {XP, YP} structures, as schematically illustrated in (18).

(16) Harvard-ga seisuuron-ga daigakuinsei-ga sono-gakkai-ni ki-ta.
Harvard-NOM number.theory-NOM grad.students-NOM that-conference-to come-PAST
'As for Harvard, the graduate students of the number theory came to the conference.'
(adapted from Fukui, 2011, p.89)

(17) a. Taro-ga Ziro-ni Hanako-o shookaisi-ta.
Taro-NOM Ziro-DAT Hanako-ACC introduce-PAST
'Taro introduced Hanako to Ziro.'
b. Hanako$_i$-o Taro-ga Ziro-ni t_i shookaisi-ta.

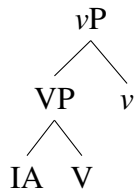
(18) a. [$_\alpha$ NP$_1$-ga, [$_\beta$ NP$_2$-ga, [$_\gamma$ NP$_3$-ga, ... [$_{v\text{P}}$ ... v] ...]]] α, β, and γ = {XP, YP}
b. [$_\alpha$ NP$_i$-o, [$_\beta$ NP-ga, [... ~~NP$_i$-o~~ ...]]] α and β = {XP, YP}

2.3.1 Labeling of a Canonical Sentence in Japanese

- Let us examine how a sentence with a transitive verb is derived in Japanese under the proposal in (15).

  – First, the Internal Argument (**IA**) and V merge to create a set, which is followed by the merger of v in (19a).
  – The EA is introduced in (19b), and Transfer applies to the complement of v.
  – The Transfer in (19c) makes VP invisible from Search; hence, what is accessible to Search is {EA, {v}} (= {EA, v}), which is labeled as vP.

(19) a.



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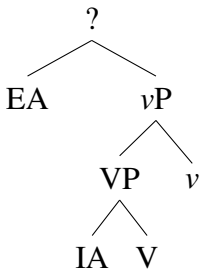


c.

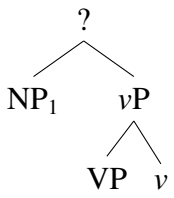
- I assume with Fukui (1986, 1995b) and many others that the subject in Japanese does not raise to the T-domain. After C and T are introduced, the SOs are labeled as TP and CP.

2.3.2 Labeling of Multiple Subject Constructions

- The proposal in (15) correctly explains why the multiple subject constructions are possible in Japanese (cf. Fujita, 2010).

  – Since Merge is free (Chomsky, 2004), multiple nominals may externally merge with the edge of the structure, as in (20a) through (20c).

(20) a.



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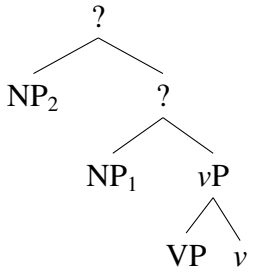

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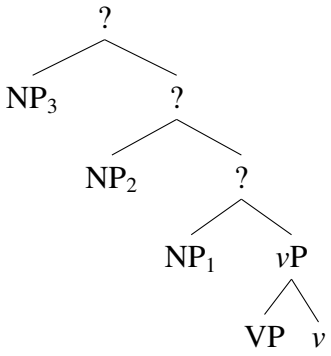
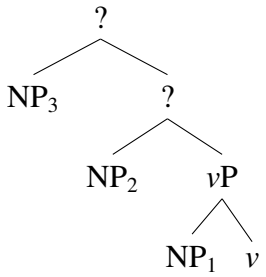


- After the Transfer of VP in (21a), Search can only see v in {VP, v}. A singleton set is identical to its member; thus, {v} = v (Chomsky, 2012, p.66).
- At this point, Search views NP_1 as the closest complement of v in {NP_1, {VP, v}} since VP is no longer visible. I assume that Transfer of NP_1 may apply, as Search detects {NP_1, v} in {NP_1, {VP, v}} (i.e., {NP_1, {VP, v}} = {NP_1, {v}} = {NP_1, v}).
- Transfer then applies to NP_1 in (21b), which results in {NP_1, {VP, v}}, rendering NP_1 invisible from Search. The same is true for NP_2.
- If Transfer does not further apply in (21c), then {NP_3, {NP_2, {NP_1, {VP, v}}}} is labeled as vP when transferred.

(21) a.



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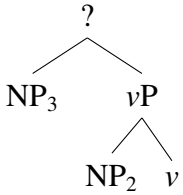

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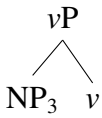


- The proposal predicts that multiple nominative constructions are available in Japanese.
  - I assume that nominative Case is valued when a nominal becomes the sister of v (cf. Zushi, 2014, 2016). As multiple nominals derivationally become sisters of v in (21a) through (21c), each nominal receives nominative Case.
  - Note that the multiple genitive construction can be derived via the same mechanism if we replace V and v with N and n (see Section 3 for details).
  - The analysis captures Fukui's (2011, p.90) insight that the unbounded merge is in full force in Japanese.
- Some may wonder what happens when NP_1 is transferred after the VP is transferred in English. Transfer itself is applicable. However, since NP_1 is not convergent due to the existence

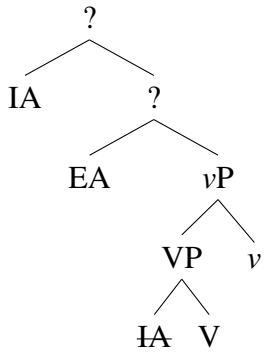
of [uCase] on nominals, such application of Transfer at this point does not satisfy Full Interpretation at the interfaces.

- In summary, this section has provided a multiple-Transfer analysis of the labeling of multiple subject constructions in Japanese.
  - The labels of each node are determined via LA (Minimal Search) when Transfer applies (Chomsky, 2013, 2015b).
  - The analysis predicts that α, β, and γ in $\{_{\alpha}$ NP$_3$, $\{_{\beta}$ NP$_2$, $\{_{\gamma}$ NP$_1$, {VP, v}$\}\}\}$ (irrelevant details are omitted) are all interpreted as vP at the interfaces without any {XP, YP} problems.[15]

2.3.3 Labeling of Scrambling Constructions

- Let us observe the derivation of (17) in (22a) through (22c).
  - In (22a), the IA internally merges with the edge of the structure. If Transfer of {IA, V} applies, the structure will be like (22b).
  - Subsequently, Transfer of the EA applies. If Transfer does not apply further, the label of the SO will be vP since Search unambiguously detects v in (22c).

(22) a.



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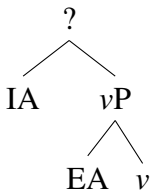


c.

- A simple case of scrambling does not pose any problem following the proposal in (15) that the timing of Transfer is not restricted in Japanese.[16] Scrambling in Japanese is not limited to clause-internal ones. The proposal in (15) predicts that {XP, YP} structures created by long-distance scrambling are also labelable. The data dealt with here are sentences like (23).

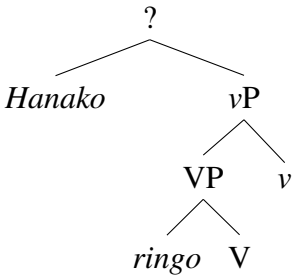
(23) Ringo$_i$-o Taro-ga [Hanako-ga t_i tabe-ta to] omow-ta.
apple-ACC Taro-NOM Hanako-NOM eat-PAST that think-PAST
'Taro thought that Hanako ate an apple.'

[15] One may question as to whether the multiple accusative construction is available in this mechanism. The analysis predicts that multiple accusative assignment is generally unavailable, as V is not a phasal head and so it cannot (multiply) Transfer its complement. This is compatible with the general ban on multiple occurrences of accusative *-o* marked nominals in Japanese (Harada, 1973; Shibatani, 1978b; Kuroda, 1988).

[16] The analysis predicts that scrambling to TP results in labeling failure since T is not a phase head. One may then consider whether it is compatible with the assumption that some scrambling targets TP (or IP) in Japanese. The only evidence for the TP-scrambling comes from the mixed A/A'-property of sentence-internal scrambling. It has been observed that sentence-internal scrambling shows somewhat mixed properties of A/A'-movement in the literature (Saito, 1992, 2003; Tada, 1993, among others). Nemoto (1999) notes that Saito (1989) suggests that such scrambling targets the adjoined position of IP. Under the current analysis, when scrambling shows A-property, then it is scrambling to vP. On the other hand, when it exhibits some A'-property, its landing site is CP. In summary, although the current analysis does not allow scrambling to TP, it is compatible with the peculiar property of middle-distance scrambling.

- Let us examine the derivation of such long-distance scrambling step-by-step. The tree-diagrammatic representations are given in (24a) through (27b).
  - After *v* has completed its argument structure in (24a), IA raises up to the edge of the structure, as in (24b). Transfer of {*ringo*, V} applies in (24c).
  - Then, T and C are introduced into the derivation, as illustrated in (24d).

(24) a.



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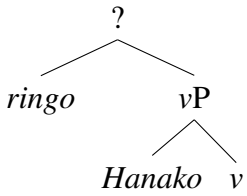

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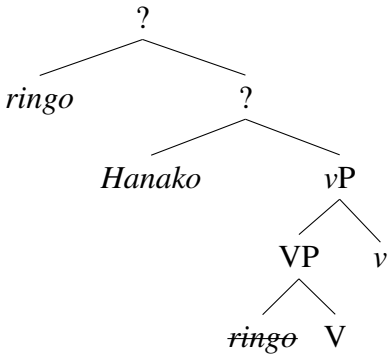
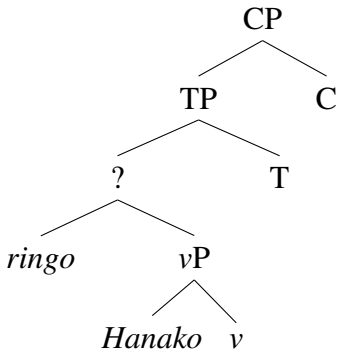
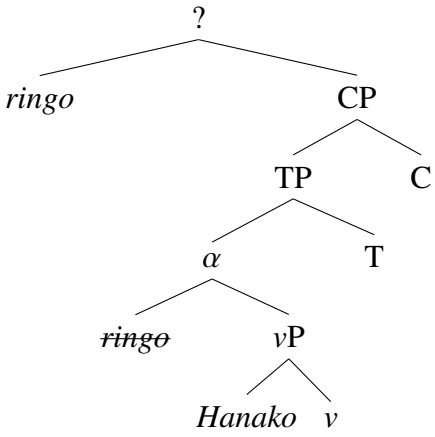


d.



- Subsequently, IA (*ringo*) raises up to the edge of the embedded clause in (25a). Next, Transfer of TP applies, as in (25b). Thus, α is labeled as *v*P.

(25) a.



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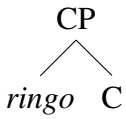
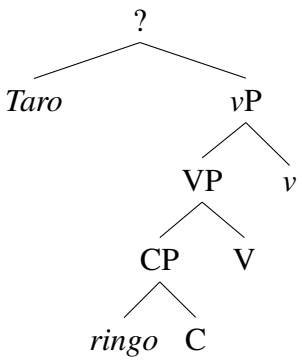


- In (26a), the matrix verb *omow-* 'think' and *v* together with its subject *Taro* are introduced via external Merge. Another internal Merge applies to the scrambled IA (*ringo*) in (26b). Transfer then applies to the complement of *v*, as presented in (26c).

(26) a.



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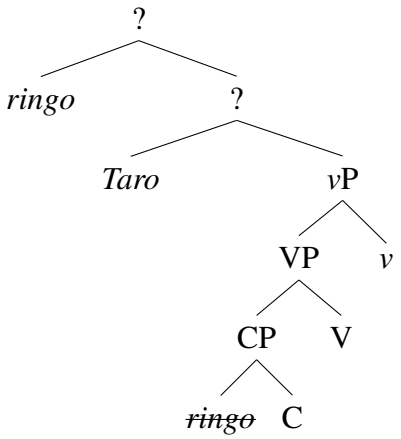

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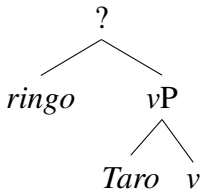
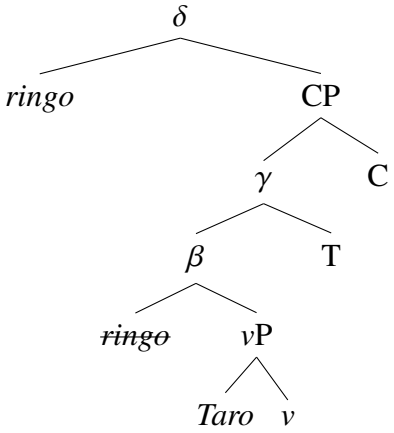


- After introducing the matrix T and C in (27a), *ringo* undergoes internal Merge to the edge of the structure.
  - Subsequently, the complement of C is transferred, as in (27b). The label of β is determined as *v*P, as ~~*ringo*~~ is an invisible lower copy.
  - Thanks to multiple applications of Transfer, γ and δ are labeled as TP and CP respectively when LA (or Minimal Search) applies to them.

(27) a.



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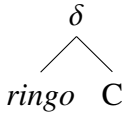


- The current proposal does not predict that scrambling is also possible in English. Since a DP bears [uCase], it must be valued before Transfer.
  - I assume with Chomsky (2000, 2008), among others, that Case is valued as a reflex of ϕ-agreement in English. The IA in English receives the accusative Case via ϕ-agreement with V.
  - After scrambling of the IA, ϕ-agreement cannot occur, as the goal IA is no longer c-commanded by the probe. The [uCase] on the IA remains unvalued; therefore, the derivation crashes at the interfaces.

- The problem does not arise in Japanese, as [uCase] is valued via sister relations created by Merge in Japanese (Zushi, 2014, 2016; Nagamori, 2020). I argue that the IA receives the accusative Case when it becomes a sister with V in the base-generated position. Therefore, the IA can undergo scrambling in Japanese.[17]

- One may question whether the analysis is compatible with A'-movement, such as topicalization and *wh*-movement in English, as in (28) and (29). These data are perfectly grammatical in English.

  (28) a. That book$_i$, John bought t_i.
  b. That book$_i$, Mary thinks that John bought t_i.

  (29) a. Who$_i$ did you see t_i?
  b. What$_i$ did you think that Mary bought t_i?

- I assume that the objects enter Agree with V simultaneously with an internal merger to the edge of *v*P at the phase level (cf. Chomsky, 2007a, 2008). This option is only available with elements with features related to A'-movement, such as Q-related and Topic/Focus features.

- I speculate on a reason to underpin this exceptional assumption: only operators with Q-related features and elements with Topic/Focus features can undergo internal merge simultaneously with Transfer and [uϕ] valuation.

  – If this option is not available, the derivation will crash due to the existence of unvalued features that should be valued later in the C-domain.
  – The above option (i.e., simultaneous valuation, Transfer, and internal merger) cannot be applied to canonical arguments, as they do not bear any features regarding A'-movement that must be valued through Agree with the C head later in the derivation.

2.4 Summary

- In this section, I proposed that the absence of [uϕ] in Japanese allows it to apply Transfer in a far less restricted form in its timing (Fukui and Kasai, 2004), as in (30) (=(15)).

  – Following the insight of Fukui and Kasai (2004) and the idea of Narita (2014), Takita et al. (2016) and others that Transfer contributes to labeling, I have demonstrated that the proposal in (30) successfully provides explanations for the labeling of {XP, YP} structures created in (i) canonical sentences, (ii) multiple subject constructions, and (iii) scrambling constructions in Japanese.

  (30) **Proposal**: The timing differences of Transfer in Japanese and English (=(15))
  a. Japanese: Transfer *may* apply at any point, due to its lack of [uϕ].
  b. English: Transfer *must* apply at the valuation of [uϕ].

  – Chomsky's LA (Chomsky, 2013, 2015b) cannot label canonical sentences or several other constructions in Japanese based on the assumption that it lacks [uϕ] in the lexicon.
  – I proposed a syntactic analysis to overcome the {XP, YP} problems that Chomsky's LA faces in labeling in a language without ϕ-agreement (see Saito, 2014, 2016; Narita and Fukui, 2022, for different approaches to this problem).

[17] See Section 3 for an extensive discussions of Case valuation in Japanese based on Zushi's Case valuation rules via merger (Zushi, 2014, 2016)

- If the proposed analysis is on the right track, it lends credence to the claim that Japanese lacks [uϕ] and the presence/absence of agreement features yields certain linguistic variations. In summary, the case study in this section supports the proposal of this study.
- See Kobayashi (to appear) for an analysis of how the proposal in (15) works in the CP-domain.

3 ϕ-agreement and Lexical VV-compounds

3.1 Introduction

- In this section, I highlight a correlation between the absence of productive lexical VV-compounds and the presence of object-verb ϕ-agreement from a comparative perspective.[18]
  - Thereafter, I propose how the derivation of lexical VV-compounds is blocked in languages with object-verb ϕ-agreement.
  - Following this, I discuss how Case is valued in Japanese. This section provides further support for the claim that Japanese lacks [uϕ] in its lexicon.
- VV-compounds in Japanese are divided into two groups: lexical and syntactic VV-compounds.
  - It has long been assumed that the lexical VV-compounds are created in the lexicon, whereas syntactic VV-compounds are derived in syntax, as their names indicate (Kageyama, 1993).
  - Japanese abounds in lexical VV-compounds, as demonstrated in (31) (Fukushima, 2005), in which the second heads are neither functional nor auxiliarized unlike syntactic compounds. I focus on such lexical VV-compounds in this talk.

(31) Examples of lexical VV-compounds in Japanese:

a. tobi-ori
   jump-drop
   'jump off'
b. nomi-aruk
   drink-walk
   'go barhopping'
c. naguri-koros
   hit-kill
   'beat to death'
d. tare-nagas
   drip-pour
   'drain'
e. koroge-oti
   roll-fall
   'roll down'

3.2 VV-compounds in Languages without Object ϕ-agreement

- I first observe data from Japanese, Korean, Mongolian, Malayalam, Turkish, and Bangla. They all lack object-verb ϕ-agreement.

[18] This section is a radically revised and extended version of Kobayashi (2018a).

– Japanese, Korean, Mongolian, and Malayalam lack ϕ-agreement altogether, while Turkish and Bangla only have subject-predicate ϕ-agreement and lack object-verb ϕ-agreement.

– The canonical sentences showing that they all lack object-verb ϕ-agreement are illustrated in (32) through (36).

(32) John-i Mary/Nay/Ai-lul kkwulh-e anc-hi-ess-ta.
John-NOM Mary/I/children-ACC kneel-LK sit-CAUS-PAST-DECL
'John made Mary/I/children kneel down.' (Korean: adapted from Ko and Sohn, 2015)

(33) Bat-Ø nama-ig/chama-ig/ter-ig/bid-nig/tanar-ig/ted-nig har-san.
Bat-NOM me/you/him/us/you/them-ACC see-PERF
'Bat saw me/you/him/us/you/them.' (Mongolian: Sakamoto, 2011, p.33)

(34) Siita eni/namu/niŋŋal/raaman-e sneehiḱḱunnnu.
Sita I/we/you/Raman-ACC love
'Sita loves me/us/you/Raman.'(Malayalam: adapted from Jayaseelan, 1999, pp.30-44)

(35) Can üç hırsız/ben/biz yakala-dı.
John three burglar/I/we catch-PAST.3SG
'John caught three burglars/me/us.'
(Turkish: adapted from Şener and Takahashi, 2010, p.88)

(36) Ami æk-ṭa/du-To/tin-Ta boi/tumi dekhechi.
1.SG one-CL/two-CL/three-CL book/you seen-1.SG
'I have seen one/two/three book(s)/you.'
(Bangla: adapted from Bhattacharya, 1999, p.12)

- In addition to Japanese, productive lexical VV-compounds are attested in all these languages, including Korean, Mongolian, Malayalam, Turkish, and Bangla, as illustrated in (37) through (41).

(37) Korean:
a. ara-tut
know-hear
'understand'
b. kulm-tcuri
hunger-starve
'starve' (Paschen, 2014)

(38) Mongolian:
a. dza:j-ögöx
teach-give
'show'
b. avc-irex
take-bring
'bring' (Khurelbat, 1992)

(39) Malayalam:
a. pookuwaan-anuwadicc
go-permit
'permit leave'

b. ār-āy
become.full-search
'investigate' (Krishnamurti, 2003)

(40) Turkish:

a. gelince-şaşır
come-surprise
'come to surprise'

b. geçip-git
pass-go
'leave through' (Kuribayashi, 2006)

(41) Bangla:

a. uRe-gE
fly-go
'fly away'

b. ghumiye-poR
sleep-fall
'fall asleep' (Paul, 2003)

3.3 The Lack of Lexical VV-compounds in Languages with Object ϕ-agreement

- In this section, I examine languages with overt object-verb ϕ-agreement and show that they lack productive lexical VV-compounds.
  - Welsh and Swahili, for instance, do not allow any combination of productive endocentric verb-verb compounds.
  - In these languages, the object undergoes overt ϕ-agreement with the verb, as illustrated in (42) and (43).

(42) Mae Steffan yn dy garu di.
be.PRES.3.SG Steffan PROG 2.SG love.INF you.2SG
'Steffan loves you.' (Welsh: Borsley et al., 2007, p.27)

(43) Juma a-li-mw-u-a fisi.
Juma 1.SG-PAST-3.SG-kill hyena
'Juma killed a hyena.' (Swahili: adapted from Vitale, 1981, p.17)

- Based on the observations in the two types of languages, (i) Japanese, Korean, Mongolian, Malayalam, Turkish, and Bangla, and (ii) Welsh and Swahili, I propose an exploratory generalization regarding the presence of lexical VV-compounds and the absence of the object-verb ϕ-agreement, as in (44).

(44) **An exploratory generalization**:
If a language has object-verb ϕ-agreement, then it cannot have productive lexical VV-compounds.

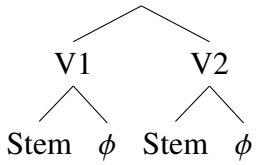
3.4 Blocking of Lexical VV-compounds by ϕ-features

- To formalize the descriptive generalization in (44), I propose a morphosyntactic analysis that blocks the derivation of lexical VV-compounds in languages with object-verb ϕ-agreement. As

for the structure of lexical VV-compounds, I follow a version of Nishiyama (1998, 2008) and Nishiyama and Ogawa (2014), in which they are base-generated via direct merger.

- Why is VV-compounding blocked in languages with object-verb ϕ-agreement? The verbal stems of VV-compounds must, by definition, be adjacent to each other in languages with productive lexical VV-compounds (Kageyama, 2016).
  - In languages with ϕ-features, I concur with Harbour (2016), among others, that ϕ-nodes exist adjacent to the verbal stems at the syntax-morphology interface.
  - ϕ-nodes are proposed as the locus of ϕ-inflection such as number morphology (Thornton, 2019, among others).
- The derivation of lexical VV-compounds in languages with ϕ-features proceeds as follows.
  - First, Vs inherit ϕ-features from v via feature inheritance (Chomsky, 2008).[19]
  - After Transfer, ϕ-features realize as ϕ-nodes, which are adjacent to verbal stems. As a result, a ϕ-node on the first V intervenes between the verbal stems, which breaks the structural adjacency of the verbal stems.
  - The structure in which a ϕ-node follows the corresponding verbal stem is illustrated in (45).[20]

(45)



- Languages with object-verb ϕ-agreement cannot form productive lexical VV-compounds because the following two requirements contradict each other:

(46) a. Two verbal stems must be adjacent to each other; and
b. ϕ-nodes must attach to the verbal stems.

  - The structure results in the contradiction of two requirements in (46) at the syntax-morphology interface after Transfer. Therefore, languages with object-verb ϕ-agreement lacks productive lexical VV-compounds.
  - If only the second V in VV-compounds inherits [uϕ] from v, then the above problem does not occur. I argue that the derivation crashes even under the assumption that only one of the Vs undergoes feature inheritance.
  - Note that [uϕ] on V cannot probe into the internal argument, which is not c-commanded by either the first or second V. Therefore, ϕ-feature agreement fails and the derivation crashes at the interfaces.

[19] See Richards (2007) and Epstein et al. (2012) for different reasoning/arguments for the need of feature inheritance. As for verbs without unvalued ϕ-features, such as unaccusatives, I assume that they have ϕ-features with some values, though defective (Chomsky, 2001; Fukui and Narita, 2017).

[20] Even if one assumes that the ϕ-node on the stem precedes the corresponding stem, the ϕ-node on the second stem intervenes between the two verbal stems.

3.5 Covert Object ϕ-agreement in English and Case Valuation in Japanese

- In this section, I claim that English has covert object-verb ϕ-agreement. Then, I discuss Case valuation in Japanese, which lacks ϕ-agreement. English does not show any overt ϕ-morphology on verbs for the object-verb ϕ-agreement, as demonstrated in (47). Initially, there is no evidence of object-verb ϕ-agreement in English.

  (47) a. The teacher scolded John/Mary/him/her/me/you/them/us.
  b. The student loves John/Mary/him/her/me/you/them/us.

- However, I argue that the verb has ϕ-features and undergoes Agree with an object in English. Along the line of Chomsky (2000, 2008), I assume that Case features in languages like English and German are licensed as a reflex of ϕ-feature agreement. That is, the verb licenses accusative Case, entering into ϕ-feature agreement with the Internal Argument (**IA**).[21]

- Although there is no direct morphological evidence of the object-verb ϕ-agreement in English, I maintain that there is ϕ-agreement between V and the IA.

  – That IAs show pronominal Case inflections in (47) is evidence for the existence of object-verb ϕ-agreement in English, as Case is valued as a reflex of ϕ-agreement in English.
  – Indeed, English lacks productive VV-compounds, as revealed in (48).[22]

  (48) Productive lexical VV-compounds are unavailable in English:
  a. *Jump-drop
  b. *drink-walk
  c. *hit-kill
  d. *strike-smash
  e. *drip-pour
  f. *roll-fall

- A question that arises here is how Case is licensed in languages without ϕ-agreement. I assume that there are two types of languages (Kuroda, 1988, p.40), in which Case is valued via ϕ-agreement (Chomsky, 2000, 2001) or via Merge (Zushi, 2014, 2016) (see also Saito, 2012).

  – I argue that Case valuation in Japanese is not tied to ϕ-agreement. In this study, I follow Zushi's analysis of Case valuation via merger (Zushi, 2014, 2016).

[21] German is like English in that it values Case via ϕ-agreement. In German, expressions such as *kennen lernen* 'get to know' and *spazieren gehen* 'take a walk' exist. Initially, they seem to be the lexical VV-compounds. Neef (2009), among others, classifies them as VV-compounds. However, I argue that they are not genuine lexical VV-compounds. They are called *partikelverben*, which are separable verbs, as illustrated below.

(i) Ich **lerne** keinen Mann **kennen**.
I learn no man know
'I get to know nobody.' (Peter Erdmann and Haider Hubert p.c.)

They are separated in the verb-second construction. It violates the principle of lexical integrity in the definition of the endocentric VV-compounds. Therefore, I conclude that German lacks productive genuine lexical VV-compounds.

[22] VV-compounds in English are not productive, and certain compounds, such as *stir-fry*, *sleep-walk* and *slam-dunk*, are frozen/idiosyncratic expressions (Lieber, 2005, p.378). Compounds such as *drink-drive* are exocentric nominal compounds. Other apparent verb-verb compounds in English, such as *type-write* and *trickle-irrigate*, which are scarce and limited in the inventory, are analyzed as derived via morphological processes, such as back-formation from nominal compounds (i.e., *type-writer* and *trickle-irrigation*) (Yosuke Sato p.c.).

– Her original Case valuation rules are given in (49). Zushi's rules presume that Case is valued when a nominal phrase merges with a head.

(49) Zushi's Case valuation rules:
   a. When a nominal is merged with a lexical head, its case feature is valued as accusative.
   b. When a nominal is merged with a phase head (*v* or *n*), its case feature is valued as nominative or genitive.
   c. Otherwise, the case feature of a nominal is valued as dative. (Zushi, 2016, p.48)

- I slightly modify Zushi's rules, as in (50) below, so that they become compatible with the proposals in Section 2.[23]

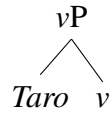
(50) The revised Case valuation rules:
   a. When a nominal phrase becomes the sister of V, its Case feature is valued as accusative.
   b. When a nominal phrase becomes the sister of *v* or *n*, its Case feature is valued as nominative or genitive.
   c. Otherwise (i.e., when a nominal phrase becomes the sister of other heads), the Case feature of a nominal phrase is valued as dative.

- We now explore how the Case valuation rules in (50) work. Data with canonical case patterns in Japanese that this study deals with are illustrated in (51) below.

(51) Canonical Case patterns in Japanese:
   a. Taro-ga arui-ta.
      Taro-NOM walk-PAST
      'Taro walked.'
   b. Hanako-ga ronbun-o kai-ta.
      Hanako-NOM paper-ACC write-PAST
      'Hanako wrote a paper.'
   c. Hanako-no ane
      Hanako-GEN sister
      'Hanako's sister'
   d. Taro-ga Hanako-ni okane-o moraw-ta.
      Taro-NOM Hanako-DAT money-ACC receive-PAST
      'Taro received money from Hanako.'

- The *-ga* pattern in (51a) can be easily derived. The subject *Taro* is merged to the edge of *v*P, and the complement of *v* is transferred. Thereafter, Taro derivationally becomes the sister of *v*, as in (52), whose Case is valued as nominative according to the rule in (50b).

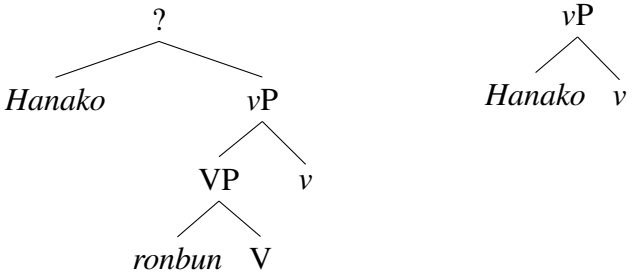
(52)



[23] I do not assume $\sqrt{\text{Roots}}$, lexical items that have no categorial information. They are assumed in the framework of Distributed Morphology (see Siddiqi, 2010, and the references cited therein). In this study, I assume that lexical heads contain categorial information in the first place. N, V, A, and P create shell structures with *n*, *v*, *a*, and *p*.

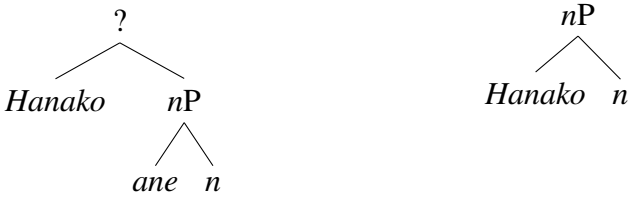
- We move on to the *-ga -o* pattern in (51b). The object *ronbun* 'paper' merges with V, receiving the accusative Case value according to the rule in (50a).
  - Then, *v* and the subject *Hanako* merge with the structure, as in (53a). Thereafter, the complement of *v* is transferred, and thus *Hanako* derivationally becomes the sister of *v* in (53b), as the complement VP becomes invisible after Transfer.
  - The subject *Hanako* receives the nominative Case according to the rule in (50b).

(53) a. b.



- Next, we deal with the *-no* pattern in (51c). First, N (*ane* 'elder sister') merges with a small *n*, creating a nominal phrase.
  - The locus of [uCase] is *n*; therefore, *ane* (N) does not receive genitive Case. Next, another *n*P, *Hanako*, merges to the structure, as in (54a).
  - Then, *ane* is transferred, which derivationally makes the nominal phrase *Hanako* the sister of *n*, as in (54b). *Hanako* receives the genitive Case according to the rule in (50b).[24]

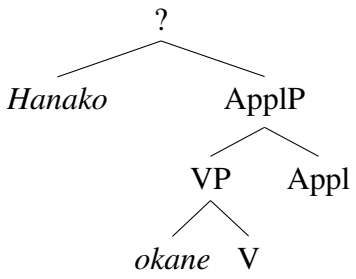
(54) a. b.



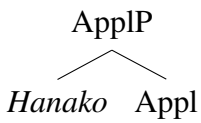
- Finally, we turn to the *-ga -ni -o* pattern in (51d). I assume with Zushi (2014) and Nagamori (2020) that the indirect object in the ditransitive construction is introduced with an applicative head, which is a phase head (McGinnis, 2001, among others).
  - The applicative head merges with the VP, *okane-o moraw-* 'receive money'. Then, the indirect object *Hanako* merges to the edge of the structure, as in (55a). The VP is transferred, which results in (55b).
  - According to the rule in (50c), the indirect object *Hanako* receives the dative Case. Next, *v* and the subject Taro are introduced via merger, as presented in (55c).
  - Subsequently, the complement of *v* is transferred. It creates the structure in (55d), in which the subject *Taro* receives the nominative Case following the rule in (50b).

[24]Takaomi Kato (p.c.) pointed out that the Case valuation rules may predict that the *n*P in {{*n*P, N}, *n*} (e.g., *tosi-no hakai* 'the city's destruction') wrongly receives dative Case, as it is the sister of N. The above structure presupposes that the *n*P (*tosi* 'a city') receives a θ-role from the N (*hakai* 'destruction'). It is unclear whether the *n*P, *tosi* 'a city', receives its θ-role from the N, *hakai* 'destruction', in the structure assumed above. Therefore, I leave this issue for future research.

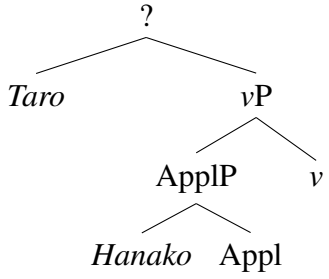
(55) a.



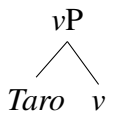
b.



c.



d.



- Thus far, I have shown a way to value Case features in Japanese with no recourse to ϕ-agreement. I argued that Case in Japanese is not valued as a reflex of ϕ-agreement but is valued via sister relations created by merger.

3.6 Summary

- In this section, I highlighted a correlation between the absence of productive lexical VV-compounds and the presence of object-verb ϕ-agreement from a comparative perspective. Based on the observations, I proposed the generalization presented in (56).

  (56) **An exploratory generalization**:(=(44))
  If a language has object-verb ϕ-agreement, then it cannot have productive lexical VV-compounds.

- Following this, I proposed a morphosyntactic analysis of how lexical VV-compounds are blocked in languages with object-verb ϕ-agreement.

  – Furthermore, I extensively discussed how Case is valued in Japanese with no recourse to ϕ-agreement.

  – The observations that the presence of object-verb ϕ-agreement blocks productive lexical VV-compounds and that languages without such agreements abound in productive lexical VV-compounds support the argument that Japanese lacks [uϕ] in the lexicon.

4 Arguments against ϕ-agreement in Japanese

4.1 Introduction

- In this section, I scrutinize five kinds of arguments for ϕ-agreement in Japanese. Although there is no conceptual necessity in unvalued ϕ-features, as they are LF-uninterpretable, they are often assumed even for Japanese with no overt realization.

  – Such an assumption takes a free ride on the Strong Uniformity Thesis (**SUT**: Boeckx, 2011, 2014, 2016, p.73) in that it accepts the universal presence of [uϕ].

  – However, SUT should not offer free rides. Rather, researchers must provide strong empirical evidence to demonstrate that SUT holds in the first place.

- I argue against such approaches in the study of Japanese syntax in this chapter. The five arguments for ϕ-agreement in Japanese that I examine in this section are as follows:

(57) a. Case valuation (Ura, 2000; Hiraiwa, 2005; Obata, 2010)
b. Nominative/genitive conversion (Hiraiwa, 2001, 2005)
c. Person restriction (Miyagawa, 2010; Obata and Sugimura, 2014, 2019)
d. Honorification (Toribio, 1990; Ura, 2000; Boeckx and Niinuma, 2004)
e. The so-called allocutive agreement (Miyagawa, 2017)

- I offer rebuttals to each. Given that there is little evidence for ϕ-agreement in Japanese, the results of this chapter support the argument that Japanese lacks [uϕ] in the lexicon.

4.2 Case Valuation (Ura, 2000; Hiraiwa, 2005; Obata, 2010)

- Ura (1996, 2000) and Hiraiwa (2005), among many others, assume that Case valuation results as a reflex of ϕ-agreement in Japanese just as in English, along with Chomsky (2001), whose idea dates back to George and Kornfilt (1981).
  - Recently, Obata (2010, p.79) claims that the nominative Case (of the subject) is valued via ϕ-agreement with T, and the accusative Case (of the object) is valued via ϕ-agreement with V in Japanese.
  - This line of studies also claims that the genitive Case is valued via ϕ-agreement with D (Ochi, 2001; Hiraiwa, 2005). To the best of my knowledge, they disregard how the dative Case is valued via ϕ-agreement.

- I point out that this line of analysis faces a problem with multiple nominative/genitive constructions.
  - Those who advocate the ϕ-agreement analysis of Case valuation in Japanese assume the [+multiple] feature concerning Agree (Ura, 2000; Hiraiwa, 2005). The [+multiple] feature enables a head to probe multiple goals.
  - In multiple nominative constructions, such as (58), [uϕ] on T has multiple agreement with [vϕ] on nominals. This is schematically illustrated in (59).
  - Consequently, [uCase] on the nominals receive the nominative Case value. However, the postulation of such features is merely an *ad hoc* stipulation. I demonstrated that we need no such features to derive multiple subject constructions in Section 2.

(58) Bummeikoku-ga dansei-ga heikinjumyoo-ga mijika-i.
developed.countries-NOM men-NOM average.longevity-NOM short-PRES
lit. 'Developed countries, men, average longevity is short.' (Kuno, 1973, p.34)

(59) [NP1$_{[v\phi,\text{NOM}]}$ NP2$_{[v\phi,\text{NOM}]}$ NP3$_{[v\phi,\text{NOM}]}$ ... [... V]-T$_{[u\phi]}$ ...] ...
(adapted from Hiraiwa, 2005)

- I argue that Case valuation is not tied to ϕ-agreement in Japanese. In this study, I follow Zushi's (2014; 2016) analysis of Case valuation via merger. Zushi's rules presume that Case is valued when a nominal phrase merges with a head. I modified Zushi's rules slightly in Section 3 to make them compatible with the proposals in Section 2.

- I have already indicated that all canonical Case patterns in Japanese are derived via the rules Section 3. I have demonstrated that Case valuation in Japanese does not require ϕ-agreement. In summary, I argued that Case in Japanese is not valued as a reflex of ϕ-agreement but is valued via sister relations created by merger and Transfer.

4.3 Nominative/Genitive Conversion (NGC) (Hiraiwa, 2001, 2005)

- NGC is a phenomenon in which a nominative subject optionally alternates with a genitive subject in nominal complements and relative clauses in Japanese.
  - The data are presented in (60). Hiraiwa (2001, 2005) proposes that genitive assignment in NGC is achieved by ϕ-agreement.
  - He argues that *rentai-kei* 'adnominal form (ADN)' of the predicate is a key to specifying the structural Case on a DP as genitive (Hiraiwa, 2001, p.71).

(60) Nominative/Genitive Conversion (NGC):

a. John-no/ga suki-na ongaku-wa blues da.
John-GEN/NOM like-ADN music-TOP blues COP
'The music that John likes is the Blues.'

b. John-no/ga onkoo-na koto-wa yuumei da.
John-GEN/NOM gentle-ADN fact-TOP well.known COP
'It is well-known that John is gentle.'

c. John-wa Mary-no/ga yom-u-yori takusan-no-hon-o yon-da.
John-TOP Mary-GEN/NOM read-ADN-than many-GEN-book-ACC read-PAST
'John read more books than Mary did.'

d. John-wa ame-no/ga yam-u-made ofisu-ni i-ta.
John-TOP rain-GEN/NOM stop-ADN-till office-at be-PAST
'John was at the office until the rain stopped.'

(adapted from Watanabe, 1996; Hiraiwa, 2001)

- Specifically, he claims that the V-(*v*-)T-C amalgam realizes as the adnominal form, in which ϕ-features are copied from T onto C.
  - Hiraiwa (2001, 2005) proposes that the ϕ-agreement between C and the subject DP specifies the structural Case as genitive.
  - He assumes that nominative Case is assigned to nominals via ϕ-agreement with T. As the amalgamation is not obligatory, the NGC is optional in Hiraiwa's (2001; 2005) account.

- I argue that Hiraiwa's (2001; 2005) proposal does not support the claim that ϕ-agreement exists in Japanese. I propose an alternative analysis of NGC, and argue that it is not ϕ-agreement that values nominative/genitive Case in NGC.
  - Maki and Uchibori (2008, p.203) indicate that examples of Hiraiwa (2001) that appear head-nounless such as (60c) and (60d) are instances of NGC where the head noun is implicit.
  - Their data are presented in (61), where *-no* '**NM** (NOMINAL(IZER))' in the boldface is either a noun itself (as it is interchangeable with *teido* 'DEGREE' in (61a)) or a nominalizer, which makes the entire clause nominal (Maki and Uchibori, 2008, p.203).

– Most of the sentences in (61) contain *-no* 'NM'. It seems that only *-no* and some other nominals can be implicit in certain environments.[25]

(61) NGC data containing covert nominals:

a. John-wa [Mary-ga/no yonda(-**teido/no**) yori] takusan-no hon-o yon-da.
John-TOP Mary-NOM/GEN read-DEGREE/NM than many-GEN book-ACC read-PAST
'John read more books than Mary did.'

b. John-wa ame-ga/no yamu(-**toki/zikan**) made ofisu-ni i-ta.
John-TOP rain-NOM/GEN stop-time/time until office-at be-PAST
'John was at the office until the rain stopped.'

c. [Boku-ga/no omow(-**no**)-ni], John-wa Mary-ga sukini chigaina-i.
I-NOM/GEN think-NM-DAT John-TOP Mary-NOM like must-PAST
'I think that John likes Mary.'

d. Kono atari-wa [hi-ga/no kureru(-**no**) ni-ture] hiekondeku-ru.
this around-TOP sun-NOM/GEN go.down-NM DAT-go.together become.colder-PRES
'It gets chillier around here as the sun goes down.'

e. John-wa [toki-ga/no tatsu(-**no**)-to tomo-ni] Mary-no koto-o
John-TOP time-NOM/GEN pass-NM-AND together-DAT Mary-GEN thing-ACC
wasurete-ik-ta.
forget-go-PAST
'Mary slipped out of John's memory as the time went by.'

f. [John-ga/no ku-ru(-**no**)-to ko-nai(-**no**)-to] de-wa ootigai da.
John-NOM/GEN come-NM-AND come-NEG-NM-AND at-TOP greatly.different COP.PRES
'It makes a great difference whether John comes or not.'
(adapted from Maki and Uchibori, 2008, p.203, cf. Harada (2002))

- I argue that the distribution of NGC can be accounted for with no recourse to ϕ-agreement.

– I assume with Maki and Uchibori (2008) that the data set of NGCs provided by Hiraiwa (2001, 2005), presented in (60), includes silent nominals, as exemplified in (61).

– Here, I concur with Zushi (2016) that Case is valued in the sister relations created by the

[25] Silent TIME is found in other constructions as well. Kayne (2003, 2016) claims that the silent TIME exists in (ia). This TIME can be overtly spelled out, as shown in (ib). The same applies to (ic) and (id).

(i) Sentences with silent TIME:

a. They'll be there in two hours (TIME).
b. They'll be there in two hours' time.
c. They'll leave (AT A) soon (TIME).
d. ?They'll leave at the soonest time possible. (Kayne, 2016, p.14)

Similarly, Takahashi (2015) claims that silent TOKI 'time' exists in some gapless relative clauses in Japanese. The set of data below (iia-c) implies that silent TOKI can be found in constructions other than those involving NGC in (61).

(ii) Data with silent TOKI 'TIME' in Japanese:

a. Sakana-ga koge-ru (toki-no) nioi
fish-NOM burn-PRES time-GEN smell
'The smell of fish getting burnt'

b. Hoochoo-de kit-ta (toki-no) kizuato
knife-by cut-PAST time-GEN scar
'A scar from a knife cut'

c. Juusu-o kat-ta (toki-no) otsuri
juice-ACC buy-PAST time-GEN change
'Change for buying juice' (Takahashi, 2015, p.404)

merger in Japanese, as demonstrated in (62). The structure of the NGC constructions is shown in (63).

(62) The revised Case valuation rules: (=(50))
   a. When a nominal phrase becomes the sister of V, its Case feature is valued as accusative.
   b. When a nominal phrase becomes the sister of *v* or *n*, its Case feature is valued as nominative or genitive.
   c. Otherwise (i.e., when a nominal phrase becomes the sister of other heads), the Case feature of a nominal phrase is valued as dative.

(63) [*n*P [[...~~*n*P~~...V *v*...] N] *n*]

- Here, I extend Nagamori's (2020) suggestion. When the *n*P receives genitive Case, Nagamori (2020, p.126) notes that it raises to [Spec, *n*] first, and then the multiple Transfer (see my proposal in Section 2) subsequently creates a configuration {*n*P, *n*}, as in (64).
  - According to the Case valuation rule in (62b), the Case of *n*P is valued as genitive.
  - Nagamori (2020) claims that when the *n*P receives nominative Case, it remains in the verbal domain. As he notes, the optionality of NGC is captured by the free application of internal Merge (cf. Fukui and Nishigauchi, 1992).

(64) a. [*n*P [[...~~*n*P~~...V *v*...] N] *n*]
   b. [*n*P [[...~~*n*P~~...V *v*...] N] *n*] (transferred domain)
   c. [*n*P *n*]
   cf. [[[...*n*P...V *v*...] N] *n*]

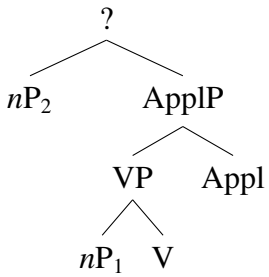
- The analysis precludes unwanted results such as *o-no* conversion and *ni-no* conversion. *O-no* conversion and *ni-no* conversion are not possible in Japanese, as illustrated in (65) and (66).
  - The Case feature on a nominal phrase is immediately valued when the phrase becomes the sister of a head, according to the rules in (62).
  - *O-no* conversion does not occur because an *n*P receives accusative Case in the base position. Once Case is valued, its value is fixed (contra Nagamori, 2020).
  - Therefore, even if the relevant *n*P is scrambled to the edge of *n*, it does not receive genitive Case from *n*.

(65) a. Taro-ga ringo-o tabe-ta.
   Taro-NOM apple-ACC eat-PAST
   'Taro ate an apple.'
   b. Ringo-o/*no tabe-ta Taro
   apple-ACC/GEN eat-PAST Taro
   'Taro, who ate an apple.'

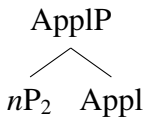
(66) a. Hanako-ga daigaku-ni shorui-o okur-ta.
   Hanako-NOM university-DAT paper-ACC send-PAST
   'Hanako sent a paper to the university.'
   b. Daigaku-ni/*no (Hanako-ga) okur-ta shorui
   university-DAT/GEN Hanako-NOM send-PAST paper
   'A paper that Hanako sent to the university'

- The same applies to *ni-no* conversion. Since Transfer applies to {nP$_1$-*o*, V} (the complement of Appl) in (67a), nP$_2$ derivationally becomes the sister of Appl, as in (67b). As the Case value of nP$_2$ is fixed as dative, *ni-no* conversion does not occur.

(67) a.



b.



- In sum, Hiraiwa's (2001) proposal on NGC does not support the claim that Japanese has ϕ-agreement, as there is an alternative analysis of NGC in Japanese with no recourse to ϕ-agreement.

4.4 Person Restriction (Miyagawa, 2010; Obata and Sugimura, 2014, 2019)

- Miyagawa (2010) and Obata and Sugimura (2014, 2019) argue that there is ϕ-agreement in Japanese based on the observations of data such as (68) (cf. Nitta, 1991).

(68) a. *Boku/Kimi/*Taro-wa sonna-koto kinisu-ru-***na***.
I/You/Taro-TOP such-fact mind-PRES-PROHIBITION
'I/You/Taro must not mind such a thing.'
b. Boku/*Kimi/*Kare-ga sugu ik-***oo***.
I/You/He-NOM now go-INTENTION
'I/You/He will go now.' (Ueda, 2008, p.134)

- In (68a), the modal head *-na* 'PROHIBITION' is incompatible with the first- and third-person subjects. In (68b), the modal head *-(y)oo* 'INTENTION' is only compatible with the first-person subject. They consider these observations evidence to claim that Japanese has ϕ-agreement.

  - Obata and Sugimura (2019) propose that the Person features of the modal heads are specified as [2nd] in (69a) and as [1st] in (69b), while the Number features are unvalued.
  - The [uNumber] on the C/Modal probes down into the structure and ϕ-agreement occurs with the subject, whose Person feature matches that of the C/Modal.
  - In order for the Number agreement to occur, Obata and Sugimura (2019) assume that the Person features of the subject and modal head must be identical.

(69) a. [...[DP$_{[Num][2nd]}$ T [...]] Mod/C$_{[uNum][2nd]}$] (Prohibition: *-na*)
b. [...[DP$_{[Num][1st]}$ T [...]] Mod/C$_{[uNum][1st]}$] (Intention: *-(y)oo*)

- Obata and Sugimura (2014, 2019) further claim that the Person restriction is also triggered by the give-type verbs (*age-* and *kure-* 'give'). The data are presented in (70a) and (70b).

  - In (70a), *kure-* imposes a restriction on the subject as either [2nd person] or [3rd person], while in (70b), *age-* only allows the indirect object with [2nd person] or [3rd person].

(70) a. *Watashi/Anata/Hanako-ga Taro-ni hon-o kure-ta.
I/You/Hanako-NOM Taro-DAT book-ACC give-PAST

'I/You/Hanako gave Taro the book.'

b. Hanako-ga *watashi/anata/Taro-ni hon-o age-ta.
Hanako-NOM I/You/Taro-DAT book-ACC give-PAST
'Hanako gave me/you/Taro the book.' (Obata and Sugimura, 2014, p.114)

- Obata and Sugimura (2014, 2019) propose that the give-type verbs are unspecified for Person features as [2nd] or [3rd], and their Number features have no value. They undergo verb-movement to T, and then the unvalued features on V probe for the agree-mates.
- Finally, ϕ-agreement occurs between the verbal amalgam with *-kure* 'give' and the subject in (71a) as well as the verbal amalgam with *-age* 'give' and the object in (71b).

(71) a. [SUBJ$_{[Num][2nd/3rd]}$...OBJ...[V$_{[uNum][2ndor3rd]}$-v-T]] (=(70a))

b. [SUBJ...OBJ$_{[Num][2nd/3rd]}$...[V$_{[uNum][2ndor3rd]}$-v-T]] (=(70b))

- I argue that the abovementioned observations of Obata and Sugimura (2014, 2019) do not support the claim that Japanese has ϕ-agreement.
  - First, I argue against the analysis of modal agreement. The prohibition in (68a) is a type of imperatives. Imperatives are used for the addressee; hence, it semantically or pragmatically cannot have a first-person subject.
  - An intentional modal in (68b), on the other hand, requires the first-person subject since it shows the addresser's intention; hence, it semantically or pragmatically requires the speaker, the first person, as its subject.
  - That said, the unacceptability of (68) may not be due to ungrammaticality (i.e., existence of [uF]), but may be caused by semantic ill-formedness at the C-I interface.[26]
  - Therefore, Obata and Sugimura's (2014; 2019) evidence for the claim that Japanese has ϕ-agreement is inconclusive.
- Moreover, Obata and Sugimura's (2014; 2019) account has conceptual and empirical problems. I emphasize that it is just a stipulation to assume that the probe X and the goal Y Agree regarding a certain feature only if the values of the other features of X and Y match.
  - Let us call this the feature-matching condition on Agree. Obata and Sugimura limit the scope of this condition to a set of ϕ-features (e.g., [uNumber] and [vNumber] Agree only if the values of [vPerson] match between X and Y), but there is no principled reason to restrict the scope of their feature-matching condition to a set of ϕ-features.
  - Once they posit such a condition on Agree, features such as Case and other semantic features such as [+animate] would also need to match between the probe and the goal. This leads to a significant under-generation problem.
  - A canonical sentence, such as *John ate an apple* cannot be derived, as features such as Case and [+animate] do not match between *John* and T (only *John* has both [uCase] and [+animate]).
- Next, I argue against the analysis of give-type verbs. I maintain that Kuno and Kaburaki's (1977) theory of Empathy summarized in (72) can also explain the contrasts in (70).[27]

[26] I thank Takaomi Kato (p.c.) for bringing this possibility to my attention.
[27] I would like to thank Takaomi Kato (p.c.) for referring me to Kuno and Kaburaki (1977).

– The sentences in (73) are different in meaning: the speaker's point of view (Empathy in (72a)) differs according to the verb form. In (73a), the speaker's point of view is focused on the agent *Hanako*, while in (73b), it is focused on the recipient *Taro*.
– When *age-* is used in (70b), the speaker's empathy is focused on the subject; hence, the first person cannot appear in the object position, violating the requirement of Speech-Act Empathy Hierarchy in (72b), which states that the empathy focus is always on the speaker themselves if the speaker is in the sentence.
– When it turns to *kure-* in (70a), the speaker's empathy is focused on the object. Therefore, the use of the first-person subject obtains an unacceptable result in violation of the requirement in (72b).

(72) a. **Empathy**:
Empathy is the speaker's identification, with varying degrees (ranging from 0 to 1), with a person who participates in the event that they describe in a sentence.
b. **Speech-Act Empathy Hierarchy**:
It is not possible for the speaker to empathize more with someone else than with him/herself. (adapted from Kuno and Kaburaki, 1977, p628, 631)

(73) a. Hanako-ga Taro-ni hon-o age-ta.
Hanako-NOM Taro-DAT book-ACC give-PAST
'Hanako gave a book to Taro.'
b. Hanako-ga Taro-ni hon-o kure-ta.
Hanako-NOM Taro-DAT book-ACC give-PAST
'Hanako gave a book to Taro.'

- To summarize, Obata and Sugimura's (2014; 2019) observations or analysis do not support their claim that ϕ-agreement exists in Japanese, as the Person restriction can be explained with no recourse to syntactic agreement.

4.5 Honorification as ϕ-agreement (Toribio, 1990; Ura, 2000)

- Ura (2000), citing Toribio (1990), claims that honorific affixation is an instance of ϕ-agreement in Japanese. The relevant data are presented in (74). To be more precise, they assume that subject-honorification is induced by the Spec-Head agreement of ϕ-features (Ura, 2000, p.100).

(74) a. Yamada-sensei-ga o-warai-ni nar-ta.
Yamada-prof.-NOM HON-laugh-to become-PAST
'Prof. Yamada laughed.'
b. Yamada-sensei-ga gakusei-o o-tasuke-ni nar-ta.
Yamada-prof.-NOM student-ACC HON-help-to become-PAST
'Prof. Yamada helped the student.'
(adapted from Shibatani, 1978a; Ura, 2000, p.100)

- Although honorific agreement in Toribio's (1990) and Ura's (2000) analysis is achieved via Spec-Head feature checking in the GB era, it can be reinterpreted as the agreement between [uϕ] and [vϕ] that the current study is investigating.

– Suppose that [uϕ] resides in T, and the corresponding [vϕ] is on the subject *n*P. The [uϕ] on T probes into the complement *v*P, and then finds the corresponding [vϕ] on the subject.
– Thereafter, Agree occurs between the [uϕ] and the [vϕ], which morphologically realizes as an honorific affix on the predicate, as in (74).

- I argue that honorification is irrelevant to ϕ-agreement in Japanese. First, it is evident that honorification phenomena are distinct from ϕ-agreement in English and other Indo-European languages (cf. Niinuma, 2003, p.60).

  – The ϕ-agreement involves features such as [Person] and [Number] (and sometimes [Gender]) in these languages. However, the honorific morphology is completely different from that of ϕ-agreement. Honorific morphemes indicate the social status of the referents.

  – Fukui (1995a) points out that it is highly questionable whether such morphology should be treated as instances of ϕ-morphology, which indicates Person and Number (and sometimes Gender) information of the referents.

- Second, the honorific morphology need not appear in the conversational situation where the subject has a high social status.[28]

  – The sentences in (74) are never ungrammatical without the honorific morphology, as in (75). If ϕ-agreement occurs in honorific constructions, then it is expected that the data in (75) would be totally ungrammatical like the data in (76).

  – Because the nature of honorific morphology is completely different from that of ϕ-agreement morphology, the data in (74) do not serve as evidence for ϕ-agreement in Japanese.

(75) a. Yamada-sensei-ga waraw-ta.
Yamada-prof.-NOM laugh-PAST
'Prof. Yamada laughed.'
b. Yamada-sensei-ga gakusei-o tasuke-ta.
Yamada-prof.-NOM student-ACC help-PAST
'Prof. Yamada helped the student.'

(76) a. *John laugh. (cf. John laughs/laughed.)
b. *Mary help her students. (cf. Mary helps/helped her students.)

- Before commencing with the next section, a note on Boeckx and Niinuma (2004) is required.

  – They claim that object-honorification, as depicted in (77), in Japanese is an instance of ϕ-agreement. Since the same counterarguments as above apply, I do not discuss their observations or analysis in detail here.

  – Furthermore, Bobaljik and Yatsushiro (2006) present extensive arguments against Boeckx and Niinuma (2004) (cf. Boeckx, 2006).

(77) a. Taro-ga Tanaka-sensei-o o-tasuke-si-ta.
Taro-NOM Tanaka-prof.-ACC HON-help-do-PAST
'Taro helped Prof. Tanaka.'
b. Hanako-ga Tanaka-sensei-ni Mary-o go-syookaisi-ta.
Hanako-NOM Tanaka-prof.-DAT Mary-ACC HON-introduce-PAST
'Hanako introduced Mary to Prof. Tanaka.' (Boeckx and Niinuma, 2004, p.456)

4.6 Allocutive Agreement (Miyagawa, 2017)

- Miyagawa (2017) argues that Japanese shows allocutive agreement like Basque and other languages.

[28] I thank Takaomi Kato (p.c.) for pointing this out to me, crediting the observations and the insights to Naoki Fukui.

- Assuming that C-to-T feature-inheritance occurs in English, but significantly not in Japanese, Miyagawa proposes that C with ϕ-features raises to the domain of SpeechActP (SAP), more precisely to the small sa-head and consequently to the SA-head.
- The ϕ-features then serve as an allocutive probe. The ϕ-features of the SA-head probe for the HEARER, a null nominal (interlocutor) with a second-person feature, in [Spec, saP].
- Then they undergo ϕ-agreement, which realizes as a polite form *-des/mas* 'POL' in Japanese. The derivation is illustrated in (78) and the data are in (79).

- Miyagawa (2017) states that when the hearer is present (in conversational situation/Speech Act), *-des/mas* must be present, as in (79b).

(78) a. $[_{CP}$ ... TP $C_{[\phi]}]$
b. $[_{SAP}$ SPEAKER $[_{saP}$ HEARER $[_{CP}$ ... TP $C_{[\phi]}]$ sa] SA]
c. $[_{SAP}$ SPEAKER $[_{saP}$ HEARER $[_{CP}$ ... TP ~~$C_{[\phi]}$~~] ~~$C_{[\phi]}$-sa~~] $C_{[\phi]}$-sa-SA]

(adapted from Miyagawa, 2017, pp.26-29)

(79) a. Watashi-wa piza-o tabe-ru.
I-TOP pizza-ACC eat-PRES
'I eat pizza.'
b. Watashi-wa piza-o tabe-***mas***-u.
I-TOP pizza-ACC eat-POL-PRES
'I eat pizza.' (Miyagawa, 2017, p.19)

- I argue that Miyagawa's (2017) proposal does not provide evidence for ϕ-agreement in Japanese. The polite form need not appear in the conversational situation where the hearer is someone who the speaker should show respect to.
  - It is true that the lack of *-des/mas* may make the sentence (i.e., (79a)) sound a little rude, but never ungrammatical.
  - If ϕ-agreement needs to occur in (79a) but does not, then it is expected that the data become ungrammatical like the English example in (80a)[29]
  - Given that (79a) is grammatical, the data in (79b) should not be construed as evidence for ϕ-agreement in Japanese.

(80) a. *John like cats.
b. John likes cats.

4.7 Summary

- In this section, I reviewed five different arguments for ϕ-agreement in Japanese: (i) Case valuation, (ii) nominative/genitive conversion, (iii) Person restriction, (iv) honorification, and (v) apparent allocutive agreement.
- I offered rebuttals to each. By demonstrating that none of them is persuasive enough, this section supports the argument that Japanese lacks [uϕ] in the lexicon.
- Unvalued ϕ-features are, by definition, uninterpretable at the interfaces, and are, therefore, irrelevant to LF and the human thought system (Fukui, 1990).

[29] I thank Takaomi Kato (p.c.) for pointing these out to me, crediting these insights to Naoki Fukui.

– As such, they have no conceptual necessity (Chomsky, 2007a, p.5). The particular approach reviewed in this section assumes that languages in general, even those without overt evidence, have unvalued ϕ-features and agreement.

– Considering that there is no persuasive evidence for ϕ-features in Japanese, I conclude that it is not desirable to postulate them in Japanese.

5 Conclusion

5.1 Summary of this Talk

- In this study, I argued for the following statement, which is part of the FPH:

  (81) **Agreement Parametrization Hypothesis** (=(1)):
  The presence/absence of agreement features of functional categories in the lexicon yields certain parametric variation.

- Throughout this study, I have shown that Japanese lacks [uϕ] in the lexicon, supported by a few case studies and discussions in Sections 2, 3, and 4 from a comparative perspective.

- In Section 1, I reviewed how the FPH (Fukui, 1988, 1990, 1995a, among others) emerged in the theory of language.

  – Thereafter, I examined the literature on different approaches to the study of human language: Language Acquisition and Language Disorder.

  – I argued that it is reasonable that functional categories are subject to variation in contrast to lexical categories.

- Furthermore, I demonstrated that it is not unnatural that agreement features of functional categories are also subject to variation.

  – This argument is incompatible with the EH (Chomsky, 2010; Berwick and Chomsky, 2011, 2016; Boeckx, 2016, among others), which states that cross-linguistic variation stems only at the PF-branch.

- Section 2 proposed an analysis of how several apparently unlabelable constructions in Japanese are labeled under the assumption that Japanese lacks [uϕ] in the lexicon.

  – I revealed that canonical sentences, multiple subject constructions, and (multiple) scrambling constructions in Japanese can all be derived without labeling failure by solving the {XP, YP} problem of Chomsky (2013).

- In Section 3, I proposed the generalization that languages with object-verb ϕ-agreement cannot have productive lexical VV-compounds.

  – Thereafter, I provided a morphosyntactic analysis of why productive lexical VV-compounds are absent in English and other languages with object-verb ϕ-agreement.

  – Importantly, I discussed how Case is licensed in Japanese, which lacks ϕ-agreement.

- Section 4 consists of extensive discussions on previous studies that argue for the presence of ϕ-agreement in Japanese.

  - I carefully reviewed five different arguments for ϕ-agreement in Japanese, and then offered rebuttals to each of them.
  - Showing that there is little substantive evidence for ϕ-agreement in Japanese, Section 4 further supports the argument that Japanese lacks [uϕ] in its lexicon.

- Overall, I argued that Japanese lacks [uϕ] in the lexicon, and the presence/absence of agreement features in the lexicon yields certain parametric variation. This study provides a counterargument to the EH.

5.2 On Discourse Orientation and ϕ-agreement

- See Kobayashi (2022, Chapter 5) for details.

5.3 Final Remarks

- Naoki Fukui (p.c.) notes that Language Change regarding ϕ-features occurs in one way: they disappear and do not emerge from scratch or become more complex during Language Change.
  - In the same vein, Roberts (2019) and Roberts and Roussou (2003, p.17) claim that Language Change occurs unidirectionally from the complex to the simple.
  - More precisely, the agreement features disappear, but do not emerge in functional categories.

- Agreement features are LF-uninterpretable and are, therefore, irrelevant to LF or the human thought system (Fukui, 1990).
  - Since they are not crucial for the design of human language as an instrument of thought (Fukui and Sakai, 2003), it is natural to conclude that they are ultimately unnecessary for human language.
  - Being unnecessary, it is reasonable to claim that [uϕ] and other unvalued features are subject to disappearance in some languages, which yields certain language variations.
  - This is exactly what I have argued for in this study.

- If this argument is correct, it raises the question of why such unnecessary features were introduced to human language.
  - Kobayashi (2022) presumes that functional categories and agreement features emerged later than lexical categories during Language Evolution (Progovac, 2015).
  - The reason they were introduced into human language is not obvious. It might be an instance of contingency, which often occurs in evolution in general.
  - I currently do not have an exact answer. Therefore, I leave this issue open for future research.

- This study leaves a number of issues open for future research. However, I hope that the arguments and discussions presented in this study contribute to gaining a better understanding of Japanese syntax, and ultimately, human language.

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