PRO and (Under)Specification of Person in Imposter Constructions[*]

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Abstract—This paper examines a particular type of English control constructions that exhibits morphosyntactic variation. The constructions that are investigated are control that appears in the imposter phenomenon studied by Collins & Postal (2012). Using minimalist syntax in combination with the framework of Distributed Morphology (DM), a syntactic account is offered that validates such variation and shows evidence for PRO in infinitives with imposter constructions, rather than a trace of NP via movement. Furthermore, comparing PRO and *pro* for the subject gap of control, it shows that PRO can account for binding alternations unlike *pro*. The current analysis demonstrates that the lack of the underspecification of phi-feature valuation does not result in ungrammaticality whereas the failure of Agree itself leads to ungrammaticality. Moreover, the current analysis offers a systematic picture of the morphosyntactic variation of English nominals in terms of the person feature and it also accounts for cross-linguistic morphosyntactic variation in agreement displayed in Chinese and Japanese.

Index Terms—control, PRO, binding, imposter constructions, (under)specification, the person feature, agreement

I. INTRODUCTION

This paper investigates control in terms of the person feature. Control states referential dependencies between a NP that is coreferential with the subject gap of an infinitive (controller) and the subject gap (controllee). The controller determines the referential properties of the controllee (Bresnan 1982). Consider the example in (1).

(1) I like [*e* to look at myself/*yourself/*himself] in front of the mirror.

The subject gap [*e*] of the infinitive clause binds a 1st person reflexive and the selection of other reflexives is ungrammatical. The gap is syntactically associated with 1st person because it is controlled by a 1st person pronoun in the matrix clause. This phenomenon appears to indicate that the subject gap has the same person feature value as that of the controller. However this statement does not appear to be supported by the example in (2).

(2) (a) [*e* To protect myself$_i$/himself$_i$,] this reporter$_i$ (=I) is going to wear a bullet-proof vest.   (Collins & Postal, 2012, p. 73)

(b) [*e* To keep ourselves$_i$/themselves$_i$ out of jail], the present authors$_i$ (=we) are going to wear bullet-proofing vests. (p. 187)

The subject DPs *this reporter* and *these reporters* are grammatically 3rd person. Yet they are used to refer to the speaker or the speaker's group in (1) and (2) respectively and both subjects do not denote a 3rd party. Interestingly, they can determine a 1st person or 3rd person reflexive in infinitives. At first grant, these binding alternations seem to be the counterexample to the statement of control because the reflexives bound by the controllee are 1st or 3rd person. Because of the pronominal alternations it seems that the controllee does not show the same person feature value as that of the controller in (2). However, the same binding alternations exhibited in the infinitives of (2) are also observed in the matrix clauses of (3) and (4).

(3) (a) This reporter$_i$ (=I) sent myself$_i$ to cover Bill Clinton's lecture. (Collins & Postal, 2012, p. 20)

(b) This reporter$_i$ (=I) sees himself$_i$ as managing editor in the future. (p. 20)

(4) These reporters$_i$ (=we) respect ourselves$_i$/themselves$_i$. (p. 54)

Collins & Postal (2012) observe that referential DPs that refer to the speaker(s) can select a 1st or 3rd person reflexive in (3) and (4).[1] These particular kinds of expressions, which may exhibit notionally and grammatically distinct person features, are what they call *imposters*.[2] This example shows that the pronominal alternations have nothing to do with infinitives. They observe that a similar observation applies to DPs which denote the addressee (2nd person) as well. For simplicity, I will focus only on singular DPs that refer to the speaker (1st person) in the following discussion. What is important here is that imposter DPs control the subject gap of the infinitives in (2). Since imposter DPs appear to be able to possess distinct person feature values, the same morphosyntactic variation is observed in control as in the matrix

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[1] According to Collins & Postal (2012), only the 3rd person reflexive yields a grammatical result for some dialects of English speakers.
[2] The definition of imposters proposed by Collins & Postal (2012) is as follows in (i):
(i) An imposter is a notionally *n* person DP which is grammatically *m* person, $n \neq m$. (p. 5)

clauses. Note that the pronominal alternations do not correlate with differences in meaning or truth conditions in imposter constructions.

However this "optional" selection of reflexives appears to be uniquely restricted to imposter constructions, and this optionality is not observed in non-imposter constructions as in (5).

(5) (a) [*e* To protect *myself$_i$ /himself$_i$*], this reporter$_i$ ($\neq$I) sent *myself/himself to the training.

(b) [*e* To protect *myself$_i$/himself$_i$*], he$_i$ sent *myself/himself to the training.

(c) [*e* To protect myself$_i$/*himself$_i$*], I$_i$ sent myself/*himself to the training.

The subjects in the matrix clauses are not in imposter use, and only one and the same selection of reflexives in both the matrix clauses and the infinitive clauses is grammatical and the other selection is ungrammatical. To be clear, these pronominal binding relations are different from those of imposters in that the latter can have a wider selection of reflexives.

What rule governs the identification of the subject gaps of infinitives? What is the syntactic category of the subject gap? Is it PRO? Is it a trace via movement? To what extent does syntax regulate the interpretation of control constructions? In order to answer these questions, I examine the binding alternations that control exhibits in imposter constructions, building on Chomsky's (2000, 2001) analysis on Agree in combination with DM proposed by Halle & Marantz (1993, 1994). I attribute the morphosyntactic variation to dual properties of the person feature (i.e., notional and grammatical person). More specifically, I propose that the controller and PRO may not possess both notional and grammatical person simultaneously since notional person and grammatical person are not always in one-to-one relation. This effect leads to (under)specification of the person feature in binding relations, in support of an infinitival PRO subject. I demonstrate that underspecification of binding agreement as a result of Agree does not induce ungrammaticality, unlike in the case of the failure of Agree. Moreover I show that cross-linguistic (under) specifications of the person feature exhibited in Chinese and Japanese fall under the current analysis.

Section II critically reviews Hornstein's (1999 et seq.) movement analysis and Landau's (2000 et seq.) Agree analysis by applying them to control constructions with the imposter phenomenon, and presents that both analyses cannot fully account for morphosyntactic variation in person. Section III introduces Harley & Ritter's (2002) feature geometry with a slight modification and applies it to imposter constructions to clarify the distribution of the person feature in the binding alternations within control constructions, in support of a PRO hypothesis rather than a *pro* hypothesis. Moreover, it presents a systematic picture of the morphosyntactic variation of English nominals and also shows that the current analysis accounts for cross-linguistic variation exhibited in Chinese and Japanese imposter constructions. Section IV is the conclusion.

II. Literature Review: The Subject of Infinitives

Although dominant throughout the 1980s, the approach involving government has been abandoned in minimalist analyses in the generative literature. Because of this the subject gap in infinitives had to be accommodated without appealing to the government theory. Yet not much attention has been devoted to the issue in the recent minimalist literature, except two lines of considerations: One is that the control theory has been replaced by a movement analysis (Hornstein 1999, 2001, 2003); the other is the introduction of the syntactic operation Agree for control (Landau 2000, 2004, 2010). I critically review Hornstein's (1999 et seq.) movement analysis in 2-A and Landau's (2000 et seq.) Agree analysis in 2-B by applying these extant analyses to infinitives with imposter constructions, and I identify the issues of the person feature in terms of the binding alternations in infinitives with imposter constructions.

A. Hornstein's (1999 2001, 2003) Movement Analysis

Hornstein (1999 et seq.) denies the existence of PRO and locality for control. According to Hornstein's (1999 et seq.) movement analysis, the subject gap in infinitive clauses is a trace (or a copy) of NP-movement. He argues for movement-derived control including obligatory adjunct control derived by means of sideward movement. Let us consider Hornstein's movement analysis with an adjunct infinitive in (6), whose derivation is illustrated in (7).

(6) Sam wrote a petition in order [*e* to get a gold medal].

(7) (a) K= [wrote a petition]
      L= [Sam to get a gold medal]

  (b) M=[Sam wrote a petition]

  (c) [$_{vP}$ Sam wrote a petition [in order ~~Sam~~ to get a gold medal]]

According to Hornstein, the adjunct control in (6) can be derived along the lines of (7). In (7a) the two syntactic objects, K and L, are assembled independently through the operation of merge. In (7b) provided that the possibility of sideward movement is allowed, *Sam* is copied from L and merged with K and it becomes the subject of the matrix clause in M. In (7c) *in order* is added to *L*, and the extended L and M merges, and the lower copy of *Sam* is deleted and gives rise to a subject control reading.

I apply Hornstein's movement analysis to the infinitive in the imposter construction in (8) (=2a) and show how much his movement analysis can account for the binding alternations in control.

(8) [To protect myself$_i$/himself$_i$,] this reporter$_i$ (=I) is going to wear a bullet-proof vest.

Consider the schemas of the derivation under Hornstein's (1999 et seq.) movement analysis in (9) for the sentence in

(8).

  (9) (a) is going to wear a bullet-proof vest.

     (b) [$_{XP}$ This reporter to protest myself/himself]

     (c) [$_{TP}$ this reporter is going to wear a bullet-proof vest].

     (d) [$_{TP}$ [$_{XP}$ ~~this reporter~~ protest myself/himself] [$_{TP}$ this reporter is going to wear a bullet-proof vest.

Part of the matrix clause is built in (9a). Independently the imposter DP *this reporter* is originally generated in subject position of the adjunct infinitive and binds either a 1st or 3rd person reflexive in (9b). Once the subject of the adjunct clause is copied, it becomes the subject of the matrix clause, where it receives a structural Case in (9c). Both clauses in (9b) and (9c) merge by adjoining the adjunct infinitive XP to TP, and then the subject in the adjunct infinitive is deleted in (9d). Under Hornstein's analysis, no *PRO* appears in the infinitive. Instead, the imposter DP merges in subject position of the adjunct infinitive, and after that, it remerges in the matrix clause via sideward movement. This means that the same DP possesses two theta roles (one from the verb in the infinitive clause and the other from the matrix verb), which does not violate the theta criterion, according to Hornstein. Yet, in order for the theta roles to be "visible" the DP needs a structural Case. This requirement drives the DP to be "remerged" in the matrix clause. Note that the imposter DP does not violate a Minimal Link Condition because both adjunct and matrix clauses are separately built in Hornstein's movement analysis. Before the imposter DP remerges in the matrix clause, this DP is not c-commanded by the object DP in the matrix clause. The sideward movement is not dependent on c-command but copy and deletion of a DP for the subjects of both matrix and infinitive clauses. Thus under this analysis the subject gap is a trace (or a copy) via movement and is the exactly same DP as the matrix subject. Hornstein's analysis accounts for the pronominal alternation in the imposter construction.

However his analysis cannot example a mismatch in the person feature that is observed in the imposter construction in (10), in which both the matrix clause and the embedded clause have a reflexive of distinct person although both reflexives are coreferential with the matrix subject.

  (10) (a) [To cover myself$_i$ in case of an investigation], this reporter$_i$ (=I) is going to keep himself$_i$ out of the newspapers. (Collins, Moody, & Postal, 2008, p. 61)

     (b) [To keep ourselves$_i$ out of jail], the present authors$_i$ (=we) are going to behave themselves$_i$ from now on. (Collins & Postal, 2012, p.187)

The imposter DPs in subject position of the matrix clauses bind a 3rd person reflexive in the main clauses while the subject gaps determine a 1st person reflexive in the adjunct clauses. Despite of their distinct person, these reflexives are coreferential with the imposter DPs in matrix subject position. Let us look at the derivation of the example (10) under Hornstein's movement analysis in (11).

  (11) (a) is going to keep himself out of the newspapers.

     (b) this reporter to cover myself in case of an investigation

     (c) this reporter is going to keep himself out of the newspapers.

     (d) [~~this reporter~~ to cover myself in case of an investigation], this reporter is going to keep himself out of the newspapers.

In (11a) the matrix clause is generated. In (11b) the imposter DP binds a 1st person reflexive in the infinitive clause independently. In (11c) after the subject of the infinitive clause is copied, it is remerged as the subject of the matrix clause and binds a 3rd person reflexive. In (11d) the matrix clause and the infinitive clause merge and the subject of the infinitive clause is deleted. This derivation indicates that the same DP can bind a 1st and 3rd person reflexive at the same time in the middle of the derivation.

However Hornstein's movement analysis would wrongly predict the example in (12) to be grammatical, contrary to what we observe.

  (12) (a) *The present authors$_i$ (=we) are going [to talk to ourselves$_i$ about themselves$_i$]. (Collins & Postal, 2012, p.187)

     (b) *The present authors$_i$ (=we) are going [to talk to themselves$_i$ about ourselves$_i$].

The same imposter DPs bind two reflexives of distinct person, which is ungrammatical. This shows that imposter DPs cannot possess two distinct person values simultaneously in (11). Yet, the distinct person values of the reflexives in (10) do not induce ungrammaticality. Thus the grammaticality of the infinitives in (10) (in contrast with (12)) weakens Hornstein's movement analysis.

B. Landau's (2000, 2004, 2010) Agree Analysis

Landau (2000 et seq.) argues for the existence of PRO as the subject of infinitives. According to Landau, there are two kinds of control: exhaustive and partial control. The difference between these kinds of control lies in the reference of PRO in (13) and (14).

  (13) Exhaustive Control

     (a) The chair$_i$ managed [PRO$_i$ to gather the committee at 6].

   (b) *The chair$_i$ managed [PRO$_{i+}$ to gather at 6].[3]

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[3] The notation *i+* in (13b) and (14) indicates that the referent of a DP is partially coreferential with its controller DP that has the same index in that the reference is plural including the referent himself/herself.

(14) Partial Control

The chair$_i$ preferred [PRO$_{i+}$ to gather at 6]. (Landau, 2000, p. 5)

PRO in exhaustive control does not allow PRO to refer plural referents including the referent that the matrix subject denotes in (13), whereas PRO in piratical control permits the plural interpretation in (14).

Landau argues that these two kinds of control should be accounted for under Agree, rather than a movement analysis. Consider Landau's (2004) analysis of Agree in (15).

$$[F \quad DP_i \ [_{CP} \ C_j \ [_{TP} \ PRO_i \ T_j \ [\ \ldots \ ] \ ]]]$$

(15)
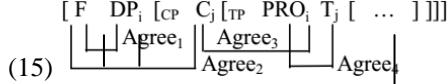
F inherits the semantic number from the DP via Agree$_1$ and transmits it to C via Agree$_2$. Once C passes down the feature to T via Agree$_3$, T shares it with PRO via Agree$_4$. However, according to Landau, C^0 never enters into a primary checking relation with a DP and thus optionally lacks the number feature via Agree. The distinction between exhaustive and partial control is attributed to the optional lack of the number feature by the C head. If the number feature value of C is shared with T, PRO is in exhaustive control relation; otherwise it is in partial control.

With Landau's agreement analysis in mind, let us closely look at the distribution of the phi-features of the partial control construction in (14), shown in (16).

(16) a. [DP$_i$\{3rd, Singular\}.... [$_{CP}$ C \{3rd\} [$_{TP}$ PRO$_i$ \{3rd\} [$_{T'}$ T \{3rd\}…]]]

b. PRO \{3rd, __\} $\rightarrow$ PRO \{3rd, Pl\}

According to Landau, in (16a) the subject DP with both person and number values enters into an Agree relation with the C head, which Agrees with the T head. Because C lacks number, however, this T head only possesses the person feature value \{3rd\} from C and enters into an Agree relation with PRO. This way PRO only receives 3rd person. Since C has no specification for number and PRO does not acquire a value for number via Agree. Instead, PRO obtains \{plural\} semantically in (16b). This way the controller and PRO involve the distinct number values.

I apply Landau's Agree analysis to the binding alternations in (2a), repeated as (17), and examine the distribution of person (and not number) in the schemas in (18a,b).

(17) [To protect myself$_i$/himself$_i$,] this reporter$_i$ (=I) is going to wear a bullet-proof vest.

(18) (a) [PRO$_i$ \{1st\} … reflexive$_i$ \{1st\}] [$_{CP}$ C \{1st\} [$_{TP}$ DP$_i$\{1st\} T\{1st\}…]

(b) [PRO$_i$ \{3rd\} … reflexive$_i$ \{3rd\}] [$_{CP}$ C \{3rd\} [$_{TP}$ DP$_i$ \{3rd\} T\{3rd\} …]
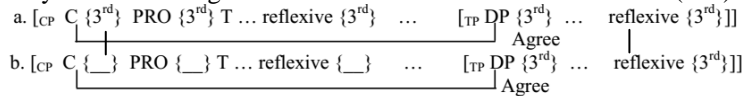
Under Landau's analysis, the binding alternations in the infinitive of (17) ultimately result from an Agree relation between the imposter DP and PRO by means of C and T; because the imposter DP should possess \{1st\} or \{3rd\}, one of the features is shared to *PRO* via Agree, and passes down to the reflexive via Agree, as the schemas in (18a,b). However Landau's Agree analysis is also unable to fully account for the mismatch in person of reflexives in (10). (10a) is repeated as (19a) and its schema is shown in (19b).

(19) (a) [To cover myself$_i$ in case of an investigation], this reporter$_i$ (=I) is going to keep himself$_i$ out of the newspapers.

(b) [$_{CP}$ C PRO$_i$ \{1st\}… reflexive$_i$\{1st\}] … [$_{TP}$ DP$_i$ \{3rd\} T …reflexive$_i$ \{3rd\}]

As the two reflexives show, the controller DP binds 3rd person in the matrix clause while *PRO* determines a 1st person reflexive in the infinitive clause. Yet these two reflexives of distinct person are coreferential with the DP in imposter use in (19a). Under Landau's Agree analysis, it is not clear how elements of a distinct person value can corefer in (19b).

One might assume that there are two kinds of the C head with and without the person feature in (20a,b), which additionally involves an Agree relation in contrast with the schema in (19b).

a. [$_{CP}$ C \{3rd\} PRO \{3rd\} T … reflexive \{3rd\}   …   [$_{TP}$ DP \{3rd\} … reflexive \{3rd\}]]
Agree

b. [$_{CP}$ C \{__\} PRO \{__\} T … reflexive \{__\}   …   [$_{TP}$ DP \{3rd\} … reflexive \{3rd\}]]
Agree

(20) c. RPO \{__\} $\rightarrow$ PRO \{1st\}

The DP possesses 3rd person and binds a reflexive of the same person in the matrix clause. The same DP as controller enters into an Agree relation with C. Under Landau's modified analysis, this C head may or may not have the person feature. When C has the person feature in (20a), it obtains the person feature value from the controller, it realizes as 3rd person (which is grammatical as shown in (27)). In contrast, when C does not have the person feature in (20b), C does not possess the person feature value to share with PRO via T. In this case, one might argue that PRO semantically obtains 1st person in the given contexts in (20c) (as in the case of number with partial control in (14)) and binds a 1st person reflexive. At first sight, Landau's revised analysis of C appears to successfully account for the person mismatch in (19a), although four kinds of C are now needed to be assumed: C with/without number and C with/without person.

However, Landau's (revised) analysis is silent to the question of why a 3rd person reflexive is coreferential with the imposter DPs referring to the speaker in (18a). This is an issue of representation and interpretation of the person feature and it is not clear with Landau's analysis. Moreover, if there were four kinds of the C head (one with and without the person feature and the other with and without the number feature), the binding alternations and the person mismatch would be more widely accepted even in non-imposter constructions, contrary to what we observed in (5). The lack of evidence is problematic to Landau's analysis. Thus, the mismatch in person cannot be attributed to the properties of C.

III. PHI-FEATUREGEOMETRY AND IMPOSTER DPS

Why can a non-pronominal DP referring to a speaker tolerate a 3rd person reflexive? In order to offer an answer to this question, I review Harley & Ritter's (2002) feature geometry for phi-features of pronouns and generalize it to non-pronominal DPs in III-A. In III-B by employing the generalized geometry for person, I analyze the "optionality" of the reflexive selection in the control construction and argue for an infinitival PRO subject in line with Landau (2000 et seq.). However, departing from his (revised) analysis, I propose that the dual properties of the person feature cause the seemingly "optional" selection in binding. In III-C I extend the current analysis to the mismatch in person of control in question and I argue that the mismatch does not induce ungrammaticality because it is constrained by Agree in proper syntax in combination of DM. I offer a systematic picture of the morphosyntactic variation of English nominals in terms of the person feature. In III-D I present cross-linguistic morphosyntactic variation in agreement displayed in Chinese and Japanese, in support of the current analysis of the dual properties of the person feature.

A. Feature Geometry for the Person Feature

Harley & Ritter (2002) examine morphosyntactic properties of pronominal systems cross-linguistically and argue that morphosyntactic features are best thought of as forming a dependency structure, or a feature geometry. The structure in (21) illustrates the properties of the person feature.

(21) Phi-Feature Geometry for Person

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        {Participant}
          /\
         /  \
{Speaker}    {Addressee}
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(Harley & Ritter, 2002, p. 486)
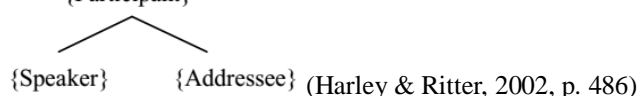
The individual nodes represent privative phi-features of the person feature. Particularly, the Participant node and its dependents represent the person feature values, which depend on the DP's discourse roles. Under Harley & Ritter's analysis, {Speaker} and {Addressee} are used to represent the person feature values. Put differently, there is complete agreement between notional person as the semantic category (e.g. {Speaker}) and grammatical person (which refers to morphosyntactic properties such as {1st}). For instance, a 1st person pronoun would possess {Speaker}. This interpretation of person is not problematic to personal pronouns. Given Harley & Ritter's equal treatment of notional person {Speaker} and grammatical person {1st}, a DP referring to the speaker or addressee is predicted to only take a bound pronoun of same grammatical person.

However we observed that this is not always the case in imposter constructions. Referential DPs in imposter use such as *this reporter* can refer to a speaker like a 1st person pronoun although they do not possess a specific morphological form unlike the pronoun. Moreover they can determine either a 1st person or 3rd person reflexive. This indicates that the geometry for person in (21) is not directly applied to non-pronominal DPs such as imposter DPs.

I assume that imposter DPs referring to a speaker possess {Speaker} like a 1st person pronoun. Based on the fact that imposter DPs can bind either a 1st or 3rd person reflexive, I also assume that they may or may not additionally possess grammatical person {1st} besides notional person. This means that notional person {Speaker} and grammatical person {1st} are not always identical with non-pronominal DPs. Thus, they may possess both notional and grammatical person {Speaker, 1st}; otherwise, they lack grammatical person {Speaker, $\emptyset$ } under the assumption that 3rd person is the default person feature for English (Baker 2011, Furuya under review). Note that $\emptyset$ represents the lack of grammatical person. The geography of 1st person feature values is shown in (22):

(22) Dual Properties of the Speaker Node for English Imposter DPs

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        {Speaker}
          /\
         /  \
{1$^{st}$}    $\emptyset$
```
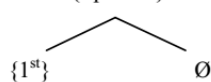
This feature geometric structure shows that notional person {Speaker} may or may not be connected with grammatical person {1st}, because the Speaker node is not automatically tied to morphology for the person feature particularly when a DP lacks a special form. When the {Speaker} feature is not connected with {1st}, grammatical person is realized as 3rd person in DM since 3rd person is a default feature in English. Thus, {Speaker} in (22) possesses additional dependencies.[4]

Note that the dual properties of the person feature in (22) are not applied to personal pronouns because they possess both notional and grammatical person as in (23).

(23) I {Speaker, 1st} sent myself/*himself to cover the story.

The pronominal subject *I* has the feature geometry that involves the combination of notional person {Speaker} and grammatical person {1st}, thanks to its intrinsic lexical properties. Thus the pronoun in (23) only binds a 1st person reflexive and cannot tolerate a 3rd person reflexive.

Once the dual properties of the person feature are clear, let us return to imposter constructions with the binding alternations and examine them.

B. Imposter DPs and Binding Alternations

Given the feature geometry with the dual properties of the person feature for DPs in imposter use, the "optionality"

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[4] See III-C for more arguments of the relation between syntax and DM.

of reflexive selection in imposter constructions in (24) (=3) is readily accounted for.

(24) (a) This reporter$_i$ (=I) sent myself$_i$ to cover Bill Clinton's lecture.

(b) This reporter$_i$ (=I) sees himself$_i$ as managing editor in the future.

The imposter DP *this reporter* referring to the speaker possesses notional person {Speaker}. However because the imposter DP does not possess a specific form it may or may not possess grammatical person {1st} simultaneously. In (24a) the DP possesses {Speaker, 1st} and shares it with the reflexive via Agree (Despić 2015, Furuya under review, Rooryck & Vanden Wyngaerd 2011, among others for an Agree analysis of Condition A). Because of the presence of grammatical person {1st} a 1st person reflexive is inserted in DM. In contrast, the DP in (24b) only has notional person {Speaker, Ø }, and thus a 3rd person reflexive is selected post-syntactically. The selection of a 1st or 3rd person reflexive is grammatical when it is coreferential with the imposter DP referring to the speaker, because of the presence of notional person {Speaker} on the reflexive, shared via Agree.

In the following subsection, I employ the generalized feature geometry of 1st person and analyze the person mismatch in infinitives, in support of the PRO hypothesis.

C. Person Mismatch in Control

I propose the structure in (25b) for the imposter construction with the person mismatch in (25a) (=10a) and examine the distribution of the person feature.

(25) (a) [To cover myself$_i$ in case of an investigation], this reporter$_i$ (=I) is going to keep himself$_i$ out of the newspapers.

(b)
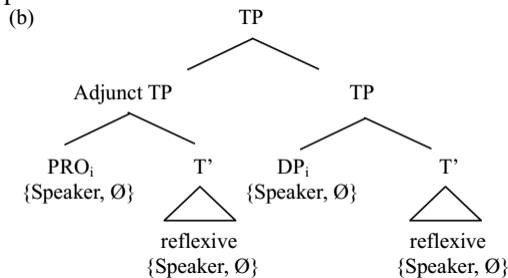
In (25b) the imposter DP *this reporter* involves {Speaker, Ø }, which is shared with the reflexive in the matrix clause and PRO via Agree respectively. Once PRO obtains the person feature value from the controller, it shares the feature with its bound object in the infinitive clause again via Agree. Thus, all the nominal elements in both matrix and adjunct clauses possess the same person feature value {Speaker, Ø } in narrow syntax.

How does the mismatch in the person feature of the reflexives bring about in (25a)? Under the framework of DM introduced by Halle & Marantz (1993, 1994) that I adopt, morphology is a part of the mapping from the output of a syntactic derivation to the input in phonology. Lexical insertion happens post-syntactically after the syntactic features are manipulated. Although the syntactic representation is thoroughly specified, the vocabulary or the morphology is not always correspondingly specified. Given the dual properties of the person in (22), I assume that the person feature {Speaker, Ø } may be realized as 1st person post-syntactically in English because it lacks the morphological information and yet it possesses notional person. Notional person may be associated with grammatical person.[5] I propose specifications of the two reflexives in (25b) shown in (26a,b):

(26) Syntax   →   Morphology

(a) Reflexive {Speaker, Ø }   3rd person reflexive   (matrix clause)

(b) Reflexive {Speaker, Ø }   1st person reflexive   (embedded clause)

The two reflexives possess the same person feature values and yet they are realized distinctively in DM. Critically, however, they are both coreferential with the imposter DP in matrix clause because of the presence of notional person {Speaker}. I should note that the realization of {Speaker, Ø } on the two reflexives can also be 1st or 3rd person as shown in (27):

(27) (a) [To cover himself$_i$ in case of an investigation], this reporter$_i$ (=I) is going to keep himself$_i$ out of the newspapers.

(b) [To cover myself$_i$ in case of an investigation], this reporter$_i$ (=I) is going to keep myself$_i$ out of the newspapers.

This indicates that Agree guarantees full sharing of {person} with PRO in narrow syntax though its morphological realization may vary in PF. Put differently the absence of the morphological realization of a person feature value does not result in ungrammaticality.

One might consider *pro* instead of PRO as the subject gap in infinitives (see Hornstein 1999 et seq. for non-obligatory adjunct control). In the Government and Binding theory *pro* is treated as [+pronominal], distinct from PRO with [+anaphor, +pronominal]. I take this to mean that *pro* possesses both notional and grammatical person from the beginning of a derivation like lexical pronouns. If the subject of an infinitive were *pro*, it would bind the reflexive

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[5] Furuya (under review) argues that the realization of 1st person feature without grammatical person is not necessarily realized as 1st person cross-linguistically. See also III-D and footnote 5.

independently from the subject DP in the main clause. However, English is not generally considered as a *pro*-drop language. Moreover if the subject of *keep* were *pro*, it should not allow for the binding alternations in (28) like lexical pronouns in (5).

(28) It is important [e]$_i$ (=I) to keep myself$_i$/herself$_i$ from getting sunburned.

Given the appropriate contexts, the referent of the reflexives in (28) is the speaker even when the 3rd person reflexive is selected, and the sentence is still grammatical. The analysis of the subject gap as *pro* cannot explain why a 3rd person reflexive can be coreferential with the subject gap that refers to the speaker. Likewise the *pro* hypothesis also fails to account for the presence of a 3rd person reflexive bound by the subject gap referring to the speaker in (25a) and (27a). On the other hand, if PRO is the subject of the infinitive, it does not obligatorily have a person feature value from the beginning of a derivation; it is given via Agree as in (25b) and (27). Alternatively in the case of (28) the person feature is given to PRO in the given contexts. Thus, the reflexive bound by *PRO* can be coreferential with PRO referring to the speaker even when it is 3rd person. The current analysis supports the PRO hypothesis.

Combining with the current analysis of the dual properties of person, let us examine one more example in (29) under the *pro* hypothesis in comparison with the PRO hypothesis.

(29) (a) [To cover myself$_i$ in case of an investigation], this reporter$_i$ (=I) kept himself$_i$ out of the newspapers.   (=10a)

(b) [To cover himself$_i$ in case of an investigation], this reporter$_i$ (=I) kept himself$_i$ out of the newspapers.   (=27a)

(c) *[To cover himself$_i$ in case of an investigation], this reporter$_i$ (=I) kept myself$_i$ out of the newspapers.

The sentences have the same imposter DP in the matrix clause, which binds a 3rd person reflexive in (29a,b) and a 1st person reflexive in (29c) like in (27b) respectively. These binding alternations in the matrix clauses themselves are not ungrammatical since an imposter DP referring to a speaker binds a 1st or 3rd person reflexive. Moreover, the presence of both a 1st person reflexive and a 3rd person reflexive in the adjunct clauses is also grammatical in (29) as in (27). The question is why the sentence in (29c) is ungrammatical, in which the matrix clause contains a 1st person reflexive while the adjunct clause possesses a 3rd person reflexive, in contrast with (29a,b).

Let us scrutinize the distribution of the person feature of the sentences in (29a,b,c), illustrated in (30a,b,c) respectively.

(30) (a) [pro {Speaker, 1st} … reflexive {Speaker, 1st} …   [DP {Speaker, Ø } … reflexive {Speaker, Ø }]

(b) [pro {Speaker, Ø }… reflexive {Speaker, Ø } …   [DP {Speaker, Ø } … reflexive {Speaker, Ø }]

(c) *[pro {Speaker, Ø }… reflexive {Speaker, Ø } …   [DP {Speaker, 1st }… reflexive {Speaker, 1st}]

Under the *pro* hypothesis with the analysis of the dual properties for person, the *pro* in subject position of the adjunct clauses as well as the referential DPs in subject position of the matrix clauses possesses notional person from the beginning of the derivations because they refer to the speaker. Moreover the *pro* subject is [+pronominal] and thus it should inherently possess its own grammatical person feature and behave like a 1st person pronoun regardless of the controller's person feature. This assumption of *pro* is compatible with the schema in (30a): the matrix subject possesses 3rd person while the subject of the infinitive possesses 1st person. As for (30b, c) although the issue of the representation of 3rd person with reference to a speaker is already pointed out as problematic if the subject is *pro*, let us assume that *pro* may or may not possess grammatical person. This optionality of grammatical person on *pro* is taken to lead to the morphosyntactic variation in (30). However, under the *pro* hypothesis it is not clear why the realization of 3rd person is ungrammatical in the adjunct clause when a 1st person reflexive is selected in the matrix clause in (30c) in contrast with the example in (30b). This contrast cannot be accounted for by the *pro* hypothesis.

In contrast with the *pro* hypothesis, however, the PRO hypothesis accounts for the ungrammaticality in (30c). Since the DP in matrix subject position possesses both notional and grammatical person, the person feature of its bound pronoun is realized as 1st person in the matrix clause. Likewise, both notional and grammatical person that the DP possesses are shared with PRO in the infinitive via Agree, which should be realized, again, as 1st person in DM. However the schema in (30c) exhibits that the subject of the infinitive does not fully obtain the person feature from its controller, realizing as 3rd person. The partial agreement of the person feature by PRO via Agree induces ungrammaticality.

I have discussed the four types of English nominals in terms of 1st person. I summarize their properties in (31).

(31) MORPHOSYNTACTIC PROPERTIES OF THREE TYPES OF ENGLISH NOMINALS REFERRING TO THE SPEAKER

Pronoun	PRO	Referential DP
{Speaker, 1st}	{Speaker, 1st} or {Speaker, Ø }	{Speaker,1st} or (Speaker, Ø)

Lexical pronouns possess notional and grammatical person in the numeration. On the other hand, PRO and referential DPs may or may not possess grammatical person along with notional person from the beginning of a derivation, and they may obtain the person feature via Agree in the middle of the derivation, which leads to morphosyntactic variation in binding relations.

D. Implications from the Dual Properties of the Person Feature

What does the current analysis predict with regard to the control contexts in imposter constructions? In the current analysis English referential DPs happen to possess the two types of person feature values in regards to 1st person in (31).

However referential DPs in imposter use do not obligatorily allow for both person feature values cross-linguistically since they lack lexical/referential properties. The current analysis predicts that there are languages that involves two other types of referential DPs referring to a speaker besides ones that allow DPs possess both {Speaker, 1st} and {Speaker, Ø } as in English. All possibilities are listed in (32).

   (32) (a) A language that allows referential DPs to have {Speaker,1st} and {Speaker, Ø } as in English

       (b) A language that allows referential DPs to have {Speaker, 1st}

       (c) A language that allows referential DPs to have {Speaker, Ø }

If a language permits referential DPs to uniquely possess {Speaker, 1st} a mismatch in the person feature would not be accepted in control because controller DPs possess grammatical person as well as notional person and share both person with PRO. The reflexive bound by this PRO should be realized only as 1st person because of the presence of grammatical person. This is borne out in Chinese. According to Wang (2009), Chinese DPs in imposter use bind only a 1st person reflexive in (33).

   (33) A-Bian$_i$ zhi hui tou gei {*ta-ziji$_i$ / wo-ziji$_i$} (A-Bian = the nickname of a President) (Wang, 2009, p. 3)

      A-Bian   only will vote to   he-self / I-self

      Lit. 'A-Bian$_i$ (= I/speaker) will only vote for {* himself$_i$ / myself$_i$}'

The DP in imposter use determines a 1st person reflexive and the selection of a 3rd person reflexive is ungrammatical. This indicates that Chinese referential DPs in imposter use include both notional and grammatical person. Thus a 3rd person reflexive is predicted to be not selected in infinitives as well in Chinese, which is correct in (34).

   (34) [PRO$_i$ yao   rang   {*ta-ziji$_i$ / wo-ziji$_i$} gen jiankang], laoshi$_i$ juedin tiantian yundong.   (Wang, 2009, p. 4)

      want.to make   himself/myself   more healthy   teacher decide everyday exercise

      Lit. 'To make {*himself$_i$/myself$_i$} healthier, teacher$_i$ (=I) decided to exercise every day.'

If a language allows referential DPs to exclusively possess {Speaker, Ø }, again a mismatch in person may not be observed in control. Japanese is one of such languages. Japanese DPs in imposter use do not tolerate a 1st or 3rd person reflexive. Look at the example in (35).

   (35) Sensei (= I)-wa kagami-de *watasizisin/*kanozyozisin/zibun-o mita.

      Teacher-Top   mirror-in   myself/herself/self-Acc   saw

      'Teacher (=I) saw *myself/*herself/self in the morrow.'

The imposter DP in subject position takes the underspecified reflexive *zibun* 'self' (Kuno 1973, Kuroda, 1973), and the selection of other reflexives is ungrammatical in (35). This suggests that subject DPs referring to the speaker involve {Speaker, Ø } in Japanese, whose person feature is realized underspecified on the reflexive.[6] The same selection of reflexives is found in control in (36).

   (36) [PRO kagami-de *watasizisin/*kanozyozisin/zibun-o minagara], sensei (= I)-wa sore nituite kangaeta.

        mirror-in   myself/herself/self-Acc   seeing   teacher-Top   it   about thought

      'While PRO looking at *myself/*herself/self, teacher (= I) thought about it.

The imposter DP in matrix subject controls RPO in the adjunct clause via Agree, and this Agree relation is realized as underspecified on the specification of the reflexive in the adjunct clause because the Japanese imposter DP lacks grammatical person.

IV. CONCLUSIONS

After having reviewed distinctive agreement in English binding relations that appear in imposter constructions studied by Collins & Postal (2012), I showed that the same binding alternations are observed in infinitives to imposter constructions, in comparison with non-imposter constructions. This phenomenon indicates that the subject gaps of infinitives are closely related to the matrix subjects in imposter use. I applied Hornstein's (1999 et seq.) movement analysis and Landau's (2000 et seq.) Agree analysis to the morphosyntactic variation in infinitives and argued that these extant analyses cannot fully account for the variation. I reexamined Harley & Ritter's (2002) analysis of person and generalized their feature geometry for person to non-pronominals. I proposed that the person feature consists of notional and grammatical person and claimed that notional and grammatical person are not always in one-to-one relation. Under the generalized feature geometry for the person feature, I argued for an infinitival PRO subject in an Agree analysis, in line with Landau (2000 et seq.). Dissimilar from him, however, I argued that binding alternations are attributed to the dual properties of the person feature, not the properties of C or other elements. I claimed that although personal pronouns and *pro* possess both notional and grammatical person, referential DPs in imposter use and PRO may not obligatorily possess both properties of the person feature (notional and grammatical person), which leads to morphosyntactic variation. I demonstrated that the failure of Agree results in ungrammaticality whereas the lack of morphological specifications of the person feature is grammatical. This conclusion shows that syntax validates the interpretations of the subject gaps of infinitive clauses. Moreover I argued that cross-linguistic variation exhibited in Chinese and Japanese falls under the current analysis of the dual properties of the person feature. My overall conclusion

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[6] Henderson (2013) asserts that 3rd person is not obligatorily a default feature cross-linguistically (see also Furuya under review). This indicates that the relation between syntax and morphology is not always in one-to-one relation, which is compatible with the current analysis.

is that morphosyntactic variation in binding is attributed to the dual properties of the person feature, notional and grammatical person. Because referential DPs may lack grammatical person, they are realized morphologically differently in English and cross-linguistically even though the syntactic operation for agreement is not varied.

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2. (2012) On person agreement of Full NPs and personal pronouns. In *Proceedings of the 28th Northwest Linguistics Conference* at Seattle, Washington.

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