Binding and Coreference Constraints in Vietnamese[1]

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Abstract

Principle B of Binding Theory prohibits coreference between a non-reflexive pronoun and a subject of the same clause. However, Vietnamese allows apparent violations of this restriction. The results from a two-alternate forced choice experiment show that Vietnamese speakers let pronouns corefer with local referential NPs, but not quantificational NPs. The findings contribute a new empirical generalization that while coreference is highly permissive, binding is still effectively at play in the language. I argue that the distributional and interpretive properties of binding and coreference in Vietnamese can be captured by the notion of pragmatic pronominal competition, along the lines of Reinhart (1983) and Roelofsen (2010). Unlike the English reflexive and non-reflexive pronouns, these Vietnamse forms are not encoded with equivalent information. While the morphological form of pronouns is sensitive to person, number, honorificity and gender, that of reflexives is underspecified. While the change in competition between these two forms does not affect the binding component, it does alter the coreference blocking effects in Vietnamese. A close investigation on Vietnamese pronouns offers new theoretical and experimental perspectives on linguistic universality and variation.

1   Introduction

Linguistic research has sought to advance understanding of how humans construct and comprehend referential relationships. In natural language, there are various linguistic devices that can be used to refer to a given entity, such as proper names like *Obi-Wan*, definite descriptions like *the guy with the beard*, and pronouns like *he*. The literature on how and why language users choose different referential expressions in different contexts has been vast and growing. In particular, many linguists have shown interest in how speakers establish grammatical constraints in coreference, such as (1) below:

(1)   a. Obi-Wan blames **him**.
      b. Obi-Wan blames **himself**.

The reflexive *himself* in (1b) has to refer back to *Obi-Wan*, the non-reflexive pronoun *him* in (1a) cannot. This pattern of restrictions on coreference has been characterized as systematic linguistic constraints as a part of the Binding Theory. In classic Binding Theory, these constraints on binding and coreference are assumed to be universal principles. However, these constraints, in their classic form, appear not to be strictly enforced in Vietnamese:

(2) a. Obi-Wan trách **nó**.
         Obi-Wan blame 3SG.HHON
         'Obi-Wan blames him / himself.'

     b. Obi-Wan trách **mình**.
         Obi-Wan blame SELF
         'Obi-Wan blames himself.'

Similar to the English judgment in (1b), the Vietnamese reflexive *mình* in (2b) also establishes a local binding relationship with its antecedent *Obi-Wan*. In contrast, as shown in (2a), the Vietnamese counterpart of the English sentence in (1a) can be understood to mean Obi-Wan displays self-blame. Vietnamese allows the non-reflexive pronoun *nó* to corefer with a subject in the same clause. This perplexing observation presents an interesting puzzle for the standard view of Binding Theory, which predict that reflexive and non-reflexive pronouns should have complementary distributions. This prediction is not met in Vietnamese.

This project approaches this curious puzzle by analyzing the distribution and interpretation of Vietnamese referent forms, while also taking into account empirical evidence from language processing investigations. A close examination of an understudied language like Vietnamese will yield valuable insight into the characteristics of the Binding Principles as well as the underlying cognitive mechanisms. Therefore, the results of this work contribute new theoretical and experimental perspectives to the discussion on linguistic universality and variation.

In order to address the theoretical question regarding the constraints at play in Vietnamese anaphoric relations, I consider two approaches that account for the different factors at play in determining the occurrence of pronominal elements. While one argues for pragmatic components (Reinhart, 1983), the other relies on morphological features (Rooryck & Vanden Wyngaerd, 2011). The results from a two-alternative forced choice experiment suggested that coreference is highly permissive, but binding principles are active grammatical constraints in Vietnamese. Based on these experimental results, I propose that a model built on Reinhart's (1983) system and Roelofsen's (2010) modification can capture the Vietnamese data. I then further argue that the difference between the information encoded in the reflexive and the non-reflexive pronouns leads to the lack of coreference prohibitions in Vietnamese.

The paper is organized as follows. In the next two sections, I elaborate on the previous syntactic proposals, and then question whether they can effectively capture certain facts in Vietnamese. From there, I propose a judgment study to test out a hypothesis concerning binding and coreference, and present the experimental results in Section 4. I then turn the discussion on the nature of Vietnamese pronominal competitions in Section 5. Finally, Section 6 concludes the paper.

2 Competitions of Pragmatic Interpretations

2.1 Reinhart's (1983) Assumptions

A novel contribution of Reinhart (1983) is that pronouns may come with or without an index. The index with which a pronoun enters a syntactic derivation is regarded as a binding index. This index appears as a subscript attached to the pronoun (for instance, she_1). Pronouns with a binding index are analyzed as bound variables, while whose without an index are regarded as referential. Reinhart (1983) argues that the interpretation of bound variable pronouns is assigned at the syntactic level, while that of referential pronouns is determined at the pragmatic level.

Firstly, when a pronoun has a binding index, it has to be interpreted to be bound to a c-commanding antecedent that has the same index. As shown in (3), the NP *Padmé* binds its coindexed pronoun *she* in the same sentence:

(3)   Padmé^1 said that **she**$_1$ was sad.

Since non-pronominal NPs can serve as antecedents for pronouns, they always come with a binder index. This index is marked as a superscript integer adjoined to an antecedent, as illustrated with *Padmé*^{1} in (3) above. Then, a binding relationship between a pronoun and an antecedent NP is encoded through coindexation of these two elements. In contrast, when a pronoun has no index, it is treated as referential, and crucially, not bound. The pronoun *she* is assigned to a contextually salient referent:

(4)   Padmé^1 said that **she** was sad.

While the NP *Padmé* has a binder index, it is also a referent which has been introduced in the discourse. This allows for anaphoric devices to refer back to *Padmé* as a discourse referent. Reinhart (1983) argues that (4) is an instance of an non-indexed (hence unbound) pronoun such as *her* (accidentally) coreferring with *Padmé*, and, hence, referring to the same antecedent that the bound variable pronoun *her* refers to in (3). Consequently, there are two distinct mechanisms for achieving an anaphoric relationship: syntactic binding and discourse coreference.

Moreover, in cases where the antecedent NP does not determine a particular entity, the interpretation of a bound variable pronoun is sharply different from that of a referential pronoun. As illustrated in (5) below, the quantificational NP *every woman* binds the indexed pronoun *she*:

(5) Every woman^1 said that **she**$_1$ was sad.

Unlike referential NPs like *the woman* or *a woman*, which pick out a fixed referent in the discourse, the quantificational NP *every woman* refers to a set of possible referents. For this reason, the pronoun *she* has to vary with each of the women in the set introduced by *every woman*. In this case, the only mechanism that can give rise to an anaphoric interpretation of *she* is variable binding. The logical form (LF) and its type-theoretical translation for this bound variable reading are given below, respectively:

(6) a. [Every woman]^1 [t$_1$ said that *she*$_1$ was sad]
     b. every woman (λx_1. x_1 said that x_1 was sad)

The implementation of variable-binding adopted in this paper is one that is preceded by Reinhart (1983), namely Heim & Kratzer (1998). According to Heim & Kratzer (1998), a quantificational NP moves out of its base position to take higher scope. This movement leaves behind a trace (represented as t_1 in the LF) and generates a λ-operator. The λ-operator allows for the binding relation between the two variables (t_1 and *she*$_1$) and their coindexed antecedent *every woman*.

On the other hand, the only interpretation that results from discourse-based coreference is one where *she* refers to another female referent. As discussed earlier, *every woman* introduces a set of women, not an individual female discourse referent. Since a non-indexed pronoun refers to a particular individual in the discourse, *she* cannot covary with *every woman* in (7):

(7) Every woman^1 said that **she** was sad.

Even though this quantificational NP is the only antecedent NP introduced in this sentence, the pronoun *she* has to refer to any female individual other than *every woman*. This means that the referential pronoun seek other female referents in the discourse. What (7) also illustrates is that the interpretation of the pronoun is not restricted within the sentence-level. In other words, there is no syntactic rule that governs the antecedent choice of a non-indexed pronoun. The resolution of the pronoun in (7) is achieved at the discourse (or pragmatic) level.

Fundamentally, Reinhart's (1983) theory is built on the view that there are two components constituting anaphoric relations in language. One is at the syntactic level (binding), and the other is at the discourse level (coreference). The main argument in her proposal is that there are two independent principles at play in governing binding and coreference. While binding is subject to grammatical rules, the occurrence of coreference is determined by the context.

2.2 Principle B Effects and Rule I

The assumptions in Reinhart's (1983) system described above play a central role in her analysis on disjoint reference effects between a non-reflexive pronoun and an antecedent in a local domain. The general idea stems from the observation that pronouns are typically not interpreted to have either a binding by or a coreferential relationship with coarguments. For instance, it is impossible for the pronoun *him* to be bound by the local antecedent *every man* in (8) below:

(8)   Every man blames **him**.

Likewise, the pronoun *him* in the following sentence also cannot be understood as referring to the subject *Obi-Wan*:

(9)   Obi-Wan blames **him**.

Nevertheless, both Evans (1980) and Reinhart (1983) note that this pattern can be violated in at least two situations. One of which associates with a focus reading, while the other involves phrasal parallelism. As illustrated in (9) below, the pronoun *him* can be treated to be coreferential with its coargument *Obi-Wan himself* when there are focus-sensitive operators like *only* in the same clause:

(10)   Only Obi-Wan himself blames **him**.

Moreover, when two phrases exhibit parallel structures, coreference can be established between the pronoun and the local subject, as illustrated in (10):

(11)   I know what Anakin and Padmé have in common. Anakin blames Padmé and Padmé blames **her** too.

To account for the disjoint reference effect as well as the lack thereof, Reinhart (1983) argues that there are two components at play in pronoun resolution. The first component, which is variable binding, is governed by syntactic constraints. In this case, the rule imposed on the syntactic relation between a pronoun and a clausemate antecedent is Principle B of Binding Theory:

(12)   **Principle B**
        A pronoun must not be bound in its coargument domain.

Meanwhile, the second component, which is coreference, is not encoded as part of the syntax, and thus it is not restricted by the same grammatical restrictions. Instead, it is targeted by separate conditions on discourse. To account for the availability of coreference in a given construction, Reinhart (1983) and Grodzinsky & Reinhart (1993) propose the following economy condition:

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(13) **Rule I: Intrasentential Coreference**

NP A cannot corefer with NP B if replacing A with C, C a variable A-bound by B, yields an indistinguishable interpretation.

A reasoning behind Rule I is that in order to minimize misinterpretation in communication, speakers would choose the most direct means of reference to convey the necessary content. Therefore, speakers would always prefer a bound variable anaphora, which is syntactically encoded, over a referential pronoun, which is contextually resolved. Bound variable is the only interpretation coindexation gets. In contrast, referential pronouns may be resolved to different discourse entities, depending on how salient certain referents are to comprehenders. To avoid this ambiguity associated with pragmatic resolution, speakers typically express anaphoric relations using bound variable anaphora. It is only when speakers cannot covey the intended meaning with the bound pronoun that they would opt for a referential form.

To demonstrate how Rule I applies in English, cases like (9), where local coreference between a non-reflexive pronoun and a referent is blocked, are taken into account:

(14) Obi-Wan blames **him**.

a. $[\text{Obi-Wan}]^1$ $[t_1$ blames *him*$]$

b. $[\text{Obi-Wan}]^1$ $[t_1$ blames *himself*$_1]$

Reflexives are treated as anaphors, which are essentially the designated set of referring devices that must always be bound by a binder index. In other words, they can only be interpreted as "variables." Reinhart (1983) assumes that when a speaker intends to express the meaning that Obi-Wan blames Obi-Wan, they would consider all the LFs in which this coreference is available. In this case, there are two possible LFs that an English speaker could generate. One of which is (14a), which contains the referential pronoun *him*, and the other is (14b), which includes the reflexive anaphor *himself*. Rule I then rules out the use of the referential pronoun in favor of the bound variable anaphora that could straightforwardly provide the same interpretation. The logic is that if the bound reflexive *himself* already convey the desired meaning, then the unbound pronoun *him* cannot be intended to corefer with the same referent, which is *Obi-Wan*. Consequently, coreference is blocked, and disjoint reference is the only possible reading for the pronoun *him* in this sentence.

Furthermore, Rule I can also account for the special English cases that allow for coreference between non-reflexive pronouns and their clausemate subjects. Firstly, for a focus environment like (10), the LFs that can establish coreference locally are those in (15a) and (15b) below:

(15) Only Obi-Wan himself blames **him**.

a. $[\text{only}]$ $[[\text{Obi-Wan himself}]^1$ $[t_1$ blames *him*$]]$

b. [only] [[Obi-Wan himself]^1 [t$_1$ blames *himself*$_1$]]

According to Rule I, coreference is blocked when it provides the same interpretation as a bound variable LF. In (15), Rule I does not prohibit *him* from being coreferential with *Obi-Wan himself* because the meaning of coreference in (15a) is different from that of binding in (15b). The LF in (15a) conveys that other individuals do not blame Obi-Wan, while that in (15b) means that others do not blame their own selves. Replacing the non-indexed pronoun *him* with the bound reflexive *himself* yield distinguishable meanings in (15). Consequently, local coreference between an unbound pronoun and an antecedent is not excluded even in the presence of a bound pronoun.

The same reasoning can be extended to the 'parallelism' cases like (11), in which a pronoun can be coreferential in its coargument domain. The LFs that can express local coreference for (11) are as follows:

(16)   I know what Anakin and Padmé have in common. Anakin blames Padmé and Padmé blames **her** too.
   a. [Padmé]^1 [t$_1$ blames *her*]
   b. [Padmé]^1 [t$_1$ blames *herself*$_1$]

Heim (1998) argues that it is not sufficient to claim that two LFs are semantically indistinguishable when they both denote the same proposition. (16a) and (16b) assert the same proposition, but in the context given in (16), their is a sharp contrast in meaning between these two LFs. Mapping the LFs in (16a) and (16b) to type-theoretical expressions results in the translations in (17a) and (17b), respectively:

(17)   a. Padmé (λx_1. x_1 blames Padmé)
   b. Padmé (λx_1. x_1 blames x_1)

Based on these expressions in (17), Heim reasons that structured meaning plays an important role in separating the interpretations of the two LFs in question. In particular, (16a) conveys that Padmé has the attribute of blaming Padmé, and this is the common attribute shared by both Padmé and Anakin. In contrast, (16b) conveys that Padmé has the attribute of blaming her own self, but this is crucially not the attribute that Anakin has. This means that the LFs in (16a) and (16b) are semantically distinguishable. As a result, Rule I does not eliminate the use of the referential pronoun *her* in favor of the bound variable anaphora *herself*. In essence, Reinhart's (1983) framework effectively captures both the compliant cases and the so-called violations of Principle B effects observed in English.

2.3   Application of Reinhart's (1983) System to Vietnamese

The Vietnamese data in (2) above, repeated in (18) below, show that both the reflexive pronoun *mình* and the non-reflexive pronoun *nó* can corefer with the same local

referential NP, which is *Obi-Wan*:

(18)   a. Obi-Wan trách **nó**.
           Obi-Wan blame 3SG.HHON
           'Obi-Wan blames him / himself.'

        b. Obi-Wan trách **mình**.
           Obi-Wan blame SELF
           'Obi-Wan blames himself.'

This pattern would only be problematic to Binding Theory if Principle B were to be responsible for both binding and coreference. However, Reinhart (1983) and Grodzinsky & Reinhart (1993) make a clear distinction between a bound variable pronoun and a coreferent pronoun. While the former is governed by syntactic and semantic binding Principle B, the resolution of the latter is of a pragmatic nature. In essence, under this view, the availability of a reading where *nó* corefers with a clausemate referential NP antecedent is subject to Rule I, but crucially, not Principle B.

Implementing the Reinhartian approach, *mình*, as a bound reflexive form, binds with the local antecedent via coindexation, while *nó*, as a coreferential pronoun, refer back that same subject via accidental coreference. Assuming that a Vietnamese speaker aims to express the proposition that Obi-Wan blames Obi-Wan, then both of the following LFs can express that intention:

(19)   a. [Obi-Wan]^1 [t$_1$ blames *nó*]
        b. [Obi-Wan]^1 [t$_1$ blames *mình$_1$*]

Rule I predicts that in the same syntactic environment, a bound variable anaphora is always preferred over a non-reflexive coreferential pronoun that expresses the same meaning. However, the fact that the coreferent interpretation is possible for the Vietnamese sentences like (18), which is not the case for the English alternative in (14), suggests that this version of Rule I proposed by Reinhart (1983) and Grodzinsky & Reinhart (1993) does not apply in Vietnamese.

Then, the puzzling absence of coreference prohibition between a non-reflexive and a local subject in Vietnamese seems to recommend two possibilities: *(i)* Binding Principle B is not a grammatical constraint in Vietnamese, or *(ii)* Rule I fails to apply in the language. The first possibility would lead to a theoretically perplexing suggestion that Vietnamese is a violation to Universal Grammar. Meanwhile, the second possibility opens up a discussion on how binding component universally governs the distribution of anaphoric elements, but coreference resolution differs across languages. We will now discuss another competition-based account of the Binding Theory, proposed by Rooryck & Vanden Wyngaerd (2011), and examine how the Vietnamese data fares against this system.

3 Competitions of Morphological Features

3.1 Rooryck & Vanden Wyngaerd's (2011) Assumptions

A major point that drives Rooryck & Vanden Wyngaerd's (2011) theory away from previous Binding approaches is that they do not employ indices to differentiate between reflexives and non-reflexives. Under their view, Agreement provides a feature valuation system that links an anaphoric element to its antecedent. In other words, they argue that Binding is a product of Agreement. Meanwhile, Reinhart (1983), Büring (2005), and Roelofsen (2010), among others, claim that it should be the other way around: the coindexation of pronouns and their antecedent NPs is a necessary step leading to the subsequent matching of ϕ-features.

Rooryck & Vanden Wyngaerd's (2011) theory constitutes three key ingredients, namely, the features with which each of the anaphoras enters the syntax, the presence of a valuation process under Agree, as well as the post-syntactic interface level operations. Firstly, they assume that the ϕ-features of non-reflexive pronouns are lexically valued, while those of reflexives are interpretable but unvalued before being part of the derivation, along the lines of Kratzer (2009). This highlights the idea that reflexives and non-reflexives should be treated differently from the beginning on the basis of a universal notion like ϕ-valuation, and not due to an involvement of any additional ad-hoc features such as reflexivity like Reinhart & Reuland (1993) propose.

Secondly, based on whether the ϕ-features have been valued beforehand, the syntax then determines whether an Agree mechanism should take place. Since a non-reflexive pronoun already starts off with valued ϕ-features, there is no need for an Agree relationship to be established between this type of pronominal element and an antecedent NP. On the other hand, a reflexive has to act as a probe, looking for a goal that is an antecedent NP, to get its features valued through Agree, a process described as follows:

(20) a. Agree involves a probe α that has one or more unvalued features and a goal β that has matching (i.e. identical) valued features.

   b. Agree is an asymmetric feature valuation operation that values the features of α with the features of β at a distance in a local domain.

   c. α c-commands β and there is no potential alternative goal γ such that

      i. α asymmetrically c-commands γ, and

      ii. γ asymmetrically c-commands or dominates β.

A concern with this proposal in which the reflexive occupies the c-commanding position is that it does not manifest in the precedence relationship between the antecedent and the anaphor. To tackle this problem, Rooryck & Vanden Wyngaerd (2011) implemented the idea that the verb only proceeds to merge with the argument bearing the accusative case after having already merged with the nominative case (Sigurðsson,

2006). It is this Merge operation that is responsible for the surface positions, as it happens to the antecedent before the reflexive.

Crucially, the core of this syntactic configuration is that feature values are not copied on the goal via Agree. Instead, they end up being shared by both the probe and the goal after this process. Ultimately, the ϕ-features of the reflexive are valued differently from those of the non-reflexive, because the former is shared, while the latter is not. This difference is reflected in the notation, where a shared feature is marked with a star, as illustrated in the following table:

Table 1: *Convention for Representing ϕ-Features*

Role	Feature Set	Value
Goal	{P: 3, N: SG, G: M}	Lexically valued features
Probe	{P: _, N: _, G: _}	Unvalued features
Probe	{P: 3*, N: SG*, G: M*}	Features valued after Agree

The third ingredient of this theory concerns the morphological and semantic assignments that take place after Agree. At this point, it is the distinction remaining in the syntax between the reflexive and the non-reflexive pronouns that get transferred to the phonetic form (PF) and the logical form (LF) components. Both of these interface levels have to be able to tell the different feature values apart to properly provide the morphological form and semantic interpretation. For instance, if an NP has its features shared with an antecedent, it will be spelled out as a reflexive, and accordingly interpreted as bound to said antecedent. On the other hand, when an NP has its own lexically valued feature bundle, the non-reflexive pronominal form will be inserted at the PF instead. Moreover, its reference will be determined to be independent of any other clause-internal NP at the syntax-semantic interface.

Rooryck & Vanden Wyngaerd (2011) then elaborated on the mechanism that determines the post-syntactic morphological realization of reflexive and non-reflexive constructions on the basis of the Distributed Morphology framework (Halle & Marantz, 1993; Harley & Noyer, 1999). Firstly, following the Subset Principle, proposed by Halle (1997), a phonological string of a lexical unit is mapped onto a morphological feature set when this unit matches all or part of the feature set. Moreover, this lexical unit can also identify the environment at which the insertion of this phonological string may take place, which can be schematized as follows:

(21)   morpheme $\leftrightarrow$ exponent / environment

These instances of insertion can oftentimes display different kinds of underspecification in which a phonological string of a lexical unit cannot designate one single value for a specific morphological feature in the set. Even though the syntactic context at which the unit can be inserted in these cases, the Spell-Out process can still take

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place if there exists no other form that can be more specific in the vocabulary inventory of the language in question. To produce the right forms for both of the fully specified and underspecified units, the insertion rules cannot be applied randomly, but have to be ordered in accordance with the following principle (Anderson, 1992):

(22) **Elsewhere Principle**
Application of a more specific rule blocks that of a later more general one.

Rooryck & Vanden Wyngaerd reasons that this competition among insertion rules accounts for not only the complementarity observed in the distribution of reflexives and non-reflexives but also the cases displaying apparent Principle B violations.

3.2   Morphological Underspecification and Absence of Principle B Effects

Under Rooryck & Vanden Wyngaerd's view, the lack of Principle B effects manifests a systematic pattern in which one surface form can have receive both reflexive and non-reflexive interpretations. In other words, if there exist two different forms for reflexive and non-reflexive pronouns in a language, there would be no overlap in meanings. Hence, they stated the following prediction:

(23) **Absence of Principle B Effects**
Pronouns behave like anaphors when a dedicated class of reflexive pronouns is lacking.

I now present the application of this theory on German data, and show how it can account for both Principle B compliant and violating cases. This system is then demonstrated to work for a great set of Indo-European languages. A paradigm illustrating the distribution of pronouns in this language is provided as follows:

Table 2: *German Pronominal Paradigm*

	Non-Reflexive			Reflexive
	Nominative	Dative	Accusative	
1SG	ich	mir	mich	
2SG	du	dir	dich	
3SG.M	er	ihm	ihn	sich
3SG.F	sie	ihr	sie	
3SG.N	es			
1PL	wir	uns		
2PL	ihr	euch		
3PL.M	sie	ihnen	sie	sich
3PL.F				
3PL.N				

An important point to note here is that there are no specialized forms for reflexives for the first and second persons, both in singular and plural cases. In particular, Rooryck & Vanden Wyngaerd argue that the pronouns *mich*, *dich*, *uns* and *euch* are underspecified regarding their reference information, as they all can be used as both reflexives and non-reflexives. On the other hand, while the form *sich* is underspecified for both number and person information, it is a dedicated reflexive form under Rooryck & Vanden Wyngaerd's view. As shown in the table above, there is indeed a clear distinction between reflexive and non-reflexive use, marked with different pronominal forms, for third person pronouns in German.

Then, putting the information encoded in the German pronominal forms in Table 2 into the Spell-Out schematic characterization in (21) results in a set of ordered insertion rules as follows:

Table 3: *German lexical insertion rules*

a.	{P: 1, N: SG}	↔	ich	/ ___ NOM
b.	{P: 1(*), N: SG(*)}	↔	mir	/ ___ DAT
c.	{P: 1(*), N: SG(*)}	↔	mich	/ ___ ACC
d.	{P: 2, N: SG}	↔	du	/ ___ NOM
e.	{P: 2(*), N: SG(*)}	↔	dir	/ ___ DAT
f.	{P: 2(*), N: SG(*)}	↔	dich	/ ___ ACC
g.	{P: 1, N: PL}	↔	wir	/ ___ NOM
h.	{P: 1(*), N: PL(*)}	↔	uns	/ ___ ACC
i.	{P: 2(*), N: PL(*)}	↔	euch	/ ___ ACC
j.	{P: 3*}	↔	sich	
k.	{P: 3, N: SG, G: M}	↔	er	/ ___ NOM
l.	{P: 3, N: SG, G: M}	↔	ihn	/ ___ ACC
m.	{P: 3, N: SG, G: M}	↔	ihm	/ ___ DAT
n.	{P: 3, N: PL}	↔	ihnen	/ ___ DAT
o.	{P: 3, N: SG, G: N}	↔	es	
p.	{P: 3}	↔	sie	
q.	elsewhere	↔	ihr	

According to Rooryck & Vanden Wyngaerd, Table 3 captures all cases of under-specification. In particular, to account for the underspecification in Case, Gender, or Number information, the environment criteria in the right-hand side Spell-Out process is left blank. For instance, this means that the form of any singular neutral third person NP will surface as *es*, regardless of the Case it bears. Meanwhile, the lack of clear reflexive-nonreflexive division is stipulated using the bracketed stars in the left-hand side feature bundles. Then, the lexical insertion rules under discussion are going to apply to the morphemes carrying certain feature values, regardless of whether they are independent or shared.

Firstly, for a better understanding of how the current theory accounts for Principle B compliant cases, Rooryck & Vanden Wyngaerd (2011) demonstrate how the insertion rules in Table 3 works for German third person pronouns, where there are distinguishing forms corresponding to the different reflexive and non-reflexive uses:

(24)   a. Johannes$_i$ liebt sich$_{i/*j}$.
       Johannes loves himself

b. Johannes$_i$ liebt ihn$_{*i/j}$.
   Johannes loves him

The syntactic structure of the reflexive sentence in (24a) is presented in the following configuration. While (25a) shows the unvalued features before the Agree operation, (25b) displays the post-Agree feature valuation:

(25) a. $[_{vP}$ $[_{DP_2}$ {P: _, N: _, G: _}] $[_{vP}$ $[_{DP_1}$ {P: 3, N: SG, G: M}] $[_{VP}$ V $[_{\overline{DP2}}$ {P: ̶_̶,̶ N: ̶_̶,̶ G: _̶}]]]]

   Agree →

   b. $[_{vP}$ $[_{DP_2}$ {P: 3*, N: SG*, G: M*}] $[_{vP}$ $[_{DP_1}$ {P: 3, N: SG, G: M}] $[_{VP}$
              sich   Johannes
       V $[_{\overline{DP2}}$ {P̶:̶ ̶3̶*̶,̶ ̶N̶:̶ ̶S̶G̶*̶,̶ ̶G̶:̶ ̶M̶*̶}]]]]
       liebt

In this case, the feature values of NP$_2$ depends on those of NP$_1$ in order to get licensed. In this construction, the reflexive is moved from its base position to merge under vP. Once Agree takes place, the rule (j) inserts *sich* into the NP$_2$ slot, as the requirement of having a shared third person feature is satisfied. Crucially, the rule (j) is placed before all the other insertion rules regarding third persons, disambiguating the possible matching of feature subsets, and thus yielding the correct outcome.

On the other hand, as shown in the following non-reflexive construction of the sentence in (24b), the sets of features in NP$_1$ and NP$_2$ are independently lexically valued when they enter the derivation. Consequently, a feature valuation operation like Agree is not triggered in this case:

(26) $[_{vP}$ $[_{NP_1}$ {P: 3, N: SG, G: M}] v $[_{VP}$ V $[_{NP_2}$ {P: 3, N: SG, G: M}]]]
          Johannes   liebt   ihn

With the input of an unshared singular male third person feature set from NP$_2$, the rule (l) inserts *ihn* into this slot. As a result, while the reflexive form is *sich*, the non-reflexive one is *ihn*, drawing a clear complementary distribution between the two anaphoric elements predicted by the Binding Theory.

Secondly, Rooryck & Vanden Wyngaerd address how the set of rules can explain for the systematic lack of Principle B effects with a discussion on the German first person pronouns, where the non-reflexive form *mich* can also be used to establish a reflexive relationship:

(27) a. Ich liebe mich.   b. Johannes liebt mich.
          I   love myself   Johannes loves me

The syntactic derivations of the reflexive and non-reflexive sentences in (27) are shown in (28) and (29), respectively. The pattern appears to be similar to the cases in (25) and (26). Even though the feature values of both of the NP$_2$ in (28) and (29) end up being the same, they are different regarding the valuation process. While feature sharing takes place in the reflexive structure in (28), it does not apply in the non-reflexive one in (29):

(28) a. $[_{vP} [_{DP_2} \{$P: _, N: _, G: _$\}] [_{vP} [_{DP_1} \{$P: 1, N: SG, G: 0$\}] [_{VP}$ V $[_{DP2} \{$P: _, N: _, G: _$\}]]]]$

Agree →

b. $[_{vP} [_{DP_2} \{$P: 1*, N: SG*, G: 0$^\star\}] [_{vP} [_{DP_1} \{$P: 1, N: SG, G: 0$\}] [_{VP}$
          mich   ich

V $[_{DP2} \{$P: 1*, N: SG*, G: 0$^\star\}]]]]$
liebe

(29) $[_{vP} [_{NP_1} \{$P: 3, N: SG, G: M$\}]$ v $[_{VP}$ V $[_{NP_2} \{$P: 1, N: SG, G: 0$\}]]]]$
          Johannes   liebt   mich

In (28), the lexical insertion rule (c) in Table 3 inserts *mich* in the NP$_2$ slots, as this is a position carrying an Accusative Case, and the content of the morpheme bearing the singular first person information necessary for feature matching process to take place. Meanwhile, the same reasoning can also apply for (29), and thus *mich* also surfaces in the object position of the non-reflexive construction in this case. Since there are no separate rules assigning a reflexive form to a first person pronoun reflexive environment, the non-reflexive form *mich* is utilized as a double to fill in this gap in the paradigm. Then, even though the difference between reflexive and non-reflexive is fully recognized in the syntax, it does not surface in the morphology, appearing like a lack of Principle B effects. As a result, Rooryck & Vanden Wyngaerd's (2011) framework provides a satisfactory record of both Principle B compliant and violating cases. I will now discuss whether this approach can straightforwardly explain for certain facts observed in Vietnamese.

3.3   Application of Rooryck & Vanden Wyngaerd's (2011) System to Vietnamese

Under Rooryck & Vanden Wyngaerd's (2011) view, non-reflexives are NPs that have an inherent set of ϕ-features, while reflexives lack all ϕ-features, which only get valued via the Agree operation upon entering a syntactic derivation. The theory predicts that whenever a language lacks a specialized reflexive form, it will utilize a corresponding non-reflexive form in reflexive contexts instead. This prediction has been met not only in their own analyses on a broad range of languages but also in the current reports on Jambi (Cole, Hermon, & Yanti, 2015) and Chamorro (Wagers, Chung, & Borja, 2018).

The pronoun *nó* can receive both a disjoint and a coreferential reading. Meanwhile, the reflexive *mình* has to be interpreted as bound. Then, the set of interpretations of a bound variable anaphor is a proper subset of that of a pronoun, as illustrated below:

(30) a. Obi-Wan trách **nó**.
          Obi-Wan blame 3SG.HHON
          'Obi-Wan blames him / himself.'

b. Obi-Wan trách **mình**.
   Obi-Wan blame SELF
   'Obi-Wan blames himself.'

The features that the reflexive *mình* spells out in (30b) include third person, singular, masculine, and subhonorific. Crucially, all of these feature values have to be marked with a $\star$ because they are all shared with the antecedent NP *Obi-Wan*. Then, *mình* are assigned these attributes: {P: 3*, N: SG*, G: F*, HON: HHON*}. Meanwhile, the features that the pronoun *nó* carries in (30a) are also third person, singular, masculine, and subhonorific. Rooryck & Vanden Wyngaerd's (2011) system would characterize these feature values with an optional $\star$ marking, since *nó* comes with independently valued set of features, but it can still get a coreferential reading with a local subject. As a result, the attributes of *nó* are {P: 3(*), N: SG(*), G: F(*), HON: HHON(*)}.

Consequently, this means that *mình* is a more specific pronominal form, as compared to *nó*. Then, this theory predicts that the Elsewhere Principle (Anderson, 1992) would place lexical insertion rule of *mình* before that of *nó*. This application of rule would block *nó*, which is a more general rule, from co-occuring with *mình*, which is more specific. However, based on this reliance on reflexive and non-reflexive pronouns as syncretic forms, this approach does not predict the availability of two distinct anaphoric elements in the same structural context. As a result, this system fails to account for Vietnamese, as it cannot capture cases like (30), where both constructions associating with two different referent forms can exist within one language.

Given that the morphological competitions proposed by Rooryck & Vanden Wyngaerd (2011) cannot straightforwardly explain for the alternate occurrence of a reflexive and a non-reflexive in one syntactic construction, a pragmatic-based account argued by Reinhart (1983) appears to be a more optimal path towards an analysis on Vietnamese pronominal distribution and interpretation. Then, further experimentation is needed to determine the statuses of binding and coreference prohibition effects in Vietnamese.

4 Experiment 1

4.1 Hypothesis and Predictions

The goal of this study is to determine whether and to which degree Binding Theory guides the interpretation of anaphoric expressions in Vietnamese. Assuming Reinhart's (1983) approach in which every anaphoric relation comprises two integral parts, namely syntactic binding and discourse coreference, the main hypothesis put forward is that Vietnamese is a language in which Binding Principle B is effectively at play while coreference is highly permissive. To test this hypothesis, I conducted a two-alternate forced choice comprehension judgment experiment in Vietnamese, which involved the

distribution and interpretation of non-reflexive pronouns in quantificational and referential environments. If Vietnamese does make a distinction between binding and coreference, then the prediction is that a non-reflexive pronoun should resist being bound by a quantified antecedent, but allow for local coreference with a referential antecedent. The detailed description of the methods and discuss the experimental results collected are provided as follows.

4.2 Methods

4.2.1 Participants

36 native speakers of Vietnamese, all of whom resided in Ho Chi Minh City, Vietnam at the time of participation, were recruited via social media. 25 of them identified as female, 9 as male, and 2 as other gender. The age range was between 18 and 56, with a mean of 26.53. All participants gave informed consent.

Upon completion of the experiment, participants could choose to enter a raffle for a chance to win one of the four $20 Amazon giftcards. In order to identify and compensate the four winners, a random code was generated for each participant at the end of the experiment. Participants were then directed to an external web site to input the codes and their email addresses. All four winners were randomly selected.

4.2.2 Design and Materials

This forced choice judgment experiment consisted of two test and one control conditions. The test conditions varied in the LOCALITY of the quantificational NP to the subhonorific pronoun *nó*. Meanwhile, in the control condition, the quantifier is always an embedded subject, staying in the local position. This design resulted in three conditions exemplified in (31) below:

(31) **Experimental Conditions and Sample Materials**

    a. LONG DISTANCE QUANTIFIER

      Mọi đứa con trai nghĩ là **Tùng** nói về **nó**.
      every SUB ANIM boy think that Tung talk about 3SG.SUB

      'Every boy thinks that Tung talks about him.'

    b. LOCAL QUANTIFIER

      Tùng nghĩ là **mọi đứa con trai** nói về **nó**.
      Tung think that every SUB ANIM boy talk about 3SG.SUB

      'Tung thinks that every boy talks about him.'

c. **CONTROL**

Tùng nghĩ là **mọi đứa con trai** nói về **Tùng**.
Tung think that every SUB ANIM boy talk about Tung

'Tung thinks that every boy talks about Tung.'

The control condition differed in terms of REFERENT in the sense that an unambiguous repeated name filled the direct object slot, instead of the non-reflexive pronoun *nó* like in the two test conditions. Unlike English, Vietnamese uses repeated names as a natural and unambiguous way to refer back to an entity previously introduced in the discourse.

The 18 sets of experimental items were intermixed with 48 fillers and distributed across 3 lists in a Latin Square design. All antecedents used in these test items were controlled for gender. In particular, 9 of them had female names as referential NPs and quantificational NPs denoted sets of female entities, while the other 9 utilized male names and group of male entities. To ensure that the nature of the matrix verbs do not associate with any biases, I used four verbs belong in three different types, which are *nói* 'say' for the SPEECH type, *nghĩ* 'think' and *tin* 'believe' for THOUGHT, as well as *biết* 'know' for KNOWLEDGE.

Furthermore, the filler sentences were also controlled in the way that they were all grammatical and generally similar to the test items in terms of length and structural complexity. 12 of the fillers are test items from Experiment 2, and 16 of them are unambiguous sentences. To distract the participants from noticing the potentially ambiguous nature of one of the test conditions, the rest of the fillers were all ambiguous sentences. 10 of them were prepositional phrase (PP) and the other 10 were relative clause (RC) attachment structures. The order of presentation was randomized.

All test and filler sentences were followed by a forced-choice question along with two possible answer choices displayed on the screen, as illustrated in (32) below:

(32) **Sample Question and Answer Materials in Experiment 1**

a. **QUESTION FOR ALL THREE CONDITIONS**

Ai được nói về?
who PASS talk about

'Who was talked about?'

b. **ANSWER CHOICES FOR ALL THREE CONDITIONS**
1. Tùng
2. Mọi đứa con trai (every boy)

The answer choices were counterbalanced for each participant.

4.2.3 Procedure

The experiment was conducted using the online experiment platform Ibex Farm (Drummond, 2013) and employed a forced choice comprehension judgment task. Participants had to take this experiment with either a desktop computer or a laptop.

Each of the sentences was fully displayed on top of the screen, with a comprehension and two answer choices right below it. Most of the sentences each participant read presented some type of syntactic and semantic ambiguity. Participants were instructed to pick the interpretation that fit the sentence best. Participants could either click directly on the options or press the number '1' or '2' on the keyboard to enter their answer selection.

The experimental trials were preceded by a screen collecting general demographic data, three screens of instructions and three practice trials. The experiment lasted approximately 20 minutes. Procedures for this experiment, the other judgment task, as well as the reading study, were all approved by the Internal Review Board of the University of Massachusetts Amherst.

4.2.4 Analysis

Participants' accuracy rate on the 16 unambiguous filler comprehension questions was used to assess whether they were actually paying attention during the experiment. Because all participants met the exclusion threshold by answering at least 80% of the questions correctly, all of the collected data was included in the analyses.

All statistical analyses were carried out in R software environment (R Core Team, 2013), using the `lme4` package (Bates, Maechler, Bolker, & Walker, 2015). Since the dependent variable is categorical, a logistic mixed-effects regression was created to model antecedent selection outcomes (Jaeger, 2008). The model integrated experimental manipulations as fixed effects, with random intercepts and slopes for both participants and items (Baayen, Davidson, & Bates, 2008).

In addition, both the LOCALITY and REFERENT factors were coded using Helmert contrasts (Vasishth & Broe, 2011). The first contrast determined whether the rate of long distance antecedent selection differed when the quantifier was in the local domain, as compared to when it was in the long distance position. Meanwhile, the second contrast compared the effects of non-reflexive pronouns and names as referring devices to local quantifiers.

4.3 Results

The percentages of long distance antecedent selection as well as the standard errors for the three conditions are presented in Figure 1 below.

Figure 1: *Percentage of Long Distance Antecedent Selection and Standard Errors by Condition*
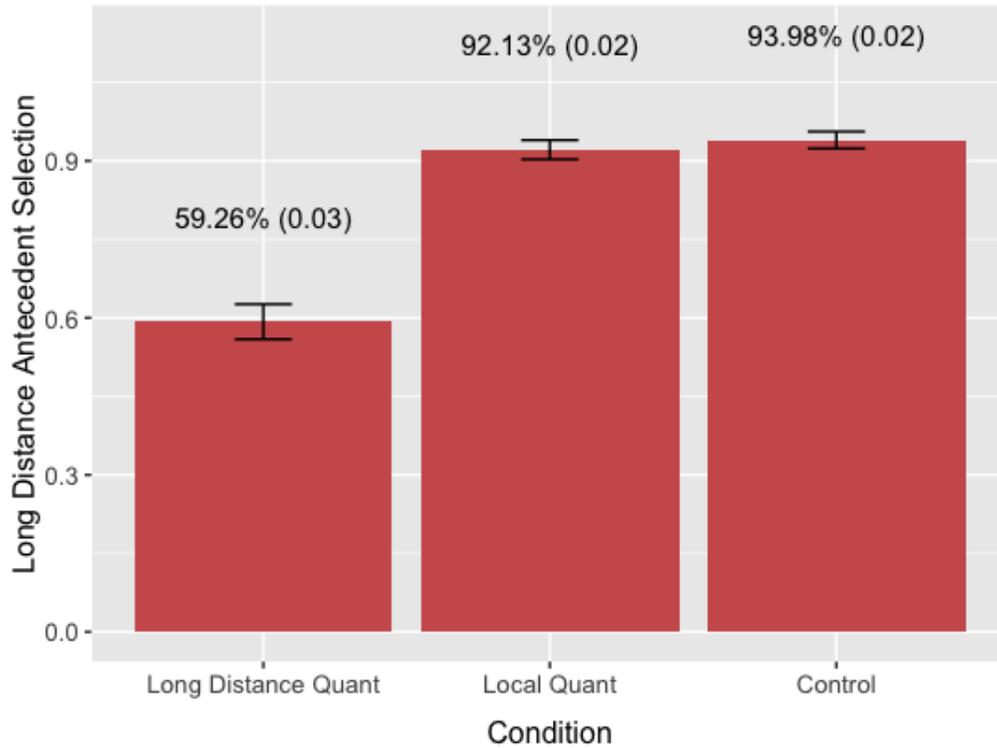
As shown in the LONG DISTANCE QUANTIFIER condition, around 41% of the time people chose the local referential subject. In other words, given two options for the pronoun's antecedent, Vietnamese speakers would opt for the local subject for almost half of the time, a pattern that sharply contrasts with the English judgments.

Although there was a general matrix subject preference, the size of this preference was significantly impacted by condition. In the LONG DISTANCE QUANTIFIER condition, the choice for long-distance subject was 59.26%. However, in both the LOCAL QUANTIFIER and the CONTROL conditions, this preference significantly increased to 92.13% and 93.98%. This shows that there is basically no difference between the quantified local subject condition and the fully unambiguous control condition.

4.4 Discussion

The main findings show that participants allow for coreference with the local subject except when it is a quantifier. The blocking of coreference between the non-reflexive pronoun *nó* and its quantified local antecedent provides strong supporting evidence for our hypothesis in which Binding Principle B is an active grammatical constraint in Vietnamese. According to Reinhart (1983), a non-reflexive cannot co-refer to a quantified antecedent due to the covarying nature of this NP type. For the LOCAL QUANTI-

FIER condition, there was no ambiguity in antecedent selection pattern, as participants chose the long distance antecedent for 92.13% of the time. Crucially, this rate was almost as high as the 93.98% rate observed in the CONTROL condition, where the long distance antecedent was the only choice. This suggests that the local quantifier was ruled out, leaving the long distance antecedent as the only antecedent available.

Moreover, the results for the LONG DISTANCE QUANTIFIER condition suggest that when accidental coreference is available in Vietnamese, it is allowed for almost half of the time. Under a Reinhartian approach, a non-reflexive can refer back to a local referential NP via accidental coreference. Nevertheless, this accidental coreference is usually prohibited in regular contexts, namely, ones that do not involve focus reading or 'parallelism' construction. A local antecedent selection of 40.74% the local referential NP displays a coreference rate that is much higher than predicted in the literature.

In addition, we observed a slight preference for matrix subjects even in the LONG DISTANCE QUANTIFIER condition. This suggests that there is some weak constraint against local coreference. There are several possible explanations for this. A syntactic explanation would attribute this effect to Principle B or Rule I, because these coreference restrictions on non-reflexives may impose bias against local antecedents. Meanwhile, a processing account would relate this pattern to the Accessibility Theory (Ariel, 1990), which argues that a minimal pronominal form like a non-reflexive is used to refer to the most salient referent in the discourse. Since the matrix subject happens to also take a topical position, it becomes the most prominent, and thus most accessible, referent for the Vietnamese pronoun *nó*. The overall preference for long distance antecedent for the non-reflexive pronoun *nó* for all conditions is not outside the range of theoretical or experimental expectations.

More importantly, this preference for long distance antecedent is not equally shared across all the conditions. If this were merely a consequence of pronouns anchoring to a salient discourse referent, then there should be no sharp contrast in preference between LONG DISTANCE QUANTIFIER and LOCAL QUANTIFIER conditions. The discrepancy in the results between these two conditions indicates that the distribution of the quantified antecedent does matter in the Vietnamese pronoun interpretation.

In summary, we observe an almost even preference between local and long distance antecedents when the local referents are referential NPs. This signals an exceptionally lenient coreference component in pronoun resolution in Vietnamese. In contrast, Vietnamese speakers almost always resolve a non-reflexive pronoun with the long distance antecedent when the local referent is a quantificational NP. This indicates an unambiguous antecedent selection for non-reflexive pronoun in a local quantificational domain, an effective Binding Principle B restriction at play in the language.

5 General Discussion

Under Reinhart's (1983) view, whenever a given context requires a coreferential relationship between 2 NPs, a speaker would general all of the LFs where the antecedent c-commands and co-refer with the pronominal form. If all these LFs are equivalent with regards to meaning, then the bound variable LF is always the optimal structure. Only when there is a difference in meaning among the LFs in competition that a speaker resorts to another LF that is not associated with a bound variable. Then, according to Rule I, when a Vietnamese speaker intends to refer back to a discourse entity *Obi-Wan*, two of the possible LFs that can be generated are as follows:

(33) a. [Obi-Wan]^1 [t$_1$ blames *nó*]
      b. [Obi-Wan]^1 [t$_1$ blames *mình$_1$*]

In this case, if the Vietnamese non-reflexive pronoun *nó* co-refer, then it will always be ruled out by the LF associated with the reflexive *mình* via competition with a bound variable. Then, Reinhart's (1983) Rule I, which was conceptualized as a competition between LFs, inaccurately excludes a reading that exists in Vietnamese.

Moreover, Reinhart (1983) relies on Gricean Maxims (Grice, 1975) to derive the notion of "indistinguishable interpretations" that governs Rule I's application. For instance, Rule I could be thought of as a derivation of Grice's Maxim of Manner, which requires utterances to be as clear, brief and orderly as possible. Then, in order to avoid ambiguous communication, a bound variable LF should be chosen over an LF associated with a non-reflexive that yields both disjoint and coreferential readings. Besides, another way to look at Rule I would be to regard it as a result of Maxim of Quantity, which states that any conversational contribution in a discourse should be as informative as it is needed. This indicates that Gricean framework operates on comparing two utterances with regards to the meanings they entail. Then, formulating Rule I as an competition between underlying logical representations like the way Reinhart (1983) stated does not align with the core systematic pragmatics-driven rules of comparing spoken sentences that Grice (1975) proposed. As a result, Rule I should be re-conceptualized as a competition between sentences instead of LFs. Maintaining the Reinhart's (1983) intuition and formal mechanism of semantic-pragmatic competitions, Roelofsen (2010) renders Rule I with two conditions:

(34) **Binding Alternatives**
      Let C be a context, let LF be a logical form, and let A and B be two determiner phrases in LF, such that A and B corefer in C and such that A c-commands B in LF. Then the structure obtained from LF by:
      i. quantifier raising A in case it has not been raised yet, and

ii. replacing B with a (possibly reflexive) pronoun bound by A is called a bind-
ing alternative of LF in C.

(35) **Coreference Rule**

A speaker will never use a logical form LF in a context C if LF is semantically
indistinguishable from one of its binding alternatives in C.

According to the definitions provided in (33) and (34), when a Vietnamese speaker
attempts to express a meaning like (35), two possible sentences like those in (35a) and
(35b) would be taken into consideration:

(36) Obi-Wan blames himself.

　　a. Obi-Wan trách **mình**.

　　b. Obi-Wan trách **nó**.

In this case, the binding alternative for the Vietnamese *nó* would be *mình*. Then,
these two sentences would always enter a competition against each other. Coreference
Rule, which is Roelofsen's (2010) adaptation of Rule I, would then determine that the
binding alternative wins if they both express the same meaning in the same context.
Given that Principle B is in effect in Vietnamese, as indicated by the results of two
judgment experiments, and that Coreference Rule does universally apply to binding
alternatives, the remaining question is why both of the sentences in (35) still coexist
instead of displaying a reflexive-nonreflexive dichotomy.

As stated in the Coreference Rule in (35), a Vietnamese speaker will never opt for a
non-reflexive sentence instead of its binding alternative if both of the utterances yield
identical interpretations. In other words, the fact that Vietnamese keeps both (36a) and
(36b) as natural, well-formed utterances after Coreference Rule's application indicates
that the sentences containing *nó* and *mình* do not convey equivalent meanings. This
suggests that, unlike the pronominal competition in English, the reflexives and non-
reflexives in Vietnamese do not differ merely in their binding nature. For instance,
in English, the non-reflexive *her* and the reflexive *herself* have the same features and
encode the same information, except their anaphoric relationships with discourse ref-
erents. However, in Vietnamese, the competition changes, as the two forms in question
do not draw parallel entailments.

One ingredient that plays a major role in the Vietnamese anaphoric system but
takes no crucial part in the English one is the honorificity feature. Honorific status
has not just been encoded in the pronominal paradigm in Vietnamese, but also in a
variety of languages in the world. Reasoning that ϕ-features are essentially elements
that undergo Agreement, Corbett (2006) as well as Adger & Harbour (2008) have pro-
posed to incorporate more categories, including honorificity, definiteness, and tense-
aspect-mood information, into ϕ-features. If the honorific status is regarded as a part

of the ϕ-features, then it would result in the reflexive and non-reflexive pronouns in Vietnamese carrying different sets of ϕ-features. In particular, while the third person non-reflexives alternate between two different honorificity markings, the corresponding reflexives do not have any encoding of honorifics. Then, while every non-reflexive sentence has an additional entailment that discloses the status of a referent in relation to the speaker, a reflexive sentence has none. For instance, the sentence containing *mình* in (37) only has one entailment regarding the coreference between the reflexive and its antecedent:

(37) Obi-Wan trách **mình**.

    i. Obi-Wan blames himself.

On the other hand, when non-reflexive pronouns like *nó* and *ổng* are present, the sentences are embedded with two meanings, as illustrated below:

(38) Obi-Wan trách **nó**.

    i. Obi-Wan blames himself.

    ii. The speaker holds a higher honorific status than Obi-Wan does.

(39) Obi-Wan trách **ổng**.

    i. Obi-Wan blames himself.

    ii. Obi-Wan holds a higher honorific status than the speaker does.

Consequently, a non-reflexive like *nó* does not convey the same information as the reflexive *mình* does, providing an account for why Coreference Rule's application fails to block one utterance in favor of the other in Vietnamese.

6 Conclusion

This paper presents theoretical and experimental findings regarding binding and coreference components that govern anaphoric relations in Vietnamese. In particular, the experimental results showed that while Binding Principle B is an active constraints in the syntax, coreference is not strictly prohibited in the language. In order to account for this puzzle, I argue because the reflexive *mình* and the non-reflexive *nó* are not packed with equivalent meanings, the pronominal competition in Vietnamese changes from the theoretical expectation held for English. The competition between the information delivered by the two anaphoric forms does affect Coreference Rule, whose mechanism heavily rely on semantic distinguishability. However, Principle B as a syntactic principle that requires the use of bound variable in a domain of a covarying context like a quantifier does not get affected by any change regarding this pronominal competitions. As a result, even though both Principle B and Coreference Rule are active in

Vietnamese, we only observe a strong binding effect in quantificational environment, but almost even occurrences of both reflexive and non-reflexive pronouns elsewhere.

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