

## When and why can 1<sup>st</sup> and 2<sup>nd</sup> person pronouns be bound variables?

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### 1. Against Inherent Indexicality

1<sup>st</sup> and 2<sup>nd</sup> person pronouns are generally considered to be genuine examples of indexical expressions (Fillmore 1971). Consider the examples in (1)

- (1) a. *I got a question from the audience*  
b. *You did **your** homework*

The 1<sup>st</sup> and 2<sup>nd</sup> person pronouns (*I* and *you*) in (1) are indexicals in the sense that their referent is dependent on the context of use: 1<sup>st</sup> singular forms index the speaker; 2<sup>nd</sup> singular forms index the addressee. Moreover, according to a pervasive view in the literature “the meaning of the [indexical] word provides a rule which determines the referent in terms of certain aspects of the context” (Kaplan 1989, p. 490). If so, this would imply that both indexicality and the interpretive process associated with it are features of particular lexical items. On this view, 1<sup>st</sup> and 2<sup>nd</sup> person pronouns are intrinsically indexical: we call this the “intrinsic indexicality hypothesis”.

The intrinsic indexicality hypothesis faces a major challenge in light of the fact that 1<sup>st</sup> and 2<sup>nd</sup> person pronouns can be interpreted as bound variable anaphors (Partee 1989: Fn 3). Consider the examples in (2).

- (2) a. *Only I got a question that I understood (nobody else did)*
- = (i)  $\lambda x$  [x got a question that  $y_{\text{SPEAKER}}$  understood]  
(...nobody else got a question that I understood)
- = (ii)  $\lambda x$  [x got a question that x understood]  
(...nobody else got a question that they understood)

b. *Only **you** did **your** homework (nobody else did)*

= (i)  $\lambda x$  [x did  $y_{\text{ADDRESSEE}}$ 's homework]  
 (...nobody else did your homework)

= (ii)  $\lambda x$  [x did x's homework]  
 (...nobody else did their homework)

In (2a) the second occurrence of *I* may be interpreted as an indexical (i) or as a bound variable (ii). On the indexical reading, the person understanding the question is the speaker no matter who got the question. In contrast, on the bound variable reading, the person who understands the question co-varies with the person getting the question. Thus, one and the same form can be used as an indexical and as a bound variable; this challenges the intrinsic indexicality hypothesis. The obvious conclusion would be to deny that we are dealing with the same item. Instead, we could assume that the dual behavior reflects the existence of distinct instances of *I* and *you* which happen to have the same form. That is, in light of the data in (1) and (2), the intrinsic indexicality hypothesis leads us to postulate homophony (e.g. Kaplan 1989). But if all 1<sup>st</sup> and 2<sup>nd</sup> person pronouns have a non-indexical version, then it is no longer clear in what sense 1<sup>st</sup> and 2<sup>nd</sup> person are intrinsically indexical. If they were, we would have to assume that the indexical use is somehow more basic, with the bound variable use secondary in a sense to be made clear.

This kind of dual behavior is not restricted to 1<sup>st</sup> and 2<sup>nd</sup> person pronouns. We also observe it with 3<sup>rd</sup> person pronouns in English. For example, *he* can be used ostensively (i.e., as an indexical) (3), anaphorically (4), or as a bound variable (5).

(3) *I saw **HIM** [accompanied by ostension]*

(4) Q: *Have you seen Peter lately?*  
 A: *Yes, I saw **him** yesterday*

(5) *&Only he got a question that **he** understood (nobody else did)*  
 = (i)  $\lambda x$  [x got a question that he understood]  
 = (ii)  $\lambda x$  [x got a question that x understood]

While 3<sup>rd</sup> person pronouns are not generally assumed to be intrinsically indexical they nevertheless allow for an indexical interpretation. Following the logic of the intrinsic indexicality hypothesis we would have to assume that there is an indexical version of 3<sup>rd</sup> person pronouns, again forcing the postulation of homophones. But in this case it appears that the non-indexical version is basic and the indexical version is secondary. In a sense then, 3<sup>rd</sup> person pronouns present us with the converse problem of 1<sup>st</sup> and 2<sup>nd</sup> person pronouns. While 3<sup>rd</sup> person appears to be intrinsically non-indexical and potentially acquires indexical force, 1<sup>st</sup> and 2<sup>nd</sup> person appear to be intrinsically indexical and potentially lose indexical force. The question that concerns us here is when and how this shift in interpretation comes about.

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Recent work has focused on this question in semantic terms. In particular, most existing approaches take for granted the intrinsic indexicality hypothesis. They roughly divide into two classes of analysis differing in the locus of the interpretational shift. For example, Kratzer (1998) postulates a *shift in interpretation of the pronoun*: 1<sup>st</sup> and 2<sup>nd</sup> person pronouns are intrinsically specified as [1<sup>st</sup> person] or [2<sup>nd</sup> person] which is responsible for the indexical interpretation. When they are interpreted as bound variables, Kratzer argues that the surface form is no longer specified as an indexical pronoun, but instead lacks the relevant person feature; she calls this a *minimal pronoun*. This is essentially a homophony account. In contrast, in Rullmann's 2004 analysis, the change in the interpretation of the pronoun is induced by focus: it appears that focusing a 1<sup>st</sup> or 2<sup>nd</sup> person pronoun facilitates the bound variable interpretation (Schlenker 2003). For Rullmann 2004, this derives from the fact that the 1<sup>st</sup> and 2<sup>nd</sup> person specification of the pronoun introduces a presupposition that a speaker or hearer is present (Heim 2005), and focus contexts allows this presupposition to be ignored. Unlike Kratzer, Rullmann's account does not postulate homophony. But in both analyses, the non-indexical construal of 1<sup>st</sup> and 2<sup>nd</sup> person pronouns requires that person features be ignored in some way: either via non-specification (Kratzer) or contextual elimination (Rullmann) of the relevant features. Moreover, Rullmann derives the bound variable interpretation of 1<sup>st</sup> and 2<sup>nd</sup> plural pronouns via a different mechanism (semantics of plurality) than for the singular forms (non-interpretation of indexical features).

A second class of analyses postulates a *shift in context* to account for the change in interpretation of 1<sup>st</sup> and 2<sup>nd</sup> person pronouns (Schlenker 2003, Cable 2005). That is, the indexical interpretation arises if the pronoun is interpreted relative to the context of utterance, while the bound variable interpretation arises if the pronoun is interpreted relative to a context introduced in the immediate linguistic context (e.g., the matrix clause). This accounts for *how* the shift in interpretation occurs. As for *when* this shift occurs, i.e., the contexts triggering a bound variable interpretation, Schlenker suggests that the relevant context is focus and/or VP-ellipsis. As we shall see below, the data is subtle and complex in interesting ways.

An immediate problem for these accounts is that they do not capture the distribution of bound variable interpretations. While it is true that focus facilitates a bound variable interpretation—it is a sufficient condition for bound variable anaphora—it is not a necessary condition. Consider (6) where the possessor pronoun *my* may be construed as a bound variable (i) or as an indexical (ii).

- (6)            &I did **my** homework and so did Sam
- = (i)    ...and **Sam** did **his** homework. (BVA)  
                           $\lambda x$  [x did [x's homework]
- = (ii) ...and **Sam** did **my** homework.  
                           $\lambda x$  [x did [<sub>SPEAKER</sub>'s homework]

This shows that a bound variable interpretation is allowed in the absence of focus. (6) involves VP-ellipsis, which according to Schlenker always facilitates bound variable anaphora of 1<sup>st</sup> and 2<sup>nd</sup> person pronouns. This is not true: as shown in (7), with an accusative pronoun, the bound variable reading is not licit (i) but the indexical one is (ii).

- (7) *I know that John saw **me**, and Mary does too*
- ≠ (i) ...and **Mary** knows that John saw **her**. (\*BVA)  
 $\lambda x$  [**x** knows that John saw **x**]
- = (ii) ...and **Mary** knows that John saw **me**.  
 $\lambda x$  [**x** knows that John saw **y**<sub>SPEAKER</sub>]  
 (adapted from Déchaine & Wiltschko 2002, (40))

The unavailability of a bound variable interpretation in (7) shows that VP-ellipsis is not a sufficient context for the loss of indexicality. This raises the question of exactly when a bound variable construal is possible for 1<sup>st</sup> and 2<sup>nd</sup> person. We argue, extending Reinhart (1983), that the bound variable construal is structurally conditioned: bound variable anaphora is possible whenever locally bound anaphora is possible.

## 2. The Significance of Locally Bound Anaphora: Reinhart's Legacy

Having established that 1<sup>st</sup> and 2<sup>nd</sup> person is not inherently indexical, we are left with the question of *when* and *how* they can be used as bound variables. The first step towards answering this requires that we have a reliable diagnostic for bound variable anaphora. The pioneering work of Reinhart (1976, 1983) established that c-command is a necessary condition for bound variable anaphora. Moreover, in her view, locally bound anaphora is necessarily bound variable anaphora. Her initial observations were based on 3<sup>rd</sup> person pronouns, but as we shall see they extend to the analysis of 1<sup>st</sup> and 2<sup>nd</sup> person.

### 2.1 The Forms of Locally Bound Anaphora

To understand the significance of locally bound anaphora we must attend to the form that it takes in a particular language. We call this the *local domain form*. According to classical binding theory there is a correspondence between the form of a pronominal and its binding domain. For example, Condition A governs the distribution of *reflexive* and *reciprocal* pronouns (also called anaphors in the generative tradition); Condition B governs the distribution of ordinary pronouns; and Condition C governs the distribution of R(eferential)-expressions.

- (8) Condition A: An anaphor must be locally bound.  
 Condition B: A pronoun must be locally free  
 Condition C: An R-expression must be free

(Chomsky 1981)

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To see how these conditions work, consider the examples in (9)-(11). The English reflexive pronoun *herself* must be bound by a local (i.e., clause-mate) antecedent, (9). The personal accusative pronouns *her* must not be bound by an antecedent within the same clause; it may however be bound by an antecedent outside of its clause, (10). And finally, the name *Lucy* functions as an R-expression and as such may not be bound at all, no matter whether the antecedent is within its own clause or outside of it, (11)

- (9) a. *Lucy<sub>X</sub> likes herself<sub>X</sub>*  
 b. \**Lucy<sub>X</sub> believes that Jim likes herself<sub>X</sub>*
- (10) a. \**Lucy<sub>X</sub> likes her<sub>X</sub>*  
 b. *Lucy<sub>X</sub> believes that Jim likes her<sub>X</sub>*
- (11) a. \**She<sub>X</sub> likes Lucy<sub>X</sub>*  
 b. \**She<sub>X</sub> believes that Jim likes Lucy<sub>X</sub>*

In classical binding theory “anaphor”, “pronoun” and “R-expression” are primitives such that there is, by hypothesis, a fixed and universal correspondence between form and coreference properties. This is challenged by the fact that in some languages there are pronominal forms that do not have the coreference properties predicted by binding theory (Zribi-Hertz 1989, 1995, 2008). For example, while English pronouns are locally free, German d-pronouns must always be free, i.e., in binding theory parlance, German d-pronouns have the distribution of R-expressions (Wiltschko 1998). This establishes that pronominal forms may, but need not be, subject to Condition B.

- (12) a. \**Lucia<sub>X</sub> mag die<sub>X</sub>*  
 Lucia likes D-pronoun
- b. \**Lucia<sub>X</sub> glaubt dass Jim die<sub>X</sub> mag*  
 Lucia believes that Jim D-pronoun likes  
 ‘Lucia believes that Jim likes her’

A similar point can be made with reflexive pronouns, which are classified as anaphors subject to Condition A: they must be locally bound and so in our terminology they are dedicated local domain forms. While in English, local domain forms are reflexives, in French they have the same form as ordinary pronouns (14) and in Zapotec they have the form of R-expressions (15).

- (13) *I admire myself* ENGLISH: CONDITION A FORM  
 $\lambda x [x \text{ admires } x]$
- (14) *Je m’ admire* FRENCH: CONDITION B FORM  
 1SG.NOM 1SG.ACC admire  
 ‘I admire myself’ (lit. I admire me)  
 $\lambda x [x \text{ admires } x]$

- (15) *R-yu'lààa'z Gye'eihlly Gye'eihlly* ZAPOTEC: CONDITION C FORM  
 hab-like Mike Mike  
 'Mike likes himself' (Lee 2003)  
 $\lambda x$  [x likes x]

This establishes that there is no fixed correspondence between locally bound anaphora (Condition A contexts) and the forms that occur in such contexts. Thus, languages differ according to whether they have a dedicated local domain form, reflexive pronouns.

We now turn to the question of the relation between local domain forms and bound variable anaphora.

## 2.2 Local Domain Forms Diagnose Bound Variable Anaphora

According to Reinhart (1983: 157f.) locally bound pronouns “are only interpretable as bound variables”. Reinhart’s generalization means that one can use local binding as a diagnostic for bound variable anaphora. In other words, if one wants to determine, for a given language, which forms can function as bound variables one simply has to look at which forms may be locally bound. We call this the bound variable diagnostic.

- (16) The bound variable diagnostic  
 If  $\alpha$  is a local domain form then  $\alpha$  is a bound variable.

With this in mind we now consider three case studies that illustrate how local domain forms diagnose bound variable anaphora: French (2.2.1), English (2.2.2) as well as Russian and Hindi (2.2.3).

### 2.2.1 The Bound Variable Diagnostic Applied to French

French accusative pronouns can be locally free and locally bound, (17). It follows from the bound variable diagnostic that these forms are bound variables. As such they predictably support bound variable anaphora, e.g., in the context of VP-ellipsis (18).

- (17) a. *Lucie me voit*  
 L. 1SG.ACC see  
 'Lucie sees me.'
- b. *Je me vois*  
 1SG.NOM 1SG.ACC see  
 I see myself.' (lit. 'I see me')
- (18) *Je pense que la police m'a vu,*  
 I think that the police me-have seen  
*...et Lucie le pense aussi*  
 ...and Lucie it thinks also

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= (i) ...and **Lucie** thinks the police saw **her**.<sup>?</sup> (BVA)  
 $\lambda x$  [x thinks that the police saw x]

= (ii) ...and **Lucie** thinks the police saw **me**.<sup>?</sup>  
 $\lambda x$  [x thinks that the police saw y<sub>SPEAKER</sub>]  
(adapted from Déchaine & Wiltschko 2002, (63))

The French data establishes two things. First, relative to classical binding theory, French does not have dedicated 1<sup>st</sup> and 2<sup>nd</sup> person forms that are sensitive to local binding (Condition A contexts) vs. non-local binding (Condition B contexts). Second, the French data confirms that 1<sup>st</sup> and 2<sup>nd</sup> person are not intrinsically indexical.

### 2.2.2 The Bound Variable Diagnostic Applied to English

English has dedicated 1<sup>st</sup> and 2<sup>nd</sup> person forms for local binding, i.e., reflexive pronouns. Reflexives must be locally bound, (19), so it follows from the bound variable diagnostic that these forms are bound variables. As such they predictably support bound variable anaphora, e.g., in the context of VP-ellipsis, as shown in (20).

(19) a. \**Lucy saw myself*  
b. *I saw myself*

(20) &*I love my-self and so does Sam*

= (i) **Sam** loves **him**-self (BVA)  
 $\lambda x$  [x loves x]

= (ii) **Sam** loves **me**  
 $\lambda x$  [x loves y<sub>SPEAKER</sub>]

Now consider how the bound variable diagnostic applies to accusative forms. In contexts where accusative pronouns cannot be locally bound, they do not support bound variable anaphora. In particular, English accusative forms are normally locally free (21)a, and cannot be locally bound (21)b. This implies that, in this context, they do not have the status of bound variables. Consequently, they do not support bound variable anaphora as we have already seen in (7) repeated as (22).

(21) a. *Lucy loves me*  
b. \**I love me*

(22) *I know that John saw me, and Mary does too.*

≠ (i)  $\lambda x$  [x knows that John saw x]  
...and **Mary** knows that John saw **her** (\*BVA)

- = (ii)  $\lambda x$  [ $x$  knows that John saw  $y_{\text{SPEAKER}}$ ]  
 ...and **Mary** knows that John saw **me**  
 (adapted from Déchaine & Wiltschko 2002, (40))

However, there are contexts in which these accusative forms may be locally bound, in which case they do support bound variable anaphora. In particular, in the context of focus, accusative pronouns can be locally bound (23). And it is precisely in these contexts of focus that they can support bound variable anaphora (24).

- (23) a. *Everyone suspects **me**; even I suspect **me***  
 b. *Everyone suspects **you**; even **you** suspect **you***

- (24) *&Only I got a question that I understood (nobody else did)*  
 = (i)  $\lambda x$  [ $x$  got a question that  $y_{\text{SPEAKER}}$  understood]  
 = (ii)  $\lambda x$  [ $x$  got a question that  $x$  understood]

In our view, the fact that focus makes local binding of accusative pronouns possible automatically derives the fact that bound variable anaphora is supported in these contexts.

The bound variable diagnostic also sheds light on the distribution of English possessive pronouns: they may be locally free (25) or locally bound (26). The latter establishes that they are bound variables. This is confirmed by the fact that they support bound variable anaphora in the context of VP-ellipsis, as in (27).

- (25) *Lucy loves **my** dog*  
 $\lambda x$  [ $x$  loves  $y_{\text{SPEAKER}}$ 's dog]
- (26) *I love **my** dog*  
 $\lambda x$  [ $x$  loves  $x$ 's dog]
- (27) *&I did **my** homework, and Sam did too*  
 = (i) **Sam** did **my** homework.  
 $\lambda x$  [ $x$  did [ $y_{\text{SPEAKER}}$ 's homework]]  
 = (ii) **Sam** did **his** homework. (BVA)  
 $\lambda x$  [ $x$  did [ $x$ 's homework]]

Relative to the construal of 1<sup>st</sup> and 2<sup>nd</sup> person, English possessive pronouns have the same distribution as French accusative pronouns. This reflects the generally available possibility of one form occurring in both indexical and non-indexical contexts. This further confirms that the inherent indexicality hypothesis is false.

A possible counterargument would be to claim that there is something special about English possessive pronouns that makes them more amenable to local binding and therefore to bound variable anaphora. That this is not so can be seen in languages that have dedicated reflexive possessors. We discuss two such examples: Russian and Hindi.



### 2.2.2 The Bound Variable Diagnostic Applied to Russian and Hindi Possessors

Russian has two distinct forms for possessors: a dedicated reflexive possessor and a regular possessive pronoun. While the reflexive possessor is restricted to local binding (28), the regular possessive pronoun is possible with both local and non-local binding (29).<sup>1</sup>

- (28) a. *Ja<sub>X</sub> ljublju svoju<sub>X</sub> mamu*  
 I love self mother  
 ‘I love my mother’
- b. *Ja<sub>X</sub> znaju, chto Nadia<sub>Y</sub> ljubit svoju<sub>X/\*Y</sub> mamu*  
 I know that Nadia loves self mother  
 = (i) ‘I know that Nadia loves her mother’  
 ≠ (ii) ‘I know that Nadia loves my mother’
- (29) a. *Ja<sub>X</sub> ljublju moju<sub>X</sub> mamu*  
 I love my mother.  
 ‘I love my mother’
- b. *Ja<sub>X</sub> naju, chto Nadia ljubit moju<sub>X</sub> mamu*  
 I know that Nadia loves my mother.  
 ‘I know that Nadie loves my mother’

At present, we have nothing to say about the possibility of local binding with the regular possessive pronoun in (29)a. Crucial to our proposal is the fact that only the reflexive possessor (in contrast to the regular possessor) may function as a bound variable, as shown in (30)-(32).

- (30) *Ya postrig svoiu luzhaiku, i Ivan tozhe*  
 I cut self lawn, and John too  
 = (i) I cut my lawn, and John cut **his** lawn (BVA)  
 ≠ (ii) I cut my lawn, and John cut **my** lawn
- (31) *Ya postrig moiu luzhaiku, i Ivan tozhe*  
 I cut my lawn and John too  
 ≠ (i) I cut my lawn, and John cut **his** lawn (BVA)  
 = (ii) I cut my lawn, and John cut **my** lawn
- (32) *Ja znaju chto Nadia ljubit moju mamu, i Oleg tozhe*  
 I know that Nadia loves my mother and Oleg too  
 ≠ (i) ...and Oleg knows that Nadia loves **his** mother (BVA)  
 = (ii) ...and Oleg knows that Nadia loves **my** mother

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<sup>1</sup> Thanks to Olga Steriopo and Ora Mathushansky for providing the Russian data, and to Philippe Schlenker for pointing out it’s significance for our analysis.

The Russian data establishes that possessor pronouns fail to function as bound variables when there is a dedicated local domain form available. Consequently, this means that there is nothing inherent about English possessor pronouns, which allows them to function as bound variables. Rather, it is the fact that English lacks a dedicated reflexive possessor that allows for the regular possessor pronoun to support bound variable anaphora.

Now consider Hindi, which, like Russian, has a dedicated reflexive possessor. In Hindi, in the context of local binding, the use of the regular possessor pronoun is judged less felicitous than the reflexive possessor.<sup>2</sup>

- (33) a. *mEN apni maaN-se pyaar kar-taa huuN*  
 I self.GEN.F mother-with love do-HAB be.PRS.1SG  
 ‘I love my mother’
- b. ?*mEN merii maaN-se pyaar kar-taa huuN*  
 I 1.GEN.F mother-with love do-HAB be.PRS.1SG  
 ‘I love my mother’

Observe moreover that while the reflexive possessor supports bound variable anaphora (34), the regular possessor does not (35).

- (34) *mEN apni maaN-se aaj miluuNgaa aur Peter kal*  
 I self.GEN.F mother-with today meet.FUT.1SG and Peter tomorrow  
 ‘I will meet my mother today and Peter tomorrow’  
 = (i) ‘...and Peter will meet his mother tomorrow’ (BVA)  
 = ??(ii) ‘...and Peter will meet my mother tomorrow’
- (35) *mEN merii maaN-se aaj miluuNgaa aur Peter kal*  
 I 1.GEN.F mother-with today meet.FUT.1SG and Peter tomorrow.  
 ‘I will meet my mother today and Peter tomorrow’  
 ≠ (i) Peter will meet his mother tomorrow (BVA)  
 = (ii) Peter will meet my mother tomorrow’

This confirms the significance of locally bound anaphora: whenever a form functions as a dedicated local domain form and as such can function as a locally bound anaphor it also supports bound variable anaphora. Conversely, if a form cannot be locally bound, it cannot support bound variable anaphora.

### 3. The Significance of Syntactic Categories: The D/φ Analysis

The bound variable diagnostic provides us with an answer to the first half of the question we set out to answer: *when* can a 1<sup>st</sup> and 2<sup>nd</sup> person pronoun be a bound variable? Our

<sup>2</sup> Thanks to Rajesh Bhatt for providing the Hindi data.

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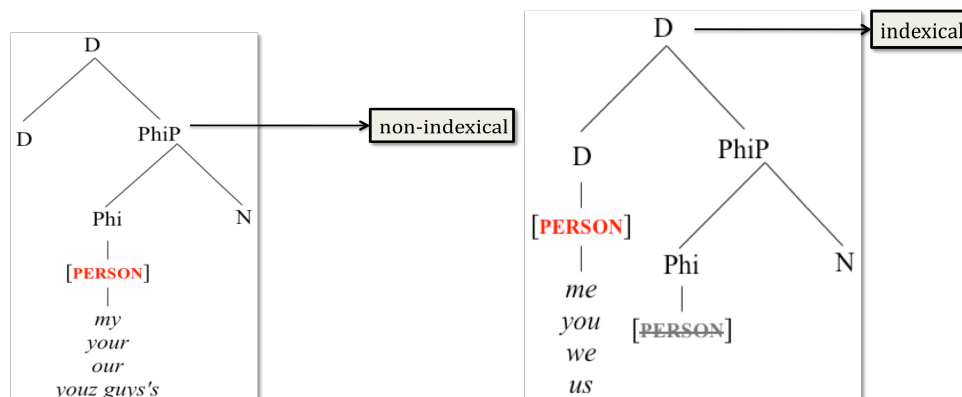
answer is simple: when it can be locally bound. As summarized in Table 1, this is seen with French accusative pronouns, English reflexive pronouns, English focused accusative pronouns as well as Russian and Hindi reflexive possessive pronouns. If a pronominal is not a local domain form, then it does not support bound variable anaphora: this is seen with English accusative pronouns and with Russian and Hindi non-reflexive possessives.

LANGUAGE	PRONOMINAL FORM	LOCAL DOMAIN FORM	BOUND VARIABLE ANAPHORA
French	ACCUSATIVE PRONOUN	✓	✓
English	REFLEXIVE PRONOUN	✓	✓
	ACCUSATIVE PRONOUN	✗	✗
	ACCUSATIVE PRONOUN + FOCUS	✓	✓
	POSSESSIVE PRONOUN	✓	✓
Russian/ Hindi	REFLEXIVE POSSESSIVE	✓	✓
	NON-REFLEXIVE POSSESSIVE	?	✗
	NON-REFLEXIVE POSSESSIVE + FOCUS	?	?

TABLE 1: LOCALLY BOUND ANAPHORA DIAGNOSES BOUND VARIABLE ANAPHORA

There remains the question of *why* 1<sup>st</sup> and 2<sup>nd</sup> person pronouns can function as bound variables. On independent grounds, various semantic analyses propose that the bound variable construal reflects a failure to interpret person features. This notion of non-interpretation is implemented relative to what is assumed to be a canonical indexical interpretation of person features. We depart from such semantic treatments in two ways. First, as we have already argued, we do not take indexicality as basic to 1<sup>st</sup> and 2<sup>nd</sup> person pronoun denotations. Second, as we now show, there are reasons to think that the indexical/non-indexical contrast has a structural basis. Specifically, we propose that if person features are in D they are indexical while if person features are in  $\phi$  they are non-indexical. This is schematized in (36).

(36) THE STRUCTURAL BASIS OF (NON-)INDEXICALITY



On this view, person features are not intrinsically indexical but they acquire indexicality by virtue of the structure they are associated with. This requires that features such as [PERSON] map onto a “universal spine” of functional categories. Local domain forms are  $\phi$ Ps and therefore non-indexical i.e., they support bound variable anaphora. Pronominals that are not local domain forms are DPs and therefore indexical, i.e., they do not support bound variable anaphora.

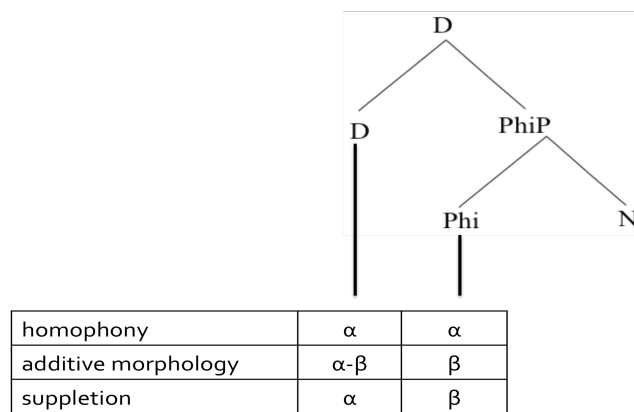
In the Déchaine & Wiltschko 2002 analysis, D is the locus of definiteness. This claim is supported by evidence from German d-pronouns (Wiltschko 1998). Given our present claim that indexical 1<sup>st</sup> and 2<sup>nd</sup> person maps onto D, this raises the question of how definiteness and indexicality are related. On independent grounds, it has been observed that there is a link between definiteness and E-pronouns (Elbourne 2005), which are treated as hidden definite descriptions (Evans 1977). We conjecture that indexicality is amenable to a similar analysis.<sup>3</sup>

In the present analysis, the interpretive contrast between indexical and non-indexical construal of 1<sup>st</sup> and 2<sup>nd</sup> person pronouns is structurally based such that indexical pronouns are DPs, while non-indexical are PhiPs. This claim, which constrains the syntax-semantics interface, also has consequences for the syntax-morphology interface and the semantics-morphology interface. We consider each in turn.

#### 4. The morphosyntax of (non-)indexicality

The D/ $\phi$  analysis predicts three morphological patterns, as schematized in (37).

(37) PREDICTED MORPHOSYNTACTIC PATTERNS



We predict that in some languages, the same form may map onto D or  $\phi$ ; this is the homophony pattern. We also expect to find languages where the D form contains  $\phi$  as a sub-constituent; we call this the additive morphology pattern. And thirdly, there should also exist languages where the D form and the  $\phi$  form are morphologically unrelated; we call this the suppletive pattern. Note that a purely semantic analysis makes no predictions

<sup>3</sup> For related discussion, see Freidin & Vergnaud 2001, Adger & Ramchand 2005.

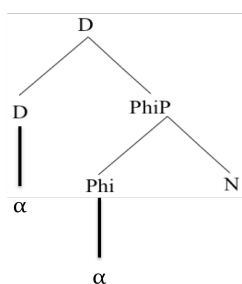
*When and why can 1<sup>st</sup> and 2<sup>nd</sup> person pronouns be bound variables?*

about the correspondence relation between a pronominal form and its (non-)indexicality. This contrasts with our syntactic analysis, which makes specific and falsifiable predictions about these correspondence relations. We now consider the relevant data.

#### 4.1 Homophonous D and $\varphi$ : English

English 1<sup>st</sup> and 2<sup>nd</sup> person exemplify the homophony pattern. In particular, the same form maps onto D or  $\varphi$ , as in (38). This has an interpretive consequence: the same form can be used as an indexical or as a non-indexical.

(38) HOMOPHONY:  $\alpha$  MAPS ONTO D OR  $\varphi$



The homophony pattern can be seen with 1<sup>st</sup> and 2<sup>nd</sup> person pronouns: in (39) the 1<sup>st</sup> person pronoun *me* has the status of a D-pronoun, and indexes the speaker; in (40) *me* has the status of a  $\varphi$ -pronoun and supports bound variable anaphora.

- (39) a. Everyone suspects [<sub>D</sub> **me** ]  
b.  $\forall x$  (x suspects SPEAKER)

- (40) a. Even [ <sub>$\varphi$</sub>  I] suspect [ <sub>$\varphi$</sub>  **me**].  
b.  $\lambda x$  (x suspects x)

In the present analysis paradigms such as the English one, where indexical and non-indexical pronominal forms are homophonous, are treated as instances of structural ambiguity. This provides a principled account for observations made about the interpretation of English type pronouns, which are treated as semantically ambiguous. For example, Kratzer (1998, 2009) distinguishes “minimal pronouns” (which are non-indexical) from pronouns proper (which are indexical). Similarly, Rullmann 2004, distinguishes pronoun meanings in terms of their context of use: the presupposition that the pronoun indexes the speaker/hearer is stripped away in the context of focus. Another type of context-shifting analysis is pursued by Schlenker 2003 and Cable 2005 for whom (non-)indexicality is derived by context-shifting operators. While our analysis does not help to choose between these various semantics analysis, it does derive the fact that there is a structurally induced partition between indexical versus non-indexical construals, however these are modeled in the semantic component.

Our syntactically based account predicts that a non-indexical construal will be illicit in contexts where a  $\phi$ P structure is prohibited. This is the case with expressions such as *us linguists*, discussed by Postal (1966), which in the present analysis are unambiguously pro-DPs with the structure in (41).

$$(41) \quad [_{DP} \textit{us} [_{\phi P} \textit{-s} [_{NP} \textit{linguist} ] ] ]$$

We predict that the 1<sup>st</sup> person feature of *us* cannot map onto  $\phi$ , because the latter is already occupied by the plural marker *-s* of *linguists*. The unavailability of a  $\phi$ P structure for *us linguists* accounts for the fact that such expressions cannot have a bound variable reading, even in contexts that otherwise facilitate such a construal as in (42) and (43).<sup>4</sup>

$$(42) \quad \textit{Only we got a question that us linguists understood}$$

$$\neq (i) \quad \lambda x [x \textit{ got a question that x understood}]$$

$$= (ii) \quad \lambda x [x \textit{ got a question that us linguists understood}]$$

$$(43) \quad \textit{Every guy that I've ever dated has wanted us lovers to get married}$$

$$\neq (i) \quad \forall x, \textit{guy}(x) \ \& \ \textit{dated}(I, x) [x \textit{ wants I \& x to get married}]$$

$$= (ii) \quad \forall x, \textit{guy}(x) \ \& \ \textit{dated}(I, x) [x \textit{ wants us to get married}]$$

In (43), we adopt the convention of representing the 1<sup>st</sup> plural form as [I & x].

Observe that (42)-(43) are only well-formed under a collective construal. When such a construal is unavailable, the result is semantic anomaly. For example, in (44) the predicate (*the smartest person in the world*) introduces a uniqueness requirement, which makes the collective construal infelicitous.

$$(44) \quad \textit{We think us linguists are the smartest person in the world}$$

$$\neq (i) \quad \forall x, \textit{linguist}(x) [x \textit{ thinks x is the smartest person in the world}]$$

$$= (ii) \quad \# \forall x [x \textit{ thinks that us linguists are the smartest person in the world}]$$

The absence of bound variable readings in (44) is predicted if English 1<sup>st</sup>/2<sup>nd</sup> person pronouns are pro-DPs in this context. This follows from our syntactically based account of indexicality. As far as we can determine, a purely semantic analysis will have to invoke some additional mechanism to account for these data.

## 4.2 Additive D and $\phi$ : Halkomelem

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<sup>4</sup> The impossibility of bound-variable anaphora in this context is independent of whether the antecedent is a regular pronominal form (as in the main text) or an expression with overt DP syntax as in (i). In both cases the occurrence of *us linguists* in the lower clause cannot be construed as a bound variable.

(i) Only **us linguists** got a question that **us linguists** understood.

*When and why can 1<sup>st</sup> and 2<sup>nd</sup> person pronouns be bound variables?*

As discussed in Déchaine & Wiltschko (2002), Halkomelem independent pronouns across all persons are syntactically complex, as shown Table 2. They can be decomposed into a D-element and a  $\varphi$ -element.

	SINGULAR	PLURAL
1	<b>te-’élthe</b> D-1SG	<b>te-lhlímelh</b> D-1PL
1, EMPH	<b>te-á’elthe</b> D-1SG.EMPH	
2	<b>te-léwe</b> D-2SG	<b>te-lhwélep</b> D-2PL
3	<b>tú-tl’ò</b> D-PHI	<b>tu-tl’ó:-lem</b> D-PHI-PL
		<b>yu-tl’ó:-lem</b> D.PL-PHI-PL
3, FEM	<b>thú-tl’ò</b> D.FEM-PHI	<b>thu-tl’ó:-lem</b> D.FEM-PHI-PL

TABLE 2: HALKOMELEM INDEPENDENT PRONOUNS  
(adapted Galloway 1993:171-172; Déchaine & Wiltschko 2002:412, 3)

In Halkomelem, the  $\varphi$  subconstituent exists independently of the full independent pronoun. As discussed in Déchaine & Wiltschko (2002), the distribution of the D-form and the  $\varphi$ -form is syntactically conditioned. The D-form occurs in argument positions, but the  $\varphi$ -form does not (45). Conversely, the D-form does not occur in predicative positions, but the  $\varphi$ -form does (46).

- (45) a. *Lám **tú-tl’ò***  
go D-PHI  
‘He goes’  
(Galloway 1993:173; Déchaine & Wiltschko 2002:412, (6a))
- b. *\*Lám **tl’ò***  
go PHI  
(Déchaine & Wiltschko 2002:412, 7b)
- (46) a. *\***Tú-tl’ò-cha** te Bill kw’e may-th-óme*  
D-PHI-FUT D Bill C help-TRANS-2.OBJ  
(Déchaine & Wiltschko 2002: 413, (6b))
- b. ***tl’ò-cha** te Bill kw’e may-th-óme*  
PHI-FUT D Bill C help-TRANS-2.OBJ  
‘It will be Bill that helps you.’  
(Galloway 1993:172, Déchaine & Wiltschko 2002:413, 7a)

Thus, in Halkomelem, pro-D contains pro- $\varphi$  as a subconstituent, and both pro-forms function as independent pronouns. The present analysis predicts that,  $\varphi$ -forms, but not D-forms, can support bound variable anaphora. While it is the case that D-forms may not be bound (47),  $\varphi$ -forms are restricted to predicate position and can therefore not be used as bound variables for independent reasons.

- (47) a. *Súq-t-es te swíyeqe te kopú-s tú-tl'ò*  
 search-TRANS-3.SUBJ D man D coat-3.POSS D.PHI  
 ≠ (i) ‘The man<sub>X</sub> was looking for his<sub>X</sub> coat’  
 = (ii) ‘The man<sub>X</sub> was looking for his<sub>Y</sub> coat’  
 (Wiltschko 1998a:444, Déchaine & Wiltschko 2002:414, (9))
- b. *Mékw'ye swíyeqe kw'ákw'ets-et-es te stoles-s tú-tl'ò-lem*  
 every D.PL man looking-TRANS-3.SUBJ D wife-3.POSS D-PHI-PL  
 ≠ (i) ‘All men<sub>X</sub> are looking at their<sub>X</sub> wives’ (\*BVA)  
 = (ii) ‘All men<sub>X</sub> are looking at their<sub>Y</sub> wives’  
 (Wiltschko 1998a:445, D&W 2002:414, 10)

### 4.3 Suppletive D and $\varphi$ : Plains Cree

Plains Cree exemplifies a system where the pronominal forms that spell out D and  $\varphi$  are in a suppletive relation. The relevant forms are found in the pronominal agreement system, which has two distinct paradigms: the independent mode paradigm (which instantiates D-agreement), and the conjunct mode paradigm (which instantiates  $\varphi$ -agreement). Here we present three arguments—one morphological, one syntactic, and one pragmatic—that support our claim that the Plains Cree agreement paradigms code a distinction between indexical (D) and non-indexical ( $\varphi$ ) agreement. First is the fact that the two agreement paradigms use completely different sets of morphemes, as shown in Table 3.<sup>5</sup>

	INDEPENDENT MODE (D-AGREEMENT)	CONJUNCT MODE ( $\varphi$ -AGREEMENT)
1	<i>ni-...-n</i>	<i>...-yân</i>
2	<i>ki-...-n</i>	<i>...-yan</i>
1PL	<i>ni-...-nân</i>	<i>...-yâhk</i>
21	<i>ki-...naw</i>	<i>...-yêk</i>
2PL	<i>ki-...nâwâw</i>	<i>...-t</i>
INDEF	—	<i>...-hk</i>
3	<i>...-w</i>	<i>...-t</i> <i>...-k</i>
3OBV	<i>...-yi-wa</i>	<i>...-yi-t</i>
3PL	<i>...-wak</i>	<i>...-cik</i>

<sup>5</sup> The paradigm in Table 3 is one of several Plains Cree pronominal paradigms that vary according to transitivity and animacy. See Wolfart (1973) for details.



*When and why can 1<sup>st</sup> and 2<sup>nd</sup> person pronouns be bound variables?*

TABLE 3: PLAINS CREE PRONOMINAL PARADIGM: ANIMATE SUBJECT AGREEMENT FOR INTRANSITIVE VERBS (from Wolfart 1973:43)

Of interest to the present discussion is the fact that these two agreement paradigms differ along a number of syntactic, semantic, and pragmatic dimensions (Cook 2008). Here we focus on three diagnostics: (i) only  $\varphi$ -agreement is found in A'-binding contexts; (ii)  $\varphi$ -agreement supports bound variable anaphora but D-agreement does not; (iii) D-agreement occurs only in discourse-initial contexts.

One indication that Plains Cree pronominal agreement exhibits an indexical/non-indexical contrast—a D/ $\varphi$  distinction in terms of the present analysis—comes from A'-dependencies such as wh-movement and relativization. Syntactically, these contexts involve syntactic binding of a variable. As illustrated in (48)-(49), in Plains Cree, they occur with  $\varphi$ -agreement (i.e. the conjunct mode paradigm), but not with D-agreement (i.e. the independent mode paradigm).

- (48) a. *awîna ana kâ-ocêm-â-t John-a* ( $\varphi$ -agreement)  
 who DEM.AN C-kiss.VTA-DIR-3 John-OBV  
 'Who is it that kissed John'  
 (Blain 1997:68)
- b. \**awîna ana ocêm-ê-w John-a* (D-agreement)  
 who DEM.AN kiss.VTA-DIR-3 John-OBV
- (49) a. *ana iskwêw kâ-ocêm-â-t John-a* ( $\varphi$ -agreement)  
 DEM.AN woman C-kiss.VTA-DIR-3 John-OBV  
 'that woman who kissed John'
- b. \**ana iskwêw ocêm-ê-w John-a* (D-agreement)  
 DEM.AN woman kiss.VTA-DIR-3 John-OBV

Now consider the bound variable anaphora diagnostic. As discussed by Cook (2008), only the conjunct mode paradigm (here analyzed as  $\varphi$ -agreement) supports bound variable anaphora: see (50)a, where the relevant verb form is *kâ-niton-ak*. Moreover, with ellipsis, the strict reading is dispreferred. In Plains Cree, the only way to get the equivalent of a strict reading is to repeat the entire clause, (50)b.

- (50) PLAINS CREE  $\varphi$ -AGREEMENT (CONJUNCT MODE)
- a. *niya ni-wâpam-â-w atim kâ-niton-ak mâka môya Jeff*  
 1SG 1-see.VTA-DIR-3 dog C-look.for.VTA-1>3 but NEG J  
 'I saw the dog I was looking for,...
- = (i) '...but Jeff didn't see the dog he was looking for' (BVA)
- =? (ii) '...but Jeff didn't see the dog I was looking for'

(Cook 2008:79, (41a))

- b. *niya ni-wâpam-â-w atim ni-niton-â-w*  
 1SG 1-see.VTA-DIR-3 dog C-look.for.VTA-1>3  
*mâka môya Jeff wâpam-ê-w atim-wa kâ-niton-ak*  
 but NEG J see.VTA-DIR-3 dog-OBV C-look.for.VTA-1>3  
 ‘I saw the dog I was looking for,  
 but Jeff didn’t see the dog I was looking for’

Even more striking is the fact that if the D-agreement form is substituted, as in (51), then the sentence is judged to be ill-formed. This is consistent with Cook’s (2008) characterization of Plains Cree D-agreement (i.e. the independent mode) as purely indexical: it can not be used for anaphoric instances of a 1<sup>st</sup> person.

- (51) PLAINS CREE D-AGREEMENT (INDEPENDENT MODE)  
 \* *niya ni-wâpam-â-w atim ni-niton-â-w mâka môya Jeff*  
 1SG 1-see.VTA-DIR-3 dog 1-look.for.VTA-DIR-3 but NEG J  
 (Cook 2008:79, (41b))

The ill-formedness of (51) reflects a more general restriction that Plains Cree D-agreement is subject to. As discussed by Cook (2008:202ff.), the indexical clauses that host D-agreement only occur in discourse-initial contexts. Thus, in conversation these indexical clauses are used for ‘scene-setting’ introductory remarks, and in narratives they specify indexical values for person, time, and place relative to which all other successive (anaphoric) clauses are evaluated. For example, in (48), the narration opens with an independent mode clause (indexical D-agreement), and then all other successive clauses are in the conjunct mode (anaphoric  $\phi$ -agreement).

- (52) a. ...*ni-kiskisi-n...* (D-agreement)  
 1-remember-LOC INDEPENDENT  
 ‘...I remember...’  
 b. ...*kisêyiniw... ê-kî-papâmi-pamihtâso-t* ( $\phi$ -agreement)  
 old.man C-prev-go.about-tend.VAI-3 CONJUNCT  
 ‘... an old man ... went about looking after the sick’  
 (Cook 2008:201)

## 5. The significance of paradigmatic structure

The central goal of this paper is to establish when and why 1<sup>st</sup> and 2<sup>nd</sup> person pronouns can be bound variables. We have developed a diagnostic according to which pronouns which are local domain forms support bound variable anaphora (53)a. Moreover, we have argued that bound variable anaphora has a syntactic correlate, namely  $\phi$ P (53)b.

- (53) a. If local domain form  $\rightarrow$  bound variable anaphora  
 b. If bound variable anaphora  $\rightarrow$   $\phi$ P

*When and why can 1<sup>st</sup> and 2<sup>nd</sup> person pronouns be bound variables?*

There remains the question of whether  $\phi$  forms will necessarily be local domain forms? In this section we show that this is not so. That is, not all  $\phi$ Ps can be used as locally bound anaphors. In particular, paradigmatic organization determines the conditions under which a  $\phi$ P will function as a local domain form. For example, if a language has a dedicated locally bound reflexive form (i.e., a Condition A anaphor) then no other pronominal form can be locally bound. This is an instance of Blocking (Williams 1997), where the more highly specified form (e.g., a locally bound reflexive  $\phi$ P) blocks the occurrence of a less specified form (e.g., ordinary pronominal  $\phi$ Ps) in the same context. In this section we illustrate how blocking constrains the construal of pronominal forms.

### 5.1 Blocking: The English Paradigm

The paradigm of English 1<sup>st</sup> and 2<sup>nd</sup> forms is given in Table 4, which lists the nominative, accusative, reflexive, and possessive pronouns.

	NOM	ACC	REFLEXIVE	POSSESSOR
1SG	<i>I</i>	<i>me</i>	<i>myself</i>	<i>my dog</i>
2SG	<i>you</i>	<i>you</i>	<i>yourself</i>	<i>your dog</i>
1PL	<i>we</i>	<i>us</i>	<i>ourselves</i>	<i>our dogs</i>
2PL	<i>you</i>	<i>you</i>	<i>yourselves</i>	<i>your dogs</i>

TABLE 4: ENGLISH PRONOMINAL PARADIGM {1, 2}

For purposes of illustration, our discussion focuses on the distribution and interpretation of 1<sup>st</sup> person forms, but the generalizations hold of the entire paradigm. As we have argued in section 4.1, accusative *me* is homophonous in that it may be a D-form or a  $\phi$ -form. In contexts that require an indexical, the D-form blocks the  $\phi$ -form; this reflects the fact that the D-form is more specified than the  $\phi$ -form by virtue of being associated with more structure: D is the locus of deixis.

Now consider the two  $\phi$ -forms, namely accusative *me* and reflexive *myself*. Here the more specified form is *myself* because it has internal structure in the form of a nominal constant which denotes a body part (*self*). It is precisely this body part noun, which forces *myself* to be a local domain form. This reflects a more general constraint on referential dependencies: local binding is a predictable byproduct of inalienable possession (Helke 1979, Vergnaud & Zubizarreta 1992, Déchaine & Manfredi 1994, Mühlbauer 2008).

FORM	SYNTAX	PERSON	LOCAL DOMAIN FORM
<i>me</i>	[ D [ $\phi$ ] ]	{1}	
<i>me</i>	[ $\phi$ ]	{1}	
<i>myself</i>	[ $\phi$ [ N <sub>INALIENABLE</sub> ] ]	{1}	✓

TABLE 5: SPECIFICATION OF ENGLISH {1}

To see how these specifications yield the blocking effects attested in English, consider the data in (54)-(55). In contexts of local binding, reflexive *myself*<sub>φ</sub> blocks *me*<sub>φ</sub> whereas in indexical contexts, *me*<sub>D</sub> blocks *me*<sub>φ</sub>.<sup>6</sup>

- (54) a. *I saw myself*<sub>φ</sub>  
 b. \**I saw me*<sub>φ</sub>
- (55) a. *I know that John saw me*<sub>D</sub> and Lucy does too  
 b. \**I know that John saw me*<sub>φ</sub> and Lucy does too

Next we turn to the relation between reflexive forms and possessive forms. Consider Table 6. Observe that 1<sup>st</sup> and 2<sup>nd</sup> person reflexives are identical to possessive constructions: in both cases a possessive pronoun precedes the head noun (*self* or *dog*).

	REFLEXIVE	POSSESSOR
1SG	<i>myself</i>	<i>my dog</i>
2SG	<i>yourself</i>	<i>your dog</i>
1PL	<i>ourselves</i>	<i>our dog</i>
2PL	<i>yourselves</i>	<i>your dog</i>

TABLE 6: ENGLISH REFLEXIVE AND POSSESSOR PARADIGM {1,2}

We take the formal parallel between 1<sup>st</sup> and 2<sup>nd</sup> person reflexives and 1<sup>st</sup> and 2<sup>nd</sup> person possessive to reflect a structural parallel. In particular, just as possessive pronouns are homophonous in that they map onto D- or φ-structures so too are 1<sup>st</sup> and 2<sup>nd</sup> person pronouns. This is illustrated in table 7. The crucial difference between ordinary possessives and reflexives lies in the fact that the latter have a body-part noun which forces local binding. As such only reflexives are dedicated local domain forms. (Recall however that possessives by virtue of being φ may be locally bound).

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<sup>6</sup> In focus contexts, both *myself*<sub>φ</sub> and *me*<sub>φ</sub> are felicitous but with differences in interpretation that seem to be related to the distinction between *de se* and *de re* (i). Notice that this contrast is also found with locally bound R-expressions which may alternate with 3<sup>rd</sup> person reflexive (ii).

- i)
- a. Everyone suspects me. Even I suspect *me*.
  - b. ?Everyone suspects me. Even I suspect *myself*.
  - c. Everyone suspects me. I even suspect myself.
  - d. Everyone suspect me. Even I suspect mySELF now.
- ii)
- a. Everyone suspects John. Even John suspects John.
  - b. ?Everyone suspects John. Even John suspects himself.
  - c. Everyone suspects John. John even suspects himself.
  - d. Everyone suspects John. Even John suspects himSELF now.

When and why can 1<sup>st</sup> and 2<sup>nd</sup> person pronouns be bound variables?

FORM	SYNTAX	PERSON	LOCAL DOMAIN FORM
<i>my dog</i>	[ D [ φ [ N ] ] ]	{1}	
<i>my dog</i>	[ φ [ N ] ]	{1}	
<i>myself</i>	[ D [ φ [ N <sub>bodypart</sub> ] ] ]	{1}	
<i>myself</i>	[ φ [ N <sub>bodypart</sub> ] ]	{1}	✓

TABLE 7: SPECIFICATION OF ENGLISH POSSESSOR AND REFLEXIVE {1}

Moreover, possessive pronouns differ from their accusative counterparts in that there is no competing local domain form. As such possessive pronouns may be locally bound or locally free.

- (56) a. *I love **my** dog*  
 b. *Lucy loves **my** dog*

To show that blocking is operative for English accusative pronouns, we turn to a system that lacks blocking in this domain.

## 5.2 Blocking: The French Paradigm

French 1<sup>st</sup> and 2<sup>nd</sup> person pronouns do not have dedicated local forms. This is shown in Table 8, where we see that the clitic pronouns are identical for the accusative and the reflexive. In addition, for the singular forms, there is a contrast between clitic and non-clitic pronouns.

	CLITIC (WEAK)			NON-CLITIC (STRONG)
	NOM	ACC	REFL	
1SG	<i>je</i>	<i>me</i>		<i>moi</i>
2SG	<i>tu</i>	<i>te</i>		<i>toi</i>
1PL	<i>nous</i>			
2PL	<i>vous</i>			

TABLE 8: FRENCH PRONOMINAL PARADIGM {1,2}

For purposes of illustration our discussion focuses on the distribution and interpretation of 1<sup>st</sup> person forms, but the generalizations also hold of 2<sup>nd</sup> person forms (for 3<sup>rd</sup> person see below). On independent grounds we have argued that the accusative clitic *me* is a φ-form (Déchaine & Wiltschko 2002) and consequently may support bound variable anaphora (57). On the present view, this is expected precisely because this form is a local domain form (58).

- (57) Je pense que la police **m'a** vu,  
 I think that the police me-have seen

...et Lucie le pense aussi.  
 ...and Lucie it thinks also

= (i) ...and **Lucie** thinks the police saw **her**.’ (BVA)  
 $\lambda y$  [**y** thinks that the police saw **y**]

= (ii) ...and **Lucie** thinks the police saw **me**.’  
 $\lambda y$  [**y** thinks that the police saw **me**]  
 (adapted from Déchaine & Wiltschko 2002, (63))

- (58) a.  $Je_x$  **me<sub>x</sub>** voit.  
 1sg 1sg.acc sees  
 ‘I see myself’ (lit. I see me’)  
 b. Jean **me** voit  
 J. 1sg.accsees  
 ‘Jean sees me.’

In addition to the weak clitic form (*me*), French also has a strong non-clitic form (*moi*). In the present analysis, they both have the status of  $\phi$ -forms. This correctly predicts that *moi* can support bound variable anaphora (59). Again, this is expected precisely because *moi* is a local domain form (60).<sup>7</sup>

- (59) & *Je suis fier de moi, et Lucie l’est aussi.*  
 1sg is proud of 1sg, and L. it is also  
 ‘I am proud of myself, and Lucie is too’

= (i) ...and **Lucie** is proud of **herself** too.’ (BVA)  
 $\lambda y$  [**y** is proud of **y**]

= (ii) ...and **Lucie** is proud of **me** too.’  
 $\lambda y$  [**y** is proud of **speaker**]

- (60) a.  $Je_x$  suis fier de **moi<sub>x</sub>**  
 1sg am proud of 1sg  
 ‘I am proud of myself (lit. I am proud of me’)  
 b.  $Jean_x$  est fier de **moi<sub>y</sub>**  
 J. is proud of 1sg  
 ‘Jean is proud of me’

Given that both *me* and *moi* are local domain forms, what determines which one is selected in a given context? Observe that in contexts that require a clitic pronoun (i.e. accusative contexts) *me <sub>$\phi$</sub>*  blocks non-clitic *moi*, (61).

<sup>7</sup> As discussed by Zribi-Herz (2008), local binding of strong pronouns is obligatory with a certain class of predicates.

When and why can 1<sup>st</sup> and 2<sup>nd</sup> person pronouns be bound variables?

- (61) a.  $Je_x$   **$me_x$**  vois.  
 1sg 1sg.acc sees  
 ‘I see myself’ (lit. I see me’)
- b. \* $Je_x$  vois  **$moi_x$**  .  
 1sg sees 1sg

On our blocking based view, this pattern indicates that *me* is the more highly specified form. In particular, unlike *moi*, *me* is specified for (accusative) case, as illustrated in Table 9.<sup>8</sup>

FORM	CATEGORY	PERSON	CASE
<i>me</i>	$\emptyset$	{1}	ACC
<i>moi</i>	$\emptyset$	{1}	

TABLE 9: SPECIFICATION OF FRENCH {1}

Evidence that the absence of blocking of French reflexives reflects paradigmatic organization comes from the pattern we find with 3<sup>rd</sup> person forms, where blocking is active. In contexts of local binding, reflexive *se* blocks accusative *le*, (62).

- (62) a.  $Jean_x se_x$  voit  
 J. refl.acc sees  
 ‘Jean sees himself’
- b.  $Jean$  ***le*** voit

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<sup>8</sup> French *X-même* forms (e.g. *moi-même*) contrast with their simplex counterparts (e.g. *moi*) in ways that are not well-understood. *X-même* forms can be locally bound (i); cannot be locally free (ii); and do not support bound variable anaphora (iii). We suspect that the explanation for this pattern lies in the focus-sensitive semantics of *même*; see Zribi-Hertz (2008) for relevant discussion.

- (i)  $Je_x$  suis fier de  **$moi-même_x$** .  
 1SG am proud of 1SG-EMPH  
 ‘I am proud of myself’
- (ii) \* $Jean_x$  est fier de  **$moi-même_y$**   
 J. is proud of 1SG-EMPH
- (iii)  $Je$  suis fier de  **$moi-même$** , et Lucie l’est aussi.  
 1sg is proud of 1sg-same, and L. it is also  
 ‘I am proud of myself, and Lucie is too’  
 $\neq$  (i) ...and **Lucie** is proud of **herself** too.’ (\*BVA)  
 $\lambda x$  [x is proud of x]  
 $=$  (ii) ...and **Lucie** is proud of **me** too.’  
 $\lambda x$  [x is proud of  $y_{SPEAKER}$ ]

J. acc sees  
 ‘Jean sees him’

It is instructive to consider how the blocking effect in (62) arises. Kayne (2000) observes that whereas the *se*-clitic is in paradigmatic contrast with 1<sup>st</sup> and 2<sup>nd</sup> person forms (*me* and *te*), the *le*-clitic is in a paradigmatic contrast with other *l*-forms that contrast for number and gender, but not for person. The relevant paradigms are given in Tables 10 and 11.

	CLITIC (WEAK)			NON-CLITIC (STRONG)
	NOM	ACC	REFL	
1SG	<i>je</i>	<i>me</i>		<i>moi</i>
2SG	<i>tu</i>	<i>te</i>		<i>toi</i>
3		<i>se</i>		<i>soi</i>
1PL	<i>nous</i>			
2PL	<i>vous</i>			

TABLE 10: FRENCH PRONOMINAL PARADIGM {1,2, 3}

	CLITIC (WEAK)		NON-CLITIC (STRONG)
	NOM	ACC	
SG	<i>il</i>	<i>le</i>	<i>lui</i>
SG.FEM	<i>elle</i>	<i>la</i>	<i>elle</i>
PL	<i>ils</i>	<i>les</i>	<i>eux</i>
3L.FEM	<i>elles</i>		<i>elles</i>

TABLE 11: FRENCH PRONOMINAL PARADIGM { NUMBER, GENDER }

Under the view that paradigm structure constrains interpretation, the presence of a dedicated local domain form has predictable consequences. To see this, consider the feature specification for 3<sup>rd</sup> person forms shown in table 12.

FORM	CATEGORY	CASE	PERSON	NUMBER GENDER	LOCAL DOMAIN FORM
<i>lui</i>	∅				
<i>le</i>	∅	ACC			
<i>la</i>	∅	ACC		FEM	
<i>les</i>	∅	ACC		PL	
<i>se</i>	∅	ACC	{3}		✓

TABLE 2: FEATURE SPECIFICATION FOR FRENCH 3<sup>RD</sup> PERSON PRONOUNS

Amongst the *l*-forms the strong non-clitic form *lui* is the least specified, differing from the weak clitic forms in terms of the absence of a case specification (Accusative). Consequently, in accusative contexts, *le* blocks *lui* (63). Elsewhere *lui* may be locally bound or locally free, (64).



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- (63) a. *Jean<sub>X</sub> le<sub>Y</sub> voit*  
 J. 3.acc sees  
 'Jean sees him'
- b. \**Jean<sub>X</sub> lui<sub>Y</sub> voit*  
 J. 3 sees

- (64) &*Jean<sub>X</sub> est fier de lui<sub>X/Y</sub>.*  
 J. is proud of 3  
 'Jean is proud of himself/him''

On our analysis, the fact that *lui* is used as a local domain form, correctly predicts that it supports bound variable anaphora (65).

- (65) &*Jean est fier de lui, et Lucie l'est aussi.*  
 J. is proud of 3sg, and L. it is also  
 'Jean is proud of him(self), et Lucie is too'

= (i) ...and **Lucie** is proud of **herself** too.' (BVA)  
 $\lambda y$  [y is proud of y]

= (ii) ...and **Lucie** is proud of **him** too.'  
 $\lambda y$  [y is proud of **Jean**]

Moreover, *se* and *le* differ in their specification in that *se* is specified as a dedicated local domain form. Consequently, in the context of local binding, *se* blocks *le* (66).<sup>9</sup>

- (66) a. *Jean<sub>X</sub> se<sub>X</sub> voit*  
 J. 3.ACC.LBA sees  
 'Jean sees himself'
- b. \**Jean<sub>X</sub> le<sub>X</sub> voit*  
 J. 3.ACC sees

French paradigmatic structures show that, within the same language, there need not be a dedicated local domain form (1<sup>st</sup> and 2<sup>nd</sup> person), but there may be (3<sup>rd</sup> person). Crucially, the absence of a dedicated local domain form allows for "condition B" forms to be locally bound, i.e. there is no blocking. In turn, the possibility of functioning as a local domain form correlates with the possibility of supporting bound variable anaphora.

<sup>9</sup> Our expectation is that the dedicated local domain form will always have a feature responsible for local binding. For English the relevant specification is the presence of body-part noun. As for French *se*, we expect there to be such a feature as well. For relevant discussion see Kayne 2003.

#### 5.4 Blocking: The Dogon Paradigm

We have proposed that a local domain form supports bound variable anaphora. Consistent with this, we have seen that if a language has dedicated reflexive possessors, then they support bound variable anaphora. If logophoric pronouns are analyzed as A-bar bound variables (Déchaine and Wiltschko 2002), and if local domain pronouns support bound variable anaphora, then we expect to find languages where the local domain form is logophoric. The dialect variation reported by Heath (2009) in Dogon reflexive possessors and their logophoric use, confirms this.

In Pattern A (found in the Tabi-Sarinyere dialect of Dogon), an invariant reflexive possessor is used as a local domain forms (67)a, with disjoint reference marked by possessive pronouns that contrast 3rd person and non-3rd person forms, (67)b-c.

- (67) pattern A (Tabi-Sarinyere)
- a. John/i drank self's tea
  - b. JohnX drank myY tea
  - c. JohnX drank hisY tea

The connection between reflexive possessors and logophoricity presents itself in the other dialects discuss by Heath. In Pattern B (found in the Jamsay, Beni, and Nanga dialects of Dogon), there is no dedicated local domain form for 1st and 2nd person (68)a, but there is for 3rd person, and it is the 3rd person local domain form which is recruited as the logophor (68)b. We take it to be significant that the reflexive possessor is the one that is recruited as the logophor in Pattern B. This is consistent with our claim that local domain forms support bound variable anaphora, and that logophors are A'-bound variable: we therefore expect that that A'-bound logophors will be recruited from local domain forms.

- (68) pattern B (Jamsay, Beni, Nanga)
- a. John/i drank my tea
  - b. JohnX drank selfX's tea                      3 = logophor
  - c. JohnX drank hisX tea

In pattern C, found in the Najamba dialect of Dogon: there is no dedicated local domain form (69), and it is the 1st person pronoun that is recruited as the logophor.

- (69) pattern C (Tabe-Sarinyere)
- a. John/i drank my tea                      1 = logophor
  - b. JohnX drank hisX/Y tea

We understand the emergence of the 1st person form as the logophor as follows: in the absence of a dedicated local domain form, the selection of the 1st person as the logophor follows from blocking. In pattern C, the 3rd person form may be locally A-bound or locally A-free. Consequently, in contexts of non-local A'-binding, which are the ones relevant for the determination of logophoricity, the selection of the 1st person form is forced because the 3rd person form is already recruited for A-binding.

## 6. Conclusion

The problem that we set out to solve was the following: when and why can 1<sup>st</sup> and 2<sup>nd</sup> person pronouns be construed as bound variables. Since the bound variable interpretation requires that person features be non-indexical, this led us to examine more carefully the contexts in which 1<sup>st</sup> and 2<sup>nd</sup> person are indexical, and the contexts in which they are not. We showed that local domain forms are a reliable diagnostic for non-indexicality: if a 1<sup>st</sup> or 2<sup>nd</sup> person form can be a local domain form, then it can support bound variable anaphora. We showed how this applies in English, French, Russian, and Hindi. We further proposed that pronoun denotations are structurally determined: while 1<sup>st</sup> and 2<sup>nd</sup> person indexical pronouns are D-forms, non-indexical pronouns are  $\varphi$ -forms. We reviewed morpho-syntactic evidence that was consistent with the claim that pronouns have a layered syntactic structure: some languages have homophonous D- and  $\varphi$ -forms (e.g. English, French), other languages have transparent morphology where a D-form contains a  $\varphi$ -form as sub-constituent (e.g. Halkomelem), and yet other languages have suppletive D- and  $\varphi$ -forms (e.g. Plains Cree). In all of these cases, D-forms fail to support bound variable anaphora, while  $\varphi$ -forms support it. We showed that the selection of a particular form as the local domain form was regulated by principles of paradigmatic structure: in contexts of local binding, a more specified local domain form blocks other forms. We illustrated this with examples from English, French, and Dogon.

In this way, what seems at first glance to be a fairly innocent observation—the fact that 1<sup>st</sup> and 2<sup>nd</sup> person persons may be indexical or non-indexical—has far-reaching consequences for our understanding of how pronoun denotations arise, how they are structured in the syntax, and how this syntactic structure is mirrored in the morphology. There are many avenues of research that we have left open. For example, there is the question of whether D-forms are hidden definite descriptions, in the sense of Elbourne (2005). If so, then our proposal will also have consequences for our understanding of the structural basis of donkey anaphora. Other questions arise regarding the details of the blocking effects that we have discussed. For example, what is the nature of the relation between regular pronouns and emphatic and intensive counterparts, e.g. English *him* vs. *him himself*. French *lui* vs. *lui-même*. Finally, there is the tantalizing relation of logophoricity to non-indexical uses of 1<sup>st</sup> person pronouns, exemplified in Dogon.

More generally, the structural approach to pronoun denotations proposed here has allowed us to uncover previously unnoticed generalizations about the form and meaning of pronouns across a wide range of languages.

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