Person Features and Pronominal Anaphora

Denis Delfitto
Gaetano Fiorin

This article aims at clarifying the role of person at the interface between syntax and the interpretive systems. We argue that first person interpretations of third person pronouns (*de se* readings) stem from the option of leaving the referential index underspecified on the pronoun, thus accounting for the interplay of this phenomenon with the anaphoric usage of first person indexicals (pronoun shifting) and logophoric pronouns. The results include proposals on the connection between the semantics of first person and the syntax of the left periphery, a neo-Davidsonian treatment of the semantics of first person indexicals, and a novel view of pronominal anaphora according to which Higginbotham's (1983) asymmetric relation of linking involves a mechanism of θ-role inheritance tied to the semantics of first person.

Keywords: first person, indexicality, pronominal anaphora, attitudes *de se*, θ-identification, logophoricity, left periphery

This article aims at defining the grammatical import of first person readings in a large variety of phenomena involving pronominal anaphora. A case in point is the *de se/de re* ambiguity that has been discussed in the philosophical and linguistic literature starting with Castañeda 1966. Although it was long believed, even after Castañeda's work, that the first person interpretation of third person pronouns in contexts of propositional attitude had no specific grammatical or even interpretive correlates, it soon became evident that these phenomena may turn out to be strictly intertwined with certain properties that lie at the foundation of the syntax of anaphoric dependencies in human language. On the one hand, Chierchia (1989) has shown that control infinitivals are bound to an unambiguous *de se* reading, with the result that *de se* readings cannot be evaluated independently of the nature of the syntactic structures that express them. In fact, capitalizing on Lewis's (1979) philosophical insights, Chierchia has argued that *de se* readings are tied to a specific property of the syntax-semantics interface, that is, to the fact that complements of verbs of propositional attitude may be property-like (and are sometimes forced to be so as a matter of syntax-semantics mapping). On the other side, the Kaplanian view of first person indexicals as essentially context

dependent (hence as not capable of giving rise to sentence-internal anaphoric dependencies) had to be ''readapted'' when it became clear that Kaplan's ''monsters'' (i.e., anaphoric first person pronouns) are indeed attested in a variety of languages, including Semitic and Dravidian languages (see Schlenker 2003 and the references cited therein). From a technical point of view, Schlenker's work undoubtedly shows that Kaplan's notion of context—including the concomitant distinction between propositional meaning (content) and indexical meaning (character)—can be made flexible enough to account for the anaphoric usage of first person pronouns (pronoun shift phenomena). However, the obvious question that arises here is whether the detected crosslinguistic variation should be entirely discharged into the interpretive component (leading to the formulation of macroparameters of some kind in the semantics) or whether it can be reduced to a morphosyntactic source, that is, to matters of lexical endowment of individual lexical items, as we should expect in a minimalist framework.

Our task here is twofold. First, we would like to show that *de se* readings are the product of a specific type of anaphoric dependency, whose source is in the underspecification of third person pronouns in those languages that do not permit pronoun shift. In doing so, we will emphasize the consequences of our approach for the nature of Higginbotham's (1983) asymmetric relation of linking (see Safir 2004 for a recent discussion) and for the nature of the economy principles that underlie language design. Second, we will attempt to express the semantics of first person in strict neo-Davidsonian terms (adopting and extending the insights developed in Higginbotham 2003). In doing so, we will emphasize that event semantics is a suitable formal tool for the treatment of indexicals when the target is not simply to build up an empirically adequate semantics for the first person but to explain how the syntax of the first person relates to its semantics. More generally, we will try to connect the semantic level at which first person readings, logophoric readings, and *de se/de re* ambiguities are processed with the morphosyntactic level at which (person) feature expression (at a DP level) takes place. The analysis we develop here has important consequences for a number of issues presently under discussion in the literature, from Chierchia's (1989) nonpropositional, property-based approach to attitudes *de se* to Kratzer's (2009) notion of minimal pronouns. An in-depth treatment of all these issues (which are partially orthogonal to each other) would certainly exceed the limits of this article. We will therefore simply sketch the guidelines of our analysis, though we will offer a full-fledged formal modeling of the main insights.

The article is organized as follows. In section 1, we introduce some of the philosophical puzzles concerning indexical meaning, together with some familiar issues concerning *de se* readings and their connection to first person. In section 2, we discuss Kaplan's (1989, 1990) model-theoretic analysis of first person indexicals and how it relates to pronoun shift phenomena. In section 3, we present a detailed analysis of the semantics of first person and first person pronouns, using a neo-Davidsonian event semantics framework as the logical language for formal modeling. In section 4, we consider the shifted interpretations of first person pronouns from the perspective of the semantic approach to first person developed in section 3. In section 5, we elaborate on our comparative account of pronoun-shifting phenomena, capitalizing on the basic insight that pronoun underspecification and linking outscore (given the zero cost of syntactic dependencies) full person

feature expression on pronominal DPs in the realization of first person readings. In section 6, we consider the way in which the semantics of logophoric pronouns relates to the semantics of first person and to the *de se/de re* ambiguity. In section 7, we summarize our conclusions.

1 Propositional Meaning, Indexical Meaning, and *De Re/De Se* Ambiguity

Consider sentences (1) and (2).

(1) His pants are on fire.

(2) My pants are on fire.

In the case in which both (1) and (2) are uttered by David and in which *his*, in sentence (1), is used to refer to David, both (1) and (2) express the fact that David's pants are on fire. Let us call this objective meaning that (1) and (2) can share the *propositional meaning*. However, even in the case in which (1) and (2) express the same propositional meaning, there is a significant difference between David's uttering (1), although referring, perhaps accidentally, to David himself, and David's uttering (2). The difference is that (2), but not (1), says something about the context of utterance. It says that the man whose pants are on fire is the speaker. Let us call this extra meaning provided by (2) the *indexical meaning*. In the situation described above, (1) and (2) have the same propositional meaning but different indexical meanings.

When somebody's utterance or thought is reported by means of an indirect report, the indexical meaning of that utterance or thought is lost. Suppose that John wants to report the fact that David said (1). (3) is a good way to report such a fact. Suppose, next, that John wants to report the fact that David said (2). (3) is still a good way to report such a fact but, crucially, (4) is not.

(3) David said that his pants are on fire.

(4) David said that my pants are on fire.

Uttered by John, (4) can only mean that David said that *John's* pants are on fire. That is, in order for John to report the fact that David said (2), the first person pronoun of David's original utterance must be turned into a third person pronoun. Unfortunately, in this way the indexical meaning of David's original utterance is irretrievably lost. Only the propositional meaning of David's utterance is preserved.

Given that the indexical meaning of utterances is lost in indirect reports, a sentence like (3), under the reading in which *his* refers to David, is ambiguous. (3) is compatible both with a situation in which David's original utterance was (1) and with a situation in which David's original utterance was (2). This ambiguity, originally noticed by Castañeda (1966), is often referred to as *de re/de se* ambiguity, after Lewis (1979). Consider Castañeda's example.

(5) John thinks that he is a war hero.

Under the *de se* reading, (5) means that John thinks that he is a war hero in full awareness of the fact that the individual that he considers a war hero is he himself. In other words, under this reading John is entertaining the first person thought *I am a war hero*. Under the *de re* reading,

(5) means that John thinks that he is a war hero without being aware that the individual that he considers a war hero is actually he himself (as in Castañeda's original scenario of the war veteran suffering from amnesia). Crucially, in the *de re* scenario, John's original thought is a third person thought of the kind *He is a hero*, with the same propositional meaning as the first person thought *I am a hero*, but with a very different indexical meaning.

2 Kaplan's Theory of Indexicality and Shifted Indexicals

The theory that Kaplan (1989) proposes for indexical terms, like the first person possessive pronoun *my*, is meant to explain why (4) cannot be used to report the fact that David said (2). Kaplan's theory relies on two main assumptions.

> (6) The referent of a pure indexical depends solely on the context of the *actual* speech act.

> (7) Context values cannot be manipulated by any logical operator.

According to Kaplan's theory, the truth conditions associated with natural language sentences are evaluated relative to a *context of utterance*, whose role is to provide, among other things, values such as *speaker* and *addressee*. Let us assume, together with Kaplan, that first person pronouns are pure indexicals and that they denote the speaker in the context of utterance. Given these assumptions, (4) can only mean that David said that the speaker in the context of the *actual speech act* has pants on fire. It cannot mean that David said that the speaker in the context of the *reported speech act* has pants on fire since, given (7), context values are given once and for all and cannot be manipulated.

   Schlenker (1999, 2003) discusses the case of Amharic, where it is possible to use a sentence like (4) to report the fact that David uttered (2). Here is the relevant example (from Schlenker 1999:98).

> (8) John əne Jägna näw alä.
>   John I   hero am said
>   'John said that I am a hero/John$_i$ said that he$_i$ is a hero.'

Sentence (8) has two readings. According to the first reading, John says that the speaker of the actual speech act is a hero. According to the second reading, John says that the speaker of the reported speech act (i.e., John) is a hero. Under the second reading, the sentence reports the fact that John uttered the first person sentence *I am a hero*. Contrary to English, Amharic allows a first person pronoun to refer to the speaker of the reported speech act. It is thus possible, in Amharic, to retain the indexical meaning of an utterance or thought even when that utterance or thought is relayed by means of an indirect speech report. Similar facts are reported for the second person (see Leslau 1995).

   At this point, two things need to be clarified. First, Schlenker (2003:68–69) provides conclusive evidence that examples like (8) are not cases of direct speech reports. Second, Schlenker (2003:69–70) provides convincing evidence that it is only in attitude reports that Amharic first and second person pronouns can be *shifted*—that is, can refer to the subject of a reported speech act.

3 The Syntax and Semantics of First Person Pronouns

In this section and the next, we propose a novel account of the first person that predicts the ambiguity found in Amharic and other pronoun shift languages. We then try to account for the fact that in English, and more generally in Indo-European, the shifted interpretation of the first person is blocked. The theory we will propose is an attempt (a) to give semantic content to the notions of first and second person, without introducing special individuals like speaker and addressee into the ontology, and (b) to explain in a principled manner the variation between ''shifting-friendly'' and ''non-shifting-friendly'' languages. In fact, the question arises whether it is correct to discharge the burden of explanation into the semantic component, by simply exploiting the context parameter among the familiar parameters of model-theoretic interpretation, and by entirely disregarding the syntax-semantics interface. As we will show, there are clear indications that the first person is tied to the left periphery (see especially Rizzi's (1997) fine-grained analysis within the cartographic framework) and that the source of the crosslinguistic variation detected within this empirical domain resides in the interaction between lexical matters (the featural makeup of indexical pronouns) and interface-driven principles of economy of computation, as expected according to minimalist guidelines (see Chomsky 1995 and much subsequent work).

We start from Evans's (1982:213) insight that ''in a self-conscious thought, the subject must think of an object in a way that permits it to be characterized as the subject of that very thought.'' For example, the thought *I am a hero*, as entertained by John, is a thought in which John conceives of the object of his thought as the *subject* of that thought. That is, John conceives of the individual *x* that he considers a hero as the very individual entertaining the thought that *x* is a hero. A similar view has been suggested by Higginbotham (2003), who proposes that when John is in the state of thinking *I am a hero* (9a), what he thinks is that *the subject of that state of thinking is a hero*. Elaborating on Higginbotham's idea, which in his paper is couched in a Davidsonian version of event semantics (see Davidson 1967), we propose the truth conditions in (9b) for the sentence in (9a).

(9) a. I am a hero.
　　b. *Assertion:* $\exists e.$ Be-a-hero(e,x)
　　　Presupposition: $\exists e'. R(e',x,{}^{\wedge}\exists e.$ Be-a-hero$(e,\sigma(e')))$

Roughly, according to (9b), (9a) asserts that the individual *x* is a hero and presupposes that the individual *x* is also the individual entertaining the thought *the author of the thinking is a hero*. The logical forms in (9b) deserve some clarifications.

(a) The pronoun *I* is treated in the semantics as a free variable. This is consistent with the view that pronouns in general denote variables over individuals. At the interpretive level, variables can either be assigned a contextually defined value or be bound by an operator.

(b) When applied to an event, the σ operator, introduced by Higginbotham (2003), provides the individual whose mental state is involved in that event—that is, the sentient subject or *Experiencer* in that event.

(c) In (9b), we have introduced an abstract relation *R* of propositional attitude. Roughly, an event of *R* is an event entailing a relation between a proposition and an individual, such that the

individual is the bearer of the mental state of entertaining the proposition. In order to have some handy terminology, we use the English verb *entertain* to refer to the relation *R*. Given this terminology, the presupposition in (9b) can be said to state that *x* is the individual participating in the event *e′* of entertaining the proposition $\sigma(e′)$ *is a hero*.

(d) We have assumed that the first person pronoun introduces a presupposition. This goes in parallel with the presuppositional treatment of gender features introduced by Cooper (1983). According to this approach, a sentence like (10a) has the truth conditions in (10b). That is to say, the sentence can be evaluated only under the condition that *x* is a female individual; otherwise, it remains undefined. Similar considerations apply to (9): the sentence *I am a hero* can be evaluated only if the presupposition in (9b) holds.

(10) a. She is a hero.
    b. *Assertion:* $\exists e.$ Be-a-hero(e,x)
       Presupposition: Female(x)

(e) In a neo-Davidsonian framework (see Parsons 1990), verbs denote predicates of events and the participants in the event are defined via θ-roles, which are operators from events into individuals or from events into propositions. In such a framework, (9b) should be rewritten as (11). In what follows, we fully endorse Parsons's neo-Davidsonian semantics of events and consider expressions like the ones in (9b) as notational shortcuts for the formulas in (11).

(11) *Assertion:* $\exists e.$ Be-a-hero(e) $\wedge$ Theme(e) = x
    Presupposition: $\exists e′.$ R(e′) $\wedge$ Exp(e′) = x $\wedge$ Theme(e′) = ^[$\exists e.$ Be-a-hero(e) $\wedge$ Theme(e) = Exp(e′)][1]

---

[1] Formula (11b) calls for some elucidations about the system of modal logic we are adopting. Notice, in particular, that the first existential quantifier in the formula (11b) binds an occurrence of the variable *e′* that is within the scope of an intensional operator. This raises a number of cross-world identity issues related to the choice of the model of evaluation of (11). In order to maintain the validity of the converse of the Barcan formula ($\Box \forall xA \rightarrow \forall x \Box A$; see Garson 1984), we assume a model in which the assignment function and the domain of individuals are constant across possible worlds. Accordingly, a formula of the type $\exists x \Box P(x)$ is true in the model if and only if there is at least one constant assignment of values to *x* such that *P(x)* is true in every possible world in the model.

However, the fact that the assignment of values to variables is constant across worlds does not necessarily entail that a term such as *Exp(e′)* is a rigid designator (for the reasons why we want *Exp(e′)* not to be a rigid designator, see footnote 13). In Parsons's (1990) event semantics, θ-roles are functions from the domain of events into the domain of individuals (or, in some cases, into propositions). Accordingly, we maintain that in different possible worlds a θ-role may map the same event into different individuals.

This move seems to be independently motivated by the need to provide an empirically adequate modeling of *de se* thoughts. More particularly, notice that according to the approach we are trying to implement here, what characterizes a first person thought such as *I am a hero* is the fact that the individual having the thought identifies the individual being said to be a hero with himself; in (11b), this identity is ensured by the identity between *Theme(e)* and *Exp(e′)*. However, this identity has nothing to do with the beliefs that one has about himself. Suppose, for example, that John believes that he is Napoleon. His false belief about himself is not going to prevent him from having the first person thought *I am a hero*. In that case, John would identify who he believes to be the Experiencer in the event of asserting *I am a hero* (i.e., Napoleon) with the individual that he is asserting to be a hero. That is to say, the sentence *I am a hero*, as uttered by John, presupposes that John identifies the individual being said to be a hero with the individual uttering the sentence, no matter who John believes this individual is.

So, what is the meaning of the sentence *I am a hero* according to (11)? The sentence asserts that *x* is a hero and presupposes that *x* is the Experiencer in an event *e'* of entertaining the proposition *the Experiencer in e' is a hero*.

Let us now start to implement these intuitive considerations technically. And let us start with a serious challenge. The semantics proposed in (11) faces a compositionality problem. The problem arises when we try to provide a semantics for the first person pronoun *I* that, interacting compositionally with its sister in the structure, delivers the desired truth conditions. Consider again the sentence *I am a hero* and its (simplified) syntactic structure, as represented in (12).

(12)   S
         /   \
       I   am a hero
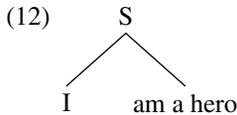
The idea developed in (11) is that *I* introduces a presupposition restricting the referent of the pronoun to those individuals that are in an attitudinal relation with what is asserted by the sentence. But what is asserted by the sentence corresponds to the denotation of the node S. *I* takes part in the compositional derivation of the meaning of S; it is the subject of S. Then, how is it possible that *I* contributes to the meaning of S and at the same time introduces a presupposition whose content is defined by S itself?

In order to provide a solution to this compositionality problem, we lay out our assumptions concerning the internal structure of third person pronouns. Following Heim and Kratzer (1998), and abstracting away from number and number-related issues, we simply assume that a third person pronoun like *she* has the structure in (13).

(13)   DP
             /   \
       [feminine]   DP
                      |
                    pro$_i$
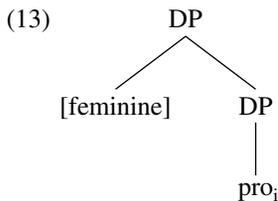
In (13), *she* is the spell-out of the combination of a pronominal DP bearing a referential index with a feminine gender feature. The pronominal DP, whose denotation is of type ⟨e⟩, is interpreted according to Heim and Kratzer's (1998) Pronoun and Trace Rule (PT).

(14) *Pronoun and Trace Rule (PT)*
     If α is a pronoun or trace, i is an index, and g is a variable assignment whose domain includes i, then $[\![\alpha_i]\!]^g = g(i)$.

The gender feature denotes a *partial function* (i.e., a function defined only for a subset of the members of its domain) of type ⟨e,e⟩, defined only for those individuals who are female.

(15) $[\![[\text{feminine}]]\!] := \lambda x: \text{Female}(x). \ x$

Given PT (14) and the denotation in (15), (13) ends up denoting, relative to an assignment function *g*, the individual *g(i)*, provided that *g(i)* is a female individual.

What about third person features? We take the view that there are no third person features. This view (see, e.g., Kratzer 2009, Schlenker 2003) is supported by examples like (16) and (17), from Schlenker 2003:85.

(16) He looks like me . . . Mmh, he must be me, in fact he is me!

(17) Every man (including me) likes his mother.

These examples show that a third person pronoun can be used to refer to (or range over individuals including) the speaker of the actual speech act. If there were a third person feature with a denotation along the lines of (18), the examples in (16) and (17) would be cases of presupposition failure. This is an undesired result.

(18) ⟦[3rd person]⟧ := λx: x is not the speaker (or addressee) in the actual speech act. x

We assume, therefore, that what is normally referred to as third person actually corresponds to the absence of a person feature (see Benveniste 1966).[2]

It is now time to propose a syntax and semantics for first person pronouns that deals with the compositionality problem described above. A first person pronoun like *I* has the structure in (19) (again, we abstract away from number and number-related features).

(19)

$$\begin{array}{c} \text{DP} \\ \diagdown \\ \text{[1st person]} \quad \text{DP} \\ | \\ \text{pro}_i \end{array}$$
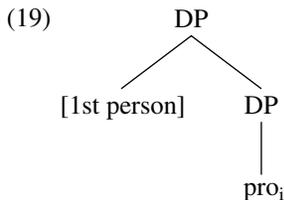
The lower DP is interpreted according to PT (14). As for the first person feature, we propose the denotation in (20), where *R* is the same type of abstract attitude relation discussed above.

(20) ⟦[1st person]⟧ := λx. λP: ∃e. R(e) ∧ Exp(e) = x ∧ Theme(e) = ^[P(Exp(e))]. P(x)

The denotation of the first person feature, combining via functional application with the denotation of the pronominal DP, delivers the following denotation for the first person pronoun:

(21) ⟦[1st person [pro$_i$]]⟧^{g} = λP: ∃e. R(e) ∧ Exp(e) = g(i) ∧ Theme(e) = ^[P(Exp(e))]. P(g(i))

In a nutshell, the first person feature performs two different functions: (a) it introduces a presupposition, and (b) it lifts the denotation of the pronoun from type ⟨e⟩ to type ⟨⟨e,t⟩t⟩. In fact, according

---

[2] We derive the fact that third person pronouns normally exclude reference to the speaker (or addressee) by Gricean implicature: if the speaker wanted to refer to the speaker/addressee, she would have used a first/second person pronoun; she did not; therefore, she did not intend to refer to the speaker/addressee.

to (21), a first person pronoun denotes a set of properties: roughly, the set of properties such that $g(i)$ ''entertains'' the thought of possessing them. Intuitively, this appears indeed an empirically satisfactory refinement, for first person DPs, of the traditional Montagovian insight that ''individuals'' may be lifted to the type of a generalized quantifier by conceiving them as sets of properties.

On the syntactic side, we propose that first person pronouns must covertly move to a higher position in the clause structure. More precisely, we propose that first person pronouns must move to the specifier of a dedicated functional head in order to value an unvalued F-feature; for reasons we will discuss in a moment, we identify this functional head with Force (Rizzi 1997). Accordingly, (22) provides the LF representation of the sentence *I am a hero* after covert movement of *I* to Spec,Force has taken place. Following Heim and Kratzer (1998), we assume that DP-movement is interpreted via the Predicate Abstraction Rule (PA; (23)). The moved DP leaves an indexed trace, interpreted via PT, and introduces an index binding the trace right below the moved DP. PA applies at the branching node dominating that index.[3]

(22)
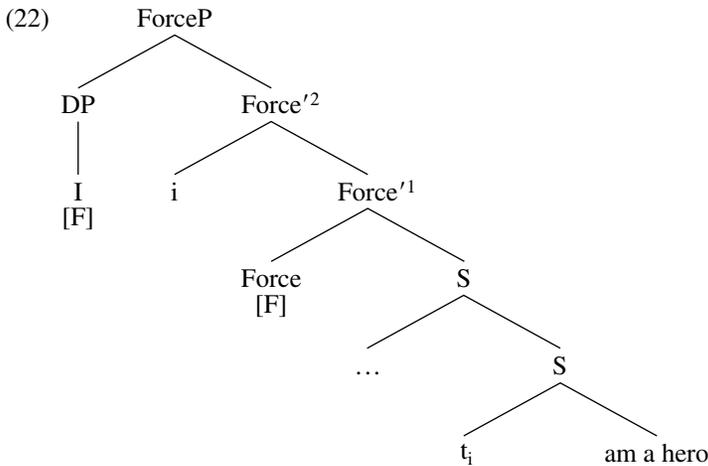
(23) *Predicate Abstraction Rule (PA)*
Let α be a branching node with daughters β and γ, where β dominates only a numerical index i. Then, for any variable assignment a, $[\![\alpha]\!]^a = \lambda x. [\![\gamma]\!]^{a[i\to x]}$.

It is now possible to show how the proposed syntax and semantics provide the desired result for a first person sentence like *I am a hero*. Consider the LF representation in (22) and assume that the Force$'^1$ node has the denotation in (24a) (we have introduced the superscripts only to differentiate the nodes). Then, by PA the Force$'^2$ node receives the denotation in (24b), which, combining with the denotation of the first person pronoun via functional application (24c), delivers the truth conditions in (25).

---

[3] In other words, we maintain Heim and Kratzer's (1998:188) assumption that a representation such as (i) is a notational abbreviation for (ii).

(i) $[_X \beta_i [_Y \ldots t_i \ldots]]$
(ii) $[_X \beta [i [_Y \ldots t_i \ldots]]]$

(24) a. $[\![\text{Force}'^1]\!]^g = \exists e.\ \text{Be-a-hero}(e) \wedge \text{Theme}(e) = g(i)$

    b. $[\![\text{Force}'^2]\!]^{g[i \to x]} = \lambda x.\ \exists e.\ \text{Be-a-hero}(e) \wedge \text{Theme}(e) = x$

    c. $[\![I]\!]^g ([\![\text{Force}'^2]\!]^g) = [\lambda P: \exists e'.\ R(e') \wedge \text{Exp}(e') = g(i) \wedge \text{Theme}(e') = \,^{\wedge}[P(\text{Exp}(e'))].$
      $P(g(i))]\ (\lambda x.\ \exists e.\ \text{Be-a-hero}(e) \wedge \text{Theme}(e) = x)$

(25) *Assertion:* $\exists e.\ \text{Be-a-hero}(e) \wedge \text{Theme}(e) = g(i)$

    Presupposition: $\exists e'.\ R(e') \wedge \text{Exp}(e') = g(i) \wedge \text{Theme}(e') = \,^{\wedge}[\exists e.\ \text{Be-a-hero}(e) \wedge$
    $\text{Theme}(e) = (\text{Exp}(e'))]$

Comparing (25) with (11) should make it clear that the syntax and semantics developed here for the first person provide the desired truth conditions in a compositional fashion.

However, the denotation of the first person pronoun as proposed in (21) needs to undergo an important refinement. Consider again the sentence *I am a hero* as uttered by John. Do the truth conditions derived in (25) guarantee that *I* ends up referring to John? In more technical terms, does the presupposition in (25) guarantee that John and only John is the semantic value of the assignment *g(i)* that satisfies the presupposition?

At first sight, the answer seems to be positive. Imagine a conversation that includes just you and John. Imagine then that John utters the sentence *I am a hero*. According to (25), the only assignment of a semantic value to *g(i)* under which the sentence can be evaluated must be such that the assigned value satisfies the presupposition in (25): the value of *g(i)* must be the individual entertaining the thought according to which *the Experiencer of that very thought is a hero*. Intuitively, there is only one individual that can satisfy this presupposition: the individual producing the sentence—who is, under standard circumstances, the individual who ''entertains'' the proposition expressed by the sentence by uttering the latter. In the context under discussion, this individual is John.

Consider, however, a context including two individuals—say, John and Bill—both bearing a propositional attitude according to which the bearer of that propositional attitude is a hero.[4] In such a context, an utterance of *I am a hero* by John might be understood, according to (25), as asserting that Bill is a hero. The reason is that Bill satisfies the presupposition in (25) and therefore qualifies as a suitable value for *g(i)*.

Intuitively, the reason for this incorrect result is that, in the presupposition in (25), *e'* is bound by an existential quantifier, which fails to univocally identify *e'* with the event corresponding to the actual utterance of the sentence. In the context under discussion, it fails to identify *e'* with the event corresponding to John's entertaining the proposition that the Experiencer in that event is a hero.

The solution to this problem can be developed in two steps. First, we replace the existential quantifier with $\exists!$, which is an existential quantifier endowed with a uniqueness condition. Accordingly, we modify (20) as in (26).

(26) $[\![[\text{1st person}]]\!] := \lambda x.\ \lambda P: \exists! e.\ R(e) \wedge \text{Exp}(e) = x \wedge \text{Theme}(e) = \,^{\wedge}[P(\text{Exp}(e))].\ P(x)$

---

[4] Thanks to an anonymous reviewer for suggesting this example to us.

The denotation in (26) requires that there is a unique event *e* of entertaining the proposition *the Experiencer in e is P* whose Experiencer is *x*. This denotation delivers the truth conditions in (27) for the sentence *I am a hero*.

(27) *Assertion:* $\exists e$. Be-a-hero(e) $\wedge$ Theme(e) = g(i)
Presupposition: $\exists!e'$. R(e') $\wedge$ Exp(e') = g(i) $\wedge$ Theme(e') = ^[$\exists e$. Be-a-hero(e) $\wedge$ Theme(e) = (Exp(e'))]

Introducing a uniqueness condition does not suffice to solve the problem, however. According to (27), the sentence *I am a hero* as uttered by John in the context under discussion (where there are two bearers of the very same propositional attitude) should remain undefined. In fact, the context includes more than one event of propositional attitude of the relevant type and therefore does not satisfy the uniqueness condition. However, we want a semantics that delivers the utterer of the sentence as the referent of the first person pronoun, even in contexts where there are two or more bearers of the very same propositional attitude.

The view of the syntax-semantics interface developed in this article suggests a quite elegant solution for this problem. Our second step consists in the hypothesis that the uniqueness condition has to be evaluated within the context provided by the syntactic category Force. Within the cartographic approach (see Cinque 1999, Rizzi 1997), the left periphery represents a set of functional positions encoding the interface between grammar and discourse/context. In particular, matrix Force encodes the relation between the propositional content of S and the context; embedded Force encodes the relation between the propositional content of S and the superordinate structure. Here, we propose a specific implementation of this insight: the role of Force consists in restricting the set of events of propositional attitude potentially associated with the propositional content of a given sentence S to the specific event of propositional attitude selected by Force and whose product is that very S. In the case of embedded Force (a case we will discuss in some detail in the following section), the relevant event is straightforwardly identified with the event expressed by the matrix clause; in the case of matrix Force, which is the case that concerns us now, the relevant event is identified with the propositional attitude involved in uttering the sentence selected by Force.

In this way, we obtain the context restriction effect required for satisfaction of the uniqueness condition encoded by $\exists!$. More precisely, the uniqueness condition associated with the first person feature has to be satisfied within the context provided by Force: the only relevant propositional attitude is the attitude involved in uttering S, to the effect that accidental bearers of the same attitude are correctly excluded, since they are not involved in uttering S.[5]

Turning to the example discussed above, in which both John and Bill are bearers of a propositional attitude according to which the bearer of that propositional attitude is a hero, Force

---

[5] In this respect, our approach does not aim at eliminating context dependency from the interpretation of first person pronouns; rather, it builds a more restrictive notion of context dependency, by taking into account the syntactic locus where context dependency is encoded.

restricts the set of events of propositional attitude potentially associated with the propositional content expressed by S in (22) to the unique event of propositional attitude that consists in uttering S. John is thus correctly predicted to be the referent of the first person pronoun.

To conclude, first person displacement to Force not only satisfies the compositionality requirements discussed above—crucially, it also contributes to the definition of the context within which the uniqueness condition on the relevant event of propositional attitude has to be satisfied.[6]

Let us now return to the observation we started with: there is a significant difference between uttering (1) and uttering (2), repeated here as (28a) and (29a), even when they express the same propositional meaning. Consider the truth conditions predicted by the present theory for the two sentences.

(28) a. His pants are on fire.
　　b. *Assertion:* $\exists e.$ Have-pants-on-fire$(e) \wedge$ Theme$(e) = g(i)$
　　　 Presupposition: $g(i)$ is a male individual

(29) a. My pants are on fire.
　　b. *Assertion:* $\exists e.$ Have-pants-on-fire$(e) \wedge$ Theme$(e) = g(i)$
　　　 Presupposition: $\exists! e'. R(e') \wedge Exp(e') = g(i) \wedge$ Theme$(e') = {}^\wedge[\exists e.$ Have-pants-on-fire$(e) \wedge$ Theme$(e) = Exp(e')]$

Both sentences assert that *g(i)* has pants on fire. Yet (28a) presupposes that *g(i)* is a male individual, whereas (29a) presupposes that *g(i)* is the individual participating in the (unique) event *e′* of entertaining the proposition *the Experiencer in e′ has pants on fire*. These truth conditions seem entirely adequate to express the difference between (28a) and (29a) that we purported to capture.[7]

---

[6] The proposal that there exists a tight relation between the first person and the left periphery is not new in the literature (see, e.g., Baker 2008, Bianchi 2003, 2006, Sigurðsson 2004, Speas and Tenny 2003). As we have shown, it follows from the basic cartographic assumption that the left periphery represents the interface between grammar and context. In this respect, a common proposal is that one or more dedicated projections, located in the left periphery, designate speaker and addressee of the speech act. Only some of these proposals, however, posit that such projections are the arguments of a speech-act-denoting head. These analyses are similar to the implicit performative analysis of Ross (1970), in that they posit the existence in the syntactic structure of a silent performative verb encoding the illocutionary force of the sentence. As is well known, Ross's performative analysis has faced criticisms and has been shown to be empirically inadequate (see, e.g., Fraser 1971, Morgan 1973). The analysis proposed here does not qualify as a performative analysis, since the Force head to which we have linked first person pronouns is not a silent performative verb.

[7] The extension of the proposed semantics to shifted second person pronouns is completely straightforward and actually worth considering in order to elucidate a number of conceptual consequences of our approach. For reasons of space, a detailed treatment will have to wait for a different occasion. For the interested reader, here is the basic insight. The semantics we would associate to second person pronouns is expressed in (i).

(i) $[\![2\text{nd person } [\text{pro}_i]]\!]^g = \lambda P: \exists! e. R(e) \wedge$ Goal$(e) = g(i) \wedge$ Theme$(e) = {}^\wedge[P(\text{Goal}(e))]. P(g(i))$

A shifted use of second person pronouns entails that *you* refers to *Mary* in a sentence like (ii). The LF representation that we would associate to sentence (ii) under the shifted reading of the pronoun is given in (iii), and the semantics of (ii) is expressed by (iv).

(ii) David told Mary that you are a hero.

(iii) [$_{ForceP}$ David told Mary [$_{ForceP}$ you i t$_i$ are a hero]]

(iv) *Assertion:* $\exists e.$ Tell$(e) \wedge Exp(e) = David \wedge$ Goal$(e) = Mary \wedge$ Theme$(e) = {}^\wedge[\exists e'.$ Be-a-hero$(e') \wedge$ Theme$(e') = g(i)]$
　　 Presupposition: $\exists! e. R(e) \wedge$ Goal$(e) = g(i) \wedge$ Theme$(e) = {}^\wedge[\exists e'.$ Be-a-hero$(e') \wedge$ Theme$(e') = Goal(e')]$

4 Shifted First Person Pronouns

As observed above, (30) can only express, in Kaplanian terms, an indexical interpretation: John says that the individual identified with the speaker in the actual speech act is a hero. However, it was also observed that the Amharic counterpart of (30) admits a second interpretation. According to this interpretation, which we will call the *shifted* interpretation, the first person pronoun is used to refer to John as the author of the embedded sentence *I am a hero*.
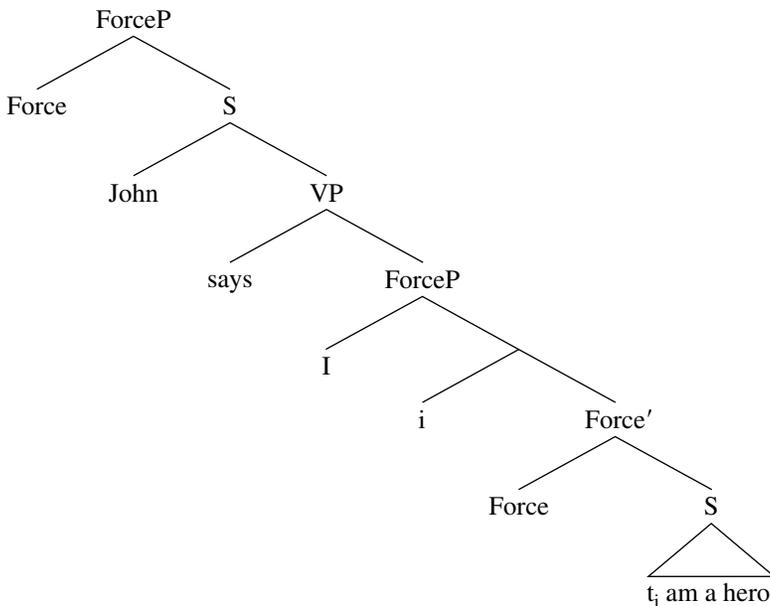
(30) John says I am a hero.

Let us assume the principles in (31) and (32) and consider the interpretation predicted for (30) by our theory. (33) provides the LF representation associated with (30), where *I* has undergone covert movement to the (specifier of the) closest c-commanding Force. (34) reports the interpretation of (30), relative to the assignment function *g*.

(31) A first person pronoun must (covertly) move to the specifier of the closest c-commanding Force head in order to value its F-feature.

(32) Verbs of propositional attitude always select a ForceP complement.

(33)

```
                  ForceP
                 /      \
            Force        S
                        / \
                   John    VP
                          /  \
                      says    ForceP
                             /   \
                            I     \
                           / \     \
                          i   Force'
                             /   \
                        Force     S
                                 /◿\
                            t_i am a hero
```

(34) *Assertion:* $\exists e.\ Say(e) \wedge Exp(e) = John \wedge Theme(e) = {}^\wedge[\exists e'.\ Be\text{-}a\text{-}hero(e') \wedge Theme(e') = g(i)]$
Presupposition: $\exists!e.\ R(e) \wedge Exp(e) = g(i) \wedge Theme(e) = {}^\wedge[\exists e'.\ Be\text{-}a\text{-}hero(e') \wedge Theme(e') = Exp(e)]$

According to (34), (30) asserts that John says that *g(i)* is a hero and presupposes that *g(i)* is the individual participating in the event *e* of entertaining the proposition *the Experiencer in e is a*

hero. The only assignment under which the sentence can be valued is $g(i)$ = John, since it is only John who satisfies the presupposition according to which the individual being said to be a hero is also the individual asserting that he himself is a hero.

As it is, our analysis makes two wrong predictions. First, Amharic sentences of the type in (30) are ambiguous between a deictic interpretation and a shifted interpretation; however, our theory predicts only the shifted interpretation. Second, English sentences of the type in (30) have only a deictic interpretation; our theory predicts only the shifted interpretation. We thus raise the following research questions: (a) How is the deictic interpretation derived, in the case of sentences like (30)? (b) Why is the shifted interpretation not available in English, in the case of sentences like (30)?

Let us first consider the derivation of the deictic interpretation of (30). If the first person pronoun occurring in the embedded clause could move to the specifier of matrix Force, we could straightforwardly derive the deictic interpretation. Consider the LF representation in (35), pretending for a moment that it is a well-formed syntactic representation of (30).

(35)
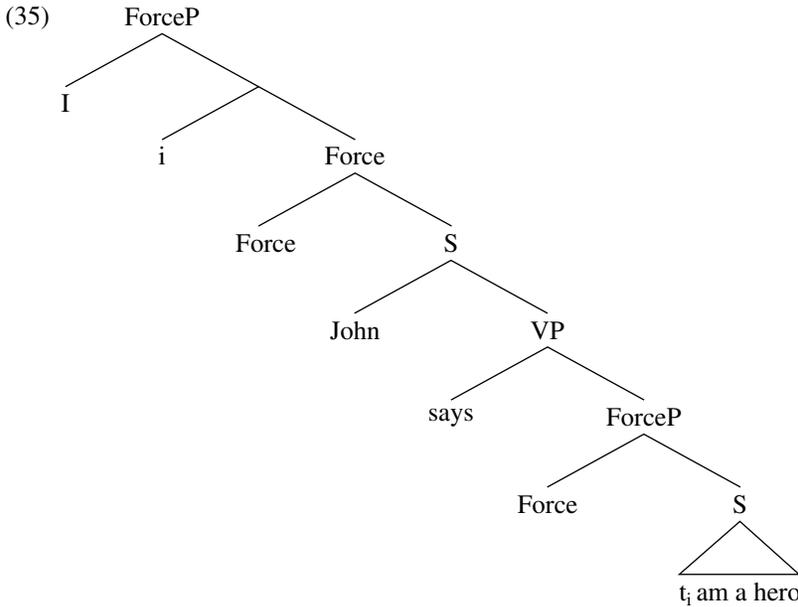
By maintaining the denotation of the first person feature proposed in (26) and by applying the interpretive rules introduced so far, (35) would deliver the truth conditions in (36).

(36) *Assertion:* $\exists e$: Say(e) $\wedge$ Exp(e) = John $\wedge$ Theme(e) = $^\wedge[\exists e'.$ Be-a-hero(e') $\wedge$ Theme(e') = g(i)]

Presupposition: $\exists!e$. R(e) $\wedge$ Exp(e) = g(i) $\wedge$ Theme(e) = $^\wedge[\exists e'.$ Say(e') $\wedge$ Exp(e') = John $\wedge$ Theme(e') = $^\wedge[\exists e''.$ Be-a-hero(e'') $\wedge$ Theme(e'') = Exp(e)]]

(36) is the desired result. According to (36), (30) presupposes that $g(i)$ is the individual participating in the event e of entertaining the proposition *John says that the Experiencer in e is a hero*. Hence, (36) corresponds to the deictic interpretation of (30).

However, (35) is not a well-formed LF representation. *I* cannot move to the matrix Force because such movement is blocked by the intervening embedded Force. The movement realized in (35) produces an ungrammatical configuration, of the type represented in (37), which is ruled out by minimality conditions (Rizzi 1990): the moved item has passed across an item with the same feature endowment.

(37) *F ... F ... F

Before we give up this line of explanation, it remains to be seen whether this problem can be solved by introducing an (independently required) more fine-grained feature system. In particular, we endorse Starke's (2001) system according to which syntactic features are organized in a feature tree, in such a way that each node in the tree defines a class, containing itself and all the nodes it dominates. We introduce a feature *F* (for *Force*) and a feature *D* (for *D-linking*), hierarchically organized as in (38).

(38)

```
        F
      / | \
     D  α  β
```
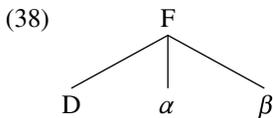
Given the relations in (38), a feature f defined as F (i.e., belonging to class F) may or may not be specified as D, whereas a feature f defined as D (i.e., belonging to class D) is necessarily specified as F. It follows that a feature f belonging to class D has to be notated as *FD*, whereas a feature f belonging to class F may be notated as *F*. We then introduce the following assumptions:

(39) a. Matrix Force belongs to class D.
     b. Embedded Force belongs to class F.

(40) First person belongs either to class F or to class D.

The idea behind (39) is that only a matrix Force is D-linked, in the sense that it introduces a context dependency. As discussed above, in the cartographic framework Force is the locus where the relation between the propositional content of the projection selected by Force and the superordinate structure is encoded. We further implemented this idea by proposing that the role of Force is to restrict the set of events of propositional attitude potentially associated with the sentence selected by Force to the unique event of propositional attitude whose product is that very sentence. In the case of embedded Force, the relevant event is specified by the matrix clause, and in particular by the verb selecting Force; it is clear how, in this case, Force is associating the propositional content of its complement to the event denoted by the superordinate verb. In the case of matrix Force, however, the role of Force is less transparent, because there is no superordinate structure

dominating Force. We proposed that in this case the relevant event has to be determined contextually as the event of propositional attitude whose product is the sentence selected by Force. The proposal in (39) expresses this distinction between matrix and embedded Force at the morphosyntactic level.

The idea behind (40) is that first person pronouns are ambiguous: they can be either F-linked (thus not necessarily context dependent) or D-linked (thus necessarily context dependent).

On the basis of these assumptions, consider the following configurations:

(41) a. *[Force$_{FD}$ … [Force$_F$ … [… I$_F$ …]]]

   b. [Force$_{FD}$ … [Force$_F$ … [… I$_F$ …]]]
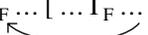
(42) a. [Force$_{FD}$ … [Force$_F$ … [… I$_{FD}$ …]]]
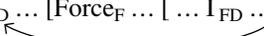
   b. *[Force$_{FD}$ … [Force$_F$ … [… I$_{FD}$ …]]]

In (41), the pronoun *I* bears the feature F and is c-commanded by a matrix Force, class D (thus notated *FD*), and an embedded Force, class F (thus notated *F*). The pronoun can move to Spec, Force$_F$ (see (41b)), but cannot move to Spec,Force$_{FD}$ (see (41a)), since Force$_F$, belonging to the same class as *I*, acts as an intervener in straightforward relativized-minimality terms. (41b) corresponds to the LF representation that provides the shifted interpretation of the first person pronoun. In the case of (42), the first person pronoun (belonging to class D, hence notated *FD*) is allowed to move to Force$_{FD}$ (since Force$_F$, belonging to a different class, does not act as an intervener; see (42a)). (42a) corresponds to the LF representation that provides the deictic interpretation. The pronoun cannot move to Force$_F$ since Force$_F$, belonging to class F, may not be able to value the pronoun's unvalued D-feature (42b).

It follows that (35) is a well-formed LF representation, provided that the first person pronoun bears the feature FD. It also follows that (35) provides the deictic interpretation in (36) according to which, very roughly, John says that the speaker in the actual speech act is a hero.[8]

Before moving to the next section, we address another issue concerning the occurrence of first person pronouns in embedded contexts. We have proposed that first person pronouns need to covertly move to the specifier of a c-commanding Force in order to value their F- or FD-feature. In order to maintain this proposal, we need to explain why first person pronouns are not subject to island constraints, since, as is clear, first person pronouns can occur within weak and strong islands and yet receive a deictic interpretation.

---

[8] There is an alternative way of deriving the deictic reading, which would allow us to maintain a single-feature system but requires a modification of the hypothesis according to which verbs of propositional attitude always select a ForceP complement. For reasons of space, we cannot address this issue in detail here. We simply emphasize that a line of explanation based on the selection ambiguity of verbs of propositional attitude cannot account for the fact that the first person pronouns contained in an embedded clause are not necessarily assigned a uniform interpretation (i.e., they are not necessarily all deictic or all anaphoric). Facts of this nature are reported from Amharic (Schlenker 1999:23) and Golin (Loughnane 2005:146). Moreover, we consider a line of explanation maintaining that verbs of propositional attitude have different selection properties in different languages quite questionable on theoretical grounds, particularly in light of the considerations expressed above about the role of Force.

We adopt, once again, Starke's (2001) theory of locality. In Starke's system, covert movement is a pure class of Q-movement (i.e., movement of quantificational features). As such, covert movement is insensitive to strong islands, since strong islands do not involve quantificational features. A case in point is *wh*-in-situ (see, e.g., Bayer 2005, Starke 2001:50–53).[9]

As for weak islands, the system allows only SpecificQ-movement to escape weak islands. In Starke's system, extraction out of weak islands reduces to the following template:

(43) $\alpha\beta \ldots \alpha \ldots \alpha\beta$

The basic insight is that the intervener is an α-element, but since α dominates β in the feature tree, it does not belong to class $\alpha\beta$ (whereas $\alpha\beta$ belongs to class α) and therefore does not act as an intervener for $\alpha\beta$. In other words, a featurally heavier element will always be able to circumvent the intervention effects of a lighter element. According to this template, extraction of a QP out of a weak island (marked as Q) is possible only if QP is specific. Extraction is possible because Q dominates SpecificQ in the feature tree. Here, following Starke, we take specificity to encode reference to an entity that is *familiar* in the context of interpretation (as for instance in É. Kiss 1993) rather than reference to an entity that belongs to a *familiar set of entities* (as in Enç 1991). Earlier in this section and in the preceding section, we contended that a first person pronoun needs to move to Force in order to satisfy its requirement of *unique reference* within a contextually salient event of propositional attitude. If we capitalize on this insight, the default hypothesis is that a first person pronoun is a SpecificQ. More precisely, we propose that within the feature architecture established by Starke (2001:7), the features F and D are dominated by SpecificQ, as represented in (44), where $i\theta$ stands for inherent case and A stands for structural case. The insensitivity of first person pronouns to weak islands directly follows.[10]

---

[9] The situation is more complicated in the case of Quantifier Raising (see Reinhart 2006:chap. 2). First of all, there is an overwhelming clause-boundedness effect. Second, there is the wide scope of existentials (also involving many instances of so-called weak quantifiers). Here, we assume that clause-boundedness is accounted for along the lines of Beghelli and Stowell 1997 and Szabolcsi 1997; that is, it depends on the fact that different types of QPs have to satisfy distinct morphosyntactic requirements and get displaced to distinct dedicated positions within the clause-functional layers (this way, also accounting for the complex set of relative scope effects that has long been discussed in the literature).

[10] Although in this article we cannot frame our presuppositional account of person features within a full-fledged theory of presupposition projection, we would like to make a few remarks on the interplay between first person and negation. In the case of a negated matrix sentence such as *I am not a hero*, the first person pronoun *I*, by moving to Spec,Force, ends up taking scope over the negation. Therefore, the sentence asserts that $g(i)$ is not a hero and presupposes that $g(i)$ is the Experiencer in the event e of entertaining the proposition according to which the Experiencer in e is *not* a hero. As for the case of a sentence such as the Amharic counterpart of *John does not say that I am a hero*, with a shifted interpretation of *I*, we need to maintain that the presupposition has to be satisfied locally at the level of the embedded clause, in such a way that the sentence ends up meaning that there is no event of John's saying that $g(i)$ is a hero while presupposing that $g(i)$ is the Experiencer in the event e of saying that the Experiencer in e is a hero.

This result can be achieved at least in two ways. We can follow Karttunen (1973), or later implementations of his insights (e.g., Heim 1992), in maintaining that verbs of propositional attitude are plugs for presuppositions; that is, they block the presupposition of the complement from projecting to the matrix clause. Alternatively, and perhaps more interestingly, we can capitalize on the insight that first person features have to move to Spec,Force in order to be anchored to the relevant event of propositional attitude. As we have shown, this dependency already entails that person features need to be valued locally (i.e., at the level of embedded Force in the Amharic example under discussion) in order to satisfy the uniqueness condition on the event of propositional attitude. It directly follows that the presupposition has to be satisfied locally (i.e., at the level of the embedded sentence)—arguably, the correct empirical result.

(44)

$$Q \quad \theta \quad A$$

SpecificQ $\quad i\theta$

F

D
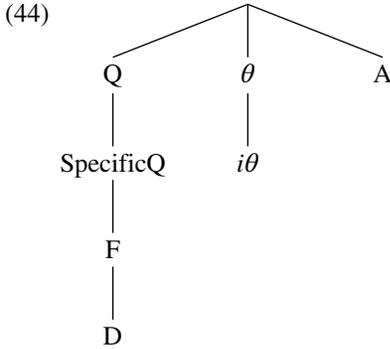
5 An Economy Account of Crosslinguistic Variation

It follows from the system devised in the preceding sections that any language, including English, should allow the shifted interpretation of first person pronouns. Remember that an English sentence like (45) is ambiguous between a *de se* and a *de re* interpretation, whereas the Amharic counterpart of a sentence like (46) can unambiguously report the fact that John entertains the first person thought *I am a hero*; that is to say, the shifted interpretation of a first person pronoun is unambiguously *de se* in Amharic-like languages.[11]

(45) John thinks he is a hero.

(46) John thinks I am a hero.

The central question to be raised is why the shifted interpretation is not available in English-like languages. We contend here that the grammar of English can establish a syntactic dependency between a pronoun and its antecedent and that such dependency, once interpreted, provides a *de se* interpretation. We further contend that the availability of such syntactic dependency blocks the shifted use of first person pronouns, inasmuch as the latter is used in order to obtain the same interpretation.

We have assumed so far that pronouns result from the combination of a pronominal DP bearing a referential index with a gender feature, as in the case of (so-called) third person pronouns, or a person feature, as in the case of first person pronouns (see (13) and (19); as above, we leave aside number and number-related issues). We now introduce the possibility of assigning an underspecified referential index $\emptyset$ to the pronominal DP, as in (47).

[11] This conclusion is supported by the facts reported by Anand (2006), Anand and Nevins (2004), Schlenker (1999, 2003), and Sudo (2010). However, as an anonymous reviewer has pointed out to us, Malamud (2006) reports different facts. We discuss this issue in section 6.2.

(47)
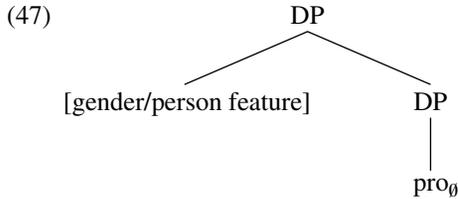
The index $\emptyset$ is not a ''zero'' index (cf. Elbourne 2005). Rather, it is an underspecified index. A pronoun with a $\emptyset$ index fails to refer to any individual in the context. In order to be interpretable, a pronoun with a $\emptyset$ index needs to be dependent on another DP. We identify the dependency required in order to interpret a pronoun bearing a $\emptyset$ index with something very similar to Higginbotham's (1983) linking.[12] More precisely, we assume that the dependency at stake is an asymmetrical dependency relating a DP bearing an underspecified index (i.e., a $\emptyset$ index) to another DP. In (48), the arrow indicates that the pronoun $he_\emptyset$ is linked to the DP *John*.

(48) John thinks $he_\emptyset$ is a hero

The linking relation expresses the fact that the interpretation of the pronoun bearing the $\emptyset$ index depends on its antecedent. What is the semantics of linking? Here comes the crucial insight: we propose that linking identifies the referent of the pronoun with the θ-role discharged in the syntactic position filled by the antecedent. For instance, in (48) *he* is identified with the bearer of the mental state of thinking (i.e., with the Experiencer in the event of thinking). Formally, we introduce (49) as the interpretation rule for linking.

(49) *Linking Rule*
      For any DP^1 and DP^2, thematic role θ, and event e, if DP^2 is (asymmetrically) linked
      to DP^1 and $[\![DP^1]\!] = \theta(e)$, then $[\![DP^2]\!] := \theta(e)$.

According to (49), a linked DP always receives a denotation of type $\langle e \rangle$ (since $\theta(e)$ is of type $\langle e \rangle$). Clearly, given (49), a linked DP cannot be interpreted before its antecedent receives a θ-role. Thus, as a first step in the computation of a sentence's truth conditions, the denotation of a pronoun with index $\emptyset$ is left undefined. (48), for example, is first translated as (50). The compositional derivation of the sentence's truth conditions proceeds smoothly, even though the denotation of the linked DP is left undefined, since it is taken for granted that the linked DP will receive a denotation of type $\langle e \rangle$.

(50) $\exists e.$ Think(e) $\wedge$ Exp(e) $=$ John $\wedge$ Theme(e) $=$ $^\wedge[\exists e'.$ Be-a-hero(e') $\wedge$ Theme(e') $=$
      $[\![DP_\emptyset]\!]]$

---

[12] See Safir 2004 for discussion of linking within a full-fledged theory of anaphoric dependencies.

As a second step, the linking relation is taken into account and, by (49), (50) is translated into (51).

(51) $\exists$e. Think(e) $\land$ Exp(e) = John $\land$ Theme(e) = ^[$\exists$e$'$. Be-a-hero(e$'$) $\land$ Theme(e$'$) = Exp(e)]

In (51), the undefined DP is identified with *Exp(e)*, which is, by assumption, the θ-role fulfilled by the antecedent within the event of thinking.

Notice that (51) necessarily brings about a *de se* interpretation. Compare the truth conditions in (51) with the truth conditions associated with (52a), where *he*'s referential index is specified, assuming that *g(i)* = John.

(52) a. John thinks he$_i$ is a hero.
     b. $\exists$e. Think(e) $\land$ Exp(e) = John $\land$ Theme(e) = ^[$\exists$e$'$. Be-a-hero(e$'$) $\land$ Theme(e$'$) = John)][13]

Notice that the objects of John's thinking are different in the cases of (48) and (52a). In the case of (52a), John is entertaining the thought that *the individual g(i) is a hero*, where *g(i)* turns out to be John. In the case of (48), John is entertaining the thought according to which *the Experiencer in the event of thinking is a hero*, which is arguably equivalent to the thought *I am a hero* as entertained by John. It follows that only (48) unambiguously encodes the fact that John is entertaining a first person thought; that is to say, only (48) unambiguously encodes a *de se* interpretation.

We can now explain the variation between English and Amharic along the following lines. First, we propose that the Amharic lexicon does not include the underspecified index *Ø* whereas the English lexicon does. As a consequence, there can be no linking of the type illustrated in (48) in Amharic, since there can be no DP with an underspecified index. Second, we propose that an economy condition blocks the use of a shifted first person pronoun to encode a *de se* interpretation whenever the same interpretation can be obtained by means of a third person pronoun. Recall that, in our framework, a third person pronoun is a pronoun without person features. Accordingly, we formalize our economy condition as follows:

(53) Avoid using a pronoun endowed with a person feature in order to obtain an interpretation that can be obtained by using a pronoun without person features.

(53) is intended to express the requirement that a lexical item in a syntactic derivation should be endowed with the minimal set of grammatical features necessary for the derivation to converge with the targeted interpretation *α*.

---

[13] In footnote 1, we argued that θ-roles, conceived as operators mapping events into individuals, are not rigid designators (in the sense that a given θ-role may map the same event into different individuals in different worlds). Technically, the main reason for holding this view is that, under the hypothesis that *Exp(e)* in (51) maps the event *e* into the very same individual in all possible worlds, (51) and (52b) would end up as logically equivalent and the proposed logical forms would fall short of capturing the distinction between the *de re* and *de se* readings. However, this move has also a strong empirical motivation, since it significantly contributes to a correct modeling of the interaction between errors of self-identification and *de se* beliefs (see footnote 1 for discussion). Of course, intriguing ontological issues are involved here, which we must leave to future research (see Pianesi and Varzi 2000 for a state-of-the-art overview).

Let us see how our proposal accounts for the fact that the shifted interpretation of first person pronouns can be found in Amharic but not in English. Consider first the case of English. As we noted, shifted first person pronouns should also be found in English, since nothing prevents a first person pronoun, belonging to the appropriate class, from moving to the specifier of an embedded Force head. Therefore, the LF representation in (54a) should not be excluded by any grammatical principle. Once interpreted, (54a) delivers a *de se* interpretation, expressing the fact that John says *I am a hero*. However, English also has the option of using a third person pronoun with an underspecified index, as illustrated in (54b).

(54) a. John says [$_{ForceP}$ I i [$_S$ t$_i$ am a hero]]
    b. John says he$_\emptyset$ is a hero

Given the proposed interpretation of linking, (54b) clearly encodes a *de se* reading. The crucial difference between (54a) and (54b) is that (54a) provides a *de se* interpretation by means of a first person pronoun bearing a referential index, whereas (54b) provides a *de se* interpretation by means of a third person pronoun. Therefore, (54a) is filtered out by the economy condition in (53). As for Amharic-like languages, they cannot resort to the more economical option represented by using a third person pronoun. In Amharic, the underspecified pronominal form, expressing the $\emptyset$ index, is not available for the numeration and consequently a third person pronoun cannot be linked to an antecedent, providing a *de se* interpretation.

A nice feature of the present account is that crosslinguistic variation is explained in terms of lexical endowment (along the lines indicated in Ramchand and Svenonius 2008): macroparameters can be conveniently eliminated to the advantage of diversity in lexical endowment expressed by different degrees of feature expression. Nothing else is needed except for economy guidelines of the sort introduced by Reuland (2001), which interestingly reduce, for the pronoun shift phenomena under analysis here, to the reasonable requirement that a syntactic dependency be preferred over a semantic dependency. In the case at stake, the difference between English and Amharic reduces to the difference between having and not having the underspecified index $\emptyset$ in the lexicon.

6 Logophoric Pronouns

In this section, we address the issue posed by the presence of logophoric pronouns in grammatical systems. What interests us, in particular, is the relation between logophoric pronouns and the kind of pronoun shift phenomena and *de se*/*de re* ambiguities that constitute the core of this article.

6.1 Logophoricity and Attitudes De Se

As observed, (55) is subject to the *de se*/*de re* ambiguity.

(55) John thinks that he is a hero.

Castañeda (1968) imagines an artificial pronoun *he** that, when used in an indirect report, indicates that in the original discourse or thought the first person pronoun was used. That is, *he** unambigu-

ously provides a *de se* interpretation. If such a pronoun existed, (56) would unambiguously report the fact that John is entertaining the first person thought *I am a hero*.

(56) John thinks that he* is a hero.

Clements (1975) identifies a class of pronouns, which he refers to as *logophoric pronouns* (a label borrowed from Hagège 1974), whose function is very similar to that devised by Castañeda when describing *he**. Logophoric pronouns, according to Clements (1975:171), are expressions that satisfy the following conditions: (a) they are restricted to reportive contexts transmitting the words or thought of an individual or individuals other than the speaker or narrator; (b) the antecedent does not occur in the same reportive context as the logophoric pronoun; (c) the antecedent designates the individual or individuals whose words or thoughts are transmitted in the reportive context in which the logophoric pronoun occurs.

An example of a logophoric pronoun is the English expression *he himself*. (57), according to native speakers' judgments, is unambiguously interpreted *de se*.

(57) John thinks that he himself is a hero.

Another example of a logophoric pronoun is the Italian possessive *proprio* (see Chierchia 1989, Giorgi 2007). Other examples of logophoric pronouns are the so-called indirect reflexive *se* in Latin, Icelandic *sig*, Ewe *yé*, and Tuburi *sé* (see, e.g., Clements 1975, Siewierska 2004, Thráinsson 1976).

A note of caution is in order here. It is clear that not all the pronouns that have been referred to in the literature as logophoric pronouns always correspond to Castañeda's *he** in unambiguously providing a *de se* interpretation (see Schlenker, to appear). As we will show in section 6.2, there is a class of pronouns that, despite being restricted to reportive contexts and referring to the individual whose words or thoughts are reported, do not necessarily encode a *de se* interpretation (i.e., they are compatible with a *de re* interpretation). In the literature, these pronouns are also often referred to as logophoric pronouns. In the rest of this section, we provide an account of those expressions that qualify as natural language counterparts of *he**, in that they unambiguously provide a *de se* interpretation.

Logophoric pronouns have been claimed to be subject dependent. For example, *proprio* in (58a) is compelled to refer to *Maria*, the subject in the main clause, and cannot refer to *Francesca*, the indirect object in the main clause. Further evidence comes from the ungrammaticality of (58b), as discussed by Giorgi (2007).

(58) a. Maria ha detto a Francesca che il proprio fidanzato è un eroe.
          Maria said   to Francesca that the LOG sweetheart is a hero
          'Maria told Francesca that her sweetheart is a hero.'
     b. *Ho informato la sventurata fanciulla   che il proprio fidanzato
          I informed the unhappy young woman that the LOG sweetheart
          non era un gentiluomo.
          not was a gentleman
          'I informed the unhappy young woman that her sweetheart was not a gentleman.'

However, examples like (59), from Tuburi (see Siewierska 2004), suggest that what really matters is not the syntactic position of the antecedent. In (59), the logophoric pronoun *sé* refers to *Pol*, which is realized as the object of the matrix verb.

(59) Heene jon Pol gá sé lé' cégè.
     fear   grips Pol that LOG fall sick
     'Fear grips Pol that he will fall sick.'

The facts in (58)–(59) can be captured by assuming that the referent of a logophoric pronoun must be the Experiencer in the event described by the main verb. In (58a), Maria is the Experiencer in the event of saying; in (59), Pol is the Experiencer in the event of fear-gripping. Therefore, both *Maria* and *Pol* qualify as possible antecedents of the logophoric pronoun. On the other hand, *Francesca* in (58a) and *la sventurata fanciulla* in (58b) do not express the Experiencer; therefore, they do not qualify as antecedents of the logophoric pronoun, independently of their syntactic position and of any matter of argument projection.[14]

This Experiencer dependency of logophoric pronouns suggests a strong parallelism with the first person. Consider the denotation of first person pronouns proposed in (21), repeated here as (60). The role of the first person pronoun, according to (60), is to identify one of the DP arguments in a proposition with the Experiencer in the event of entertaining that very same proposition.

(60) $[\![[\text{1st person } [\text{pro}_i]]]\!]^g = \lambda P: \exists!e.\ R(e) \wedge Exp(e) = g(i) \wedge Theme(e) = {}^\wedge[P(Exp(e))].$
     $P(g(i))$

Notice moreover that if English were a language allowing the shifted use of the first person, both (61) and (62) would unambiguously provide a *de se* interpretation (in the sense that the pronoun does not license a *de re* reading). That is to say, logophoric pronouns provide the same semantic contribution provided by shifted first person pronouns.

(61) John says that he himself is a hero.

(62) John says that I am a hero.

The parallelism between logophoric pronouns and first person pronouns is supported by two independent observations. First, logophoric pronouns in Ewe are diachronically connected to tonic first person pronouns, as observed by Clements (1975). Second, in Dravidian languages such as Tamil logophoric pronouns may trigger first person agreement on the verb, as in (63), from Annamalai 2000:181.

(63) Kumaar taan varreeNNu   sonnaan.
     Kumar LOG come-PRES-1P-that say-PRES-3P
     'Kumar says he comes.'

---

[14] The idea that logophoric pronouns are subject dependent might still be defended under Postal's (1970) account of Experiencer constructions. According to Postal, Experiencers are always subjects; if they are not in subject position at S-Structure, they move to that position at LF. If we then assume that subject dependencies are an LF matter, the case of (59) finds a natural explanation: at LF, *Pol* is the subject of the matrix clause and the logophoric pronoun is compelled to take its reference from it.

    Despite these similarities, there are two important differences between first person pronouns
and logophoric pronouns. First, first person pronouns, when occurring in embedded sentences
that are complements of verbs of propositional attitude, are ambiguous between a deictic and a
shifted interpretation (unless the shifted interpretation is blocked), whereas logophoric pronouns
can receive only the interpretation corresponding to the shifted interpretation of first person
pronouns; that is, logophoric pronouns cannot be used to refer to the speaker in the actual speech
act. Second, first person pronouns can appear in both matrix and embedded clauses, whereas
logophoric pronouns can appear only in embedded clauses that are complements of verbs of
propositional attitude (in Clements's terms, logophoric pronouns are restricted to reportive con-
texts).

    Given the observations made so far, it seems fair to say that an adequate analysis of logophoric
pronouns should account for the following facts:

(64) a. Logophoric pronouns are Experiencer dependent.
     b. Logophoric pronouns cannot refer to the Experiencer in the actual speech act.
     c. Logophoric pronouns can only occur under the scope of a verb of propositional
        attitude.

In order to account for (64a), we propose that logophoric pronouns share the semantics of first
person pronouns. We assume that logophoric pronouns have the same internal structure and
denotation as first person pronouns (recall (60), repeated here).

(65) $[\![[\text{1st person } [\text{pro}_i]]]\!]^g = \lambda P: \exists! e.\ R(e) \wedge \text{Exp}(e) = g(i) \wedge \text{Theme}(e) = {}^{\wedge}[P(\text{Exp}(e))].$
     $P(g(i))$

We further propose that logophoric pronouns carry a feature F but never carry a feature D. That
is to say, logophoric pronouns are always F-linked but can never be D-linked. Remember that
first and second person pronouns are ambiguous between class F and class D; they can be notated
either as *F* or as *FD*. We are now proposing that logophoric pronouns can only be notated as *Fα*
(where α is one of the daughters of F in (38) that are incompatible with D; for the sake of
simplicity, we may assume that $\alpha = [\log]$).

    Let us see what the syntax and semantics proposed for logophoric pronouns predict. Consider
sentence (66a). (66b) is a well-formed LF representation for (66a): the logophoric pronoun *he
himself* has covertly moved to the specifier of embedded Force in order to value its *Fα* feature
(notice that embedded Force cannot be notated as *FD*, but there is no obstacle to notating it as
Fα). (66c) provides the denotation of (66a).

(66) a. John says he himself is a hero.
     b. [$_{\text{ForceP}}$ John says [$_{\text{ForceP}}$ [he himself] i [$_\text{S}$ t$_i$ is a hero]]]
     c. $[\![[_{\text{ForceP}} \text{John says } [_{\text{ForceP}} \text{[he himself] i } [_\text{S} \text{t}_i \text{ is a hero}]]]]\!]^g = \exists e''.\ \text{Say}(e'') \wedge \text{Exp}(e'')$
        $= \text{John} \wedge \text{Theme}(e'') = {}^{\wedge}[\exists! e.\ \text{Be-a-hero}(e) \wedge \text{Theme}(e) = g(i)], \text{ if } \exists! e'.\ R(e') \wedge$
        $\text{Exp}(e') = g(i) \wedge \text{Theme}(e') = {}^{\wedge}[\exists! e.\ \text{Be-a-hero}(e) \wedge \text{Theme}(e) = \text{Exp}(e')], \text{ unde-}$
        fined otherwise

According to (66c), (66a) asserts that John says that *g(i)* is a hero and presupposes that *g(i)* is the Experiencer in the event *e* of entertaining the proposition *the Experiencer in e is a hero*. Comparing (66c) with (34) should make it clear that the truth conditions in (66c) correspond to the shifted interpretation of the first person.

As for (64a), the theory correctly predicts that the logophoric pronoun *he himself* in a sentence like (67a) is bound to refer to John, the Experiencer in the event of telling, and cannot refer to Bill, the Goal in the event of telling. (67b) is the LF representation associated with (67a); (67c) reports the truth conditions derived from (67b). According to (67c), *g(i)* is said to be a hero and is identified with the Experiencer in the event *e* of entertaining the proposition *the Experiencer in e is a hero*. Therefore, the sentence is bound to the reading according to which the Experiencer of the telling is a hero. Crucially, the Experiencer in such event is John and not Bill.

(67) a. John told Bill that he himself is a hero.
   b. [John told Bill [$_{ForceP}$ [he himself] i [$_S$ t$_i$ is a hero]]]
   c. $[\![$[John told Bill [$_{ForceP}$ [he himself] i [$_S$ t$_i$ is a hero]]]$]\!]^g$ = $\exists e''$. Tell(e'') $\wedge$ Exp(e'') = John $\wedge$ Goal(e) = Bill $\wedge$ Theme(e'') = ^[$\exists$e. Be-a-hero(e) $\wedge$ Theme(e) = g(i)], if $\exists!e'$. R(e') $\wedge$ Exp(e') = g(i) $\wedge$ Theme(e') = ^[$\exists$e. Be-a-hero(e) $\wedge$ Theme(e) = Exp(e')], undefined otherwise

As for (64b), the theory predicts that in (67a) *he himself* cannot refer to the Experiencer in the event of entertaining (67a). Such a reading could be obtained by moving the logophoric pronoun to the specifier of the matrix Force. This movement, however, provides the ill-formed LF representation in (68). (68) is ill formed because the unvalued *Fα* feature of the logophoric pronoun cannot be valued by the D-linked F-feature proper to the matrix Force head (notated as *FD*).

(68) *[$_{ForceP}$ [he himself] i John says [$_{ForceP}$[$_S$ t$_i$ is a hero]]]

In a nutshell, *he himself* cannot refer to the Experiencer in the event of entertaining the whole sentence because there is no well-formed LF representation that allows the logophoric pronoun to move to the specifier of the matrix Force.

As for (64c), the theory predicts that sentences like (69a) (where the logophoric pronoun is not in the scope of a verb of propositional attitude but potentially encodes a *de se* interpretation; see Delfitto and Fiorin 2008) are ungrammatical. The reason for their ungrammaticality is that the only Force head c-commanding *he himself* is the matrix Force (notated as *FD*). Now, we have shown that the feature [log] (= *α*) is incompatible with D-linking (hence with feature D). It follows that in the specifier of the matrix Force, *Fα* cannot be valued by FD. Therefore, (69b) is an ill-formed LF representation.

(69) a. *John hurt he himself.
   b. *[$_{ForceP}$ [he himself] i [$_S$ John hurt t$_i$]]

In a nutshell, the proposed analysis allows us to model logophoric pronouns as inherently non-D-linked first person pronouns. Given the system of hierarchical feature organization in (38),

[log] is simply one of the features incompatible with D in the domain of F (Force). This suffices to capture differences and analogies between first person pronouns and logophoric pronouns of Castañeda's (1968) type.

6.2 *Logophoricity, Shifted Pronouns, and Attitudes* De Re

The discussion of the shifted use of first and second person pronouns presented in this article has been based on the assumption that shifted indexicals necessarily encode a *de se* interpretation. This assumption is motivated by a number of facts.

Schlenker (1999:98) observes that the Amharic sentence (70), under the shifted reading of the embedded first person pronoun, can only have a *de se* interpretation.

(70) John əne Jägna näw alä.
     John I   hero am said
     'John said that he is a hero.'

Similarly, Schlenker reports that the Amharic sentence in (71) is judged false in the scenario in (72).

(71) Alemitu assu mən əwäddaläxw əndalä   alsämmaCCəm.
     Alemitu he what 1P.like   that.said she.didn't.hear
     'Alemitu didn't hear what he said that he likes.'

(72) John, who is a candidate in the election, is so drunk that he doesn't remember who he
     is. He watches TV and sees a candidate, and says: 'He must like X'. This candidate
     happens to be John himself, though he doesn't realize it. Alemitu didn't hear what the
     X was. (Schlenker 1999:99)

Similar examples can be constructed with second person. As reported by Anand (2006:79), the Amharic sentence (73) can mean 'John says to Bill, ''You are a hero''', but it cannot mean 'John says to Bill, ''This guy Bill is a hero''' (assuming that Bill is the person John is talking to).

(73) John jiagna na-h   yil-all.
     John hero   COP.PRES-2SG.MASC say-3SG.MASC
     'John says that he is a hero.'

Anand (2006) shows that the same facts hold in Zazaki. Moreover, Anand (2006:80) reports that in Zazaki, shifted temporal and locative indexicals are necessarily *de se*. Further data confirming that shifted indexicals are obligatorily *de se* are provided by Sudo (2010). According to Sudo, Uyghur shifted first and second person pronouns are incompatible with a *de re* scenario. For instance, (74) is judged false in the context of (75).

(74) Ahmet [män bek aqriliq] di-di.
     Ahmet [1SG very smart] say-PAST.3
     'Ahmet said that he is very smart.'

(75) Ahmet took an exam, and later saw the top 10 scores with ID numbers. He forgot his ID number, so didn't know who was on top. Pointing to the topmost score, he remarked ''This guy is very smart!'' But it turned out that he was talking about himself. (Sudo 2010:4)

Further evidence that shifted indexicals are necessarily *de se* can be drawn from the domain of tense (see, e.g., Schlenker 1999, 2003; and see von Stechow 2003 on Russian present tense).

Malamud (2006:198–203), however, reports different results. In particular, her informants judged the Amharic sentence in (76) as true in the context of the *de re* scenario in (77). This result suggests that the shifted interpretation of the first person pronoun clause is actually compatible with a *de re* scenario.

(76) Profäsəru bät'am bəzu səra   ə-sär-allähu   alä.
     professor very much   work 1SG-work.IMP-AUX.1SG say.PRF.3SG.MASC
     'The professor said that he works very hard.'

(77) A certain class has no T.A., so Hans must do both the lecturer's and the assistant's work, like grading homeworks. Hans goes to a happy hour one evening, where all the professors and T.A.s are gathering. He gets drunk, forgets that he himself is the grader, and asks someone ''who is the grader for my course?'' His interlocutor, being tongue-in-cheek, points to Hans's reflection in the bar mirror, and says, that guy. Hans is very drunk, and he doesn't realize that his interlocutor pointed to a reflection. He says ''The comments on all of the homeworks are very good and detailed this term—this guy, my course assistant, works very hard!'' (Malamud 2006:201)

Given these conflicting reports on the relevant class of empirical data, we are not in a position to decide whether there actually are cases where shifted first person pronouns can be interpreted *de re*. Yet let us assume, in a rather speculative vein, that Malamud's data are trustworthy, to the effect that (76) can have a *de re* reading. How could this be accounted for within our framework? Notice that the sentence tested by Malamud does not include an overt first person pronoun; it only shows first person agreement on the verb. As we have shown, in some languages third person logophoric pronouns may trigger first person agreement on the verb. This possibility is exemplified in the Tamil example in (63). We propose that in (76) the pronoun triggering first person agreement on the verb is not a first person pronoun, but a pronoun with the same syntactic properties as a logophoric pronoun (i.e., a pronoun endowed with the feature $F\alpha$) and the denotation in (78).

(78) $\lambda P: \exists!e.\ R(e) \wedge Exp(e) = g(i) \wedge Theme(e) = \ ^\wedge[P(g(i))].\ P(g(i))$

The denotation in (78) corresponds to that of a logophoric pronoun in that it encodes reference to the Experiencer in the event denoted by the matrix verb (remember that the pronoun is endowed with the unvalued feature $F\alpha$ and therefore can only occur in embedded contexts). However, it differs from the standard interpretation of a logophor in that it does not entail that the Experiencer in the event of propositional attitude denoted by the matrix verb identifies the individual endowed

with the property P with himself or herself. This result is obtained by replacing the identity *Theme(e) = ^[P(Exp(e))]* in (65) with the identity *Theme(e) = ^[P(g(i))]* in (78). That is, the denotation of the pronoun in (78) ensures reference to the bearer of the propositional attitude producing the embedded sentence, but does not enforce a *de se* reading. Notice, in fact, that the interpretation expressed by (78) is actually the interpretation of English third person pronouns under a *de re* reading (see (52b)).

Interestingly, the syntax and semantics just proposed describe a well-known class of pronouns: those pronouns that, despite having the same distribution as logophoric pronouns and encoding reference to the Experiencer of the matrix clause, do not force a *de se* interpretation. Relevant examples are discussed by Cole, Hermon, and Huang (2006) and include, among others, Chechen and Ingush long-distance reflexives (Nichols 2001), Malay *dirinya* (Cole and Hermon 1998a,b, Cole, Hermon, and Lee 2001), Turkish long-distance inflected reflexives (Kornfilt 1997, 2001), and Singapore Mandarin *ziji* (Cole, Hermon, and Lee 2001).

Going back to Malamud's (2006) Amharic sentence (76), we propose that the relevant pronoun is not a shifted first person pronoun but a *de re* logophor and that this pronoun can trigger first person agreement on the verb. Of course, the predictions are that only Amharic sentences with an overt embedded first person pronoun are unambiguously *de se* and that Amharic sentences without an overt pronoun but with first person agreement on the embedded verb are compatible with a *de re* interpretation. The first prediction seems to be borne out: according to Schlenker (1999), sentence (70) unambiguously provides a *de se* interpretation (indeed, just in case the first person pronoun receives a shifted interpretation). The second prediction is not: according to Schlenker, sentence (71), which only shows first person agreement on the verb, is unambiguously *de se*.

Why such a variation between the judgments reported by Malamud and those reported by Schlenker? It is interesting to observe in this respect that the variation between *de se* logophors (i.e., those logophors that are necessarily *de se*) and *de re* logophors (i.e., those pronouns that have the same distribution as logophors but are compatible with a *de re* interpretation) can be found even between different dialects of the same language. For example, Cole, Hermon, and Lee (2001) report the case of the two dialects spoken in Singapore. What is interesting for present purposes is that in Singapore Teochew the long-distance anaphor *ziji* is necessarily *de se*, whereas in Singapore Mandarin the same anaphor is compatible with a *de re* reading. We suspect that a similar variation may be responsible for the discrepancy between the judgments reported by Malamud and those reported by Schlenker.

7 Conclusions

In this article, we have shown that a neo-Davidsonian event semantics framework may lead to an empirically adequate and conceptually elegant modeling of first person readings at the syntax-semantics interface. From the perspective taken here, pronoun-shifting phenomena are an expected manifestation of the possibility that first person pronouns move to the specifier of embedded Force heads. As we have shown, first person displacement to the Force projection is assumed to satisfy both syntactic requirements (in terms of feature valuation) and semantic requirements (in

terms of compositionality and presupposition satisfaction). Linguistic variation in this domain can be reduced to the fact that underspecified pronominal forms—activating anaphoric dependencies interpreted in terms of thematic inheritance—outscore (given the zero cost of syntactic dependencies) fully specified first person forms in the grammatical systems that feature them. Here, the crucial observation is that the semantics of Higginbotham's (1983) linking comes quite close to the semantics of first person. In a similar vein, we tried to assess the precise interpretive interplay between logophoric pronouns and first person pronouns/*de se* readings of third person pronouns. The general picture of pronominal anaphora that emerges from this article is based on the role played by the interplay between the (featural) makeup of individual lexical items and principles governing the economy of the syntactic computation. Higginbotham's linking—interpreted as encoding thematic inheritance—also plays a crucial role. Some nontrivial consequences can be drawn, concerning the ''propositional'' nature of our analysis of attitudes *de se* (contra Chierchia's (1989) and Lewis's (1979) property-based analysis; see also Reinhart 1990) and the fact that ''minimal'' pronouns (i.e., minimally specified pronouns) are tied to the expression of thematic dependencies. An empirical and conceptual analysis of these consequences must be left for future work.

References

Anand, Pranav. 2006. De *de se*. Doctoral dissertation, MIT, Cambridge, MA.

Anand, Pranav, and Andrew Nevins. 2004. Shifty operators in changing contexts. In *Proceedings of Semantics and Linguistic Theory (SALT) 14*, ed. by Robert Young, 20–37. Ithaca, NY: Cornell University, CLC Publications.

Annamalai, E. 2000. Lexical anaphors and pronouns in Tamil. In *Lexical pronouns and anaphors in selected South Asian languages: A principled typology*, ed. by Barbara C. Lust, Kashi Wali, James W. Gair, and K. V. Subbarao, 169–216. Berlin: Mouton de Gruyter.

Baker, Mark C. 2008. *The syntax of agreement and concord*. Cambridge: Cambridge University Press.

Bayer, Josef. 2005. *Wh*-in-situ. In *The Blackwell companion to syntax, vol. 5*, ed. by Martin Everaert and Henk van Riemsdijk, 141–158. Malden, MA: Blackwell.

Beghelli, Filippo, and Tim Stowell. 1997. Distributivity and negation: The syntax of *each* and *every*. In *Ways of scope taking*, ed. by Anna Szabolcsi, 71–107. Dordrecht: Kluwer.

Benveniste, Émile. 1966. *Problèmes de linguistique générale*. Paris: Gallimard.

Bianchi, Valentina. 2003. On finiteness as logophoric anchoring. In *Temps et point de vue/Tense and point of view*, ed. by Jacqueline Guéron and Liliane Tasmowski, 213–246. Paris: Université Paris X-Nanterre.

Bianchi, Valentina. 2006. On the syntax of personal arguments. *Lingua* 116:2023–2067.

Castañeda, Hector-Neri. 1966. 'He': A study in the logic of self-consciousness. *Ratio* 8:130–157.

Castañeda, Hector-Neri. 1968. On the logic of attributions of self-knowledge to others. *Journal of Philosophy* 65:439–456.

Chierchia, Gennaro. 1989. Anaphora and attitudes *de se*. In *Semantics and contextual expressions*, ed. by Renate Bartsch, Johan van Benthem, and Peter van Emde Boas, 1–31. Dordrecht: Foris.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.

Cinque, Guglielmo. 1999. *Adverbs and functional heads: A cross-linguistic perspective*. Oxford: Oxford University Press.

Clements, George N. 1975. The logophoric pronoun in Ewe: Its role in discourse. *Journal of West African Languages* 10:141–177.

Cole, Peter, and Gabriella Hermon. 1998a. Long distance reflexives in Singapore Malay: An apparent typological anomaly. *Linguistic Typology* 2:57–77.

Cole, Peter, and Gabriella Hermon. 1998b. VP ellipsis and Malay reflexives. In *IATL 5: The proceedings of the 13th annual conference of the Israeli Association for Theoretical Linguistics*, ed. by Adam Zachary Wyner, 39–54. Ramat-Gan, Israel: Bar-Ilan University.

Cole, Peter, Gabriella Hermon, and C.-T. James Huang. 2006. Long distance binding in Asian languages. In *The Blackwell companion to syntax, vol. 3*, ed. by Martin Everaert and Henk van Riemsdijk, 21–84. Malden, MA: Blackwell.

Cole, Peter, Gabriella Hermon, and Cher Leng Lee. 2001. Grammatical and discourse conditions on long distance reflexives in two Chinese dialects. In *Long-distance reflexives*, ed. by Peter Cole, Gabriella Hermon, and C.-T. James Huang, 1–46. San Diego, CA: Academic Press.

Cooper, Robin. 1983. *Quantification and semantic theory*. Dordrecht: Reidel.

Davidson, Donald. 1967. The logical form of action sentences. In *The logic of decision and action*, ed. by Nicholas Rescher, 81–95. Pittsburgh, PA: University of Pittsburgh Press.

Delfitto, Denis, and Gaetano Fiorin. 2008. Towards an extension of *de se/de re* ambiguities: Person features and reflexivization. *Lingue e Linguaggio* 7:25–46.

Elbourne, Paul D. 2005. *Situations and individuals*. Cambridge, MA: MIT Press.

Enç, Mürvet. 1991. The semantics of specificity. *Linguistic Inquiry* 22:1–25.

Evans, Gareth. 1982. *The varieties of reference*. Oxford: Oxford University Press.

Fraser, Bruce. 1971. *An examination of the performative analysis*. Bloomington: Indiana University Linguistics Club.

Garson, James W. 1984. Quantification in modal logic. In *Handbook of philosophical logic, vol. 2*, ed. by Dov M. Gabbay and Franz Guenthner, 249–307. Dordrecht: Reidel.

Giorgi, Alessandra. 2007. On the nature of long-distance anaphors: *Linguistic Inquiry* 38:321–342.

Hagège, Claude. 1974. Les pronoms logophoriques. *Bulletin de la Société de Linguistique de Paris* 69: 287–310.

Heim, Irene. 1992. Presupposition projection and the semantics of attitude verbs. *Journal of Semantics* 9: 183–221.

Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Oxford: Blackwell.

Higginbotham, James. 1983. Logical Form, binding, and nominals. *Linguistic Inquiry* 14:395–420.

Higginbotham, James. 2003. Remembering, imagining, and the first person. In *Epistemology of language*, ed. by Alex Barber, 496–533. Oxford: Oxford University Press.

Kaplan, David. 1989. Demonstratives. In *Themes from Kaplan*, ed. by Joseph Almog, John Perry, and Howard Wettstein, 581–663. Oxford: Oxford University Press.

Kaplan, David. 1990. Thoughts on demonstratives. In *Demonstratives*, ed. by Palle Yourgrau, 34–50. Oxford: Oxford University Press.

Karttunen, Lauri. 1973. Presuppositions of compound sentences. *Linguistic Inquiry* 4:169–193.

É. Kiss, Katalin. 1993. *Wh*-movement and specificity. *Natural Language and Linguistic Theory* 11:85–120.

Kornfilt, Jaklin. 1997. *Turkish*. London: Routledge.

Kornfilt, Jaklin. 2001. Local and long-distance reflexives in Turkish. In *Long-distance reflexives*, ed. by Peter Cole, Gabriella Hermon, and C.-T. James Huang, 197–226. San Diego, CA: Academic Press.

Kratzer, Angelika. 2009. Making a pronoun: Fake indexicals as windows into the properties of pronouns. *Linguistic Inquiry* 40:187–237.

Leslau, Wolf. 1995. *Reference grammar of Amharic*. Wiesbaden: Harrassowitz.

Lewis, David. 1979. Attitudes *de dicto* and *de se*. *Philosophical Review* 88:513–543.

Loughnane, Robyn M. 2005. Reported speech constructions in Golin. In *Materials on Golin: Grammar, texts and dictionary*, ed. by Nick Evans, Jutta Besold, Hywel Soakes, and Alan Lee, 131–152. Parkville: University of Melbourne, Department of Linguistics and Applied Linguistics.

Malamud, Sophia. 2006. Semantics and pragmatics of arbitrariness. Doctoral dissertation, University of Pennsylvania, Philadelphia.

Morgan, Jerry L. 1973. Sentence fragments and the notion 'sentence'. In *Issues in linguistics: Papers in honor of Henry and Renée Kahane*, ed. by Braj B. Kachru, Robert B. Lees, Yakov Malkiel, Angelina Pietrangeli, and Sol Saporta, 719–751. Urbana: University of Illinois Press.

Nichols, Johanna. 2001. Long-distance reflexivization in Chechen and Ingush. In *Long-distance reflexives*, ed. by Peter Cole, Gabriella Hermon, and C.-T. James Huang, 255–278. San Diego, CA: Academic Press.

Parsons, Terence. 1990. *Events in the semantics of English: A study in subatomic semantics*. Cambridge, MA: MIT Press.

Pianesi, Fabio, and Achille C. Varzi. 2000. Events and event talk: An introduction. In *Speaking of events*, ed. by James Higginbotham, Fabio Pianesi, and Achille C. Varzi, 3–47. Oxford: Oxford University Press.

Postal, Paul M. 1970. On the surface verb 'remind'. *Linguistic Inquiry* 1:37–120.

Ramchand, Gillian, and Peter Svenonius. 2008. Mapping a parochial lexicon onto a universal semantics. In *The limits of syntactic variation*, ed. by Theresa Biberauer, 219–245. Amsterdam: John Benjamins.

Reinhart, Tanya. 1990. Self-representation. Lecture delivered at Princeton Conference on Anaphora, October.

Reinhart, Tanya. 2006. *Interface strategies*. Cambridge, MA: MIT Press.

Reuland, Eric. 2001. Primitives of binding. *Linguistic Inquiry* 32:439–492.

Rizzi, Luigi. 1990. *Relativized Minimality*. Cambridge, MA: MIT Press.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar: A handbook of generative syntax*, ed. by Liliane Haegeman, 281–337. Dordrecht: Kluwer.

Ross, John R. 1970. On declarative sentences. In *Readings in English transformational grammar*, ed. by Roderick A. Jacobs and Peter S. Rosenbaum, 222–272. Waltham, MA: Ginn.

Safir, Ken. 2004. *The syntax of (in)dependence*. Cambridge, MA: MIT Press.

Schlenker, Philippe. 1999. Propositional attitudes and indexicality: A cross-categorial approach. Doctoral dissertation, MIT, Cambridge, MA.

Schlenker, Philippe. 2003. A plea for monsters. *Linguistics and Philosophy* 26:29–120.

Schlenker, Philippe. To appear. Indexicality and *de se* reports. In *Semantics: An international handbook of natural language meaning*, ed. by Klaus von Heusinger, Claudia Maienborn, and Paul Portner. Berlin: Mouton de Gruyter.

Siewierska, Anna. 2004. *Person*. Cambridge: Cambridge University Press.

Sigurðsson, Halldór Ármann. 2004. The syntax of person, tense and speech features. *Italian Journal of Linguistics* 16:219–251.

Speas, Peggy, and Carol L. Tenny. 2003. Configurational properties of point of view roles. In *Asymmetry in grammar*, ed. by Anna Maria Di Sciullo, 315–344. Amsterdam: John Benjamins.

Starke, Michal. 2001. Move dissolves into Merge: A theory of locality. Doctoral dissertation, University of Geneva.

Stechow, Arnim von. 2003. Feature deletion under semantic binding: Tense, person, and mood under verbal quantifiers. In *NELS 33*, ed. by Makoto Kadowaki and Shigeto Kawahara, 379–403. Amherst: University of Massachusetts, Graduate Linguistic Student Association.

Sudo, Yasutada. 2010. Person restrictions in Uyghur indexical shifting. Paper presented at the 36th Annual Meeting of the Berkeley Linguistics Society. To appear in the proceedings.

Szabolcsi, Anna. 1997. Strategies for scope taking. In *Ways of scope taking*, ed. by Anna Szabolcsi, 109–154. Dordrecht: Kluwer.

Thráinsson, Höskuldur. 1976. Reflexives and subjunctives in Icelandic. In *Papers from the Sixth Meeting of the North Eastern Linguistic Society*, ed. by Alan Ford, John Reighard, and Rajendra Singh, 225–239. Amherst: University of Massachusetts, Graduate Linguistic Student Association.

(Delfitto)
Department of Philology, Literature, and Linguistics
University of Verona
Viale dell'Università 4
37129 Verona
Italy

denis.delfitto@univr.it

(Fiorin)
Department of Philology, Literature, and Linguistics
University of Verona
Viale dell'Università 4
37129 Verona
Italy

and

Utrecht Institute of Linguistics OTS
Utrecht University
Janskerkhof 13
3512 BL Utrecht
The Netherlands

G.Fiorin@uu.nl