

COMPLEX REFLEXIVES & THE PRINCIPLE A PROBLEM*

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1. Introduction

1.1 The Puzzle

This paper explores the possibility of a uniform approach for the examples in (1) and (2). The English data in (1) illustrate that anaphors are sensitive to Principle A of the Binding Theory, Chomsky (1981), meaning that they require a local antecedent. It is debatable whether Principle A should be expected to apply to the examples in (2)¹. One could argue that in (2), *his pathetic self* is a noun phrase where *self* is a noun, therefore subject to Condition C; whereas in (1), *himself* is an anaphor and thus sensitive to Principle A.

- (1) a. John saw **himself** (in the mirror) *Sensitive to Principle A*
 b.* John knows that Maria saw **himself** (on the reality show)
- (2) a. John saw **his pathetic self** (in the mirror) *Not sensitive to Principle A*
 b. John knows that Maria saw **his pathetic self** (on the reality show)

Under such a view, *self* in English is lexically ambiguous, i.e. there are two lexical entries for *self*. I will refer to the two constructions as *unmodified self*, (1), and *modified self*, (2). Assuming lexical ambiguity implies that unmodified *self* in (1) and the presence of Principle A

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¹ Natural occurrences of “his pathetic self” (from google):

- i. Let's watch his pathetic self tread water for six hours.
- ii. Anyone who saw his pathetic self on his reality show knows that.
- iii. His ex wife im sure is so happy that she left his sorry pathetic loser self.

can be explained by traditional Binding theory, whereas in the modified *self* construction in (2), *self* refers to some abstract aspect of the referent of *his*. It appears however, that the two occurrences of *self* in (1) and (2) share a core meaning, namely some notion of identity; therefore, a uniform approach is worth pursuing.

Further support for a uniform approach comes from languages such as Greek and Kutchi Gujarati. In English, lexical ambiguity is motivated by the fact that *himself* is phonologically distinct from *his self*, i.e the form of the anaphor in (1) is not *his self*. This distinction however, does not carry over to other languages. Unlike English, anaphora in Greek and Kutchi Gujarati are morphologically complex. In these languages it is not immediately obvious that *self* is lexically ambiguous, because both the unmodified *self* and the modified *self* forms look identical apart from the presence or absence of the adjective. The Modern Greek and Kutchi Gujarati data in (3) and (4) respectively, parallel the English examples in (1). In all three languages the unmodified *self* must be locally bound and is sensitive to Principle A.

(3) a. O Costas_i vlepi [ton eaf_ito_i tu] Greek
 Costas_i sees det self_i.m.sg 3.m.sg
 “Costas_i sees himself_i”

b. *O Costas_i xeri oti Maria vlepi [ton eaf_ito_i tu]
 Costas_i knows that Maria sees det self.m.sg 3.m.sg
 “Costas_i knows that Maria sees himself_i”

(4) a. John_i [e-na potha_i-ne] joyo Kutchi Gujarati
 John_i 3.sg.gen self_i-acc see.pfv.m.sg
 “John_i saw himself_i”

b. *John_i kidthu ke Maria [e-na potha_i-ne] joyo
 John_i said that Maria 3.sg-gen self_i-acc see.pfv.m.sg
 “John_i said that Maria saw himself_i”

Identical to the English modified *self* example in (2), in Greek (5b) and Kutchi Gujarati (6b) the presence of an adjective alters the acceptability of the utterance. While (5a)+(6a) with unmodified *self* are ungrammatical, presumably due to Principle A, (5b)+(6b) with modified *self* are grammatical, and have a reading where the *mother* loves the *true part* of the referent (*Jannis* in (5b) and *Valji* in (6b)). Unlike English modified vs. unmodified *self*, the Greek and Kutchi Gujarati examples in (3a)+(5b) and (4a)+(6b) respectively, show that the forms of modified *self* and unmodified *self* are identical (*eaf_ito* in Greek, and *potha-ne* in Kutchi Gujarati).

(7) *unconstrained meaning of “self” as “part-of” (to be discarded)*

John saw **himself** (in the mirror)

≈ John saw the unique salient part of John (in the mirror)

This requirement (which militates against (7)) is implemented by assuming that unmodified *self* differs from modified *self* due to predicate incorporation of *self* in the former, (8), but not in the latter, (9). While the ‘part of’ relation is asymmetric, *self*-incorporation gives rise to a symmetric relation, as *self* is interpreted both in its base position and in its landing position, thus reversing the arguments; this constrains the interpretation of unmodified *self*. In contrast, modified *self*-configurations are cases where the anaphor cannot incorporate (due to independent constraints in the syntax), allowing the relation expressed by *self* to remain asymmetric. Furthermore, I will show that *self*-incorporation not only yields a symmetric relation, but requires identity of the subject and object, triggering Principle A effects. In contrast, when incorporation is blocked (the cases of modified *self*), the anaphor is exempt from Principle A.

(8) *unmodified self*

John saw **himself** (in the mirror)

⇒ John **self**-saw **himself** (in the mirror)

≈ John is a part of the unique salient part of John and John saw the unique salient part of John (in the mirror)

= John saw John (in the mirror)

(9) *modified self*

John saw **his pathetic self**

≈ John saw the unique salient entity that is pathetic and a part of John

2. The Semantics of *Self*

In this section, I propose a uniform semantics for modified and unmodified *self*. In section 2.1, I present a simplified version of the lexical entry for *self*, which reduces the relation between the arguments to identity. Although this explains unmodified *self*, Section 2.2 shows that the lexical

entry is too conservative and fails to account for the empirical scope regarding modified *self*. I propose an alternative lexical entry that relaxes the identity relation replacing it with the *part of* relation in section 2.3. I illustrate that such an approach can uniformly account for both modified and unmodified *self*.

2.1 The Semantics of Unmodified *Self*

The utterance in (10) intuitively corresponds to a meaning similar to *Costas admires Costas*. On a par with Iatridou (1988), and Anagnostopoulou and Everaert (1999), I assume that *eafto* ‘self’ is the head of a complex DP containing a true determiner *ton* ‘the’, as well as a bound genitive pronoun *tu* ‘his’. To derive the correct truth conditions, I propose that the counterparts of *self* in Greek and Kutchi Gujarati are relational nouns, and that *self* denotes identity between its arguments². Under such an analysis of *self* as expressing the identity relation, *eafto*’s first argument in (10) is the bound genitive pronoun *tu*, and its second argument is bound by the iota operator introduced by the determiner *ton*. The resulting meaning is *Costas admires the unique individual identical to Costas*, which is trivially synonymous with *Costas admires Costas*.

- (10) a. O Costas₂ thavmazi [DP **ton** [**eafto** **tu**₂]] Modern Greek
 Costas admires det.m.sg self.m.sg 3.m.sg.gen
 “Costas admires himself”

Formally speaking, given that *self* in these languages seems to express identity, we can assume the preliminary lexical entry given in (11): A function that takes two arguments and yields the truth value 1 iff the two arguments are identical.

- (11) *the semantics of “eafto/potha (self)” (preliminary)*
 $\|eafto / potha\| = [\lambda x. \lambda y. y = x]$

To derive the syntactic distribution of Principle A, I argue that unmodified *self* obligatorily incorporates into the matrix verb (see (13b) for an illustration), unless blocked by independent

² See Saxon (1984), Lubowicz (1999), Gast (2006) for the idea that *self*-forms generally express identity functions.

syntactic constraints³. For the purposes of the present section, it suffices to state the following. In order to derive the correct truth conditions for the utterance, I assume that both copies of *self* are interpreted⁴; to interpret the higher copy of *self*, we need a new predicate modification rule, given in (12). In order for *eafto/potha* ‘self’ (being of type $\langle e, \langle e, t \rangle \rangle$) to combine with a transitive verb (also of type $\langle e, \langle e, t \rangle \rangle$), I assume that predicate modification can be extended (from combining two functions of type $\langle e, t \rangle$ to combining two functions of type $\langle e, \langle e, t \rangle \rangle$). Put differently, predicate modification for relational predicates contains sets of ordered pairs, and is a relation that holds between two things.

(12) *Predicate Modification for Relational Predicates*

For any β and γ , which are functions of type $\langle e, \langle e, t \rangle \rangle$, and assignment g ,
 $\|\beta \gamma\|^g = [\lambda x. \lambda y. \|\beta\|^g(x)(y) = 1 \ \& \ \|\gamma\|^g(x)(y) = 1]$.

(based on Heim & Kratzer 1998:95)

Compositionally, we can now derive the meaning of a construction containing a reflexive DP; this is illustrated in (13) for Greek⁵. Note that for ease of exposition, I use Buring’s 2005 β operator⁶, which does not require movement of the binder.

- (13) a. O Costas_k thavmazi [ton eafto tu_k] *Modern Greek*
 Costas admires det self 3.sg-gen
 “Costas_k admires himself_k”
 b. LF: O Costas *eafto*-thavmazi [ton eafto tu]

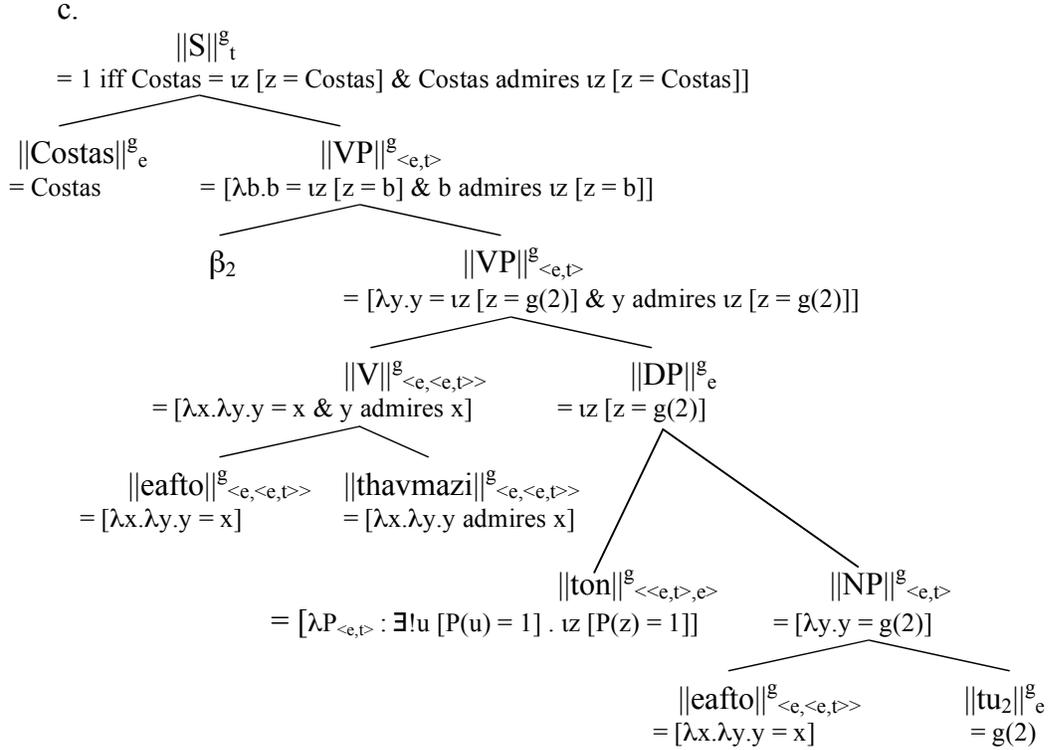
³ See Anagnostopoulou and Everaert 1999, Reuland 2001, 2005, 2011 and Reuland and Winter 2010 for predecessors of this approach.

⁴ C.f. Fox (1999), (2002) who argues that interpreting both copies is more economical than deleting one. In Fox, higher copies are interpreted as operators and lower copies as variables. However, there does not seem to be a principled reason why we should not be able to interpret both copies as they are if this yields a well-formed interpretation.

⁵ The semantic analysis proposed here also accounts for the equivalent Kutchi Gujarati data, and derives identical truth conditions to the Greek case.

⁶ Buring’s (2005:85) *Binder Index Evaluation Rule (BIER)* is defined as follows:

i. For any natural number n , $\|\beta_n Y\|^g = \lambda b. \|Y\|^g[b/n](b)$.



d. *In words:* Costas equals the unique individual (in the utterance context) that equals Costas and Costas admires the unique individual that is equal to Costas.

The syntax-semantic analysis sketched above is appealing for various reasons. First, having shown how to derive the truth conditions for sentences with *self*-incorporation that satisfy Principle A, we can now turn to examples that violates Principle A, illustrated in (14).

(14) a. *O Costas_i xeri oti Maria vlepi [ton eaf_{to}_i tu] *Greek*
 Costas_i knows that Maria sees det self.m.sg 3.m.sg
 “Costas_i knows that Maria sees himself_i”

b. *John_i kidthu ke Maria [e-na potha_i-ne] joyo *Kutchi Gujarati*
 John_i said that Maria 3.sg-gen self_i-acc see.pfv.m.sg
 “John_i said that Maria saw himself_i”

The above analysis derives the following truth conditions given in (15) for these examples.

(15) a. LF: ||O Costas_i xeri oti Maria eaf_{to}-vlepi [ton eaf_{to}_i tu]|| *Greek*
 “Costas_i knows that Maria self-sees himself_i”

= 1 iff Costas knows that [Maria equals the unique individual that equals Costas and Maria sees the unique individual that is equal to Costas].

b. LF: || John_i kidthu ke Maria [e-na potha_i-ne] potha-joyo || *Kutchi Gujarati*
“John_i said that Maria self-saw himself_i”

= 1 iff John said that [Maria equals the unique individual that equals John and Maria saw the unique individual that is equal to John].

Since it is part of the truth conditions that *Maria* is identical to whoever the reflexive refers to, these statements will be false whenever *Maria* is not identical to the referent of *himself* (given that the identity of *Maria* and *himself* is part of the truth conditions). The ill-formedness of these examples then arises from the fact that the intended reading is one where *Costas/John* is the referent of *himself*. *Costas/John* and *Maria* can only both be co-referent with *himself* if *Costas/John* and *Maria* refer to the same person (i.e. *Costas/John* = *Maria*).

One of the consequences of the analysis, which must be addressed, is why modified *self* is exempt from Principle A; this is the topic of section 2.2. We will then come back to unmodified *self* in section 2.3.

2.2 The Semantics of Modified *Self*

2.2.1 Problems with Identity

It follows from the proposal in the previous section, that given identity, a subject and object must be identical whenever the object contains *self*, and *self* is incorporated into the predicate. However, it can be shown that once *self* is modified by an adjective, treating the anaphors in Greek and Kutchi Gujarati as identity relations will not do.

Consider the following scenario. I use English for simplicity, though the same argument applies to Kutchi Gujarati and Greek. Assume that there are two sides to John’s personality. John has an *attractive self* and an *ugly self*. I can now say *John admires his attractive self and fears his ugly self*, and the use of this utterance in such a way avoids any form of contradiction⁷. If the anaphors in question were to require the subject and object to be identical, it is not clear

⁷ See appendix 3 for further examples of such cases.

how this could be implemented for this scenario; how could *John's attractive self* be identical to *John*, when *John* also encompasses an *ugly self*?

Or, what is more worrying: If *John's attractive self* was identical to *John*, and *John's ugly self* was identical to *John*, then *John's attractive self* would be identical to (and indistinguishable from) *John's ugly self*. This is clearly an undesirable result. For instance, we can make a statement like (16a), to give an extreme case. Let us assume that a modified *self* construction does not involve *self*-incorporation, given that modified *self* is not subject to Principle A (I will derive this from independent syntactic constraints in section 3). Assuming (which might be a simplification here⁸, see also section 2.2.2) that *attractive* and *ugly* are intersective adjectives, we would derive truth conditions as in (16b). Given the nature of identity, the only individual that is equal to *John* is *John himself*. The truth conditions in (16b) thus wrongly predict that (16a) is equivalent to (17a), (17b) and (17c), which in turn should all be equivalent.

- (16) a. [John's attractive self] fears [his ugly self]
b. $\|(16a)\| = 1$ iff [the unique individual that is attractive and equals John] fears [the unique individual that is ugly and equals John]
- (17) a. John fears himself.
b. [John's attractive self] fears itself.
c. [John's ugly self] fears itself.

As (17a), (17b), (17c) and (16a) do not have the same meaning, *self* in modified *self* constructions cannot denote the identity function⁹. Given these examples, it is appropriate to relax the meaning of *self*. I argue that in the cases where incorporation occurs and the subject and object are identical, the relation between the two arguments is not strict identity, but simply an illusion of identity, which I formalize more precisely in section 2.2.2.

⁸ This simplification should not have consequences for the point that I am making. If *attractive* and *ugly* are subsective, *John's attractive self* would still be a *self of John's*. Therefore, if *self* expresses identity, the same argument would hold.

⁹ This problem is not restricted to a particular class of adjectives, but applies to all of the classes of adjectives that can combine with the anaphor.

2.2.2 Analyzing Modified *Self*

Given that strict identity is problematic for the modified *self* cases, in this section I argue that a less conservative lexical entry for *self* is required. In the remainder of this paper, I argue for a single lexical entry for *self* given in (18), that consists of a *part of* relation. I will show that the compositional semantics for modified and unmodified *self* are different, despite the fact that they make use of the same lexical entry. This is motivated by the fact that the semantic relations present in the modified and unmodified *self* cases (after computing the meaning of the entire clause) are not the same. (Strict identity in the case of unmodified *self* as opposed to a relaxed *part of* relation in the case of modified *self*). I begin by laying out the foundations of my proposal, and I then illustrate its application to the modified *self* cases. I show that the proposed analysis accounts for the different classes of adjectives that combine with *self*. In the section that follows, I argue that crucially, the unmodified *self* examples can all be derived if we relax the semantics in this manner. Furthermore, I argue that the semantic unification of the two types of *self* gives rise to the differences present in the syntax (presence vs absence of *self*-incorporation, which in turn give rise to the presence vs absence of Principle A).

(18) *The meaning of “self” (first sketch)*

- a. $\|self\| = \lambda x.\lambda y.y \text{ bears } R \text{ to } x$ *Asymmetric*
- b. $\|self\| = \lambda x.\lambda y.R(y, x)$ *Symmetric*

In order to explain the modified *self* examples in Greek and Kutchi Gujarati, I argue that the meaning of the utterance can be derived if we assume that one argument, say x , is a part of the second argument, y , however the argument y is not a part of the argument x . By assuming such an asymmetric relation, we derive a meaning as sketched in (19).

(19) $\|John \text{ saw his } \dots self\| = 1$ iff John saw $\iota z . R(z, John)$ and it is possible that not $R(John, z)$

In (19), I assume that a definite determiner combines with *self*, *ton* in Greek and *-ne* in Kutchi Gujarati, which picks out the unique, salient individual that is in relation R to *John*. If we add adjectival modifiers to (19), they serve to further specify this individual.

The Greek¹⁰ and Kutchi Gujarati data in (20)-(23) show that there are three types of adjectives (intersective, non-intersective but subsective, and non-subsective but privative) that can modify *self*^{d1}.

Intersective

- (20) a. O Kostas idhe ton arosto eafto tu (ston kathrefti) *Greek*
 Costas saw det sick self his loc.P-the mirror
 “Costas saw his sick self (in the mirror)”
- b. Valji e-no bimar potha-ne joyo *Kutchi Gujarati*
 Valji 3.sg-gen sick self-acc see.pfv.m.sg
 “Valji saw his sick self”

Non-intersective, subsective

- (21) a. O Kostas idhe ton sinithi eafto tu *Greek*
 Costas saw det usual/typical self his
 “Costas saw his usual/typical self”
- b. Valji e-no thik thak potha-ne joyo *Kutchi Gujarati*
 Valji 3.sg-gen usual/typical self-acc see.pfv.m.sg
 “Valji saw his usual/typical self”

Non-subsective, Privative

- (22) a. Costas idhe ton fandastiko eafto tu *Greek*
 Costas saw det imaginary self his
 “Costas saw his imaginary self”
- b. Valji e-no khota potha-ne joyo *Kutchi Gujarati*
 Valji 3.sg-gen imaginary self-acc see.pfv.m.sg
 “Valji saw his imaginary self”

Plain non-subsective

- (23) a. O Costas idhe ton ?*dhinitiko / *endhechomeno eafto tu *Greek*
 Costas saw the potential/ potential-contingent self his
 “Costas saw his potential self¹²”

¹⁰ Greek speakers find these modified *self* cases acceptable but slightly marked. Naturally occurring examples appear in Google; thanks to Dimitris Michelioudakis (p.c.) for pointing this out to me.

¹¹ See Partee (2003) for diagnosing adjective classes. The only class of adjective that cannot modify *self* in Greek and Kutchi Gujarati is *plain non-subsective*. It is not immediately clear why this particular class of adjective cannot combine with anaphors; this is not predicted by this analysis.

¹² The Kutchi Gujarati equivalent is not possible here, for *possible* is not an adjective, but a complex verb which cannot combine with *self*.

In order to explain the first class, namely intersective adjectives, identity (as discussed in the previous section) alone would suffice, as long as we focus on a fixed point in time. For instance, if I am sick right now, and I utter the following: *I see my sick self in the mirror*, an analysis in terms of identity would yield the meaning that I see the unique salient individual in the mirror that is identical to *me*, and *sick*. This would be a true statement. However something more needs to be said in order to account for subsective and privative adjective examples. Clearly, *John's better self* (where *better* is subsective) would not be identical to *John* (even at a fixed point in time), and *John's former self* or *John's imaginary self* (*former* and *imaginary* being privative) would also not be identical to *John*.

The core of the idea that I have alluded to earlier in this section, is that the relation between the two arguments is equivalent to an asymmetric notion meaning something along the lines of *part of*¹³; *a* is a part of *b*; however, *b* is not a part of *a*. The specific definition of the relation between the two arguments in (24) is not trivial, and I will dedicate the remainder of this section to pinning it down. I will then illustrate the application of the proposal to the non-intersective but subsective adjective class.

(24) $\| \text{John saw his ... self} \| = 1$ iff John saw $\iota z . R(z, \text{John})$ and it is possible that not $R(\text{John}, z)$

Certain classes of adjectives make reference to various points in the individual's life, e.g. *former self*, *current self*, whereas other adjectives may make references to co-existing aspects of an individual at a set point in time (e.g. *cynical self*, *idealistic self*). We must first establish the concept of the individual that the denotation of *self* selects a part of (i.e. the internal argument of *self*), before turning to the relation between the two arguments of *self*. I will refer to this individual as the *host individual*;¹⁴ for every individual, there is a corresponding host individual.

¹³ This relation picks out psychological aspects of the individual, for example John painted himself blue, looked in the mirror and said "I saw my blue self", the only possible reading in Greek and Kutchi Gujarati, is that *John* saw his sad/depressed self".

¹⁴ I inherit the term *host individual* from Musan (1999).

The host individual is the collection of all temporal stages¹⁵ of an individual, and the collection of all physical and psychological aspects of that individual at any temporal stage. In other words, the host individual is equal to the individual in their entirety, temporally, physically and psychologically at each point throughout the existence. However, a host individual, encompassing all aspects of an individual, can be underspecified with respect to certain of its properties; for example, a host individual can be both *good* and *bad*, but (naturally) not simultaneously.

The *host individual* will allow the denotation of *self* to select *a part* of it, where *a part* is defined as follows: In line with Carlson (1977) and Lewis (1983), I assume that at a fixed temporal point and in a fixed world, a synchronic part of a host individual is related to the host individual in the following way. First, the part of the host individual is specified more than the host individual for one or more properties. Second, the part of the host individual does not differ from the host individual in any other way. To illustrate, assume that the host individual ∂_1 corresponds to a person, *Dan*, who can be good, but can also be bad (but not both simultaneously); i.e. ∂_1 has the property of being *good or bad* – and ∂_1 is not further specified. A part μ of ∂_1 may make a selection in this regard. *Dan's good self* (or μ_g) might be *good and not bad*, whereas *Dan's bad self* (or μ_b) might be *bad and not good*. Naturally, these may entail further selections – for instance, *Dan's good self* might also be *idealistic and not cynical* whereas *Dan's bad self* might be *cynical and not idealistic*. Again, ∂_1 would be underspecified, i.e. ∂_1 would be *cynical or idealistic*. The crucial point is that apart from being specified more than ∂_1 , all of its parts (e.g. μ_g and μ_b) are identical to ∂_1 ; this derives non-identity under near-identity (i.e. *my good self* feels identical to me in some loose sense even though it is not).

Every part of a host individual is a part of a host individual at some set point (or more) throughout the individual's existence, e.g. the part of an individual's personality that is *evil*, the part of their personality that is *fair* etc all surface at separate points in time. This will be crucial for explaining the non-identity cases. Now that the *part of* relation, which I argue to hold between the two arguments of *self* has been specified, I return to the various classes of adjectives

¹⁵ Stages are temporal parts or slices of the individual, c.f. Quine (1960), Carlson (1977a). A stage can be any length that is included in its host individual's time of existence.

that may combine with *self*. We can first define the lexical entry in (25), based on the above discussion.

(25) $\|self\| = \lambda x.\lambda y. y \text{ is a part of } x$

Naturally, there is an interaction between time and parts of a host individual (e.g. if John was innocent in the past, we might say *I admired John's innocent self*, but he may no longer be innocent and never become innocent again). To simplify, I focus on cases where the relevant part of the individual exists at the same time at which the event or state denoted by the predicate exists. For example, consider *John saw his good self*; the part of *John* that is *good*, must be present in the timeframe in which *John* carried out the act of seeing *this good part of him*, cf. Musan (1999). To illustrate my semantic analysis for the comparatively simple cases, I will first discuss the intersective and subsective class. At a fixed point in time *t*, the data in (26) can be treated as intersective if *John is sick*, given that at this point in time *t* John in his entirety is sick.

- (26) a. John e-no bimar potha-ne jo-yo *Kutchi Gujarati*
 John 3.sg-gen sick self-acc see-pfv.m.sg
 “John saw his sick self (in the mirror)”
- b. O Kostas idhe ton arosto eafto tu ston kathrefti *Greek*
 Costas saw the sick self his loc.P-the mirror
 “Costas saw his sick self (in the mirror)”

I assume that *bimar* ‘sick’ combines with *potha* ‘self’ by means of predicate modification, as is usually assumed for intersective adjectives. Thus, based on the meaning of *potha* ‘self’ in (25), the relevant lexical entries and truth conditions associated with *bimar potha* ‘sick self’ are given in (27) and (28) respectively. The lexical entry shows that in the intersective case (28), the unique individual in object position (in this case a part of *John* that may be identical to the host individual *John*) is sick.

- (27) a. $\|potha/eafto/self\| = \lambda x.\lambda y. y \text{ is a part of } x$
 b. $\|bimar/arosto/sick\| = \lambda x.x \text{ is sick}$

- (28) a. $\| \text{John saw his self} \| = 1$ iff John saw ιz . z is a part of John
 b. $\| \text{John saw his sick self} \| = 1$ iff John saw ιz . z is sick and z is a part of John

The privative class of adjectives, as illustrated in (29) and (30) is not as straightforward as the subsecutive and intersective classes, for we need to assume that the host individual can be segmented according to *temporal slices* (for (29)) and that we can talk about parts of the host individual that exist in worlds other than the real world (for (30)).

- (29) a. John e-no pelano potha-ne nafrat kar-e Kutchi Gujarati
 John 3.sg-gen former self-acc hate do-3.sg
 “John hates his former self”
 b. O Costas misos ton proigoumenos eafto tu Greek
 Costas hates det former self his
 “Costas hates his former self”
- (30) a. John e-no khoto potha-ne prem kar-e Kutchi Gujarati
 John 3.sg-gen imaginary self-acc love do-3.sg
 “John loves his imaginary self”
 b. O Costas agapai ton fandastiko eafto tu Greek
 Costas loves det imaginary self his
 “Costas loves his imaginary self”

A temporal slice is a stage of a host individual at a fixed point in time. A host individual exists at different stages of time. For any stage of time, the temporal slice of a host individual at a particular stage of time is an individual that’s identical to all of what the individual is at a particular stage of time. Temporal slices interact with parts of a host individual, for example, *John* at *age 7* may have a part that is innocent (but no part that is mature), whereas *John* at *age 28* may no longer have such an innocent part (and only a part that is mature). In this case, the host individual in its entirety has an innocent part as well as a mature part, but both are temporally bound; the innocent part to the earlier time slices of *John* and the mature part to the later time slices of *John*.

Turning to the meaning of *former self*, we need to introduce a time argument for *self*, illustrated in (31a); *self* can then combine with *former*, as defined in (31b), adapted from von Fintel & Heim (2010:69). (I differ from von Fintel & Heim in assuming that t is of type 1.) As

shown in (31c), we derive the correct truth conditions for *John hates his former self*, namely that *John* hates some part (or all) of what he was at some point in the past, but what he is no longer.

- (31) a. $\|potha/eafto/self\|^t = \lambda x.\lambda y. y \text{ is a part of } x \text{ at } t$
 b. $\|pelano/proigoumenos/former\|^t = \lambda f_{\langle t, \langle e, t \rangle \rangle}.\lambda x.[f(t)(x) = 0 \ \& \ \exists t' \text{ before } t: f(t')(x) = 1]$
 c. $\|John \text{ hates his former self}\|^t = 1 \text{ iff } John \text{ hates } \iota z. z \text{ is not a part of } John \text{ at } t \ \& \ \exists t' \text{ before } t: z \text{ is a part of } John \text{ at } t'$

Having accounted for (29), let us move on to (30). Although *khoto potha* ‘imaginary self’ is a privative adjective, it is not enough to simply apply the analysis for *pelano* ‘former’; something more is required. The problem is that *John’s imaginary self* can refer to an individual that only exists in John’s dreams and does not exist at any point in time in the real world. In this sense, *John’s imaginary self* may not be part of the host individual *John* in the real world. If, however, we relativize *self* to possible worlds¹⁶, we can analyse this on analogy to *pelano* ‘former’. I provide a rough sketch in (32), assuming that the person whose imagination *khoto* ‘imaginary’ refers to, is provided by the context (as indicated in (32b)), and resolved towards *John* in (32c). The truth conditions in (32c) correctly capture the fact that *John loves his imaginary self* is true in a situation where *John* believes that he is a hero (even though he is not), and *John* loves the hero that he thinks he is.

- (32) a. $\|potha/eafto/self\|^w = \lambda x.\lambda y. y \text{ is a part of } x \text{ in } w$
 b. $\|khoto/ \text{ fandastiko } /imaginary\|^w = \lambda f_{\langle s, \langle e, t \rangle \rangle}.\lambda x.[f(w)(x) = 0 \ \& \ \forall w' \text{ compatible with the daydreams of some salient individual } y: f(w')(x) = 1]$
 c. $\|John \text{ loves his imaginary self}\|^w = 1 \text{ iff } John \text{ loves } \iota z. z \text{ is not a part of } John \text{ in } w \ \& \ \forall w' \text{ compatible with the daydreams of } John: z \text{ is a part of } John \text{ in } w'$

¹⁶ Of course, once we relativize *potha* ‘self’ to worlds and times, the world and time parameter will always be present, but for simplicity, I only write them as and when they are needed.

The question remains why *his alleged self* or *his putative self* (with plain non-subjective adjectives) seem to be impossible (cross-linguistically); the semantic analysis would predict these to be acceptable. At this stage, it is not clear how to account for this apparent gap.

2.3 Unifying Unmodified & Modified *Self*

In the previous section, we saw that relaxing the identity relation allowed us to derive the correct truth conditions for modified *self*. In this section, we will see that the proposed semantics from the previous section carries over to the cases that appear to exhibit identity. In order to account for these cases, I assume that the relation between the arguments becomes symmetric due to the incorporation of *self*. Before presenting this analysis, it is worth discussing an alternative approach to deriving *identity* from the *part of* relation. I argue that this alternative faces problems that my analysis does not.

Given the above analysis, supported by native speaker intuitions regarding modified *self* in Greek and Kutchi Gujarati (*self* picks out a particular part of the individual, rather than the individual in their entirety). It seems appropriate to assume that the maximal part of an individual in the absence of an adjective (i.e. in the case of unmodified *self*) is by default the individual in its entirety, which may be most salient. Thus, in both the modified and unmodified *self* cases, the part of the individual that is picked out can be explained in terms of saliency. In the following example, *John's sick self*, the most salient part of John is selected that counts as *sick*, whereas in the case of *himself*, the host individual of the referent (*him*) is selected in its entirety.

Although such a view is plausible, this line of enquiry seems empirically incorrect. Consider the following scenarios. If we assume that *himself* refers to a maximal, salient part of the individual selected by *him* (rather than necessarily the entire individual), one possible reading that should be available for (33) is one where *John likes his dark self* (which would be the most salient part of *John's*). However, (33) only seems to have the reading where *John likes John* (as an individual, in his entirety).

(33) After discovering John's dark self last weekend, I'm surprised that he likes himself.

Similarly, the anaphor *himself* should fail to refer to a particular part of *John* (including the maximal part that corresponds to *John* in his entirety), if several parts of *John* are made salient, as in (34a). We find such an effect in (34b), where the referent of *his dog* cannot be resolved easily (though resolution to the closest antecedent may be an option). However, in (34a), such an effect is absent. The final sentence clearly means *John nevertheless likes John (in his entirety)*, even though this is not the most salient part of *John* and in fact there is no unique most salient part of *John* in this utterance.

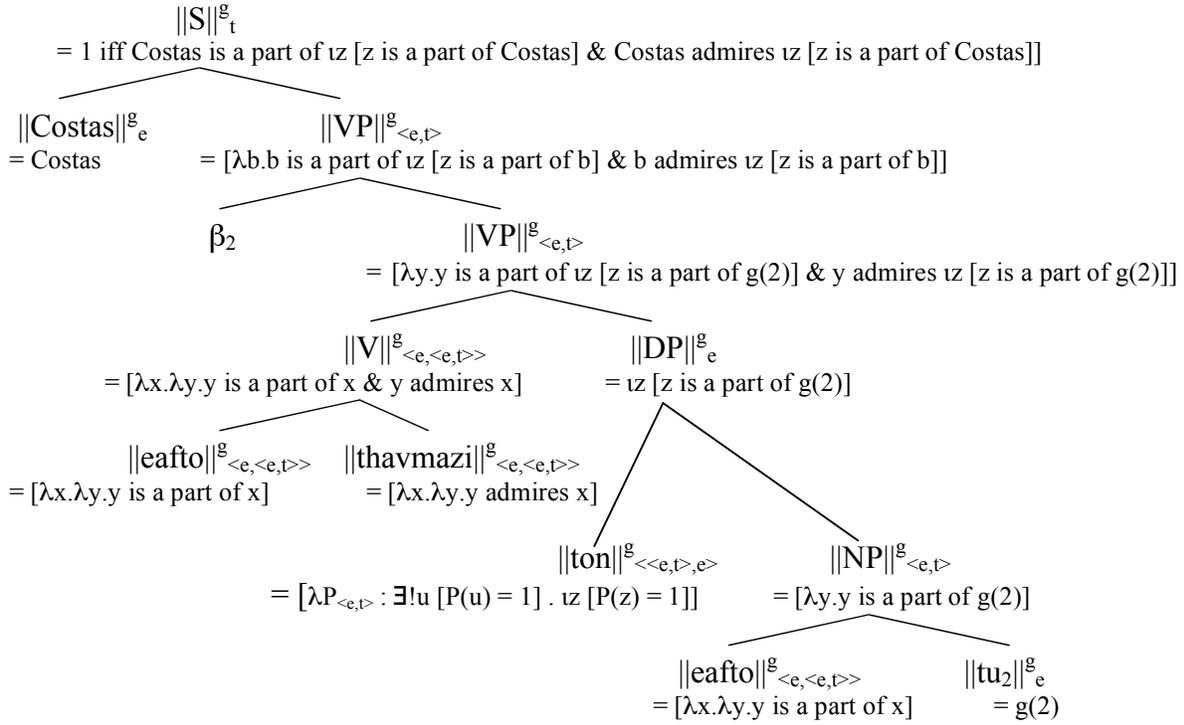
- (34) a. There are many sides to John. He clearly has a good self, he cares about others, he wants to do things morally, etc. At the same time, his psychotic self always takes over when he's stressed, and his greedy self takes over when large amounts of money are involved. John is aware that he has issues, but he nevertheless likes himself.
- b. John owns a small kennel. He has a cute, well-behaved dog. He also has a psychotic dog that attacks people, and a timid dog that always hides. ?? Nevertheless, he's happy and he likes his dog.

To account for identity with unmodified *self*, I propose (as outlined already in section 2.1) that unmodified *self* undergoes incorporation of the anaphor into the predicate, and that the anaphor is interpreted twice, reversing the order of the predicates. While this was irrelevant in section 2.1, identity being symmetric, it has an impact in the present case, as it compositionally yields *x is a part of y and y is a part of x*, thereby turning the part-of relation into a symmetric relation. Put differently, the meaning of the DP *ton eafo tu* means that the unique individual *Costas*, is a part of *Costas*. By interpreting *eafo* twice and combined with the meaning of the predicate, the meaning of the VP *eafo thavmazi ton eafo tu* gives rise is a conjunction between the *part of* relation and the predicate *admiring* the unique part of *Costas* that is a part of *Costas*. The derived LF for an example such as *John saw himself* is given in (35b), the complete derivation is illustrated in (35c).

- (35) a. O Costas_k thavmazi [ton eafo tu_k] *Modern Greek*
 Costas admires det self 3.sg-gen
 "Costas_k admires himself_k"

b. LF: O Costas *eafto*-thavmazi [ton eafto tu]

c.



d. *In words*: Costas is a part of the unique individual (in the utterance context) that is a part of Costas and Costas admires the unique individual that is a part of Costas.

Due to *self*-incorporation (which leads to assertion of “Costas is a part of $\iota z [z \text{ is a part of Costas}]$ ”), identity between the subject and the object is established in the grammar. In other words, even though the *part of* relation is not symmetric, *self*-incorporation creates a symmetric relation between the two arguments. This derives both identity and Principle A effects with unmodified *self*.

Conversely, in the case of modified *self*, *self*-incorporation would lead to an incorrect interpretation. Consider the following scenario: Costas has a pitiful side, but he also an over-confident side, both of which he shows at different times. As a matter of fact, he admires not only his over-confident side, but also his pitiful side. In this scenario, (36) may be uttered. If *self*-incorporation took place here, we would get the meaning in (37a), which incorrectly entails (37b); the correct reading is derived without *self*-incorporation, this is given in (38). This is compatible with the assumption that there is no *self*-incorporation with modified *self*.

- (36) O Costas thavmazi [ton **aksiolipito** eafto tu] *Modern Greek*
 Costas admires det.m.sg pitiful self.m.sg 3.m.sg.gen
 “Costas admires his pitiful self”
- (37) ||O Costas thavmazi ton **aksiolipito** eafto tu||
 a. = 1 iff Costas is a part of ιz [z is pitiful & z is a part of Costas] & Costas admires ιz [z is pitiful & z is a part of Costas]] *incorrect*
 b. entails: Costas (in his entirety) is pitiful.
- (38) ||O Costas thavmazi ton **aksiolipito** eafto tu||
 a. = 1 iff Costas admires ιz [z is pitiful & z is a part of Costas]] *correct*
 b. does not entail: Costas (in his entirety) is pitiful.

We can now make a stronger claim, to motivate *self*-incorporation in the case of unmodified *self*, but not in the case of modified *self*. Given that *self* selects a part of a host individual and the individual in its entirety does not seem to be available as a default maximal part (cf. (33) and (34)), *himself* (without *self*-incorporation) would be radically underspecified at any given point in time. Even more problematic, as we can see in (39a-c), the *part of* relation can pick out something that existed in the past and something that will exist in the future. Finally, it is possible to modify the *part of* relation explicitly to pick out individuals in their entirety, (39d).

- (39) a. In the moral sphere, I make decisions and count on my future self to carry them out.
 (www.ucs.mun.ca/~davidt/Intuition.htm)
 \Rightarrow *my future self* refers to an individual that does not yet exist
- b. Although GD is now 'hardcore', I still miss his innocent self. When he was with Big Bang, he was so cute.
 (http://sookyeong.wordpress.com/2009/12/07/gdragons-concert-pinned-with-controversies/)
 \Rightarrow *his innocent self* refers to an individual that no longer exists
- c. Schumacher kept smiling, kept giving non-committal answers... and kept driving like a shadow of his former self.

(www.itv-fl.com/Controller.aspx?PO_ID=49236)

⇒ *his former self* refers to an individual that no longer exists

- d. If he did not receive a glowing review from the boss over his last presentation, the Perfectionist sees it as a failure of his entire self.

(therapyinphiladelphia.com/selfhelp/tips/is_it_low_self_esteem/)

⇒ *his entire self* possibly refers to a complete host individual

The question would thus arise, which part of a host individual unmodified *self* refers to, if it still expresses the *part of* relation. As indicated in (40), *himself* typically picks out an entire host individual at the point in time that the predicate holds at. *Self*-incorporation is a means to grammatically encode this connection, deriving identity from the *part of* relation. *Self*-incorporation achieves the same results (structurally) that we would get from modifying *self* by means of the adjective *entire* (as in *his entire self*, cf. (39d)).

(40) a. John admires himself.

≈ At a point *t* John admires the entire time slice of John at *t*.

≠ John admires his former self (only).

≠ John admires his good self (only). (*but he may be unaware that he has another side*)

Based on this discussion, I propose the LF requirement in (41). This interface requirement posits that *self* cannot remain unconstrained (referring to all or any parts of the host individual). It must either be specified and thus constrained by means of an adjective, or else incorporate into the predicate giving rise to an equally constrained *identity* interpretation. In other words, the idea is that it must be made clear either by means of adjectival modification or by means of *self*-incorporation, which *part* of an individual *self* is meant to select.

(41) *Interface requirement on “self” (at the LF interface):*

To guarantee successful communication, *self* cannot be unconstrained.

- (i) Either a specific part of the host individual that *self* selects must be selected by means of an adjective,
- (ii) Or, as an alternative strategy, the meaning of a *self*-containing clause is disambiguated by means of *self*-incorporation, which gives rise to the identity relation.

The question at this point is whether this analysis overgenerates. Specifically, do we find cases where *self*-incorporation occurs in the presence of an adjective, giving rise to Principle A effects (the meaning of *self* in such constructions amounting to identity? The next section is concerned with this question.

3. The Syntactic Distribution of Principle A

3.1. Principle A as a Consequence of *self*-Incorporation

In the section 1, we observed a correlation between the presence/absence of an adjective and the absence/presence of Principle A. The data in section 1 highlighted the fact that in Greek and Kutchi Gujarati unmodified *self* is always sensitive to Principle A, whereas modified *self* appears to be exempt from it. In the remainder of this paper, I argue for a syntactic analysis of Principle A effects involving *self*, which assumes that the anaphor covertly incorporates into the verb, as illustrated in example (42) and motivated in section 2.3. As we have seen, a transitive verb that incorporates *self* requires identity of subject and direct object (by means of the compositional semantics), thus giving rise to Principle A.

(42) Costas_i admires himself_i
LF: Costas_i self-admires himself_i



An approach along these lines was first argued for by Anagnostopoulou and Everaert (1999) (based on the Reinhart and Reuland 1993 system), and developed in Reuland and Winter

(2010)¹⁷. *Self*-incorporation is generally viewed as the most economic way to encode binding dependencies (Reuland and Winter 2010:75)¹⁸. I argued in section 2.3 that *self*-incorporation is actually due to an LF restriction that bans utterances with *self* from remaining unconstrained. Therefore, *self*-incorporation is generally obligatory unless it is blocked by independent syntactic principles (e.g. the coordinate structure constraint). In the latter case, we can assume that the configuration is still grammatical, as the interface requirement against unconstrained *self* can be flouted as a *last resort*. This is discussed in the following sections.

3.2 The Syntax of Anaphor Incorporation

Given that obligatory anaphor incorporation gives rise to Principle A effects, the question that remains to be answered is, what bans modified *self* from incorporating into the predicate? If modified *self* did incorporate, we would expect to see Principle A effects (and possibly a ban against modification with privative adjectives if incorporation is obligatory). This section aims to address these issues. I argue in section 3.3.1 that incorporation of modified *self* is blocked by the adjective, as incorporation across the adjective would violate independently motivated constraints that hold in the narrow syntax.

¹⁷ Anagnostopoulou and Everaert (1999) proposed this approach for Greek, arguing that Greek *eafto* ‘self’ incorporates into the verb by covert head movement at LF. Anagnostopoulou and Everaert (1999) assume that head movement of *eafto* ‘self’ leaves a trace, but do not provide an explicit semantic analysis. Reuland and Winter (2010), in their analysis of English *self*, assume that incorporated *self* is only interpreted in its landing position.

¹⁸ Reuland and Winter (2010) do not elaborate on the nature of this economy principle; the idea, as presented in Reuland (2001, 2005), can be roughly summarized as follows. If the subject and object of a transitive verb are coreferent, the object’s interpretation is dependent on that of the subject. This dependency, which is indicated by the use of *self*, can be encoded computationally (i.e. syntax) by means of *self*-incorporation. Alternatively, it can be resolved at the interface by means of computational semantics. Reuland’s general idea regarding economy is that it is more economical to encode such an interpretive dependency in the syntax, making it “hard and fast” (Reuland 2005). This makes *self*-incorporation obligatory unless it is blocked by syntactic constraints, which suspend this economy principle. We can envisage this as follows. If *self* can incorporate, the competing derivation where it does not incorporate is eliminated by economy, given the more economic derivation with *self*-incorporation. However, if *self* cannot incorporate to begin with, no comparison between the two derivations will take place. See Reuland (2001), (2005), (2011) for further discussion.

3.3.1 The Absence of Principle A with Modified *Self*

The main claim I wish to make here, is that the absence of Principle A with modified *self* can be explained by locality; the presence of an adjective blocks *self*-incorporation due to Relativised Minimality (Rizzi 1990), a constraint which states that if movement to a certain position targets an element of a certain category (e.g. in the present case: a lexical head), then the closest appropriate element must move. This is illustrated in (43).

(43) *Relativised Minimality (based on Rizzi 1990)*

- a. *possible movement*: $Y_{\text{target position}}$ [$Z_{\text{element of a different category from X}}$ [$X_{\text{element to be moved}}$]]
- b. *impossible movement*: $Y_{\text{target position}}$ [$Z_{\text{element of the same category as X}}$ [$X_{\text{element to be moved}}$]]
-

Let us assume that *self*-incorporation involves a configuration where the verb attracts a lexical head (I assume that this is a generalized process that cross-linguistically underlies incorporation). In the examples in (44), the closest lexical head c-commanded by the verb is not *self* but the adjective *true* (this follows if the structure of a DP is [DP D [AP A [NP N]]]). Given the definition of Relativised Minimality in (43), consequently in the Greek and Kutchi Gujarati examples in (44) the predicate can only attract *true* and not *self*, for the adjective is closer. This means that *self*-incorporation is blocked and in this sense, adjectives are interveners for *self*-incorporation.

- (44) a. [I mitera tu Janni_i] agapai [ton **alithino** eafto_i tu]
 3.f.sg.nom mother Janni_i.gen loves 3.m.sg.acc true self_i 3.m.sg.gen
 “Jannis_i’s mother loves his true self_i”
- b. Valji_i-ni ma [e-no **sacho** potha_i-ne] prem kare
 Valji_i-gen mother 3.sg-gen true self_i-acc love do
 “Valji_i’s mother loves his true self_i”

The relevant configuration for relativised minimality is summarised in (45).

- (45) $V_{\text{(attracts lexical head)}}$... [AP *true*_(lexical head) [NP *self*_(lexical head)]]
-

The above proposal explains the correlation between the two *selfs* (modified vs unmodified) and Principle A, by highlighting that the core difference between them can be explained by locality. However, it is not immediately clear why the determiner is not an intervener for head movement in (3) and (4), repeated as (46) and (47) below. Greek has an overt determiner *ton* ‘the’. In Kutchi Gujarati, I assume for now that the differential case marker *-ne* bears the properties of a determiner (as it correlates with definiteness/specificity).

(46) a. O Costas_i vlepi [ton eaf_{to}_i tu] *Greek*
 Costas_i sees det self_i.m.sg 3.m.sg
 ‘Costas_i sees himself_i’

b.*O Costas_i xeri oti Maria vlepi [ton eaf_{to}_i tu]
 Costas_i knows that Maria sees det self.m.sg 3.m.sg
 ‘Costas_i knows that Maria sees himself_i’

(47) a. John_i [e-na potha_i-ne] joyo *Kutchi Gujarati*
 John_i 3.sg.gen self_i-acc see.pfv.m.sg
 ‘John_i saw himself_i’

b.*John_i kidthu ke Maria [e-na potha_i-ne] joyo
 John_i said that Maria 3.sg-gen self_i-acc see.pfv.m.sg
 ‘John_i said that Maria saw himself_i’

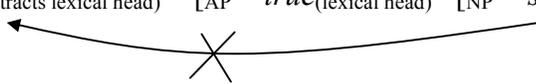
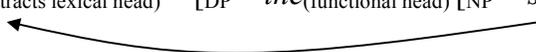
The difference between adjectives and determiners regarding their status as interveners can be explained by the distinction between the two categories; Baker and Hale (1990) demonstrate that lexical heads and functional heads must be treated as different categories by Relativised Minimality (i.e. there is no uniform Head Movement Constraint). They argue that lexical heads are interveners for lexical heads but not for functional heads and vice versa. An example of a lexical head (the noun *seuan* ‘man’) incorporating into the verb across a functional head (the demonstrative determiner *yede* ‘that’) is given in (48).

(48) a. [Yede seuan-ide] a-mu-ban. *Southern Tiwa*
 that man-suf 2sS/A-see-past
 ‘You saw that man.’

- b. [DP Yede [NP [N *t_i*]] a-**seuan_i**-mu-ban.
 that 2sS-man-see-past
 ‘You saw that man.’

(Baker & Hale 1990:291, quoting Allen, Gardiner, and Frantz 1984)

Thus, a functional head such as a determiner (in (49) *ton*), is not an intervener for a lexical head, such as the noun *eafto* ‘self’¹⁹. Therefore, while in the examples in (44), *self*-movement is blocked due to relativised minimality (given that *true* is also a lexical head), in (46) and (47), it is not. This distribution is summarised in (49).

- (49) a.* V_(attracts lexical head) [AP *true*_(lexical head) [NP *self*_(lexical head)]] *intervention*
- 
- b. V_(attracts lexical head) [DP *the*_(functional head) [NP *self*_(lexical head)]] *no intervention*
- 

The above explanation, depicted in (49), assumes that incorporation of modified *self* cannot occur due to processes in the narrow syntax; however incorporation of unmodified *self* is acceptable, as there is no relevant intervener. This derives the contrast between modified and unmodified *self*.

For completeness’ sake, it is worth pointing out that possessor DPs do not intervene with *self*-incorporation either. It is plausible that the possessor, *tu* in (50a) and *e-na* in (50b), though taking the shape of a genitive-marked DP, is truly a complement of *self*, given that *self* is a relational noun (*c.f.* appendix). In Greek, it is likely that this complement is still in its base position, whereas in Kutchi Gujarati, the possessor has moved (plausibly as an XP) to the specifier of the DP to derive the surface order; therefore, neither can be an intervener. This is illustrated by the bracketed structures in (50).

¹⁹ Note (although not relevant here), a lexical head is not an intervener for incorporation of a functional head either; *c.f.* Baker and Hale (1990) for examples.

- (50) a. O Costas_i vlepi [ton eaf_{to}_i tu]
 Costas_i sees det self_i.m.sg 3.m.sg
 “Costas_i sees himself_i”

Greek

Costas [DP₁ ton [NP eaf_{to} [DP₂ tu]]]

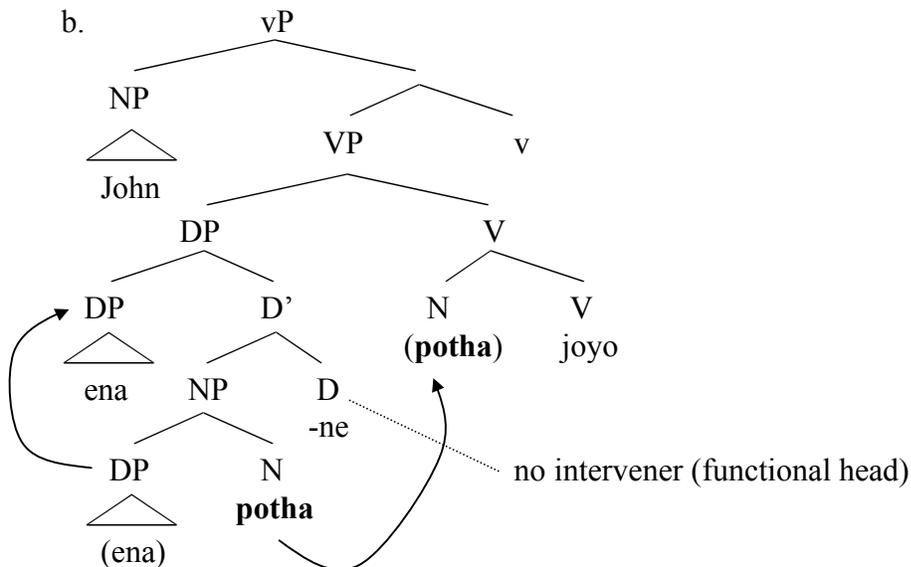
- b. Costas_i [e-na potha_i-ne] joyo
 Costas_i 3.sg.gen self_i-acc see.pfv.m.sg
 “Costas_i saw himself_i”

Kutchi Gujarati

Costas [SpecDP₁ [DP₂ ena] [D’₁ D [NP potha-ne t_{ena}]]]

For Kutchi Gujarati, we can now give a complete illustration (51a+b), assuming that the differential case marker *-ne* is located in D²⁰ (which is head-final). This contrasts with (52a+b), where *self*-incorporation is blocked by the presence of the adjective *mota* ‘big²¹’.

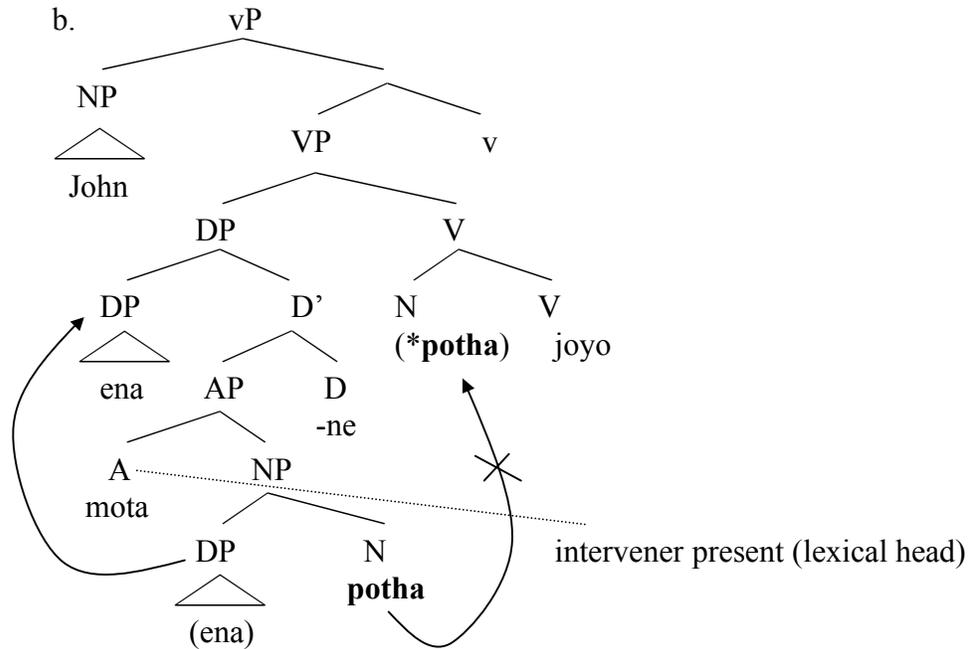
- (51) a. John e-na potha-ne joyo
 John 3.sg-gen self-acc see.pfv.m.sg
 “John saw himself”



²⁰ The structures for Greek are analogous except for the difference in headedness (Greek being head-initial), and the fact that the genitive noun phrase does not move into SpecDP.

²¹ Parentheses mark unpronounced copies in these trees.

- (52) a. John e-na mota potha-ne joyo
 John 3.sg-gen big self-acc see.pfv.m.sg
 ‘John saw his fat self’



4. Old Puzzles Revisited

4.1 Unbound Possessors in Modern Greek

Greek allows for cases where the possessor of *eafto* ‘self’ is truly unbound (i.e. where it does not co-vary with any other expression in the clause). This is illustrated in (53). (Anagnostopoulou & Everaert call this the *reified substantive reading* of *eafto*, a term that I do not adopt). The possibility of such an unbound possessor (here: *tis Marias* ‘of Mary’) actually follows from my analysis whenever *self*-incorporation is blocked. In (53) the resulting meaning is that only *Jannis* knows the unique individual that is a part of *Maria*’s and *good*.

- (53) O Jannis kseri mono ton kalo eafto **tis Marias**
 the Jannis(N) knows only the good self(A) the Maria(G)
 ‘Jannis only knows Maria’s good self’
 (Anagnostopoulou & Everaert 1998:103)

4.2 Clitic Doubling in Modern Greek

The idea of deriving identity through anaphor incorporation can be traced back to work by Anagnostopoulou and Everaert (1999) for Modern Greek. The authors assume that *eafto* is a relational noun, *c.f.* appendix 3 and Iatridou (1988), where *eafto* incorporates into the matrix verb. They argue that anaphor incorporation results in the LF (54).

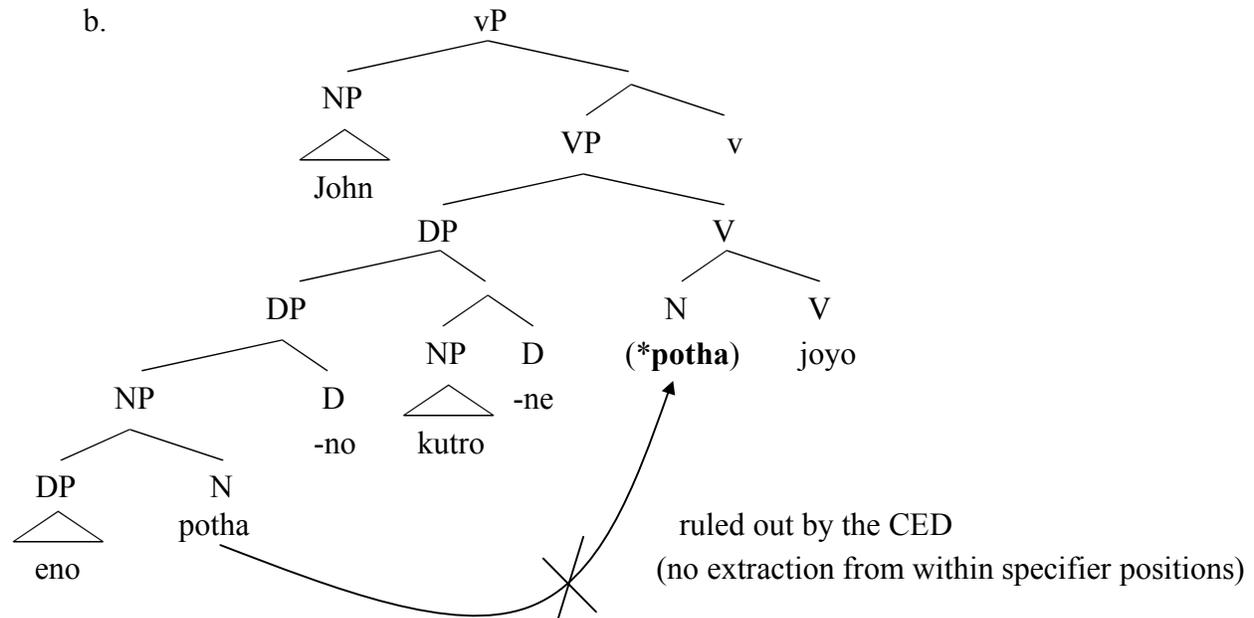
- (54) a. O Costas (ton) thavmazi ton eafto tu
Costas det admires det self 3.sg.gen
“Costas admires himself”

Anagnostopoulou and Everaert (1999) do not provide an explicit semantics for the cases concerning identity, thus it is not clear how the actual truth conditions are derived in this system. Furthermore, it is not immediately obvious how their analysis (couched in the Reinhart and Reuland system), could explain the differences in meaning between modified and unmodified *self*. Given that they do not comment on the semantics of *self* in Greek, I will say no more about their proposal in relation to the data discussed in this paper. Instead, I wish to discuss an empirical observation made by Iatridou (1988), Anagnostopoulou and Everaert (1999) regarding clitic doubling.

In Modern Greek, clitic doubling of the anaphor takes place in the form of a pronominal clitic. Iatridou (1988) and Anagnostopoulou & Everaert (1999) view this as a problem and state the following question: If the clitic is a pronominal element, is it a reflexive or a non-reflexive pronoun? Does Binding Theory apply? If so, how does it satisfy Binding Conditions? I follow recent work by Alexiadou & Anagnostopoulou (2001) and Anagnostopoulou (2003) who argue that clitics in Greek clitic-doubling constructions are not really pronouns; instead, clitics in Greek clitic-doubling are purely formal features of DPs. Alexiadou & Anagnostopoulou assume that these features undergo overt movement without phrasal pied-piping. In other words, clitics are semantically vacuous, similar to scope markers. Alexiadou & Anagnostopoulou motivate this by showing that clitic doubling is obligatory in passives, raising constructions and unaccusatives (i.e. in all the cases where a lower argument moves to SpecTP), such as (55), if another argument DP is present. Formally, Alexiadou & Anagnostopoulou view clitic doubling as a mechanism that allows the lower DP, which ends up in subject position, to move past the

Principle A effects, the possessive reflexive constructions show that incorporation of the anaphor is blocked by independent syntactic principles, in this case the CED, illustrated in (57).

- (57) a. # John_k [[e-na *potha-no*]_k kutro] *potha-joyo*.
 John 3.sg-gen self-gen dog.m.sg self-see.pfv.m.sg
 “John *self*-saw his dog.”



Given that reflexive possessors cannot undergo *self*-incorporation, the question naturally emerges how Principle A applies to possessors. First of all, there is evidence that Principle A effects are rather limited in the case of possessive reflexives, as we can have genitive-marked (unmodified) *potha* in the possessor position of subject DPs. So, possessive *potha* does not seem to require an antecedent outside the DP in any case. Then why do Principle A effects like in (56) occur?

- (58) a. Ama-ro potha-no kutro aav-yo
 2.sg-gen self-gen dog.m.sg come.pfv.m.sg
 ‘Our (own) dog came’ (literally ‘Our self’s dog came’)
- b. John-nu potha-nu ghar bari g-yu.
 John-gen self-gen house burn went-pfv.n.sg
 ‘John’s (own) house burned down’ (literally ‘John’s self’s house burned down’)
- c. E-nu potha-nu ghar bari g-yu.
 3.sg-gen self-gen house burn went-pfv.n.sg
 ‘His / Her (own) house burned down.’ (literally ‘His / Her self’s house burned down.’)

The following facts suggest that the necessity (and possibility) of *potha* inside possessors (c.f. (56)) might be linked to alienable/inalienable possession, and it might be of a semantic nature. First, in cases of inalienable possession (e.g. kinship terms, body parts and properties), *potha* is optional. This is illustrated by the data in (59).

- (59) a. John e-ni (potha-ni) ben-ne joyi
 John 3.sg-gen self-gen sister-acc see.pfv.f.sg
 ‘John saw his own sister’
- b. John e-no (potha-no) hath-ne uparyo
 John 3.sg-gen self-gen arm-acc raised.pfv.m.sg
 ‘John raised his (own) arm’
- c. John e-na (potha-na) vaar-ne ketchya
 John 3.sg-gen self-gen hair-acc pull.pfv.pl
 ‘John pulled his (own) hair’
- d. John e-ni (potha-ni) aakhi-ne bandth kari
 John 3.sg-gen self-gen eyes-acc close do.pfv.f.sg
 ‘John closed his (own) eyes’
- e. John e-ni (potha-ni) uchai maapi
 John 3.sg-gen self-gen height measured
 ‘John measured his (own) height’

The data in (59) contrast with (60), where *potha* is necessary.

- (60) a. John e-no *(potha-no) kutro joyo
 John 3.sg-gen self-gen dog.m.sg see.pfv.m.sg
 ‘John saw his own dog’
- b. John e-nu *(potha-nu) ghar joyu
 John 3.sg-gen self-gen house see.pfv.n.sg
 ‘John saw his own house’

- c. John e-ni *(potha-ni) gaadi joyi
 John 3.sg-gen self-gen car see.pfv.f.sg
 “John saw his own car”
- d. John e-ni *(potha-ni) chopri joyi
 John 3.sg-gen self-gen book see.pfv.f.sg
 “John saw his own book”

Finally, the examples of a reflexive object in (61a) does not even allow for *potha* inside the possessor of the argument *ena potha-ne*, cf. (61b), and thus contrasts with (56) above.

- (61) a. Valji_i [e-na mota potha-ne]_i joyo
 Valji 3.sg-gen.pl big.pl self.pl-acc saw.pfv.m.sg
 “Valji saw his fat self”
- b. *Valji_i [[e-na potha-na] mota potha-ne]_i joyo
 Valji 3.sg-gen.pl self.pl-gen.pl big.pl self.pl-acc saw.pfv.m.sg
 “Valji saw his fat self”

The data in this section seem to suggest that *potha* in possessor position is required to mark co-reference between the possessor and a local antecedent, if the possessive relation is alienable, whereas it is optional if this relation is inalienable. It seems as though *potha* in these constructions (or perhaps it is the constructions themselves), cannot be compared to the cases discussed in the main sections of this paper. It follows that in possessive reflexive constructions, any Principle A and B effects that we observe are plausibly semantic in nature, for alienability is a semantic property of a possessive relation. The observations discussed in this section extend beyond the scope of this project, and I leave them open for future research.

6. Open Questions

As shown before, I derive Principle A effects from *self*-incorporation. In this section, I discuss another case where the reflexive and its antecedent are not co-arguments (i.e. arguments of the same verb); however this time, these cases patterns like those in the main sections. The case I am referring to is exceptional case marking (ECM) in Greek and Kutchi Gujarati. ECM constructions are problematic for a view where Principle A is derived by *self*-incorporation or other mechanisms of subject-object identification, such as Reinhart and Reuland (1993). In the

case of ECM constructions containing an anaphor, Principle A effects arise. Given that *self* and its antecedent do not belong to the same predicate, *self*-incorporation alone will not do, and an alternative must be pursued.

6.1 ECM Constructions in Greek & Kutchi Gujarati

The examples in (62) and (63) are ECM constructions in Kutchi Gujarati and Greek respectively.²³ The example in (64) illustrates acceptable ECM clauses containing an anaphor.

(62) a. Valji-ne Reena-ne dablu mar-va-nu khaptu tu *Kutchi Gujarati*
 Valji-dat Reena-acc container.n.sg hit-inf-gen want aux
 “Valji wanted Reena to hit the container”

b. Valji-ne Reena-ne sui ja-va-nu khaptu tu *Greek*
 Valji-dat Reena-acc sleep go-inf-gen want aux
 “Valji wanted Reena to go to sleep”

(63) a. O Yiorghos perimene tin Maria na grapsi asxima sto djagonisma.
 the Jorghos expected the.acc Maria subj write badly in.the exam
 “Jorghos expected Maria to do badly in the exam”

b. O Yiorghos ithele tin Maria na grapsi asxima sto djagonisma.
 the Jorghos wanted the.acc Maria subj write badly in.the exam
 “Jorghos wanted Maria to do badly in the exam”

(64) a. Valji-ne **e-na potha-ne** sui ja-va-nu khaptu tu
 Valji-dat 3.sg-gen self-acc sleep go-inf-gen want aux
 “Valji wanted himself to go to sleep” (... but he found it hard to stop watching TV).

²³ For Greek ECM, see Schneider-Zioga (1992), Kotzoglou (2002). The Kutchi Gujarati examples below indicate that we are dealing with ECM in (56). Example (i) shows that the accusative-marked argument can be an expletive with an associate that’s an argument of the embedded clause (*it ... that John will come*).

i. Valji-ne aa-ne kevai ja-va-nu khaptu tu ke John avse
 Valji-dat that-acc said go-inf-gen want aux that John come.fut
 “Valji wanted it to be said that John will come”

Example (ii) shows that the accusative-marked argument can be part of an idiom in the embedded clause.

ii. Valji-ne tari jeeb-ne kap-vai ja-va-nu khaptu tu
 Valji-dat your tongue-acc cut-pass go-inf-gen want aux
 “Valji wanted you to shut up”

This indicates that the accusative-marked argument (while plausibly receiving accusative case from the matrix clause) is an embedded subject, i.e. we are not dealing with a control construction (or with a construction where the embedded clause has a *pro* subject).

- b. O Yiorghos perimene **ton eafto tu** na grapsi asxima sto djagonisma.
 the Jorghos expected the.acc self his subj write badly in.the exam
 “Jorghos expected himself to do badly in the exam” (*ton eafto tu* needs to be focused)
- c.? O Yiorghos ithele **ton eafto tu** na grapsi asxima sto djagonisma.
 the Jorghos wanted the.acc self his subj write badly in.the exam
 “Jorghos wanted himself to do badly in the exam”

The problem is, that such constructions also exhibit Principle A effects of the same type as we find in matrix clauses. The examples in (65) show that Principle A effects surface with unmodified *self*, whereas the data in (66) show its absence with modified *self*. This is the same observation that has been illustrated throughout this paper.

- (65) a. *Valji kidthu ke Reena-ne **e-na potha-ne** sui ja-va-nu khaptu tu
 Valji said that Reena-acc 3.sg-gen self-acc sleep go-inf-gen want aux
 “Valji said that Reena wanted himself(Valji) to go to sleep”
- b.*O Yiorghos xeri oti i Maria perimene **ton eafto tu** na grapsi asxima sto djagonisma.
 Jorghos knows that Maria expected the self his subj write badly in.the exam
 “Jorghos knows that Maria expected himself(=Jorghos) to do badly in the exam”
- (66) a. Valji kidthu ke Reena-ne **e-na bimar potha-ne** sui ja-va-nu khaptu tu
 Valji said that Reena-acc 3.sg-gen sick self-acc sleep go-inf-gen want aux
 “Valji said that Reena wanted his sick self(Valji's sick self) to go to sleep”
- b.?O Yiorghos xeri oti i Maria perimene **ton aksiolipito eafto tu** na grapsi asximasto
 Jorghos knows that Maria expected the pitiful self his subj write badly in.the
 djagonisma.
 exam
 “Jorghos knows that Maria expected his pitiful self to do badly in the exam”

The pattern in (64)-(66) is not predicted from this analysis. Given that we see Principle A effects, we would expect *self*-incorporation; however in ECM clauses this may appear not to be possible, for the anaphor and its referent are arguments of different verbs (the anaphor is the subject of the embedded clause, its antecedent is the subject of the matrix clause). Thus, it is initially not clear how *self*-incorporation could apply. We may expect (65) to be good, as *self*-incorporation should be blocked anyway. Assuming that *self* cannot incorporate into the matrix predicate it is not immediately obvious why there are Principle A effects in ECM constructions, as the analysis predicts its absence.

At this point, there are two possible solutions to this puzzle. Either Principle A in ECM constructions is a completely different phenomenon from Principle A in non-ECM clauses, or *self-incorporation* into the matrix predicate *can* occur in ECM clauses. I will argue for the former in the case of possessive reflexives, which do indeed look rather different from regular reflexives. However, in the case of ECM predicates, this does not seem motivated, as they are parallel to matrix predicates. I thus pursue the second option.

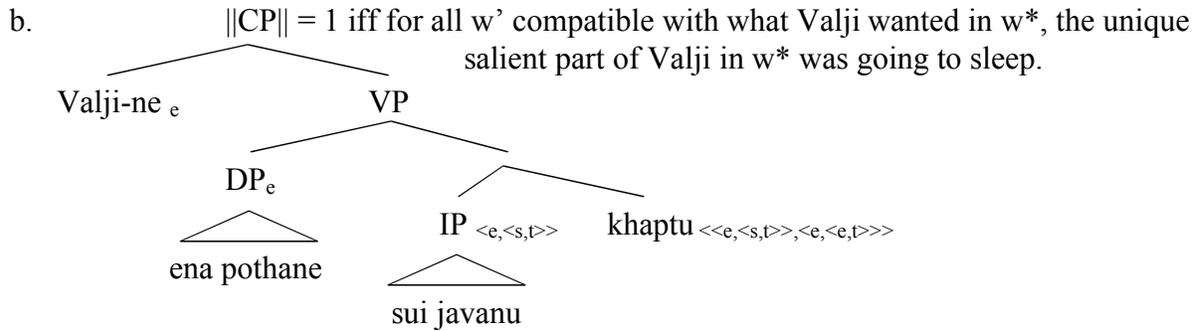
As Buring (2005:229) argues, ECM clauses appear to behave as though the embedded subject *did* also count as an object argument for the matrix predicate. Such a view has been substantiated by Bruening (2001), based on Pasamaquoddy facts²⁴. The idea is that ECM really involves *Raising-to-Object*, i.e. the embedded clause expresses a property (type $\langle e, \langle s, t \rangle \rangle$). I adopt his entry for ‘know’ to Kutchi Gujarati and Greek.

- (67) a. $\| \text{perimene/expected} \| ^w = \lambda P_{\langle e, \langle s, t \rangle \rangle} . \lambda x . \lambda y . \text{for all } w' \text{ compatible with what } y \text{ expected in } w, P(x)(w')$
 b. $\| \text{ithele/khaptu/wanted} \| ^w = \lambda P_{\langle e, \langle s, t \rangle \rangle} . \lambda x . \lambda y . \text{for all } w' \text{ compatible with what } y \text{ wanted in } w, P(x)(w')$

Without *self-incorporation*, we derive the truth conditions in (68) from the above lexical entries. We might now propose that *potha* once again incorporates into *khaptu* ‘want’ (leaving open the details of such an approach). The problem is, how *potha* ‘self’ (being of type $\langle e, \langle e, t \rangle \rangle$) could compositionally combine with *khaptu* ‘want’ (being of type $\langle \langle e, \langle s, t \rangle \rangle, \langle e, \langle e, t \rangle \rangle \rangle$), as is illustrated by the diagram in (68b). Compositionally, there is no real issue for the semantic component, if we assume an alternative syntactic structure along the lines of *Larsonian VP shells*. The precise evidence for VP shell structures in Kutchi Gujarati and Greek exceeds the scope of this paper, and I leave it open for further research.

- (68) a. Valji-ne **e-na** **potha-ne** sui ja-va-nu khaptu tu
 Valji-dat 3.sg-gen self-acc sleep go-inf-gen want aux
 “Valji wanted himself to go to sleep” (... but he found it hard to stop watching TV)

²⁴ See also von Stechow & Heim’s 2005 lecture notes, p.68-69. Von Stechow & Heim do however not pursue or endorse such an analysis.



7. Conclusion

The presence or absence of Principle A of the Binding Theory can be explained by a requirement at the syntax semantics interface. Principle A effects surface in the presence of unmodified *self*, where there is a requirement for the subject and object to be identical; this requirement triggers *self*-incorporation into the predicate. In contrast, modified *self*-incorporation is blocked in the syntax, giving rise to an asymmetric *part of* relation. Given that *self*-incorporation is absent, we predict that Principle A effects do not surface, and this is exactly what we find.

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