The Principle A Problem

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Abstract

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.

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,[2] 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 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

[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.

[2] Of course, treating English *self* as lexically ambiguous presupposes an analysis where *himself* is the spell-out of the DP *his self*. Alternatively, *himself* and *his ... self* may be classed as distinct items altogether.

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(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 (Greek) and Kutchi Gujarati (KGu) (an Indo-Aryan language). In English, lexical ambiguity is motivated by the fact that *himself* is morphologically 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 (cf. (3b) and (4b) vs. (5b) and (6b)). The 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** **eafto**$_i$ **tu**]. Greek
Costas$_i$ sees det.M.SG self$_i$.M.SG 3.M.SG.GEN
'Costas$_i$ sees himself$_i$.'

b. *O Costas$_i$ xeri oti Maria vlepi [**ton** **eafto**$_i$ **tu**]. Greek
Costas$_i$ knows that Maria sees det.M.SG self.M.SG 3.M.SG.GEN
'Costas$_i$ knows that Maria sees himself$_i$.'

(4) a. john$_i$ [**e-na** **potha**$_i$**-ne**] jo-yo. KGu
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**] jo-yo. KGu
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 (*eafto* in Greek, and *potha-ne* in Kutchi Gujarati).

(5) a. *[I mitera tu Janni$_i$] agapai [ton eafto$_i$ tu]. Greek
3.F.SG.NOM mother Janni$_i$.GEN loves 3.M.SG.ACC self$_i$ 3.M.SG.GEN
'Jannis$_i$'s mother loves his self$_i$.'

b. [I mitera tu Janni$_i$] agapai [ton **alithino** eafto$_i$ tu]. Greek
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$_i$.'

(6) a. *valji$_i$-ni ma [e-na potha$_i$-ne] prem kar-e. KGu
Valji$_i$-GEN.F mother 3.SG-GEN self$_i$-ACC love do-3.SG
'Valji$_i$'s mother loves his self$_i$.'

b. valji$_i$-ni ma [e-na **sacha** potha$_i$-ne] prem kar-e. KGu
Valji$_i$-GEN.F mother 3.SG-GEN true self$_i$-ACC love do-3.SG
'Valji$_i$'s mother loves his true self$_i$.'

There is a question at this point whether modified *self* may be a type of logophor, i.e. a pronominal element that refers to the 'source of information' (Büring 2005:62) for the environment that it occurs in. It can be easily shown that this is not the case. In the Kutchi Gujarati example in (7), the embedded clause 'she saw his true self' is embedded under a verb of saying, *kidthu* 'said' with *Mary* as its subject. If *ena sacha pothane* 'his true self' was a logophor in this example, then its only

possible antecedent would be *Mary*, as the source of information. However, *eno sacho pothane* can refer to *John's true self*, which shows that it is not a logophor.

(7) john$_i$ avyo. mary kidthu ke i [**e-na** **sacha potha**$_i$**-ne**] jo-yo. KGu
John came Mary said that 3.SG 3.SG-GEN true self$_i$-ACC see-PFV.M.SG
'John$_i$ came. Mary said that she saw his true self$_i$.'

Given the facts discussed in this section, it seems worth pursuing a view where there is simply one, non-lexically ambiguous *self* (at least for Greek and Kutchi Gujarati). Such an approach raises the following question: if unmodified *self* in Greek and Kutchi Gujarati is sensitive to Principle A, why does this effect vanish in the case of modified *self*? I will argue that the Principle A effects do not arise directly from the semantics of *self* (in the sense that there are two lexical entries), but rather from the structural configuration and syntactic environment where *self* is situated, in combination with interface requirements.

1.2 Overview of the Solution

In order to explain the peculiar distribution of unmodified and modified *self* with respect to Principle A, I propose that the lexical entry for *self* in these languages denotes a relation R, which I assume is equivalent to something along the lines of PART-OF (defined in section 2.2.2). I argue that this part-of relation can pick out different aspects of an individual e.g., the *evil side* of someone's personality as well as the *good side* of that person's personality.

Furthermore, I argue that the difference between modified and unmodified *self* arises due to a requirement at the syntax-semantics interface; unmodified *self* would be too unconstrained if it simply expresses the part-of relation (because there are potentially infinitely many aspects of an individual[3]).

(8) *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 (8)) is implemented by assuming that unmodified *self* differs from modified *self* due to predicate incorporation of *self* in the former, (9), but not in the latter, (10). 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 also 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.

(9) *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).

(10) *modified* self
John saw **his pathetic self**.
≈ John saw the unique salient entity that is pathetic and a part of John.

[3] I will show that an approach where default interpretation of 'the unique salient part' as 'the part that corresponds to the whole' cannot be the correct one.

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 utterances in (11a) and (11b) intuitively correspond to a meaning similar to *Costas admires Costas* and *Valji saw Valji*, respectively. On a par with Iatridou (1988), and Anagnostopoulou & Everaert (1999), I assume that *eafto* 'self' (and *potha* 'self') is the head of a complex DP containing a true determiner *ton* 'the' (which takes the shape of the differential object marker *ne* in Kutchi Gujarati), as well as a bound genitive pronoun *tu* 'his' (and *ena* '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 arguments.[4] Under such an analysis of *self* as expressing the identity relation, *eafto*'s first argument in (11a) 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*.

(11) a. O Costas$_2$ thavmazi [$_{DP}$ **ton** [**eafto** **tu**$_2$]]. Greek
Costas admires det.M.SG self.M.SG 3.M.SG.GEN
'Costas admires himself.'

b. valji$_2$ [e-na$_2$ potha-ne] jo-yo. KGu
Valji 3.SG-GEN self-ACC see-PFV.M.SG
'Valji saw himself.'

Formally speaking, given that *self* in these languages seems to express identity, we can assume the preliminary lexical entry given in (12): A function that takes two arguments and yields the truth value 1 iff the two arguments are identical.

(12) *the semantics of 'eafto/potha (self)'* (preliminary)[5]
$||\text{eafto/potha}|| = [\lambda x.\lambda y.y = x]$

To derive the syntactic distribution of Principle A, I argue that unmodified *self* obligatorily incorporates into the matrix verb (see (14b) for an illustration), unless blocked by independent syntactic constraints.[6] 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 interpreted. Fox (1999, 2002) proposes that higher copies are interpreted as operators and lower copies as variables. Given his explanation of Principle C effects in quantifier raising (QR), his findings suggest that we have reason to believe that copies are interpreted in every merge position modulo semantic convergence.[7] In order to interpret the higher copy of *self*, we need a new predicate modification rule, given in (13). In order for *eafto/potha* (being of type <e,<e,t>>) to combine with

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

[5] This analysis of Kutchi Gujarati *potha* and Greek *eafto* as relational nouns that denote the identity function was first proposed in Patel (2010:6); the adaptation of predicate modification for relational predicates was first given in Patel (2010:13). For Greek *eaftos*, the same proposal was made in parallel by Spathas (2010:161-162).

[6] See Anagnostopoulou & Everaert (1999), Reuland (2001, 2005, 2011) and Reuland & Winter (2009) for predecessors of this approach.

[7] Cf. For Fox (1999, 2002), interpreting both copies is more economical than interpreting one. 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.

a transitive verb (also of type <e,<e,t>>), I assume that predicate modification can be extended (from combining two functions of type <e,t> to combining two functions of type <e,<e,t>>). Put differently, predicate modification for relational predicates contains sets of ordered pairs, and is a relation that holds between two things.

(13) *Predicate Modification for Relational Predicates*
For any β and γ, which are functions of type <e,<e,t>>, 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 (14) for Kutchi Gujarati.[8] Note that for ease of exposition, I use Büring's (2005) β operator,[9] which does not require movement of the binder.

(14) a. valji$_2$ [e-na$_2$ potha-ne] jo-yo. KGu
Valji 3.SG-GEN self-ACC see-PFV.M.SG
'Valji saw himself.'

b. LF: Valji$_2$ [ena$_2$ potha-ne] *potha*-joyo.

c. $\|S\|^g_t$
= 1 iff Valji = ɪz [z = Valji] & Valji saw ɪz [z = Valji]

- $\|\text{Valji}\|^g_e$ = Valji
- $\|\text{VP}\|^g_{<e,t>}$ = [λb.b = ɪz [z = b] & b saw ɪz [z = b]]
  - β_2
  - $\|\text{VP}\|^g_{<e,t>}$ = [λy.y = ɪz [z = g(2)] & y saw ɪz [z = g(2)]]
    - $\|\text{DP}\|^g_e$ = ɪz [z = g(2)]
      - $\|\text{NP}\|^g_{<e,t>}$ = [λy.y = g(2)]
        - $\|\text{ena}_2\|^g_e$ = g(2)
        - $\|\text{potha}\|^g_{<e,<e,t>>}$ = [λx.λy.y = x]
      - $\|\text{-ne}\|^g_{<<e,t>,e>}$ = [λP$_{<e,t>}$: ∃!u [P(u) = 1] . ɪz [P(z) = 1]]
    - $\|\text{V}\|^g_{<e,<e,t>>}$ = [λx.λy.y = x & y saw x]
      - $\|\text{potha}\|^g_{<e<e,t>>}$ = [λx.λy.y = x]
      - $\|\text{joyo}\|^g_{<e,<e,t>>}$ = [λx.λy.y saw x]

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

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 violate Principle A, illustrated in (15).

(15) a. *O Costas$_i$ xeri oti Maria vlepi [**ton** **eafto**$_i$ **tu**]. Greek
Costas$_i$ knows that Maria sees det.M.SG self.M.SG 3.M.SG.GEN
'Costas$_i$ knows that Maria sees himself$_i$.'

[8] The semantic analysis proposed here also accounts for the equivalent Greek data, and derives identical truth conditions to the Kutchi Gujarati case. In this example, I analyze the differential object marker *-ne* as an element that contributes the meaning of the definite determiner; however, this is a simplification, since *-ne* is known to interact with various factors, including animacy, definiteness and specificity, cf. Butt and Ahmed (2011), Mistry (1997).

[9] Büring's (2005:85) Binder Index Evaluation Rule (BIER) is defined as follows:

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

b. *john$_i$ kidthu ke maria [**e-na** **potha$_i$-ne**] jo-yo. KGu
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 (16) for these examples.

(16) a. LF: ||O Costas$_i$ xeri oti Maria **eafto**-vlepi [**ton eafto$_i$ 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 || KGu
'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 address 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 contradiction. If the anaphors in question were to require the subject and object to be identical, it is not clear 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 (17a), 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 here,[10] see also section 2.2.2) that *attractive* and *ugly* are intersective adjectives, we would derive truth conditions as in (17b). Given the nature of identity, the only individual that is equal to *John* is *John himself*. The truth conditions in (17b) thus wrongly predict that (17a) is equivalent to (18a), (18b) and (18c), which in turn should all be equivalent.

(17) a. [John's attractive self] fears [his ugly self]
b. ||(17a)|| = 1 iff [the unique individual that is attractive and equals John] fears [the unique individual that is ugly and equals John]

[10]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.

(18) a. John fears himself.
b. [John's attractive self] fears itself.
c. [John's ugly self] fears itself.

As (18a), (18b), (18c) and (17a) do not have the same meaning, *self* in modified *self* constructions cannot denote the identity function.[11] 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.

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 (19), 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).

(19) *The meaning of 'self'* (first sketch)
a. $||\text{self}|| = \lambda x.\lambda y.y \text{ bears R to } x$ *Asymmetric*
b. $||\text{self}|| = \lambda x.\lambda y.\ R(y, x)$ *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 (20).

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

In (20), I assume that a definite determiner combines with *self*, namely *ton* in Greek and *–ne* in Kutchi Gujarati, which picks out the unique, salient individual that is in relation R to the possessor pronoun bound by *John*. If we add adjectival modifiers to (20), they serve to further specify this individual.

The Greek[12] and Kutchi Gujarati data in (21)–(24) show that there are three types of adjectives (intersective, non-intersective but subsective, and non-subsective but privative) that can modify *self*.[13]

[11] 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.

[12] 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.

[13] See Partee (2007) 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.

Intersective

(21) a. O Costas idhe ton arosto eafto tu (ston kathrefti). Greek
Costas saw det.M.SG sick self.M.SG 3.M.SG.GEN in.the mirror
'Costas saw his sick self (in the mirror).'

b. valji e-no bimar potha-ne jo-yo. KGu
Valji 3.SG-GEN.M sick self-ACC see-PFV.M.SG
'Valji saw his sick self.'

Non-intersective, subsective

(22) a. O Costas idhe ton sinithi eafto tu. Greek
Costas saw det.M.SG usual/typical self.M.SG 3.M.SG.GEN
'Costas saw his usual/typical self.'

b. valji e-no thik thak potha-ne jo-yo. KGu
Valji 3.SG-GEN.M usual/typical self-ACC see-PFV.M.SG
'Valji saw his usual/typical self.'

Non-subsective, privative

(23) a. Costas idhe ton fandastiko eafto tu. Greek
Costas saw det.M.SG imaginary self.M.SG 3.M.SG.GEN
'Costas saw his imaginary self.'

b. valji e-na khota potha-ne jo-yo. KGu
Valji 3.SG-GEN imaginary self-ACC see-PFV.M.SG
'Valji saw his imaginary self.'

Plain non-subsective

(24) O Costas idhe ton ?*dhinitiko / *endhechomeno eafto tu. Greek
Costas saw the potential / potential-contingent self.M.SG 3.M.SG.GEN
'Costas saw his potential self.'[14]

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;[15] a is a part of b; however, b is not necessarily a part of a. The specific definition of the relation between the two arguments in (25) is not trivial, and I will dedicate the reminder of this section to pinning it down. I will then illustrate the application of the proposal to the non-intersective but sub-sective adjective class.

(25) ||John saw his ... self|| = 1 iff John saw ɪz . R (z, John)
and it is possible that not R (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

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

[15]This relation picks out psychological aspects of the individual, for example if 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.

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;[16] for every individual, there is a corresponding host individual. The host individual is the collection of all temporal stages[17] 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 their 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 δ_1 corresponds to a person, *Dan*, who can be good, but can also be bad (but not both simultaneously); i.e. δ_1 has the property of being *good or bad* — and δ_1 is not further specified. A part μ of δ_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, δ_1 would be underspecified, i.e. δ_1 would be *cynical or idealistic*. The crucial point is that apart from being specified more than δ_1, all of its parts (e.g., μ_g and μ_b) are identical to δ_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 that may combine with *self*. We can first define the lexical entry in (26), based on the above discussion.

(26) $||\text{self}|| = \lambda x.\lambda y.$ y 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 (27) can be treated as intersective if *John is sick*, given that at this point in time t John in his entirety is sick.

(27) a. john e-na bimar potha-ne jo-yo. KGu
John 3.SG-GEN sick self-ACC see-PFV.M.SG
'John saw his sick self (in the mirror).'

b. O Costas idhe ton arosto eafto tu ston kathrefti. Greek
Costas saw det.M.SG sick self.M.SG 3.M.SG.GEN in.the mirror
'Costas saw his sick self (in the mirror).'

[16] I inherit the term *host individual* from Musan (1999).

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

I assume that *bimar* 'sick' combines with *potha* 'self' by means of predicate modification, as is usually assumed for intersective adjectives (though the first argument slot of *potha* 'self' needs to be filled first, e.g., by *John* in (29)). Thus, based on the meaning of *potha* 'self' in (26), the relevant lexical entries and truth conditions associated with *bimar potha* 'sick self' are given in (28) and (29), respectively. The lexical entry shows that in the intersective case (29), the unique individual in object position (in this case a part of *John* that may be identical to the host individual *John*) is sick.

(28) a. ||potha/eafto/self|| = λx.λy. y is a part of x
b. ||bimar/arosto/sick|| = λx.x is sick

(29) a. ||John saw his self|| = 1 iff John saw ɪz . z is a part of John
b. ||John saw his sick self|| = 1 iff John saw ɪz, z is sick and z is a part of John

The privative class of adjectives, as illustrated in (30) and (31) is not as straightforward as the subsective and intersective classes, for we need to assume that the host individual can be segmented according to TEMPORAL SLICES (for (30)) and that we can talk about parts of the host individual that exist in worlds other than the real world (for (31)).

(30) a. john e-na pelano potha-ne nafrat kar-e. KGu
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.M.SG former self.M.SG 3.M.SG.GEN
'Costas hates his former self.'

(31) a. john e-na khota potha-ne prem kar-e. KGu
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.M.SG imaginary self.M.SG 3.M.SG.GEN
'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 is 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 *his former self*, we need to introduce a time argument for *self*, illustrated in (32a); *self* can then combine with *former*, as defined in (32b), adapted from von Fintel & Heim (2010:69). (I differ from von Fintel & Heim in assuming that t is of type l.) As shown in (32c), 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.

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

Having accounted for (30), let us move on to (31). Although *khota 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 worlds,[18] we can analyze this on analogy to *pelano* 'former'. I provide a rough sketch in (33), assuming that the person whose imagination *khoto* 'imaginary' refers to, is provided by the context (as indicated in (33b)), and resolved towards *John* in (33c). The truth conditions in (33c) 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.

(33) a. $||\text{potha/eafto/self}||^w = \lambda x.\lambda y.$ y is a part of x in w

b. $||\text{khoto/fandastiko/imaginary}||^w = \lambda f_{<s,<e,t>>}.\lambda x.[f(w)(x) = 0$ & $\forall$w' compatible with the day dreams of some salient individual y: $f(w')(x) = 1]$

c. $||\text{John loves his imaginary self}||^w = 1$ iff John loves ɪz . z is not a part of John in w & $\forall$w' compatible with the day dreams of John: z is a part of John in w'

The question remains why *his alleged self* or *his putative self* (with plain non-subsective adjectives) seem to be impossible (crosslinguistically); 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.

Take 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 then 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 could be explained in terms of saliency. In the 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 (34) is one where *John likes his dark self* (which would be the most salient part of *John's*). However, (34) only seems to have the reading where *John likes John* (as an individual, in his entirety).

(34) 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 (35a). We find such an effect in (35b), where the referent of *his dog* cannot be resolved easily (though resolution to the closest antecedent may be an option). However, in (35a), 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.

(35) a. There are many sides to John. He clearly has a good self, he cares about others, he wants

[18] 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.

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.

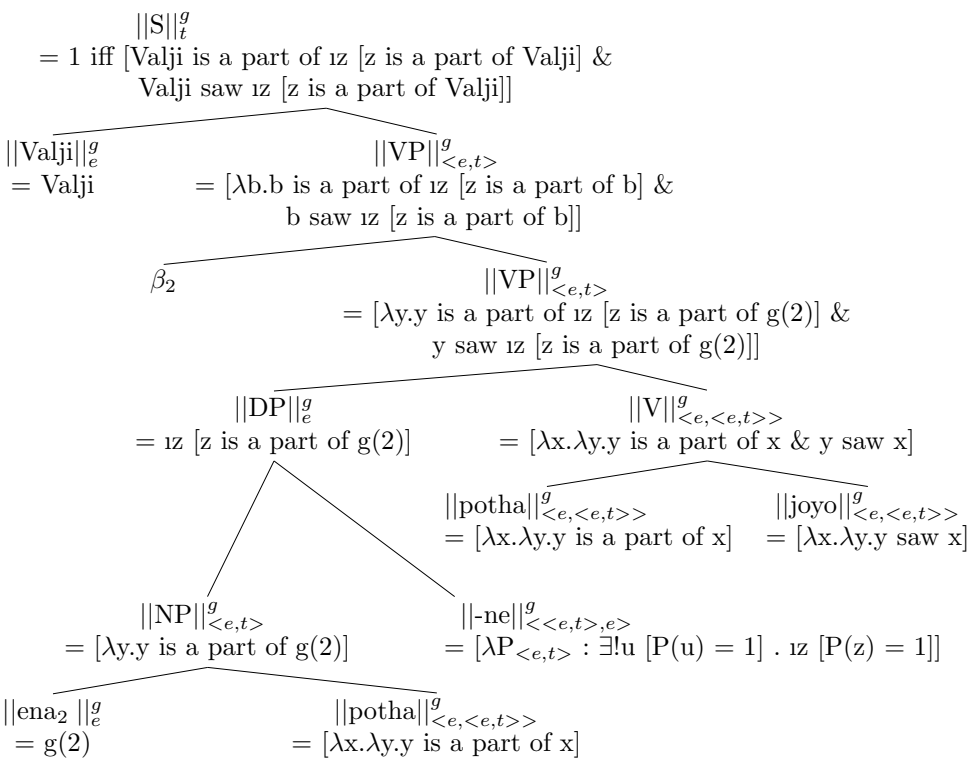
b. John owns a small kennel. He has a cute, well-behaved dog. He also has a psychotic dog that attacks people, and a timid dog that always hides. ?? Nevertheless, he's happy and he likes his dog.

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, in (36a), the meaning of the DP *ena potha-ne* is the unique individual that is a part of *Valji*. By interpreting *potha* twice and combining it with the meaning of the predicate, the meaning of the VP *ena potha-ne (potha-)joyo* is a conjunction between *being a part of the unique individual that is a part of Valji* and *seeing the unique individual that is a part of Valji*. The LF for an example such as *valji ena potha–ne joyo* 'Valji saw himself' is given in (36b), the complete derivation is illustrated in (36c).

(36) a. valji$_2$ [e-na$_2$ potha-ne] jo-yo. KGu
Valji 3.SG-GEN self-ACC see-PFV.M.SG
'Valji saw himself.'

b. LF: Valji$_2$ [ena$_2$ potha-ne] potha-joyo.

c.



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

Due to *self*-incorporation (which leads to assertion of 'Valji is a part of ɪz [z is a part of Valji]'),

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 has 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, (37) may be uttered. If *self*-incorporation took place here, we would get the meaning in (38a), which incorrectly entails (38b); the correct reading is derived without *self*-incorporation, this is given in (39). This is compatible with the assumption that there is no *self*-incorporation with modified *self*.

(37) O Costas thavmazi [ton **aksiolipito** eafto tu]. Greek
Costas admires det.M.SG pitiful self.M.SG 3.M.SG.GEN
'Costas admires his pitiful self.'

(38) ||O Costas thavmazi ton **aksiolipito** eafto tu]||
a. = 1 iff Costas is a part of ɪz [z is pitiful & z is a part of Costas]
& Costas admires ɪz [z is pitiful & z is a part of Costas]] *incorrect*
b. entails: Costas (in his entirety) is pitiful.

(39) ||O Costas thavmazi ton **aksiolipito** eafto tu]||
a. = 1 iff Costas admires ɪz [z is pitiful & z is a part of Costas]] *correct*
b. does not entail: Costas (in his entirety) is pitiful.

Since modified *self* does not involve *self*-incorporation, we now derive the absence of Principle A effects, e.g., in (40a), which has the LF in (40b) and derivation in (40c). (Note that in (40), the pronoun *ena* must reconstruct to a position adjacent to *potha* 'self', since it is interpreted as the first argument of the relational noun phrase *potha* 'self'.)

(40) a. valji$_i$-ni ma [e-na **sacha** potha$_i$-ne] jo-yo. KGu
Valji$_i$-GEN.F mother 3.SG-GEN true self$_i$-ACC see-PFV.M.SG
'Valji$_i$'s mother saw his true self$_i$.'
b. LF: [Valji$_2$-ni ma] [sacha ena$_2$ potha-ne] joyo.
c.

$||S||^g_t$
= 1 iff [λx [x is a mother of Valji] saw ɪz [z is true & z is a part of g(2)]]
= 1 iff [λx [x is a mother of Valji] saw ɪz [z is true & z is a part of Valji]]

$||\text{Valji-ni ma}||^g_e$
= λx [x is a mother of Valji]

$||VP||^g_{<e,t>}$
= [λy.y saw ɪz [z is true & z is a part of g(2)]]

$||DP||^g_e$
= ɪz [z is true & z is a part of g(2)]

$||joyo||^g_{<e,<e,t>>}$
= [λx.λy.y saw x]

$||NP||^g_{<e,t>}$
= [λx.x is true & x is a part of g(2)]

$||\text{-ne}||^g_{<<e,t>,e>}$
= [λP$_{<e,t>}$: ∃!u [P(u) = 1] . ɪz [P(z) = 1]]

$||\text{sacha}||^g_{<e,t>}$
= [ɪz.z is true]

$||NP||^g_{<e,t>}$
= [λy.y is a part of g(2)]

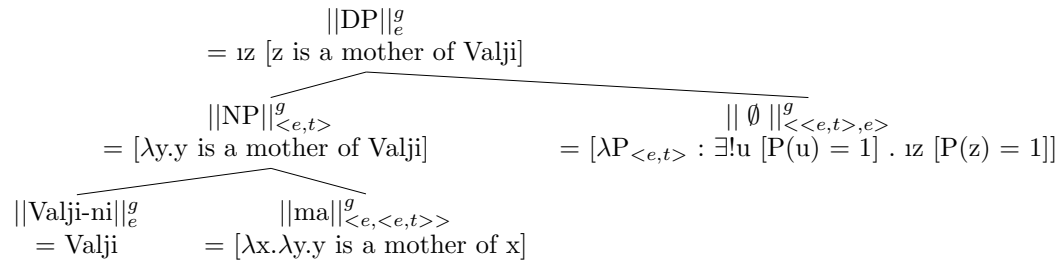
$||\text{ena}_2||^g_e$
= g(2)

$||\text{potha}||^g_{<e,<e,t>>}$
= [λx.λy.y is a part of x]

d. *In words:* Valji's mother saw the unique individual (in the utterance context) that is true and that is a part of Valji.

The structure and derivation of *valji-ni ma* 'Valji's mother' is given separately in (41) for reasons of space. Here, *ma* 'mother' is assumed to be a relational noun, which takes *Valji* as its first argument. In subject position, definiteness is not overtly marked, but by analogy to the definiteness marking in object position (due to the differential object marker *–ne*), I assume that definiteness is introduced by a null marker, as indicated.

(41)



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. (34) and (35)), *himself* (without *self*-incorporation) would be radically underspecified at any given point in time.

Even more problematic, as we can see in (42a-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, (42d).

(42) 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)
$\Longrightarrow$ *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/)
$\Longrightarrow$ *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-f1.com/Controller.aspx?PO_ID=49236)
$\Longrightarrow$ *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/)
$\Longrightarrow$ *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 (43), *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. (42d)).

(43) John admires himself.
$\approx$ At a point t John admires the entire time slice of John at t.
$\neq$ John admires his former self (only).
$\neq$ 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 (44). 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.

(44) *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.

In the formal implementation, one may wonder why ɪz [z is a part of x] does not reduce to x (thus resolving the underspecification without *self*-incorporation), given that the iota operator has a maximalizing property. (This concern is similar to the concern addressed around examples (34)–(35).) However, observe that even expressions such as *the left part of my head* are contextually restricted in terms of their reference; e.g., if a speaker says that the left part of her head hurts, there is no entailment that the entire left half of her head hurts (which would be the maximal left part of her head). Moreover, it seems infelicitous (possibly due to scalar implicatures) to use concepts such as *part of*, *subset of*, etc., to refer to something in its entirety; to illustrate, even though every set is a subset of itself, it is generally deviant to refer to an entire set by means of the definite description the subset (for instance, the brief conversation A: 'Please draw a subset of set X.' — B: 'OK, I've drawn the subset.' would not make much sense if B simply redrew the original set X, which would be the maximal subset of X).

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.[19]

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 (45) 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.

(45) Costas$_i$ admires himself$_i$
LF: Costas$_i$ self-admires himself$_i$

[19] As a final remark, it is worth addressing *Madame Tussaud* sentences, as discussed by Jackendoff (1992). The example in (i) in English (from Jackendoff 1992:4) has a reading in which it means that Ringo Starr (the actual person) started undressing the statue of Ringo Starr.

(i) The other day I was strolling through the wax museum with Ringo Starr, and we came upon the statues of the Beatles, and . . . . . All of a sudden Ringo started undressing himself.

In Kutchi Gujarati, *ena potha-ne* does not appear to allow for such readings, though it has suggested by an anonymous reviewer that they are possible in Modern Greek. More research is required to determine crosslinguistic empirical facts.

An approach along these lines was first argued for by Anagnostopoulou & Everaert (1999) (based on the Reinhart & Reuland 1993 system), and developed in Reuland & Winter (2009).[20] *self*-incorporation is generally viewed as the most economic way to encode binding dependencies (Reuland & Winter 2009:75).[21] 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 3.2.1 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.

3.2.1 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 (46).

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

a. *possible movement*:

$Y_{\text{target position}}$ [$Z_{\text{element of a }\textbf{different}\text{ category from X}}$ [$X_{\text{element to be moved}}$

b. *impossible movement*:

$Y_{\text{target position}}$ [$Z_{\text{element of the }\textbf{same}\text{ category as X}}$ [$X_{\text{element to be moved}}$

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 crosslinguistically underlies incorporation). In the examples in (47), 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 $[_{\text{DP}}$ D $[_{\text{AP}}$ A $[_{\text{NP}}$ N]]]). Given the definition of Relativised

[20] Anagnostopoulou & Everaert (1999) proposed this approach for Greek, arguing that Greek *eafto* 'self' incorporates into the verb by covert head movement at LF. Anagnostopoulou & Everaert (1999) assume that head movement of *eafto* 'self' leaves a trace, but do not provide an explicit semantic analysis. Reuland & Winter (2009), in their analysis of English *self*, assume that incorporated *self* is only interpreted in its landing position.

[21] Reuland & Winter (2009) 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.

Minimality in (46), consequently in the Greek and Kutchi Gujarati examples in (47) 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.

(47) a. [I mitera tu Janni$_i$] agapai [ton **alithino** eafto$_i$ tu]. Greek
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-na **sacha** potha$_i$-ne] prem kar-e. KGu
Valji$_i$-GEN.F mother 3.SG-GEN true self$_i$-ACC love do-3.SG
'Valji$_i$'s mother loves his true self$_i$.'

The relevant configuration for relativised minimality is summarized in (48).

(48) V$_{\text{(attracts lexical head)}}$ $\cdots$ [$_{\text{AP}}$ *true*$_{\text{(lexical head)}}$ [$_{\text{NP}}$ *self*$_{\text{(lexical head)}}$]]

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 (49) and (50) 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).

(49) a. O Costas$_i$ vlepi [**ton** **eafto**$_i$ **tu**]. Greek
Costas$_i$ sees det.M.SG self$_i$.M.SG 3.M.SG.GEN
'Costas$_i$ sees himself$_i$.'

b. *O Costas$_i$ xeri oti Maria vlepi [**ton** **eafto**$_i$ **tu**]. Greek
Costas$_i$ knows that Maria sees det.M.SG self.M.SG 3.M.SG.GEN
'Costas$_i$ knows that Maria sees himself$_i$.'

(50) a. john$_i$ [**e-na** **potha**$_i$**-ne**] jo-yo. KGu
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**] jo-yo. KGu
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 & 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 (51).

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

b. [$_{\text{DP}}$ Yede [$_{\text{NP}}$ [$_{\text{N}}$ t$_i$]]] a-**seuan**$_i$-mu-ban. Southern Tiwa
that 2sS-man-see-past
'You saw that man.' (Baker & Hale 1990:291, quoting Allen, Gardiner & Frantz 1984)

Thus, a functional head such as a determiner (*ton* in (49)), is not an intervener for a lexical head, such as the noun *eafto* 'self'.[22] Therefore, while in the examples in (47), *self*-movement is blocked due to relativised minimality (given that *true* is also a lexical head), in (49) and (50), it is not. This distribution is summarized in (52).

(52) a. * $V_{\text{(attracts lexical head)}}$ [$_{\text{AP}}$ $true_{\text{(lexical head)}}$ [$_{\text{NP}}$ $self_{\text{(lexical head)}}$]] *intervention*

b. $V_{\text{(attracts lexical head)}}$ [$_{\text{DP}}$ $the_{\text{(functional head)}}$ [$_{\text{NP}}$ $self_{\text{(lexical head)}}$]] *no intervention*

The above explanation, depicted in (52), 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, as I have been assuming, that the possessor, *tu* in (53a) and *ena* in (53b), though taking the shape of a genitive-marked DP, is truly a complement of *self*, given that *self* is a relational noun. 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 (53).

(53) a. O Costas$_i$ vlepi [**ton** **eafto**$_i$ **tu**]. Greek
Costas$_i$ sees det.M.SG self$_i$.M.SG 3.M.SG.GEN
'Costas$_i$ sees himself$_i$.'

Costas [$_{\text{DP1}}$ ton [$_{\text{NP}}$ eafto [$_{\text{DP2}}$ tu]]]

b. Costas$_i$ [**e-na** **potha**$_i$**-ne**] jo-yo. KGu
Costas$_i$ 3.SG-GEN self$_i$-ACC see-PFV.M.SG
'Costas$_i$ saw himself$_i$.'

Costas [$_{\text{SpecDP1}}$[$_{\text{DP2}}$ ena] [$_{\text{D'1}}$ D [$_{\text{NP}}$ potha-ne t_{ena}]]]

For Kutchi Gujarati, we can now give a complete illustration (54a+b), assuming that the differential case marker *–ne* is located in D[23] (which is head-final). This contrasts with (55a+b), where *self*-incorporation is blocked by the presence of the adjective *mota* 'big'.[24]

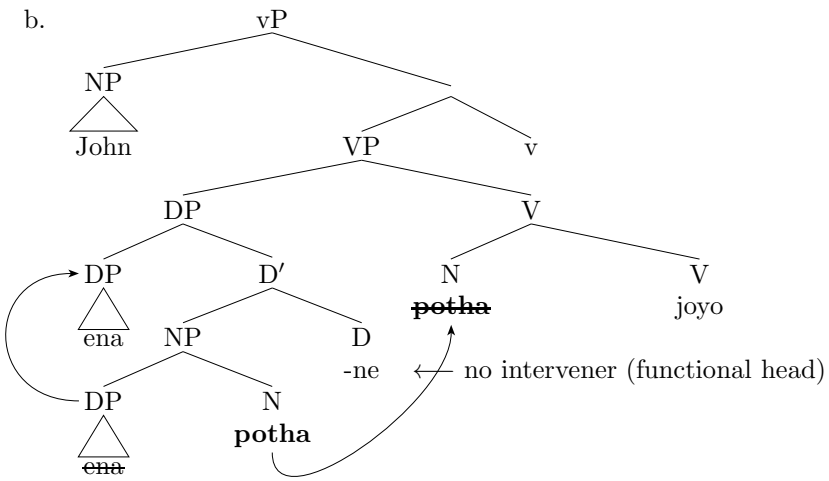
(54) a. john e-na potha-ne jo-yo. KGu
John 3.SG-GEN self-ACC see-PFV.M.SG
'John saw himself.'

[22]Note (although not relevant here), a lexical head is not an intervener for incorporation of a functional head either; cf. Baker & Hale (1990) for examples.

[23]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.

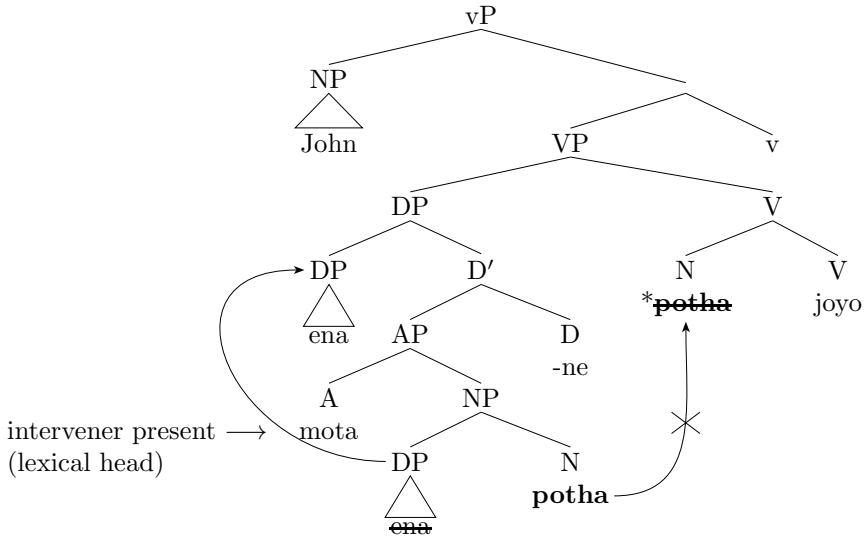
[24]Strike through marks unpronounced copies in these trees.

b.



(55) a. john e-na mota potha-ne jo-yo KGu
John 3.SG-GEN big self-ACC see-PFV.M.SG
'John saw his fat self.'

b.



4 Old Puzzles Revisited: Unbound Possessors in 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 (56). (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 (56) the resulting meaning is that only *Jannis* knows the unique individual that is a part of *Maria's* and that is *good*.

(56) O Jannis xeri mono ton kalo eafto **tis Marias**
Jannis.NOM knows only the good self.ACC Maria.GEN
'Jannis only knows Maria's good self' (Anagnostopoulou & Everaert 1999:103)

5 Introducing A New Puzzle: Possessive Reflexives & Alienability

Kutchi Gujarati possessive pronouns seem to be subject to Binding Principles, illustrated by the examples in (57). If a possessor is c-commanded by a local antecedent, it must contain the reflexive *potha* 'self', giving rise to Principle A and B effects.

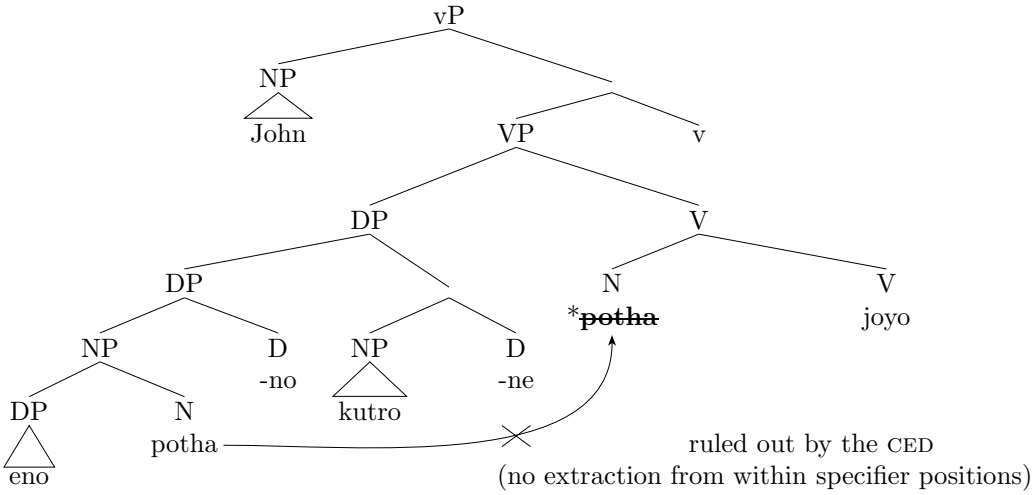
(57) a. valji$_i$ [e-na$_{k/\#i}$ mota kutra] jo-ya. KGu
Valji 3.SG-GEN.PL big.PL dog.PL see-PFV.PL
'Valji$_i$ saw his$_{k/\#i(\#own)}$ big dogs.'

b. valji$_i$ [[e-na potha-na]$_{i/\#k}$ mota kutra] jo-ya. KGu
Valji 3.SG-GEN.PL self.PL-GEN.PL big.PL dog.PL see-PFV.PL
'Valji$_i$ saw his$_{i/\#k}$ own big dogs.'

However, in this case, the presence of Principle A in possessive reflexive constructions cannot be due to *self*-incorporation, for if we were to force *self*-incorporation in (57), then we would derive a meaning that does not correspond to the meaning of the utterance, suggesting that *self*-incorporation cannot take place in the case of possessive reflexives. One could argue that the genitive possessor is located in the SpecDP of the DP that it modifies; the consequence of such an assumption is that incorporation is blocked by the same principle that gives rise to the Condition on Extraction Domains (CED), Huang (1982). The relevant generalization is that we can extract from complement positions, but not from specifier positions;[25] although we see 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 (58).

(58) a. #john$_k$ [[e-na potha-no]$_k$ kutro] potha-jo-yo. KGu
John 3.SG-GEN self-GEN.M dog.M.SG self-see-PFV.M.SG
'John self-saw his dog.'

b.



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

25

(i) *Extraction from a complement position*
a. I met [a woman from England].
b. **Who** did you meet [**t** from England]?

(ii) *Extraction from a specifier position*
c. *I read [a woman from England]'s article on China.
d. ***Who** did you read [**t** from England]'s article on China?

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 (57) occur?

(59) a. ama-ro potha-no kutro aav-yo. KGu
2.SG-GEN self-GEN.M 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. KGu
John-GEN.N self-GEN.N 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. KGu
3.SG-GEN.N self-GEN.N 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 (cf. (59)) 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 (60).

(60) a. john e-ni (potha-ni) ben-ne jo-yi. KGu
John 3.SG-GEN.F self-GEN.F sister-ACC see-PFV.F.SG
'John saw his own sister.'

b. john e-no (potha-no) hath-ne upar-yo. KGu
John 3.SG-GEN self-GEN.M arm-ACC raise-PFV.M.SG
'John raised his (own) arm.'

c. john e-na (potha-na) vaar-ne ketch-ya. KGu
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 kar-i. KGu
John 3.SG-GEN.F self-GEN.F eyes-ACC close do-PFV.F.SG
'John closed his (own) eyes.'

e. john e-ni (potha-ni) uchai maapi. KGu
John 3.SG-GEN.F self-GEN.F height measured
'John measured his (own) height.'

The data in (60) contrast with (61), where *potha* is necessary.

(61) a. john e-no *(potha-no) kutro jo-yo. KGu
John 3.SG-GEN.M self-GEN.M dog.M.SG see-PFV.M.SG
'John saw his own dog.'

b. john e-nu *(potha-nu) ghar jo-yu. KGu
John 3.SG-GEN.N self-GEN.N house see-PFV.N.SG
'John saw his own house'.

c. john e-ni *(potha-ni) gaadi jo-yi. KGu
John 3.SG-GEN.F self-GEN.F car see-PFV.F.SG
'John saw his own car.'

d. john e-ni *(potha-ni) chopri jo-yi. KGu
John 3.SG.F-GEN.F self-GEN book see-PFV.F.SG
'John saw his own book.'

Finally, the examples of a reflexive object in (62a) does not even allow for *potha* inside the possessor of the argument *ena potha-ne*, cf. (62b), and thus contrasts with (59) above.

(62) a. valji$_i$ [e-na mota potha-ne]$_i$ jo-yo. KGu
Valji 3.SG-GEN big self-ACC see-PFV.M.SG
'Valji saw his fat self.'

b. *valji$_i$ [[e-na potha-na] mota potha-ne]$_i$ jo-yo. KGu
Valji 3.SG-GEN self-GEN big self-ACC see-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 Extending the Analysis

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, this 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 & 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 and Kutchi Gujarati

The examples in (63) and (64) are ECM constructions in Kutchi Gujarati and Greek respectively.[26] The example in (65) illustrates acceptable ECM clauses containing an anaphor.

(63) a. valji-ne reena-ne dablu mar-va-nu khaptu tu. KGu
Valji-DAT Reena-ACC container.N.SG hit-INF-GEN.N want aux
'Valji wanted Reena to hit the container.'

b. valji-ne reena-ne sui ja-va-nu khaptu tu. KGu
Valji-DAT Reena-ACC sleep go-INF-GEN.N want aux
'Valji wanted Reena to go to sleep.'

(64) a. O Yiorghos perimene tin Maria na grapsi asxima sto djagonisma. Greek
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. Greek
the Jorghos wanted the.ACC Maria subj write badly in.the exam
'Jorghos wanted Maria to do badly in the exam.'

[26] For Greek ECM, see Schneider-Zioga (1992) and Kotzoglu (2002). The Kutchi Gujarati examples below indicate that we are dealing with ECM in (63). 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 av-se. KGu
Valji-DAT that-ACC said go-INF-GEN.N 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. KGu
Valji-DAT your tongue-ACC cut-pass go-INF-GEN.N 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).

(65) a. valji-ne **e-na** **potha-ne** sui ja-va-nu khaptu tu. KGu
Valji-DAT 3.SG-GEN self-ACC sleep go-INF-GEN.N want aux
'Valji wanted himself to go to sleep (... but he found it hard to stop watching TV).'

b. O Yiorghos perimene **ton** **eafto** **tu** na grapsi asxima
the Jorghos expected the.ACC self.M.SG 3.M.SG.GEN subj write badly
sto djagonisma. Greek
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
the Jorghos wanted the.ACC self.M.SG 3.M.SG.GEN subj write badly
sto djagonisma. Greek
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 (66) show that Principle A effects surface with unmodified *self*, whereas the data in (67) show its absence with modified *self*. This is the same observation that has been illustrated throughout this paper.

(66) a. *valji kidthu ke reena-ne **e-na** **potha-ne** sui ja-va-nu khaptu tu. KGu
Valji said that Reena-ACC 3.SG-GEN self-ACC sleep go-INF-GEN.N 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
Jorghos knows that Maria expected the self.M.SG 3.M.SG.GEN subj write
asxima sto djagonisma. Greek
badly in.the exam
'Jorghos knows that Maria expected himself(=Jorghos) to do badly in the exam.'

(67) a. valji kidthu ke reena-ne **e-na** **bimar potha-ne** sui ja-va-nu khaptu
Valji said that Reena-ACC 3.SG-GEN sick self-ACC sleep go-INF-GEN. N want
tu. KGu
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
Jorghos knows that Maria expected the pitiful self.M.SG 3.M.SG.GEN subj
grapsi asxima sto djagonisma. Greek
write badly in.the exam
'Jorghos knows that Maria expected his pitiful self to do badly in the exam.'

The pattern in (66)–(67) 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 (66) 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 have argued 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. Therefore, I thus pursue the second option.

As Büring (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 facts.[27] The idea is that ECM really involves *Raising-to-Object*, i.e. the embedded clause expresses a property (type <e,<s,t>>). I adopt his entry for 'know' to Kutchi Gujarati and Greek.

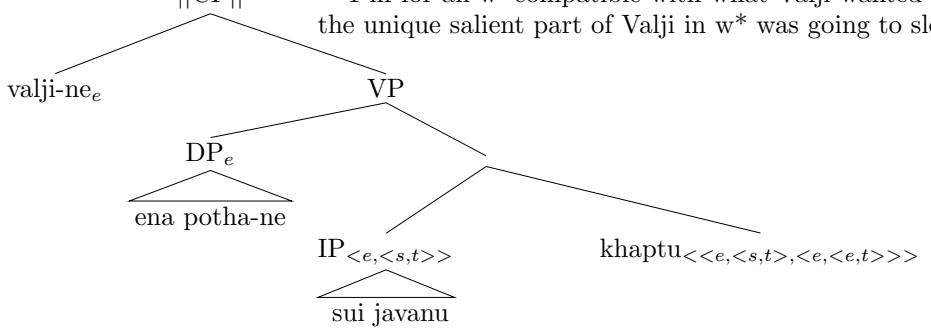
(68) a. $||\text{perimene/expected}||^{\text{W}} = \lambda \text{P}_{<e,<s,t>>}.\lambda \text{x}.\lambda \text{y}.$for all w' compatible with what y expected in w, P(x)(w')

b. $||\text{ithele/khaptu/wanted}||^{\text{W}} = \lambda \text{P}_{<e,<s,t>>}.\lambda \text{x}.\lambda \text{y}.$for all w' compatible with what y wanted in w, P(x)(w')

Without *self*-incorporation, we derive the truth conditions in (69b) from the above lexical entries (based on the structure in (69b)). 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 <e,<e,t>) could compositionally combine with *khaptu* 'want' (being of type <<e,<s,t>>,<e,<e,t>>), as is illustrated by the diagram in (69b). 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.

(69) a. valji-ne **e-na** **potha-ne** sui ja-va-nu khaptu tu. KGu
Valji-DAT 3.SG-GEN self-ACC sleep go-INF-GEN.N want aux
'Valji wanted himself to go to sleep (... but he found it hard to stop watching TV).'

b. ||CP|| = 1 iff for all w' compatible with what Valji wanted in w*, the unique salient part of Valji in w* was going to sleep.



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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[27] See also von Fintel & Heim's (2002:66–69) lecture notes. von Fintel & Heim do however not pursue or endorse such an analysis.

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