

Towards a Uniform Theory of Valence-changing Operations

Edit Doron and Malka Rappaport Hovav

The Hebrew University of Jerusalem

Reinhart and Siloni (2005) develop a theory of valence-changing operations (*arity operations* in their terms) which includes a “lexicon-syntax” (lex-syn) parameter; through this parameter, Universal Grammar allows valence-changing operations to apply in the lexicon or the syntax, according to the setting of the parameter for each language:¹

- (1) a. *The lex-syn parameter* (R&S: 391)
Universal Grammar allows thematic arity operations to apply in the lexicon or in the syntax.
- b. *Sample settings* (R&S: 408)
Lexicon setting: Hebrew, Dutch, English, Russian, Hungarian ("lexicon" languages)
Syntax setting: Romance, German, Serbo-Croatian, Czech, Greek ("syntax" languages)

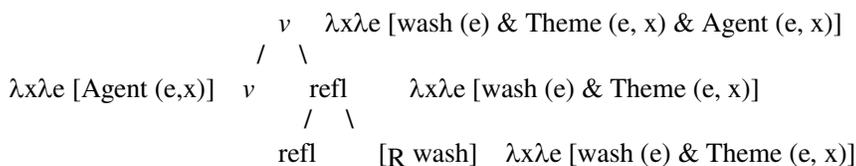
We challenge the idea that valence changing operations may apply in different components in different languages and suggest that valence-changing operations apply uniformly. We adopt the traditional view that valence-changing operations apply in the lexicon (though this exposition is compatible with a constructional view of the lexicon whereby lexical items are syntactically constructed).

This paper concentrates on reflexivization and reciprocalization. We will argue that reflexivization and reciprocalization (as operations on θ -roles) are lexical operations. There is no reflexivization or reciprocalization in the syntax, and all putative instances of reflexivization/ reciprocalization applying in the syntax are really instances of anaphoric binding. Taking French *se* as a case study, we show that what R&S count as syntactic reflexivization is a conflation of two distinct phenomena: lexical reflexivization for 'naturally reflexive' verbs such as *se raser* 'shave', and naturally reciprocal verbs such as *se rencontrer* 'meet', and anaphoric binding for all verbs, including ECM verbs. Generalizing to all “syntax” languages, we suggest that what is special about these languages is the syncretism between the anaphor and the marker for lexical reflexivization. We show furthermore, that no language with the properties of a “syntax” language marks reflexivization with derivational morphology, while many “lexicon” languages do.

I. The nature of reflexivization/ reciprocalization

Reflexivization is an operation which *identifies* an internal θ -role with the external θ -role of a verb (identification is an operation defined in Higginbotham 1985). A system utilizing identification is Doron (1999, 2003) where a reflexive/ reciprocal morpheme enables the identification of the theme argument of the root with the agent argument of the little-*v*:

- (2) **hitr**xec 'washed-refl' (Hebrew)



¹ The idea that valence changing operations can apply both lexically and syntactically can be traced to Williams (1994).

R&S refer to the identification operation as "bundling" and adopt it for the analysis of reflexivization/reciprocalization.² They allow this operation to apply either "in the lexicon" (on the verb's grid) or "in the syntax" (on unassigned θ -roles, at the point at which the external argument is merged). This choice is determined for each language, according to R&S, by the lex-syn parameter. In English, since the parameter is set to "lexicon", reflexivization of the verb *wash* results in a new verb, one with a single thematic role (the bundle Agent-Theme):

- (3) a. Verb entry: *wash*_{[Agent] [Theme]}
 b. Reflexivization output: *wash*_[Agent-Theme]
 c. Syntactic output: Max_[Agent-Theme] washed
 d. Interpretation: $\exists e$ [wash(e) & Agent(e, Max) & Theme(e, Max)] (R&S: 401)

In French, on the other hand, the parameter is set to "syntax". Therefore, at the VP level there are still two separate roles, (see (b) below), but these are identified at [spec, IP]:

- (4) a. Jean se lave.
 Jean SE washes ‘Jean washes.’
 b. VP: *se lave*_{[Agent], [Theme]}
 c. IP: Jean_[Agent-Theme] se lave
 d. Interpretation: $\exists e$ [wash(e) & Agent(e, Jean) & Theme(e, Jean)] (R&S:404)

Crucially, the output of the operation is identical in both cases (see (3c) & (4c)), and is input to the same rules of interpretation (see (3d) & (4d)), in which bundling is interpreted as conjunction.

R&S and Siloni (2001, 2005) list a number of characteristics which distinguish "lexicon" from "syntax" languages:

- (5) A language is of the "syntax" type if it has the following characteristics:
- Reflexivization/reciprocalization is productive and not sensitive to the semantics of the verb (R&S: 410).
 - There is reflexivization/reciprocalization of causative and ECM predicates (R&S: 408).
 - Reflexivization/reciprocalization of the experiencer/benefactor is possible (R&S: 410-411), yielding a verb which is nevertheless transitive, i.e. assigns accusative Case (Siloni 2005).
 - Reflexive/reciprocal nominals are not attested (R&S: 409).
 - Plural reflexive verbs are consistently ambiguous with the reciprocal reading (Siloni 2001).
 - Discontinuous reciprocals are not generally available (R&S: 417).
 - Reciprocals allow a non-mutual interpretation (Siloni 2005).

This clustering of properties for "syntax" languages is said to follow from reflexivization applying in the syntax. We argue instead that these properties follow from analyzing the reflexive morpheme as an anaphor. If our account can be shown to have the same empirical coverage as that of R&S, then our theory, which recognizes only lexical reflexivization and anaphoric binding, is clearly superior to a system such as R&S's, which recognizes lexical reflexivization, syntactic reflexivization and anaphoric binding.

² One problem is that this operation is incompatible with the view, also found in R&S, that thematic roles are feature clusters. If the agent role is the cluster [+c+m] and the theme role is [-c-m], it is unclear how they can "bundle" without clashing. Indeed, in all prior work by Reinhart, reflexivization was presented as "reduction of an internal role" and the output of this rule was represented as a predicate with a [+c+m] thematic role which results from the elimination of the internal thematic role, as in (i):

(i) wash_{[+c+m], [-c-m]} \rightarrow R(wash)_[+c+m] (Reinhart 2002: 239)

We begin with a study of French *se*, showing that in many cases, it is best analyzed as an anaphoric clitic and that all the properties which are assumed to follow from the syntactic application of reflexivization, follow as naturally, if not more naturally, from assuming that *se* is an anaphor. We are aware of the fact that this type of analysis has been rejected since Grimshaw (1981) and Burzio (1986), and we will counter the arguments brought up by these authors in section V below.

II. French *se* as an Anaphor

If *se* is an anaphor, its productivity is accounted for immediately; anaphors are not selected by individual predicates. It also follows that it is impossible to nominalize verbs with an anaphor, as nominalization applies to the verb, but not to the verb together with an argument (in section IV, we show that it is possible to nominalize lexically reflexive verbs, even in French). The fact that all verbs can in principle be interpreted either as reflexive or reciprocal in "syntax" languages (if that language uses anaphoric binding for both reciprocals and reflexives) is also immediately explained. This of course follows from analyzing *se* as an anaphor, since the particular interpretations of the anaphor are not selected by particular predicates. For example, *s'embrasser* 'SE+kiss' in French is ambiguous; it can be interpreted as either reciprocal or reflexive, unlike its translation equivalents in Hebrew and English.

We have just demonstrated that some of the properties which follow from the syntactic reflexivization approach will follow from our approach as well. We now show that the analysis of *se* as an anaphor is empirically superior to the analysis of *se* as marking syntactic reflexivization (aside from being a simpler analysis to be preferred by Occam's razor), because some of the characteristics of "syntax" reflexivization actually do not follow from the syntactic application of the operation of bundling, but do follow from analyzing the reflexive morpheme as an anaphoric clitic.

First, the fact that *se* is only bound by a(n underlying) subject is a stipulation on the θ -bundling approach: "syntactic bundling takes place upon the merger of an external θ -role" (R&S: 403). On our account this is explained: only the subject is structurally high enough to bind a clitic attached to the inflectional head of the clause, e.g. the auxiliary in (6a). In contrast, a full lexical anaphor can be bound by a non-subject argument, because it occupies a VP internal position, as in (6b).

- (6) a. Jean s'est montré l'enfant.
 Jean SE is shown the child
- i. possible interpretation: Jean_i showed the child to himself_i.
 ii. impossible interpretation: Jean showed the child_i to himself_i. (R&S 2005:412)
- b. Sur cette photo Jean n'a montré les enfants_i qu'à eux-mêmes_i.
 on this picture Jean not has shown the children but to themselves
 'On this photo Jean didn't show the children except to themselves.' (R&S 2005:412)

Similarly, the derived subject of a passive clause cannot bind *se* since it has a trace below *se* (Wehrli 1986), but it can bind an indirect object anaphor. For R&S (407), this again depends on the stipulation that syntactic bundling takes place upon the merger of an *external* θ -role, which of course does not occur in a passive sentence:

- (7) a. *Jean_i se_i sera décrit t_i par sa femme
 Jean SE will-be described by his wife
- b. Jean sera décrit t_i à lui-même_i par sa femme
 Jean will-be described to himself by his wife
 'Jean will be described to himself by his wife.' (Kayne 1975: 375)

Second, it is a fact about pronominal elements in French that they occur as clitics in object position, but strong pronouns as objects of prepositions. So, the pronominal clitic *me* is the variant of the first person pronoun *moi* for object position, *te* for the second person *toi*, etc. In line with this generalization, *se* is the clitic variant of the anaphor *soi*, which, for reasons that need not concern us here, has practically fallen out of use, and has been replaced in most contexts by *lui-même*. In fact, R&S (407;412) recognize *lui-même* as a reflexive anaphor in French, (as in (6b) and (7b) above).³ This anaphor has a defective distribution. It can appear as the object of a preposition, but not in object position, where, instead, *se* appears:

- (8) a. Jean-Pierre a parlé de lui-même
 JP has spoken of himself
- b. Jean-Pierre a discuté avec lui-même
 JP has argued with himself
- (9) a. *Jean-Pierre a dénoncé lui-même
 JP has denounced himself
- b. Jean-Pierre s'est dénoncé
 JP SE is denounced 'Jean denounced himself.'

On R&S's approach, which does not recognize *se* as an anaphor, the reflexive anaphor has a peculiar distribution in that it appears only as the object of a preposition but nowhere else. Furthermore, the parallel with the complementary distribution between the full pronoun and the clitic which we find with personal pronouns is not captured.

There is one crucial difference between *se* and *lui-même*. The former, as a clitic, cannot be focused, and therefore needs to appear along with *lui-même*, when in focus:

- (10) Jean-Pierre s'est dénoncé lui-même
 JP SE is denounced himself
- i. 'Jean-Pierre denounced himself, it was not others who denounced him.'
- ii. 'Jean-Pierre denounced himself, he did not denounce others.'
 (Labelle 2007)

Note, crucially, that (10) cannot be understood without focus; it is not available simply as the grammatical variant of (9a). Rather, the grammatical variant of (9a) is (9b), the sentence with the anaphor *se*. We assume, then, that *lui-même* is the variant of the anaphor when it appears in oblique position. In addition, it is capable of focus. In object position, its variant is *se*, but since *se* is not able to bear focus, it must appear with *lui-même* when in focus.

Third, the bundling account does not predict the very possibility of focusing the internal argument in cases of syntactic reflexivization. Under R&S's analysis, the internal θ -role of a syntactically reflexivized verb is not discharged in the syntax: it is carried along until the [spec, IP] position and then bundled with the external argument. Therefore, it should not at all be possible to focus the internal argument of such a verb, just as it is impossible to focus the unrealized object in *John ate*, or the unrealized agent in *John was seen*. However, not only the agent of a reflexive verb can be focused in French, the patient of a reflexive can be focused too (with the addition of *lui-même*), as we have just seen.

³ The status of *lui-même* is in dispute; R&S, following Zribi-Hertz 1995, consider it an anaphor, but others consider it an emphatic pronoun (Kayne 1975: 347). We need not settle this matter here. The important point is that on R&S's analysis, there is no non-emphatic anaphor in object position in French.

It is useful to compare the French examples with corresponding sentences in English and Hebrew, which uncontroversially have lexically reflexive verbs. In these languages, the internal argument of a reflexivized verb is not available for focus (unless an anaphor is used).

- (11)a. John doesn't shave (by himself) (someone else shaves him; focus on subject only)
 b. John does not shave himself. (he shaves someone else; focus on object)
- (12)a. dani lo mitgaleax (be-acmo)
 dani NEG shave-refl (by-himself)
 'Dani doesn't shave (by himself).' (someone else shaves him; focus on subject only)
- b. dani lo megaleax et acmo
 dani NEG shave acc himself
 'Dani does not shave himself.' (he shaves someone else; focus on object)
- (13) Jean-Pierre ne se rase pas lui-même
 JP NEG SE shaves himself (both meanings (a) and (b) above available)
 (Labelle 2007 based on Rooryck and Vanden Wyngaerd 1999:5 (26b))

With English and Hebrew lexical reflexives, the object position is not available for focus, since it is not there. Our analysis of French, however, predicts the possibility of focus for this argument, since it is analyzed as an instance of anaphoric binding. Analyzing the French case of reflexivization as applying in the syntax will not help here, since, according to R&S the internal θ -role is never discharged to a syntactic position, even in cases of syntactic reflexivization.

The fourth argument for the analysis of French *se* as an anaphor comes from its behavior under ellipsis. It is well-known that in simple clauses French *se* only allows a sloppy reading under ellipsis and allows neither a strict nor a remnant reading (Bouchard 1984, Dechaine and Wiltschko 2002):

- (14) Marie se regarde et son chat aussi
 Marie SE looks-at and her cat too
- a. 'Marie looks at herself, and her cat looks at itself.' (sloppy reading)
 b. *'Marie looks at herself, and her cat looks at her too.' (strict reading)
 c. *'Marie looks at herself, and she looks at her cat too.' (remnant reading)

This is due to the fact that the predicate *se regarde* in the first conjunct is semantically a reflexive predicate. This is true whether we consider *se* here a marker of reflexivization or a reflexive anaphor. Even if *se* is interpreted as an anaphor, it is clearly a SELF anaphor in the terminology of Reinhart and Reuland (1993), since it is a co-argument of its antecedent. The predicate in the two conjuncts of (14) is thus (15a), interpreted as in (15b) whether we assume reflexivization or reflexive anaphora:

- (15)a. [_{VP} look-at SELF]
 b. λx [x looks-at x]

This predicate is also present in the logical form of the second conjunct, thus only yielding a sloppy reading.⁴

However, what hasn't been noticed yet is that the remnant reading is available with bare ellipsis in ECM contexts and in causative constructions:

⁴ The English sentence *John saw himself and his cat too* does not have a remnant reading any more than (14) does, but it has a reading equivalent to the remnant reading, obtained by NP conjunction, which is not available in French, since an NP cannot be coordinated with the nonadjacent clitic.

- (16) Paul se trouvait bête et sa soeur aussi
 Paul SE considered stupid and his sister too
- 'Paul considered himself stupid, and his sister considered herself stupid.' (sloppy)
 - *'Paul considered himself stupid, and his sister considered him stupid too.' (strict)
 - 'Paul considered himself stupid, and he considered his sister stupid too.' (remnant)
- (17) Marie se fera vacciner et sa soeur aussi
 Marie SE will-make vaccinate and her sister too
- 'Marie will have herself vaccinated, and her sister will have herself vaccinated.' (sloppy)
 - *'Marie will have herself vaccinated, and her sister will have her vaccinated too.' (strict)
 - 'Marie will have herself vaccinated, and Marie will have her sister vaccinated.' (remnant)

The availability of the remnant reading, (16c) and (17c), indicates that *se* can be interpreted as an argument which is not a SELF anaphor, i.e. which does not yield a semantically reflexive predicate. Assuming this argument is an anaphoric pronoun, labeled SE in Reinhart and Reuland (1993), the first conjunct of (16) can be represented by two *different* predicates. These are shown in (18a) and (19a), with their interpretations in (18b) and (19b) respectively:

- (18)a. [_{VP} consider [SELF stupid]]
 b. λx [x consider [x stupid]]
- (19)a. [_{VP} consider [SE stupid]]
 b. $\lambda y \lambda x$ [y consider [x stupid]]

By copying the predicate in (18b) to the second conjunct of (16), we get the sloppy reading (16a), but not the strict reading (*16b). Copying the predicate which is derived by applying (19b) to *Paul*, we get the remnant reading (16c). The availability of this latter reading depends on the interpretation of *se* as a SE anaphor, i.e. as an anaphoric *pronoun*. As is well known since Everaert (1986), SE anaphors are not allowed to be co-arguments of their antecedents, which is why we cannot analyze *se* as a SE anaphor in (14), and no remnant reading is available there. Everaert showed that the SE anaphor *zich* in Dutch appears in the subject of the complement of an ECM verb, but not as the object of that verb (where only the SELF anaphor *zichzelf* is permitted):

- (20)a. * Jan hoorde zich
 John heard SE
- b. Jan hoorde [zich zingen]
 John heard [SE sing]
- (21)a. Jan hoorde zichzelf
 Jan heard himself
- b. Jan hoorde [zichzelf zingen]
 Jan heard [himself sing]

The different interpretations of *se* in local and nonlocal contexts depend on its double interpretation as SE and SELF anaphor, which is not phonologically marked in French, unlike the case of Dutch and other languages. Yet, the existence of a SE anaphor interpretation, demonstrated by the presence of the remnant reading in (16) and (17), shows that it is possible to interpret *se* as an argument of a predicate which is not a reflexive predicate.⁵

⁵ Kayne 1975: 349 notes that the strong form *soi* corresponding to *se* has can have a long distance antecedent:

(i) On ne doit pas dire aux gens de parler de soi
 'One shouldn't tell people to speak about one' (Kayne 1975: 349 ex. 23)

Fifth, the syntactic reflexivization approach makes the wrong predictions with respect to the interpretation of *se* in what has been called ‘statue’ or ‘Mm. Tussaud’ environments. Lexical reflexives cannot in general be used when there is a relation between a person and some image of that person (Jackendoff 1992, Lidz 2001, Doron 2003, among others). Doron (2003: 58) notes for Hebrew that in this environment "if Dani were to wash a statue of himself, it would be barely possible to say (22a), but it would be totally impossible to describe this situation with (22b)":

- (22)a. dani raxac et acmo
Dani washed acc himself
- b. dani hitraxec
Dani washed-refl

However, in French we CAN use *se* in these environments:

- (23)a. Marie s'est reconnue sur la photo
Marie SE was recognized on the photo
'Marie recognized herself in the photograph.'
- b. Dorian Gray se voyait dans la peinture tel qu'il aurait dû être.
Dorian Gray SE saw in the painting as he should have been
(Labelle 2007, based on Rooryck and Vanden Wyngaerd 1999:5 (14b))

This should be as impossible in French according to the θ -bundling approach as it is in the Hebrew (24) below. If a reflexive verb has one argument only, it cannot be both an individual and a statue (or a painting), irrespective of whether the reflexive verb is reflexivized in the syntax or in the lexicon.

- (24) ruti hizdahata (* ba-tmuna)
Ruti identified-refl (* in the picture)
'Ruti identified herself.'

Sixth, the interpretation possibilities for reciprocals in French, which are different from those available to clear lexically derived reciprocals, can only follow from an analysis with anaphoric binding but not with θ -bundling, as we now show.

Siloni (2005) notes the contrast below between French and Hebrew:

- (25)a. Jean et Marie se sont embrassés cinq fois
Jean and Marie SE were kissed five times
'Jean and Marie kissed five times.'
- b. dan ve-dina hitnašku xameš pe'amim
Dan and Dina kissed- recip five times
'Dan and Dina kissed five times.'

(25a), the output of "syntactic" reciprocalization, can receive an interpretation in which there were ten nonmutual kissing events, whereas (25b) can only be interpreted as describing five mutual kissing events. However, since, as was shown in (3-4) above, θ -bundling in the syntax and in the lexicon have the same semantic representation, it is unclear how applying bundling in the syntax will derive

Kayne 1975 actually presents this example as a problem for the view that *soi* and *se* are variants of the same lexical item, since he considers *se* as being clause-bound. Yet Kayne (2000b: 149-150) proposes that *se* should be interpreted as pronominal.

this reading. On the other hand, the nonmutual reading follows from *se* also being an anaphor, similarly to (26):⁶

- (26) John and Mary kissed each other five times
(can mean John kissed Mary five times and Mary kissed John five times, on distinct occurrences)

Siloni (2005) also suggests that French reciprocals with *se* are different from full DP anaphoric reciprocal expressions (such as the Hebrew reciprocal in (27b)), in that they cannot scope over a higher verb, thus unable to rescue (27) from being self-contradictory:

- (27)a. #Pierre et Jean ont dit qu'ils se sont vaincus à la finale.
Pierre and Jean have said that they SE are defeated in the final (Siloni 2005:5b)

- cf. b. dan ve ran amru še-hem nicxu exad et ha-šeni ba-gmar
Dan and Ran said that-they defeated each other in+the-final
'Dan and Ran said that they defeated each other in the finale' (Siloni 2005:4b)

However, our informants have provided us with examples in which French *se* acts just like an anaphor in this regard. In the following sentence, the most natural reading is one in which Jean and Marie each want to kill the other, without themselves being killed. Therefore, the most natural interpretation does involve the reciprocal scoping over the higher verb.⁷

- (28) Jean et Marie voulaient se tuer
Jean and Marie wanted SE kill
'Jean and Marie each want to kill the other.' (not necessarily mutual killing)

Finally, Dimitriadis (2004) and Siloni (2005) show that reciprocals in "syntax" languages cannot be used in the discontinuous construction:

- (29)a. Marie et Jean se sont embrassés
Marie and Jean SE were kissed
'Marie and Jean kissed.'

b.* Marie s'est embrassé avec Jean
Marie SE was kissed with Jean

While Siloni (2005) notes this, and uses discontinuous reciprocals as a diagnostic of lexical reciprocals, no explanation for this fact is offered. This distribution follows directly, however, from *se* being an anaphor. (29b) is ungrammatical because the reciprocal clitic c-commands one of its antecedents.

Summing up, we have claimed that the properties of French *se* are better explained by analyzing it as an anaphoric clitic and not the output of the syntactic application of θ -bundling. In the next section, we generalize this to all languages which have been claimed to choose the "syntax" setting in the lex-syn parameter. More specifically, we will claim that the lex-syn parameter is an artifact of the type of morphology utilized by the various languages to mark reflexivization.

⁶ In IV below, we account for why the mutual reading is more salient in (25a) after all. As we show in IV, since *s'embrasser* is a naturally reciprocal predicate, (25a) has a second reading involving lexical reciprocalization.

⁷ We conjecture that the scoping of the reciprocal depends on the infinitival inflection of the embedded verb, and is impossible with the finite embedded construction in (27a), which is why it is contradictory. We are not convinced that (27b) is not likewise contradictory.

III. Morphology and the Lex-Syn Parameter

It is rather striking that most of the languages cited as "syntax" languages in (1) above, mark reflexive predicates with a reflexive pronominal element, and that most "lexicon" languages utilize derivational morphology to mark reflexive predicates. We suggest, in fact, that this morphological distribution is principled and that *all* languages which show properties of what R&S call "syntax" languages, are languages in which the reflexive morpheme is a pronominal element: e.g. French, German, Serbo-Croatian and Czech, and no language which marks reflexivization by derivational morphology (including lack of overt marking) such as English, Hebrew and Hungarian, will show these properties.

R&S cite Greek as a "syntax" language, though reflexive marking is derivational. This is a challenge to our just stated correlation. However, we now bring evidence that Greek actually has the properties of lexical reflexivization, and does not have any of the characteristics of "syntax" languages cited above. First, many verbs do not allow morphological reflexives. Unlike (30a), the only interpretation of the Nact verb in (30b) is passive:

- (30)a. I Maria xtenizete kathe mera
the Maria combs.NACT.3SG every day
'Maria combs herself every day.'
- b. O Yanis katastrafike
the Yanis destroyed.NACT.3SG
'Yanis was destroyed.' (Embick 2004: 143)

This goes counter to the first property listed in (5) above. Second, there is no reflexivization across sentences, rather the Non-active morphology on the following ECM verb is interpreted as passive:

- (31) Theorise Amerikanidha?
consider.NACT.2SG American.F.NOM
'Are you considered American?' (Papangeli 2004)

According to our informants, the sentence only has a passive reading (though Papangeli claims it also has a reflexive reading: 'Do you consider yourself American?'). A passive ECM verb, as opposed to a reflexivized ECM verb, does not pose a challenge to a lexical analysis, since all it involves is the lexical "suppression" of the external thematic role, which is an argument of the verb and not of its complement clause.

Furthermore, with other typical ECM predicates such as *see* and *hear*, reflexivize morphology is impossible altogether (Artemis Alexiadou, Melita Stavrou p.c.). Third, discontinuous reciprocals are available, unexpected in a "syntax" language:

- (32)a. O Yanis kje i Maria filithikan
the John and the Mary kissed.NACT.3PL
'John and Mary kissed.'
- b. O Yanis filithike me ti Maria
the John kissed.NACT.3SG with the Mary
'John and Mary kissed.' (Dimitriadis 2004)

This may not be a conclusive argument, since Siloni (2005) allows for lexical reciprocals in "syntax" languages, as long as they denote symmetric events (but she disallows lexical *reflexives* in "syntax" languages).

Fourth, many plural Nact verbs allow only reflexive or only reciprocal readings, again unexpected in a "syntax" language (though it's true that some verbs, mainly body-care verbs such as *wash*, *comb* are ambiguous)

- (33)a. O Janis ke I Maria filithikan
 the John and the Mary kissed.NACT.3PL
 'John and Mary kissed.' reciprocal only (Dimitriadis 2004)
- b. jnorizomaste
 know.NACT.1PL
 'We know each other.' reciprocal only (Papangeli 2004)

Fifth, reflexivization of the benefactor/recipient is not attested in Greek, though it is in typical "syntax" languages such as French: (Papangeli 2004)

- (34)a. Jean s'est acheté une voiture.
 Jean SE is bought a car
 'Jean bought a car for himself.'
- b. Jean s'est envoyé une lettre.
 Jean SE is sent a letter
 'Jean sent a letter to himself.' (Reinhart and Siloni (51a&b)

It should be noted that reflexivization of an oblique argument is actually possible in "lexicon" languages as well (an example from Hebrew follows); the difference between the two kinds of languages seems to be that the "lexicon" languages don't allow a reflexivized verb to assign accusative case, whereas "syntax" ones do allow it, if the recipient is the reflexive. R&S do not explain this difference. In our framework, we would state that the lexical operation has as a side effect the removal of accusative case, but there is no reason why having a dative anaphor should affect the availability of accusative case.

- (35)a. dani laxaš le-dina sodot
 Dani whispered to-Dina secrets
- b. dani ve dina hitlaxašu (*sodot)
 Dani and Dina whispered-refl (*secrets)
 'Dani and Dina whispered (secrets) to each other.'

Once Greek is properly classified, the correlation between morphology and the lex-syn parameter is striking. This correlation between morphology and the setting of the parameter is a coincidence on the lex-syn account. However, if all cases of "syntactic" reflexivization are really instances of anaphoric binding, distinguished from lexical reflexivization, this pattern immediately follows. No language that we know has anaphors marked by derivational morphology.

The correlation between the type of reflexivization and the kind of morphology used is not surprising given the typological generalizations formulated in Haspelmath (1990:54). Reflexive pronouns are known to grammaticalize (they lose their syntactic scope, reduce phonologically and get incorporated to the verb) and then generalize to lexical reflexives, anticausative and passive.⁸ However, there are

⁸ Examples include Russian, and probably Icelandic. In these languages, reflexive morphology of the verb is a historical descendant of reflexive pronouns (Anderson 1990). This results in the well-known paradoxical situation in which this derivational morphology is external to person, number and gender inflection. Yet these are probably best analyzed as lexical reflexivization, and not anaphora. For example, there is no reflexivization of ECM verbs in Russian; rather, as discussed for Greek above, the reflexive form of such verbs is interpreted as passive.

no known examples of the opposite kind of change, in which a morpheme used for middle morphology gets extended and becomes an independent anaphor with syntactic distribution. Furthermore, Haspelmath points out that 'verbal reflexives that come from reflexive pronouns are not common outside of Indo-European (p.43)'. It is not surprising, therefore, that all "syntax" languages are from Romance, Slavic, Baltic and some Germanic languages. R&S's syntax setting for the lex-syn parameter is essentially crafted to account for this typologically rare state of affairs.

We have claimed that what makes French and other "syntax" languages special is the syncretism between the reflexive pronoun and the marker for lexical reflexivization. In fact, as we have shown, French *se* is also a marker of long distance anaphora. To complete our analysis of French, we show that French *se* can indeed mark lexical reflexivization.

IV. Evidence for lexical reflexivization/reciprocalization in French

In languages of the world, it is common for there to be a special form of the verb to mark reflexivization for what might be called 'naturally reflexive' or 'introverted' actions, including naturally reciprocal verbs. The members of both sets vary from language to language, but typically include verbs such as *wash, dress, shave, comb, cover* and *defend* for reflexive verbs and *meet, fight, marry* for reciprocal verbs (Kemmer 1993, Haspelmath 2005). Crucially, these special verb forms do not apply to all situations to which the corresponding nonreflexive/nonreciprocal verb can apply when the agent and the patient argument are coreferential.

Consider reflexive examples from Hebrew:

- (36)a. dani raxac et acmo
 Dani washed himself (appropriate also when Dani washes dirt off clothes still on him)
- b. dani hitraxec
 Dani washed-refl (not appropriate in the above situation)
- (37)a. dani gileax et acmo
 Dani shaved himself (appropriate also when Dani shaves his legs on the eve of a bike race)
- b. dani hitgaleax
 Dani shaved-refl (not appropriate for the above situation)
- (38)a. dani tala et acmo al ha-gader
 Dani hung himself on the fence (appropriate also for suicide)
- b. dani nitla al ha-gader
 Dani hung-refl on (hung on to) the fence (not appropriate for the above situation)
- (39)a. dani rašam et acmo l-a-kurs
 dani registered himself to the course (appropriate also when Dani is amnesiac and registers someone to the course which he doesn't realize is he-himself)

(i) Eta programma schitaet-sja samoj luchshej
 this program consider-refl best one
 'This program is considered to be the best one.' (Olga Kagan, p.c.)

The same is true to a large extent of Icelandic, as shown in Andrews 1990, contra Andrews 1982:

(ii) Hann tel-st efnilegur
 he consider-refl promising
 'He is considered promising.'
Not 'He considers himself promising.' (Andrews 1990 (31b))

- b. dani niršam l-a-kurs
 Dani registered-refl to the course (not appropriate for the above situation)

Even in R&S's theory, the locus for the derivation of related concepts is the lexicon. Since lexical reflexives are conceptually distinct from predicates with syntactic anaphors, to the extent that "syntax" languages have such concepts, they should be derived in the lexicon. Indeed, no principle prevents the derivation of reflexive predicates in the lexicon in a language such as French, other than the stipulated lex-syn parameter.

In principle, the verb + anaphor combination is available for all situations which are appropriately described by the reflexivized verb, while the lexical reflexive is semantically restricted, and not appropriate for all circumstances which are appropriately described by the verb + anaphor combination. Therefore, under normal circumstances in which the lexical reflexive is appropriate, the *elsewhere condition* (Kiparsky 1982), or alternatively, Grice's Maxim of Quantity (Grice 1975) forces the choice of the lexical reflexive, and only in other circumstances is the anaphor appropriate.

In French, the output of lexical reflexivization/reciprocalization with naturally reflexive/reciprocal verbs and the same verbs with syntactic anaphors are morphologically identical. That is, a sentence such as (40) is ambiguous.

- (40) Marie and Jean se sont embrassés
 Marie and Jean SE were kissed
 'Marie and Jean kissed each other./ 'Marie and Jean kissed.'

This sentence can be analyzed as having a regular verb and an anaphor or a reflexivized verb. However, we claim that in a situation of mutual kissing, the situation described by the lexical reflexive *hitnašek* in Hebrew, the sentence would contain a lexical reflexive, while in a nonprototypical kissing situation, such as one in which John kissed Mary and then Mary kissed John, the sentence contains *se* as a syntactic anaphor. This would be true for all the cases where the reflexivized verb has a more restricted reading, as in (36-39) above.

Likewise, (41) is ambiguous between the lexical and anaphoric reading.

- (41) Jean se rase
 Jean SE shaves
 'Jean shaves himself./ 'Jean shaves.'

Because sentences like (40-41) are ambiguous, probing the existence of lexical reflexivization in lexical reflexives in addition to anaphors is difficult. However, we claim that it is possible to show that even in French, in situations that are appropriately described by a lexical reflexive, the verb+ *se* combination shows properties of being a reflexivized verb.

In (28) above, we pointed out that with a verb like *tuer* 'kill', the reciprocal can scope over a higher verb. If we contrast *se tuer* 'kill each other', which is not a naturally reflexive predicate with *s'embrasser* 'kiss', which is, we find that in (42) the embedded reciprocal reading is the most salient interpretation.

- (42) Jean et Marie veulent s'embrasser
 Jean and Marie want SE kiss
 'Jean and Marie want to kiss.'

While this sentence can also mean Jean and Marie each wants to kiss the other, this reading is much less salient than the reading associated with the lexical reciprocal. The important point is that the lexical one doesn't have wide scope. Thus lexical reflexives can be distinguished from the anaphoric case we discussed above in (26), where the anaphor can scope over a higher verb.

We now bring further evidence for lexical reflexives/reciprocals in French. In all the cases below, we find that verb + *se* combinations behave differently when the event denoted is a naturally reflexive event and when it is not. In the former cases, the syntactic behavior is similar to the behavior of inherent reflexives (i.e. verbs such as *s'évanouir* 'faint', *se repentir* 'repent', which do not have a transitive counterpart) and derived unaccusatives, which are lexically derived even on R&S's analysis.

In (43), we find examples of unaccusatives (a-b) and inherent reflexives (c-d) which do not require *se* under causativization, though *se* is required when the verbs are not embedded under a causative. The examples are all attested examples from texts found in web searches.

- (43)a. Le même principe vaut lorsqu'une cantatrice **fait briser** un verre au seul son de sa voix
'The principle applies when a singer **makes** a glass **break** by the sound of her voice'
- b. le brouillard **fait humidifier** la surface de la terre
'the fog **makes** the surface of the earth **humidify**'
- c. Parfois il parle de la mort qui **fait repentir**
'Sometimes he speaks of death which **makes repent**'
- d. La vue du sang me **fait évanouir**
'The sight of blood **makes** me **faint**'

We find the same pattern with natural reflexives and reciprocals (all attested examples). As with the unaccusative and inherently reflexive verbs above, the naturally reflexive (a,b) and naturally reciprocal verbs (c,d) below are causativized without *se*, though they clearly require *se* otherwise:

- (44)a. ...prépare leur souper, fait les devoirs avec les petits, fait la vaisselle, vide le lave-vaisselle, fait jouer les petits dehors, **fait laver** les petits
'(I) prepare their dinner, do homework with the kids, do the dishes, empty the dish-washer, make the kids play outside, **make** the kids **wash**'
- b. La Poste **fait habiller** ses employés avec des tee-shirts
'The post-office **makes** its employees **dress** in t-shirts'
- c. Depuis sa création en 2004, ce site a **fait rencontrer** de plus en plus d'hommes et femmes à travers le monde
'Since its creation in 2004, this site has **made** more and more men and women **meet** across the world.'
- d. Nos moments préférés, c'est quand Sylvia **fait embrasser** le père et le fils et quand le père danse.
'Our favorite moments are when Sylvia **makes** the father and the son **kiss**, and when the father dances.'

(d) can only be interpreted as involving mutual kissing and not sequential kissing, as expected if this is reflexivization and not anaphoric binding.

Crucially, these contrast with nonlexical reflexives, which do not maintain the reflexive reading without the *se* under causativization:

- (45)a. Jean a fait reconnaître Paul et Marie
Jean has made recognize Paul and Marie.
'Jean had Paul and Marie recognized.' (not reflexive/reciprocal)

- | | | |
|----|-----------------------------------|-----------|
| b. | Paul et Marie s'entendent bien | entente |
| | Paul and Marie SE understand well | agreement |
| | 'Paul and Marie get along well.' | |

Summarizing, we find that the syntactic behavior of verb + *se* combinations differs when the denoted event is a naturally reflexive one and when it isn't. The syntactic behavior in the former case is similar to *se* with unaccusatives and inherent reflexives, which are, by all accounts, lexical. We have thus found evidence for the existence of lexical reflexivization even in a "syntax" language such as French.

The existence of lexical reflexivization in "syntax" languages weakens the lex-syn approach considerably, since we have already shown above that the anaphoric approach is actually superior for the purported cases on non-lexical reflexivization. All that remains at this point in favor of the lex-syn approach is the argument, considered conclusive since Grimshaw (1981), that reflexive predicates pattern with intransitive rather than transitive verbs in a variety of constructions. In the same constructions, verbs with nonreflexives pronominal clitics pattern like transitives. This is unexpected if *se* is an anaphor. We now turn to reconsider this line of argumentation as well.

V. French reflexives as intransitives

The idea that French *se* should be analyzed differently from pronominal clitics like *le* dates to Kayne's (1975) classic study of French. Grimshaw (1981) interprets these differences as indicating that verbs with *se* behave as if they are syntactically intransitive, unlike corresponding verbs with *le*. She concludes that French *se* should not be analyzed as a reflexive argument subject to anaphoric binding.

In the causative construction, the subject of the embedded reflexive verb is assigned accusative case (52a), parallel to intransitive verbs such as in (51a), rather than dative case, like the subjects of transitive verbs, as demonstrated (51b) and (52b):

- (51)a. Il a fait partir (*à) son amie.
 he has made leave (*to) his friend
 'He had his friend leave.'
- b. Il fera boire un peu de vin *(à) son enfant.
 He will-make drink a little of wine *(to) his child
 'He'll have his child drink a little wine.' (Kayne 1975: 203)
- (52)a. La crainte du scandale a fait se_i tuer (*au)/ le frère_i du juge
 the fear of scandal has made SE kill (*to) the brother of-the judge
 'Fear of scandal made the judge's brother kill himself.'
- b. Elle le_i fera boire *(à) son enfant_k
 she it will-make drink *(to) her child
 'She'll have her child drink it.' (Kayne 1975: 407)

In order to account for this, while maintaining the analysis of *se* as an anaphor, we suggest that French clitics such as *le*, *se* can share their Case with a coindexed argument, and therefore accusative Case is available to the causee argument which is coindexed with *se* in (52a) above, but not to the causee in (52b), which is not coindexed with the clitic. We have already seen above that *se* shares Case with *lui-même*, see again below in (53a). *le* shares Case with a clitic-doubled pronoun (53b):

- (53)a. Jean-Pierre se rase lui-même
 JP SE shaves himself
- b. Jean la connaît elle
 Jean her knows her (Kayne 2000a: (12))

Kayne (1975) also argues that in the presentational construction (*there* sentences), a verb with *se* is acceptable, but not a verb with *le*:

- (54)a. ?Il s'est dénoncé trois mille hommes ce mois-ci
 there SE is denounced three thousand men this month
 'Three thousand men denounced themselves this month.'
- b. *Il les a dénoncés trois mille hommes ce mois-ci.
 there them has denounced three thousand men this month
 'Three thousand men denounced them this month.' (Kayne 1975: 381)

First note that neither of these sentences is considered very good; the first is marked with a question mark (as in Dobrovie-Sorin 2007 and others). Some of our informants claim these are ungrammatical altogether. The difference in unacceptability may be attributed to the presentational function of the construction: the construction is meant to introduce a new referent onto the scene and thus improves with *se* because the two arguments are coreferential, and hence only one referent is really introduced in the sentence.

Another reason which has hindered the analysis of French *se* as a reflexive clitic subject to anaphoric binding comes from putative generalizations about the morphological form of anaphors crosslinguistically. Reinhart and Reuland (1993) and R&S, among others, claim that morphologically simplex anaphors cannot be locally-bound, and are normally allowed only in long-distance contexts. This militates against treating French *se* as an anaphor which can be locally bound.

However, Haspelmath (2005) offers the following generalization instead:

If a language has different reflexive pronouns in local contexts and long-distance contexts, the local reflexive pronoun is at least as complex phonologically as the long-distance reflexive. (Haspelmath 2005:17)

In fact, Haspelmath provides examples of other languages in which reflexive pronouns in local contexts are simple. We, therefore, do not consider the morphological simplicity of *se* an obstacle to analysing it as a locally-bound anaphor.

A reason offered for the fact that long distance anaphors must be simplex (Cole, Hermon and Huang 2000) is that they are assumed to undergo head-movement at LF from their clause to the inflectional head of their antecedent's clause, to satisfy locality. The same head-movement is relevant to the formation of lexical reflexives, which might explain why long distance anaphors are also expected to function as lexical reflexivizers.

In a language with a morphological distinction between long-distance and local anaphors (SE and SELF anaphors in the terminology of Reinhart & Reuland), such as Dutch and Danish, naturally reflexive verbs are formed with SE anaphor. Danish, for example, has a contrast between *sig* and *sig selv*. *sig* cannot normally be locally bound, similar *zich* in Dutch (20-21 above): (The data is from Erteschik-Shir 1997 and Jakubowicz 1994.)

- (55)a. Ida kritiserer sig selv / * sig *local binding: SELF anaphor*
 Ida criticizes herself SE

- b. Ida bad mig om at kritisere sig *non-local binding: SE anaphor*
 Ida asked me about to criticize SE
 'Ida asked me to criticize her.'

Yet, with naturally reflexive verbs, the binding of *sig* can be local:

- (56) Ida klæder sig på *naturally reflexive verb*
 Ida dresses SE on

As we saw above in (16) – (17), French *se* reveals interpretive properties of a SE anaphor. One difference between French *se* and Danish *sig* is in the defective distribution of *se*. *sig* can appear in object position, but *se* cannot:

- (57) * On_i ne doit pas dire aux gens de se_i donner de l'argent
 One NEG should say to people to SE give money
 'One shouldn't say to people to give money to oneself.' (Pica 1992: 81(6a))

We attribute the defective distribution of *se* as a SE anaphor to its being a clitic. The reason that *sig* can function as a SE anaphor in a wider variety of environments, i.e. in clauses which have not necessarily undergone restructuring, is that unlike French *se*, it does not cliticize to its host (and can thus move in LF to the higher clause, to satisfy locality relation to its antecedent). To see the clitic status of *se* in contrast to the independent status of *sig*, note that where the verb fronts in questions, *se* fronts with it, but not *sig*:

- (58)a. Pourquoi se cachent-ils? *French*
 why SE hide they
- b. Hvor vasker børnene sig? *Danish*
 where wash the-children SE

Another indication of its clitic status, as noted by Kayne 1975, is that *se* cannot be dropped from coordinated verbs. In Danish, *sig* can be dropped in coordinated structures:

- (59)a. Avant de sortir, Marie s'habille et *(se) peigne
 Before going out, Marie se dresses and *(SE) combs
- b. Ida klæder (sig) og reder sig omhyggeligt
 Ida dresses (SE) and combs SE carefully

The clitic-nature of French *se* in contrast to Danish *sig* (and Dutch *zich*) is also implicated in the switch of the auxiliary selected by past participles from *have* (with transitive verbs) to *be* (with reflexive verbs) in French, (60a), but not in Danish, (60b):

- (60)a. Marie **a** habillé l'enfant/ Marie s'**est** habillée
 Mary **has** dressed the child/ Mary SE **is** dressed
 'Mary has dressed the child./'Mary has dressed.'
- b. Marie **har** klædt barnet på / Marie **har** klædt sig på
 Mary **has** dressed child+the on/ Mary **has** dressed SE on
 'Mary has dressed the child./'Mary has dressed.'

R&S presuppose that the switch from *have* to *be* signals the workings of reflexivization, rather than anaphora. However, the setting of the lex-syn parameter clearly does not make the appropriate correlations, since German, which is a "syntax" language, actually patterns in this regard with Dutch (a "lexicon" language), and not with French. However, there is another explanation for the contrast in

(60). Kayne (2000c) suggests that the underlying form of the auxiliary in all cases is actually *be*. The specifier of *be* is an A-bar position, and the switch from *be* to *have*, which has an A-spec, comes from the need to enable the raising of the participle's subject to that position. However, it is also possible for *be* itself to acquire an A-spec through the cliticization of an anaphor coindexed with the subject, thus obviating the switch to *have*. This latter strategy is possible in French, since *se* is a clitic, but not in Danish or Dutch, where *sig* and *zich* are not clitics (Kayne 200c: 118).

VI. Conclusion

In this paper, we have argued that reflexivization as a valence changing operation on θ -roles applies uniformly in the lexicon. Purported "syntax" languages, in which this operation applies in the syntax, are in fact languages in which there is a syncretism between a SELF anaphor and the marker of lexical reflexivization. There seems to be little reason to construct a theory which extends the domain of application of reflexivization and other valence changing operations in order to accommodate this accidental syncretism.

We have seen that languages which mark lexical reflexivization by an anaphor utilize a SE anaphor for this purpose (Dutch and Danish). French *se*, which is an anaphor used for lexical reflexivization, would thus be expected to be a SE anaphor. We have indeed uncovered evidence which points in this direction. Accordingly, *se* in fact fulfills three 'reflexivizing' functions: in addition to being a marker of lexical reflexivization and a SELF anaphor, it also functions as a SE anaphor.

In "syntax" languages such as French, many sentences are ambiguous between a reading with an anaphor and a reading with a lexical reflexive. While it is difficult to probe the existence of the two readings, because in general, sentences with lexical reflexives have readings which are in principle compatible with anaphors as well, nonetheless, we have shown that under particular circumstances it is possible to distinguish the lexical reflexive reading from the anaphoric reading and that sentences with lexical reflexives have different properties from sentences with anaphors.

We expect that a more careful scrutiny of other valence changing operations, such as the ones involved in the formation of passives, middles and impersonals, will yield the same results, namely, that there is no evidence for the same operation applying to two components of the grammar.

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