

*Constraints on Reflexivization**

Dominique Sportiche[†]
UCLA

January 2023

Abstract

Discussing reflexivization via autonomous morphemes (e.g. via *self*-anaphora like English *herself*, French *lui-même* or Hebrew *acmo*, or via ‘pronominal’ morphemes such as German *sich* or French *se*), I show that lexical or syntactic bundling via adicity reduction or predicate reflexivization (e.g. via *self* incorporation) in these languages is too strong to be the general mechanism involved, favoring analyses in terms of direct covaluation (via the antecedent binding the anaphor) as in the classical view. This means in particular that what counts as an anaphor cannot be related to *self* incorporation (into predicates), raising the question of how to derive why anaphors are anaphors, a question discussed in [Charnavel and Sportiche \(2021\)](#) and [Charnavel and Sportiche \(2023\)](#). I also discuss some (limited) boundary conditions on analyses for incorporated English *self*- or French *auto*-, and explore syntactic (as opposed to lexical) analyses for predicates prefixed with *self*- or *auto*-, as well as for inherently reflexive verbs.

*Thanks to Barry Schein, Isabelle Charnavel, Martin Prinzhorn, Richard Stockwell, Tim Stowell, Travis Major, Vincent Homer, Viola Schmitt, and Yael Sharvit.

[†]Email contact: dominique.sportiche@ucla.edu

Contents

1	Introduction	3
1.1	The Problem	3
1.2	Outline	3
2	Reflexivizations: types of analysis	4
3	Constraints on Reflexivization via pronouns	7
3.1	No reflexivization via semantic adicity reduction	7
3.2	<i>Self</i> marked Predicates	9
3.3	Reflexivization as anaphor binding: further reasons	11
3.3.1	Focus Alternatives	11
3.3.2	Proxies	13
3.4	Functional <i>self</i> analysis difficulties	13
4	Analytical Implications	16
5	Explicitly marked or intrinsically reflexive predicates	17
5.1	A detour: <i>auto</i> and incorporated <i>self</i>	17
5.2	Self-marked predicates	20
5.3	Inherently Reflexive Predicates	23

1 Introduction

1.1 The Problem

Two analytico-theoretical questions are tightly intertwined: why are anaphoric expressions such as reflexives anaphoric, and what exactly is the mechanism by which a reflexive meaning arises. For example, under some views, a reflexive DP argument of a predicate is lexically defined as a function taking this predicate as argument, and turning it into a reflexive predicate. In turn, this has consequences on how to understand why such expressions must be in a local relation with their antecedents. The view just mentioned for example, entails that the reflexive and its antecedent must be co-arguments of the predicate in question.

In what follows, I primarily discuss reflexive pronouns in English and French, and to a lesser extent German and Hebrew, showing why some widely held analyses (diagonalizing adicity reduction, or predicate reflexivization via *self* movement or incorporation) cannot be right. More precisely, such analyses cannot be right as sole analyses: as such analyses are more restrictive than what is needed, it is difficult to show that they are not available *in addition to* more permissive analyses. Here, I will simply assume, by Ockham’s razor, that there is no such unnecessary duplication. The discussion will examine *self*-reflexive pronouns in English (*themselves*) and French (*elle-même*) as well as SE reflexives (in [Reinhart and Reuland, 1993](#)’s terminology) in German (*sich*) or French (*se*).

1.2 Outline

The well formedness of the sentence *Leila washed Lydia* meaning that Leila washed Lydia leads us to postulate the existence of a lexical item, *wash*, as a dyadic predicate, a two place relation this sentence is in part the syntactic realization of. Or to say things another way, the verb *wash* assigns two theta roles, say Agent and Theme here, these theta roles bijectively assigned to the two DPs *Leila* and *Lydia*.¹

Now suppose that we get a reflexive meaning: Leila washed herself. Ignoring the case of the sentence *Leila washed Leila* (a possibly mild condition C violation in some languages, depending on context), this could arise in different ways. To illustrate some options, let us begin with the following cases:

- (1) a. Leila washed herself
- b. Leila s’ est lavée *French*
 Leila se is washed
- c. Leila hat sich gewaschen *German*
 Leila has self washed
- d. Leila raxca et acma *Hebrew*
 Leila washed herself

In English (1a), French (1b), German (1c) and Hebrew (1d), a DP, or a particle morphologically independent from the verb, *himself*, *se*, *sich*, *acma*, appears, typically described as a reflexive pronoun or clitic. This raises the following question: how does the reflexive reading arise in each case? Fundamentally, there are two approaches, each with subcases.²

¹ Note that throughout, I am disregarding so-called proxy readings, unless explicitly discussed, e.g. in section 3.3.2. These readings are important, and telling, but not relevant to most of the points made here.

² Throughout, I limit myself to the languages and constructions explicitly discussed. It is conceivable

1. The first approach, diagonalizing³ semantic arity reduction, postulates that semantically, in some, or all, of these cases, the predicate involved is *wash_R*, a variant of the dyadic *wash*, which is semantically monadic and means *self-wash* defined as follows: $wash_R(x) = self-wash(x) = wash(x, x)$: a single element, x , satisfies both argument slots of *wash*.
2. The second approach, argument covaluation, does not assume that such semantic adicity reduction occurs. There is a single semantically dyadic predicate *wash*, syntactically dyadic as well, thus taking two DP arguments syntactically. The reflexive reading arises because these two DPs have the same denotation. In other words, the reflexive meaning arises because it is the meaning of $wash(x, y)$ where $x = y$, that is where x and y are required to covary, that is denote the same individual or are covalued variables.

The first approach will be shown to be not viable for these cases. Furthermore, it will be argued that the second approach is only viable if the ‘reflexive’ argument is understood as directly covalued with its antecedent and not (only) via predicate reflexivization.

First the interpretations of sentences in (1) will be discussed. It will be shown that the first approach, reflexivization via semantic arity reduction, excludes some available interpretations and must thus be abandoned (as sole option). Next the behavior of such sentences as in (1) will be contrasted with counterparts in which reflexivization is not encoded via the presence of an *independent* nominal reflexive morpheme such as *himself*, *se*, *sich*, *’acma*, but instead via the presence of a pre predicate morpheme such as *self* in the case of ‘explicitly reflexive predicates’ such as *self-identify*. This discussion will provide further support for the conclusion that the first approach is inadequate for examples in (1). In addition, it will show that only the version of the second approach in which reflexivization involves direct covaluation is adequate. Finally, further differences between these two types of cases will be discussed, as well as how the latter type (explicitly or inherently reflexive predicates) could be analyzed.

2 Reflexivizations: types of analysis

This section provides a simple argument showing that any approach to reflexivization in terms of semantic adicity reduction for reflexive constructions using English *X-self* (which also apply to French *X-même*, French *se*, German *sich* is too strong as they rule out available interpretations.

Let us first further detail the two approaches to reflexivization mentioned above. To the examples in (1), repeated below, let us add a couple ((2e) and (2f)):

- (2) a. Leila washed herself

that other options are available, as Déchaine and Wiltschko (2017) discuss.

³ So named because it restrict the relevant pairs of arguments of the predicate (those involved in the reflexive relation) from a cartesian product X^2 to its diagonal. Note also that quite generally, composing an argument with its predicate reduces the arity of the predicate by one. This is of course not what is meant here and in the remainder of this article by arity reduction. What is meant are cases in which the syntactic argument of the predicate is not a semantic argument of this predicate but rather a function mapping this predicate into a reflexive predicate.

- b. Leila s'est lavée *French*
Leila se is washed
- c. Leila hat sich gewaschen
Leila has self washed
- d. Leila raxac 'et acma *Hebrew*
Leila washed herself
- e. Leila washed
- f. Leila hitraxec *Hebrew*
Leila morph-wash

Begin with the first approach:

1. Option #1: The predicate $wash_R$ could be formed from $wash$ in the lexicon, in which case it is semantically and syntactically monadic. This option, semantic and syntactic adicity reduction, is what Reinhart and Siloni (2005) call **lexical bundling**. In (2e), it would be signaled by the absence of an otherwise required direct object, in (2d), it would be signaled by the presence of the special verb morphology (*hitpa'el*), and in (2b) by the presence of the particle *se* which would presumably be attached to the verb lexically as a (detachable) particle (reminiscent of English verb particle constructions). In English (2a), German (2b) or Hebrew (2c), this option would be excluded under the usual assumption that the very presence of two DPs requires the predicate to be syntactically dyadic.

This of course presupposes that there are lexical rules combining morphemes and affecting how the syntax and semantics of the combination is computed. A theory of grammar allowing such rules should include a restrictive theory of what lexical rules are (dis)allowed and why. The limiting case is one in which there are no lexical rules at all.

2. Option #2: The predicate $wash_R$ could be formed from $wash$ in the syntax, in which case it is semantically monadic but syntactically dyadic. There is semantic adicity reduction without syntactic adicity change. The verb $wash$ becomes the semantic one place predicate $wash_R$ because of its syntax. Since two DPs are projected, some mechanism insures this result. This is what Reinhart and Siloni (2005) call **syntactic bundling**. Informally, while two DPs are projected the presence of the Hebrew verbal morphology in (2d) or the presence of the particle *se* in French (2b) would indicate that the theta role normally assigned to the silent object DP is "bundled" in syntax with the other one and this complex theta role is assigned to the subject DP.⁴ Similarly for (2e) where the presence of an otherwise illicit silent DP object would signal that bundling has occurred. This extends to English (2a) or Hebrew (2c) as follows: *himself/'acma* is not an argument, it is not a theta bearer. Rather, its function is to mark $wash$ as interpreted reflexively; normally, theta roles of a predicate have to be bijectively associated with DPs but if one of the syntactic dependent of the predicate is X-self, the theta role that this dependent normally gets is assigned to something else - the "antecedent" of X-self, e.g via bundling. The same could be said with the Hebrew verbal morphology in (2d) or English (2e), assuming the presence of a silent DP behaving like English X-self. Reinhart and Siloni (2005) does not spell out the precise mechanism underlying syntactic bundling, but one mechanism, possibly underlying it in part, assumes that semantic adicity reduction directly results from the reflexive pronoun, or morpheme or the silent object being a function taking the verb $wash$ as argument and returning $wash_R$, predicated of the appropriate argument of the verb (here the subject).

⁴ See Sportiche (2014a) for reasons why these constructions are not 'just' unaccusative, see section 3.3.1 and footnote 17

This option, **diagonalizing arity reducing functional self** is adopted in Cresswell (1973), Bach and Partee (1980), Keenan (1987), Schlenker (2005), Spathas (2010), Lechner (2012), for example.⁵ Such an approach requires enriching the generative power of the system, essentially treating reflexives as quantifiers able to manipulate the argument structure of the predicate they take as argument.

The second approach can be implemented as follows:

3. Option #3: this option - **argumental functional self** - is similar to option #2: but there is neither semantic nor syntactic adicity reduction: in English (2a) or Hebrew (2c), *himself/acma* counts as an argument, a theta bearer. The way in which reflexivization is achieved is by making reflexive the predicate that the reflexive pronoun is a dependent of. In the present case, the reflexive pronoun is analyzed as a function taking the relation *wash* (or more generally a polyadic predicate) as argument and encodes the property that (the) two arguments of *wash* are semantically covalued, e.g. via a presupposition. The way this is done technically is by decomposing *himself* as *him +self*, where *him* ends up being the argument of *wash* and *self* is an identity function that takes the verb *wash* as argument and returns the verb *wash* together with the property that its two arguments are covalued. This is adopted in some form for example in Reinhart and Reuland (1993), Reuland (2001), Patel-Grosz (2013), Sauerland (2013), Ahn (2015), McKillen (2016), Déchaine and Wiltschko (2017). Technically, here is Sauerland’s explicit representative treatment: the *self* portion of *himself* is the identity function with a presupposition. It takes *wash* as argument yielding *self wash*, so that *Leila washed herself* ends up as *Leila self-washed her*, with *her* necessarily coreferential with *Leila* to satisfy the presupposition *self* lexically comes with. The literature does not specify, or entertain, how this would generalize to French *se* or German *sich*, English (2e) or Hebrew (2f), but there are imaginable ways to do this, e.g. assuming that they are associated with a silent object of the form *himself*.⁶

4. Option #4: A final option is the classical option, **anaphor binding** adopted e.g. in Chomsky (1981), Heim and Kratzer (1998), Büring (2005), as well as in a variety of Agree/Movement based approaches such as Lebeaux (1983), Kayne (2002), Drummond et al. (2011), Rooryck and vanden Wyngaerd (2011). Again that there is no (semantic or) syntactic adicity change. The verb *wash* projects two DPs and some mechanism insures that the resulting meaning is reflexive. This is achieved by requiring the silent DP of Hebrew and French and the English reflexive to be anaphoric: they must be bound by a local antecedent, here the subject, where binding entails covaluation (which could a priori either be coreference or semantic binding).

This option requires explaining why such anaphoric DPs behave in this manner and in what way the Hebrew verbal morphology, the French particle *se* or the morphology of X-self mandate such behavior.

Overall then, Options #1 and #2 involve some form of predicate reflexivization. As we will see such approaches are too restrictive. They exclude possible interpretations and can’t

⁵ Difficulties of various sorts arise requiring some additional machinery for example: (i) the reflexivizing function does not say which arguments of the base predicate enter into the reflexive relation: the right arguments must be guaranteed to participate in the reflexive relation; (ii) the target predicate may not be dyadic in the right way e.g. with *Henri expects himself to win* where *himself* is not an argument of *expect*, or *This museum sells replicas of itself*, where *itself* is not even a syntactic dependent of *sell*; or with *Henri seems to himself to be pale* where *Henri* is not an argument of *seem*.

⁶ There also are difficulties with such an approach, some applying to the previous approach as well, see section 3.4.

therefore be the (unique) way in which reflexives yield reflexive meanings. Option #3 also involves predicate reflexivization and faces all sorts of other problems. Option #4 does not involve predicate reflexivization.

Now, there is no a priori reason why different ways of expressing reflexive relations within the same language or across languages should all use the same mechanisms. Different reflexivization strategies could use different mechanisms, or the same strategy could in principle use multiple mechanisms even in the same language. And indeed, for example, English *himself* has not been analyzed as involving bundling, but French *se* reflexivization has been analyzed as syntactic bundling in [Reinhart and Siloni \(2005\)](#), or structurally ambiguous (depending on cases) between syntactic and lexical bundling in [Hovav and Doron \(2009\)](#). But if different mechanisms are in principle available and, as far as is known, (mother tongue) learners typically converge on the same mechanism(s) for a given strategy in a given language (as is almost always assumed⁷), the right theory must provide inference strategies mapping the evidence available to language learners to the right mechanism, yielding the observed convergence. This is actually the main problem to solve for any analysis and a non trivial one which is not addressed at all here (but see [Déchaine and Wiltschko, 2017](#) for suggested steps to approach this question).

3 Constraints on Reflexivization via pronouns

We now examine some properties of reflexive constructions where reflexivization is coded via the presence of a pronominal element, one that usually (but not always, see [Collins and Postal 2012](#)) agrees in ϕ -features with its antecedent, such as *X-self*, *se*, *sich*, *acma* in English, French, German and Hebrew respectively.

3.1 No reflexivization via semantic adicity reduction

Consider the following type of examples originally discussed in [Heim \(1994\)](#):

- (3) Oedipus_k wants [*localdomain* PRO_k to find himself_k]

What is of interest in such cases is the question of for whom (in which worlds) the binding theory mandated coreference (or semantic binding) between *PRO* and *himself* holds. There are basically two non mutually exclusive candidates. A first candidate is the actual world in which case I, the speaker, believe that there is a single individual who I take to be Oedipus, such that I take Oedipus to want Oedipus to punish Oedipus. A second candidate is any member of the set of Oedipus's modal alternatives. In this case Oedipus could express his desire as : I should punish myself, where there is coreference for Oedipus (but where Oedipus could take himself to be someone else than Oedipus: he could believe he is Achilles, or even not know who he is). I am not going to discuss here why the second option can hold without the first as this is not relevant for our purposes (but cf. [Sportiche \(2022a\)](#), [Sportiche \(2022b\)](#)). What is relevant here is that the first option can hold without the

⁷ This is not the case however of [Haiden \(2020\)](#) which, for French *se*, defends lexical bundling for agentive verbs with non proxy reflexives, a different analysis for other cases of agentive verbs or for experienter verbs. I take the evidence provided insufficient to warrant such a conclusion, but showing why would require a full discussion not provided here.

second holding, as Heim (1994) remarks. To see this, let us place ourselves in the following scenario.

- (4) Oedipus Scenario: Oedipus, raised as King Polybus’s only son, kills someone he does not know, Laius his real father, whose only son he in fact is. Later, an oracle reveals that, to end a god sent plague on Thebes, Laius’s killer must be punished. Oedipus searches for Laius’s killer to punish him in order to satisfy the gods and end the plague.

In such a scenario, sentence (3) is well formed and true.⁸ This raises an apparent problem for the Binding theory. The problem is that for Oedipus, *PRO* denotes Oedipus (*PRO* is read *de se*) but *himself* does not.⁹ In Sportiche (2022a), Sportiche (2022b), I discuss why this is in fact not a problem as there is coreference for the speaker. What matters to the present discussion is that the speaker can truthfully report that the person Oedipus wants to find is in fact Oedipus, without Oedipus thinking that the person he wants to find is Oedipus. I will describe this as coreference *de re non de dicto*. This interpretation is also available in the French, German (as Heim 1994 reports), and Hebrew (Yael Sharvit, p.c.) counterparts of (3):¹⁰

- (5) a. Oedipus veut *PRO* se trouver
 b. Oedipus will *PRO* sich finden
 c. Oedipus roce limco et acmo

It should be clear that this interpretation is excluded under any analysis of reflexivization as involving semantic adicity reduction. Indeed under such analyses, the verb in the infinitive is a monadic predicate predicated of *PRO*, that is of Oedipus. Given that *PRO* is read *de se*, that is as Oedipus for Oedipus, the only meaning predicted is that of Oedipus wishing: ‘I will find myself’. Under such analyses, the predicate *find* is turned into the reflexive predicate $\lambda x. find_R(x)$ which is equivalent to $\lambda x. find(x, x)$ with coreference between the two arguments of *find* in all worlds.

I conclude that for English *himself*, French *se* or German *sich*, we cannot entertain options #1 and #2 above, that is, Lexical Bundling, Syntactic Bundling or more generally semantic adicity reduction. As mentioned in the introduction, the right analysis, whatever it is, must be strictly weaker, more permissive, than semantic adicity reduction; as a result, what is more precisely excluded are analyses requiring semantic adicity reduction as the sole option for these cases. Semantic adicity reduction could be allowed, if a second, alternative analysis is available that would allow the relevant reading. This seems like an unnecessary duplication¹¹, and one furthermore that precludes the possibility of a unified analysis for all

⁸ As Charlow (2010) remarks, accenting the reflexive makes these readings more accessible. Charlow reports that accent is not required however, as do other speakers. Still, this is an important remark that we do not investigate here, but is further discussed in Charnavel and Sportiche (2021).

⁹ Similarly, suppose that Oedipus thinks he is Achilles as above, and that he wants himself (Achilles) to find Oedipus. Then it is true that Oedipus wants to find himself, but the content of Oedipus’s desire is not ‘I should find myself’.

¹⁰ Some speakers have difficulties accessing this reading in their own language for such sentences, perhaps a reflection of the general, lesser accessibility of *de re non de dicto* construals. But speakers allowing them do report the contrasts discussed in the remainder of this article.

¹¹ Furthermore, I know of no language in which this difference is morphologically coded, that is one morphology for adicity reduction and another for non adicity reduction. Superficial examples do exist but do not withstand analysis. This said, such a two option analysis is defended in Hovav and Doron (2009) in some cases.

occurrences of *self*. As I take such an outcome to be highly desirable,¹² I indeed conclude that adicity reduction is not involved.

How would options #3 and #4 fare?

In principle, a presuppositional analysis as in option #3 of the second approach could accommodate these facts. Under such an analysis, the presence of *himself*, *se* or *sich* signals the presence of a presupposition according to which two arguments of the predicate are coreferential. This presupposition would have to be relativized to attitude holders, so that it would hold either in Oedipus’s thoughts yielding *de dicto* coreference, or for the speaker, that is in the actual world yielding *de re* coreference, or both. I will discuss such an option in more details in section 3.4.

Option #4 would be straightforward: Condition A requires coreference or covaluation but does not specify in which worlds this must hold, the speaker’s belief worlds, or Oedipus’s. Just like the preceding option, it requires relativizing covaluation to particular attitude holders (as discussed in Sportiche, 2022a, Sportiche, 2022b).

3.2 *Self* marked Predicates

The conclusion that semantic adicity reduction is not right is corroborated by an observation made in Heim (1994) whose analytical significance has been overlooked, I think. Heim, 1994, section 3, remarks that in German, inherently reflexive verbs (such as French (*se*) *suicider/commit suicide*) or explicitly marked reflexive predicates such as *self-identify/autogérer*, *hitpa’el* forms) (can) behave differently from verbs with a reflexive pronoun argument. I will use for these predicates the *descriptive* term **reflexive predicates** without preconception on how they should be analyzed.

Consider the following sentences in the given scenario:

- (6) Henri sees a dead body he mistakenly thinks is Anna’s. I (and my addressee) know that the dead body is in fact Maria’s. Henri tells me: I think Maria killed Anna.
I can report to my addressee:
- | | |
|---|--------|
| a. Henri pense que Maria s’est tuée | French |
| Henri thinks Maria killed herself | |
| b. Henri pense que Maria s’est suicidée | French |
| Henri thinks Maria committed suicide | |

The first sentence (in French or English) is a true report (it reports what happened *de re*), while the second (in French or English) is not. For it to be true, Henri would have to think: ‘Maria killed herself’. We can describe the difference as follows: assuming informally that *se* in the first example stands for the theme argument, the identity relation between the agent Maria and what the theme *se* denotes can be read *de re non de dicto*. The identity relation between the agent and the theme in the second sentence can’t be.

Heim’s German examples with non inherent but explicitly marked reflexive predicates involve a *selbst/selber* nominal (contrasted with verbs with *sich selbst/selber* instead of bare *sich*):

- (7) a. Der Hans soll sich mal vorstellen, mit sich selber sprechen zu müssen.
 ‘Hans should imagine having to talk with himself’

¹² Charnavel and Sportiche (2022) and Charnavel and Sportiche (2021) propose such a unified treatments of *self* anaphora and *self* intensifiers.

- b. Der Hans soll sich mal vorstellen, Selbstgespräche führen zu müssen.
 'Hans should imagine having to conduct self-conversations'

According to Heim (and other German speakers I checked the data with), only the first one can mean that Hans's imagination-alternatives talk with him, where Hans does not realize that this 'him' is Hans himself.¹³

The difference can be more minimally illustrated in French (or English) in which (many) predicates can be explicitly reflexivized by adding the prefix *auto/self*.

Before proceeding, note that, in the cases we will consider, *auto* does involve reflexivization as opposed to what Spathas et al. (2015) calls the "anti assistive" meaning "by oneself", "alone" or "without help" - an a priori plausible alternative - argued for for Greek *afto/auto* in Spathas et al. (2015).¹⁴ This is discussed in section 5.1. So for example, the noun *critique/criticism* can be prefixed with *auto* yielding *autocritique/self-criticism*; the verb *critiquer/criticize* can have a reflexive clitic as in *se critiquer/ criticize oneself* or have a reflexive clitic and (a mandatory conjunction to which we will return) the prefix *auto* yielding *s'autocritiquer /self-criticize*. The following examples illustrate that anaphor binding reflexivization and reflexive predicates behave differently:

- (8) Suppose Henri hears Maria often criticizes someone who he thinks is Anna. He thinks: Maria criticizes her too much. In fact, Henri is mistaken, Maria is criticizing herself. I report:
- a. Henri pense que Maria se critique trop
 Henri thinks that Maria *se* criticizes too much
 - b. Henri pense que Maria s'autocritique trop
 Henri thinks that Maria *se* self-criticizes too much

The first report is a true report, with *de re non de dicto* coreference of the reflexive and its antecedent in the embedded clause. The second report is false: in it, coreference must be *de dicto*. Henri must be thinking: "there is self-criticism by Maria", which is not the case. This behavior is clearly due to the presence of *auto* and as Heim notes for German with *selbst-N* forms, can be observed in nominals in French or in English. In the context above, the first sentence is a truthful report, while the second is not:

- (9) a. Henri pense que Maria fait trop de critiques d'elle même
 Henri thinks that Maria voices too many criticisms of herself
- b. Henri pense que Maria fait trop d'autocritiques
 Henri thinks that Maria voices too many self-criticisms

¹³ It is worth noting that Heim's German examples contrast *selbst* forms with *sich* in a PP. But the same contrast holds with direct object *sich*: In the same scenario as above with Elie, the high priest, I report:

- a. Komisch, Eli will sich opfern/verbrennen!
 Funny, Eli wants himself immolate/immolate
 Funny, Eli wants to immolate himself!
- b. Komisch, Eli will eine Selbstverbrennung tun!
 Funny, Charles wants a self-immolation do
 Funny, Eli wants to self immolate!

The first report is true, the second false. This shows that an analysis of non PP *sich* in terms of arity reduction as in Büring (2012) is not tenable.

¹⁴ Note however that, assuming counterfactually that the meaning is the anti-assistive 'without help', it would cast serious doubts on any analysis of reflexivization via *self* incorporation, as overt incorporation would not be expected to yield a reflexive reading, but an anti-assistive reading instead.

Finally, this difference can be illustrated with reflexive verbs in English. Here are a couple of examples.

Suppose Connie thought that Toby identified the fuzzy character on the picture as Karla the spy, not realizing Toby was in fact pointing at himself. The first report below is a true report, with *de re non de dicto* coreference, while the second is not.

- (10) a. Connie thought that Toby had identified himself as a spy
 b. Connie thought that Toby had self-identified as a spy

Here is a second example, using a strategy from Charlow (2010) to help bring out the *de re* reading.

- (11) Elie, the high priest wants to placate the gods by sacrificing a member of the community. He says: I want to sacrifice the oldest member of the community. He does not realize it's him! But I do. I report:
 a. Funny, Eli wants to immolate himself!
 b. Funny, Eli wants to self immolate!

The first report is true, the second is false.

In conclusion, *self/auto* marked predicates behave differently (allowing fewer readings) than predicates taking a *self* DP argument. Reducing the latter to the former via (covert) *self* incorporation therefore yields incorrect results: anaphor binding cannot be reduced to *self* incorporation.¹⁵

3.3 Reflexivization as anaphor binding: further reasons

In this section, further support is provided contrasting bound anaphora reflexivization from predicate reflexivization in two areas: Focus alternatives and Proxies. A third area is the syntactic configurations in which either occur, which, as will see in section 3.4 make reducing the former to the latter implausible.

3.3.1 Focus Alternatives

Sportiche (2014a) discusses the following type of examples to show that French reflexive constructions cannot be unaccusative:

- (12) Seul Henri s' est critiqué
 Only Henri SE is criticized
 Only Henri criticized himself

The truth of (12) can be denied by uttering (13a) or (less easily)¹⁶ (13b) but not (13c):

¹⁵ Naturally, it is possible to propose an ad hoc solution: stipulate that covert *self* incorporation has different properties than overt *self* incorporation to accommodate the facts discussed in this section. I ignore such an unmotivated option.

¹⁶ Haiden (2020) reports such readings as experimentally unavailable. I take the experimental protocol adopted to be insufficiently controlled to warrant this conclusion (there is no denying that there are preferences - availability is a different matter). Furthermore, facts are quite clearly as reported for me and my consultants, as are the striking contrast between (13a) as answer to (12) and (13a) as answer to (14a).

- (13) a. Non, Pierre s'est critiqué aussi
 No, Peter criticized himself too
 b. Non, Pierre a critiqué Henri aussi
 No, Peter criticized Henri too
 c. Non, Henri a aussi critiqué Pierre
 No, Henri criticized Peter too

Sportiche (2014a) concludes that the unavailable denials (13c) shows that the superficial subject is not (just) an underlying object.¹⁷

Now suppose we make the verb a reflexive predicate by adding *auto* as below in (14a):

- (14) a. Seul Henri s' est autocritiqué
 Only Henri SE is self-criticized
 Only Henri self-criticized himself
 b. Only Toby self-identified as a spy

Now, not only can't (14a) be denied by uttering (13c), showing that these *auto/self* verbs are not unaccusatives, it also can't be denied by uttering (13b). In other words, while (12) allows both a sloppy reading (*only Henri engages in self-criticism*) deniable by (13a) and a strict reading (*Only Henri criticizes Henri*) deniable by (13b), (14a) only allows the sloppy reading. Similarly, (14b) can only be denied by uttering *No, Karla also self-identified as a spy* and not by uttering *No, Karla also identified Toby as a spy*. Thus (14a), and (14b) only allow the sloppy reading. This corroborates the conclusion that treating cases like (12) by reducing them to cases like (14a) or (14b) via *self* incorporation is not viable.

The same facts can be reproduced with reflexive nominals. The truth of (15a) can be felicitously denied by uttering (15b) or (15c) but not (15d) (the possessive bolded only to indicate it is the focus associate of *only*):

- (15) a. Seules **ses_k** critiques de lui_k-même blessent Henri_k
 Only **his** criticisms of himself hurt Henri
 b. Non, les critiques de lui_m-même de Pierre_m blessent Henri_k aussi
 No, Peter's criticisms of himself too hurt Henri
 c. Non, les critiques de Henri par Pierre aussi blessent Henri_k
 No, Peter's criticisms of Henri also hurt Henri
 d. Non, les critiques de Pierre par Henri aussi blessent Henri_k
 No, Henri's criticisms of Peter also hurt Henri

This is consistent with long standing conclusions regarding what can be possessivized in nominals: if both an agent and a theme are present, only the agent can be possessivized (unless the agent is in a *by*-phrase): the focal alternatives to the possessor can thus only range over agents.¹⁸

Now, using explicitly reflexive nominals still allows (15b) as denial but removes the strict

¹⁷ More precisely now in light of Charnavel and Sportiche (2022) and Charnavel and Sportiche (2021), hence the 'just' qualification, the superficial subject cannot **only** have the theta role assigned to the object. A derivation in which (somehow) the object move to the subject theta position (ending up with two theta roles) is consistent with the available focal alternatives.

¹⁸ This correctly predicts that *Seules ses_k critiques par lui_k-même blessent Henri_k / Only his_k criticisms by himself_k hurt Henri_k*, or *Seules les critiques de lui_k par lui_k-même blessent Henri_k / Only the criticisms of himself_k by him(self)_k hurt Henri_k* can be felicitously denied by (15d), and not by (15c).

reading, thus excluding the denial in (15c):

- (16) Seules **ses**_k autocritiques blessent Henri_k
 Only **his** self-criticisms hurt Henri

3.3.2 Proxies

Another reason to reject a predicate reflexivization analysis is that overtly reflexive predicates disallow proxy readings, while reflexive binding of a DP does not. Reducing the latter to the former blurs a necessary distinction. Thus, there is a minimal contrast between examples (17a) and (18a):

- (17) a. Seul Ringo s' est critiqué
 only Ringo SE is criticized
 Only Ringo criticized himself
 b. Only Ringo identified himself as one of the Beatles
- (18) a. Seul Ringo s' est autocritiqué
 only Ringo SE is self-criticized
 Only Ringo self-criticized himself
 b. Only Ringo self-identified as one of the Beatles

Indeed, while (17a) could be used to describe a situation in which Ringo, visiting the Madame Tussaud museum, criticizes the way in which his wax figure represents him, (18a) couldn't. The latter can only mean that Ringo criticized Ringo the person. Similarly, while (17b) could be used to describe a situation in which Ringo, visiting the Madame Tussaud museum, identified his wax figure as one of the Beatles, (18b) couldn't. The latter can only mean that Ringo identified himself the person as one of the Beatles.

3.4 Functional *self* analysis difficulties

Any treatment that analyzes *se critiquer/ identify oneself* as reducing to a predicate with the semantics as *self-criticize/self-identify* is too restrictive. Looking at the examples below:

- (19) a. They identified themselves as...
 b. They self-identified \emptyset (as...)
 c. They self_k-identified [them t_k] as...

The facts discussed exclude as too restrictive all treatments in terms of semantic adicity reduction under which the verb of a sentence like (19a) is turned into a one-place predicate applying to the antecedent of the reflexive (with no object projected) as in (19b). This reinforces our earlier conclusion against option #1 and #2.¹⁹

¹⁹ It is worth noting that Heim's German examples contrast *selbst* forms with *sich* in a PP. But the same contrast holds with direct object *sich*: In the same scenario as above with Elie, the high priest, I report:

- a. Komisch, Eli will sich opfern/verbrennen!
 Funny, Eli wants himself immolate/immolate
 Funny, Eli wants to immolate himself!
- b. Komisch, Eli will eine Selbstverbrennung tun!
 Funny, Charles wants a self-immolation do
 Funny, Eli wants to self immolate!

The first report is true, the second false. This shows that an analysis of non PP *sich* in terms of arity reduction as in Büring (2012) is not tenable.

Whether these facts also exclude treatments in which the reflexive interpretation arises by turning it into a reflexive predicate without semantic adicity reduction is less immediately clear as it depends on the specifics of its implementation.

I take as boundary condition that any explanatory theory has to satisfy the postulation of a unique element *self* appearing at the very least in both (19a) and (19b). Most treatments adopting option #3, e.g. Patel-Grosz (2013), Sauerland (2013) (substantially building on Lechner (2012)), Spathas (2017), do satisfy this requirement by taking option #3 to involve the syntax shown in (19c) via (covert) *self* incorporation. A minimal challenge such treatments face is to explain why (19a) analyzed as (19c) and structures such as (19b) behave differently in the respects discussed in the preceding sections.

Taking Sauerland (2013) (substantially building on Lechner (2012)) as example, *self* is analyzed as the identity function taking a relation as argument and adding the presupposition that two individual arguments of this relation are covalued.²⁰

(20) $\|self\|(P)(x)(y)$ presupposes that $x = y$ and denotes P.

This has the merit of motivating why *self* movement takes place (to find the argument it needs). In addition it can circumvent the objections discussed earlier as it does not literally reduce (19a) to (19b) but to (19c). As a result, the desired presupposition of coreference between *they* and *them* can be relativized to different worlds, e.g. be read *de re non de dicto*. But much remain unclear.²¹

1. Why is sentence (19c) ill formed? Shouldn't it be predicted just as good as (19b)?
2. If *self* has the lexical entry in (20), why exactly is it possible for it to combine with a pronoun to form *himself*? And what exactly is the structure of this combination? If somehow this lexical entry is modified to make such a combination with an individual denoting expression possible, how exactly do *self* predicates function: Shouldn't bare *self* in such cases combine with an individual denoting expression as well? And if this is indeed the case, how do we then derive the behavioral differences between the second sentence and the first sentence (analyzed as the third sentence).

These differences include mandatory *de dicto* coreference, or lack of proxy reading or of strict readings in ellipsis/focus contexts for (19b) but not only: unlike in (19a), which can mean each of them identified them as ..., in (19b), distributing the subject requires distributing the object (meaning each of them identified himself as...).

To compound this problem, Charnavel and Sportiche (2021) following Ahn (2015) distinguish strong and weak reflexives (the latter noted *'emselves* here) and show that weak reflexives do not tolerate strict readings in ellipsis/focus contexts or *de re non de dicto* readings. They do however license proxy readings. This undermines the idea that the difference between the first two examples is reducible to the presence of the pronoun *them*.

²⁰ Sauerland (2013) is not concerned with deriving the general properties of anaphor binding. Rather, it defends a presuppositional analysis to assimilate it to other cases of weakened presupposition (which, according to him, materializes for reflexives on focal alternatives to *himself*, when the presupposition introduced by *self* is deemed not to have to hold). Sauerland's formulation is thus meant to apply to binary relations only as below; this would have to be modified to take into account more complex cases, perhaps along the lines explored in Lechner (2012), who does try to take the syntactic complexity of VPs into account.

²¹ It should be clear, incidentally, that some of these difficulties apply to options #1 and #2 as well, in addition to further difficulties not discussed here.

3. Thirdly, does the structure of *himself* allow *self* moving by itself? The answer seems negative: invoking *self* incorporation seems inconsistent with syntactic constraints on head movement: anaphors can occur in contexts (adjuncts, inside PPs or nominals) not accessible to head movement (incorporation is strictly bounded, cf. Baker 1988, Angelopoulos and Sportiche 2022). For example, the following examples are well formed, with *itself* a plain anaphor in a context in which it self is too deeply embedded to incorporate:

- (21) This museum sells replicas of itself
Ce musée vend des répliques de lui-même

4. The behavior of *himself* is paralleled in terms of distribution and interpretation by the French *lui-même* /*him-self* (see Charnavel and Sportiche, 2016). Yet, as Safr (1996) remarks, *même* is adjectival and does not incorporate into verbs. Furthermore *lui-même* denotes an individual but *même* is a two place identity (or similarity) adjective, thus presumably heading an AP: it can't be the head of *lui-même*; instead *lui* must be, with *même* an adjunct, hence not in a syntactic position to incorporate. A unified approach to English *himself* and French *lui-même* would appear out of reach despite their common properties.
5. In connection with point 2 above, how is the trace of *self* as part of *himself* interpreted? And how do we address the long standing challenge (cf. e.g. Reinhart and Reuland 1993, section 2.2. p. 662) facing approaches invoking predicate reflexivization to derive (rather than stipulate) that the reflexive pronoun argument is one that enters into the reflexive relation? To illustrate, in a clause like *PRO to assign him to himself*, we would want:
- (i) *self* to require covaluation of two arguments of *assign*: by hypothesis, this would mean that *self* is the identity function on predicates.
 - (ii) *himself* to end up being interpreted like *him*: this would require *self* to be the identity function on individuals. This looks incompatible with the previous point: indeed, we want the moved *self* to take a predicate as argument, but its trace to take an individual as argument.
 - (iii) PRO being covalued with the IO *him*, not with the DO *him*: this could perhaps derive from Condition B, but it looks implausible as Condition B can sometimes be overridden but the interpretation to exclude here is never available. This last point requires somehow building into the analysis that the argument slot occupied by the reflexive is involved in the reflexive relation: this comes down to stipulating that the reflexive must be bound.
6. Finally, and most serious perhaps, what is the relation between the *self* found in reflexives and the *self* found in intensifiers (as in (i) *John himself*)? A unified treatment is surely desirable (see the reasons in Charnavel and Sportiche (2022), as well as section 5.1 below): taking *self* to be functional looks untenable (there is no predicate in (i)).

Before concluding this section, I briefly discuss an informal suggestion made by Dylan Bumford as it is informative in a different way. It proposes a functional analysis of *himself* and *self* as follows in (a) and (b):

- (22) a. $||\text{himself}||^w = \lambda v \lambda R \lambda x R(x_v)(x_w)$
 b. $||\text{self}||^w = \lambda R \lambda x R(x_w)(x_w)$
 c. $||\text{self}|| = \lambda w \lambda R \lambda x R(x_w)(x_w)$

First, (22b) should be modified to (22c) (with λw saturated locally) to guarantee that covaluation holds for the attitude holder, as required, not for the speaker only. Second, (22a) defines the reflexive to be a function taking a binary predicate R as argument whose two arguments are distinguished as is required: one is evaluated by the attitude holder (in w), the other not necessarily. This approach is (instructively) too weak. Indeed consider again:

- (23) Elie, the high priest wants to placate the gods by sacrificing a member of the community. He says: I want to sacrifice the oldest member of the community! He does not realize it's him! But I do. I report:
- | | |
|--|--------------|
| a. Funny, Eli wants to immolate himself! | true |
| b. Funny, Eli wants to self immolate! | false |

In (23a), one of the variables is referentially valued by the speaker, not by Elie. The intent of (22a) is to allow this. But this now yields a functional *himself* that is too weak since there is no guarantee that the value of x in world v and the value of x in world w have any connection: the reflexive reading is lost.

To illustrate, suppose that *the best student in the class* is Leila for me, the speaker, but is Lydia for Charles. Suppose Charles says: ‘the best girl in the class saw Leila’ to mean that Lydia saw Leila. The following report would be false: ‘Charles said that the best girl in the class saw herself’. Yet, it is predicted true by (22a) because its predicted meaning would be: Charles said that the person he takes to be the best girl in the class (namely Lydia) saw the person I take to be the best girl in the class (namely Leila). What is needed - this is discussed in detail in Sportiche (2022b) - is that the reflexive and its antecedent be covalued for someone (relevant).²²

To guarantee this result, (22a) could be modified to:

$$(24) \quad ||\text{himself}||^w = \lambda R \lambda x R(x_w)(x_w)$$

This could in principle work although this faces some of the difficulties discussed above: (i) it is unclear how *himself* and *self* are compositionally related; (ii) there is no guarantee that the argument slot *himself* occupies participates in the reflexive relation as in option #3; (iii) since *himself* is not necessarily a sister to the predicate it takes as argument, the syntax would have to be manipulated in ways that would need to be plausible.

4 Analytical Implications

Summarizing the preceding discussion, options #1, #2 and #3 face significant challenges. Adopting option #4 for cases in (1) leaves room to handle intrinsically reflexive predicates (like *suicide*), or explicitly marked reflexive predicates (like *self-criticism*) differently in a variety of ways (e.g. conceivably, albeit not necessarily, by assuming that they alone involve semantic arity reduction).

I thus conclude that only a version of option #4 is tenable (as it is the weakest). It is remains desirable to derive from primitive properties why certain expressions, e.g. *herself* can behave anaphorically under certain circumstances.

²² Furthermore, even if there was a connection between x_w and x_v , say x_w is the counterpart in w of x_v in v , this would be insufficient if Sportiche (2022b) is right in concluding that covaluation must be in the same world to meet binding condition A.

Taking *herself* to be a functional arity reducer has the merit of providing an answer to this question by attributing a particular lexical content to it, namely, as mentioned earlier, that of being a reflexivizing function taking the predicate it is a dependent of as argument. This in addition derives why antecedent and reflexive are in a local relation. But as argued, this is not viable. Similarly, taking *self* of *herself* to be a reflexivizer having to incorporate to the predicate the reflexive is an argument of provides similar benefits. To force incorporation, *self* ought to be taken as function taking a predicate as argument, but as discussed below, it is most unclear how to implement such a view in a consistent way and looks non viable as well.

Consequently, a different approach must be developed, one that does not rely on predicate reflexivization. I take this to be an independently welcome conclusion. Indeed, it is most unclear how these approaches can generalize to logophoric usages of English or French *self* reflexives, without invoking ad hoc lexical ambiguities (why wouldn't the *self* of logophoric *himself* not be a local predicate reflexivizer?). Furthermore, it is surely desirable to treat uniformly not only the *self* or anaphoric reflexives or logophoric reflexives, but also the *self* morpheme of intensifying reflexives, a widespread homophony that demands explanation. By this measure, no current analysis is satisfactory.

Ultimately, I adopt an altogether different approach, not discussed here but developed in Charnavel and Sportiche (2022) and Charnavel and Sportiche (2021) and Charnavel and Sportiche (2023), according to which *self* takes two individual arguments, asserting their (near) coevaluation,²³ and attempting to unify all uses of *self*, in anaphors, logophors and intensifiers, whether incorporated or not.

5 Explicitly marked or intrinsically reflexive predicates

5.1 A detour: *auto* and incorporated *self*

As mentioned earlier, we took it that *auto* does involve reflexivization as opposed to only what Spathas et al. (2015) calls the "anti assistive" meaning "by oneself", "alone" or "without help" - an a priori plausible alternative - argued for for Greek *afto/auto* therein.

There are several reasons to adopt this conclusion.

First, *auto* (and *self*) are compatible with stative predicates such as *connaitre/knowledge* as in *s'auto-connaitre*, *self-knowledge*, unlike the 'anti-assistive' usages which are not compatible with stative predicates (cf. Hole (2002)). This means at least that *auto*, *self* cannot be only anti-assistive.

Second, consider nominalizations such as *self-evaluation/ auto-evaluation*. when the noun *evaluation* is used without arguments, it can mean an evaluation by someone of someone; if *self/auto* could mean 'without help' here, this should be able to mean 'evaluation by someone of someone or other without help, which it can't. It must mean 'evaluation by X of Xself. Third, there are expressions such as:

²³ These share with (Reuland, 2011, chapter 6) the idea that *self* is fundamentally relational but disagrees with it in several ways (internal structure of reflexives, availability of proxy readings etc...) most notably in how reflexivization arises. The proposal in (Reuland, 2011, chapter 6) is a hybrid of options #2 and #3 and the relevant part of the semantics proposed (for (1) e.g. : $\lambda x.V(x, x)$) makes it subject to the problems affecting option #2. But it also faces several of the problems listed above (in addition to specific problems): *self* is 'uncontroversially' taken to have minimal lexical content which requires it to incorporate for interpretation (?), facing the problems listed above under points 2, 3, 4, a portion of 5, and 6 in section 3.4.

- (25) un four auto-nettoyant
 a self cleaning oven
 ‘an oven that cleans itself’

Here we have an active verb form (a present participle in French), where *auto/self* can readily be analyzed as an incorporated internal argument. Cases like *autocollant/lit. self sticking/sticker* again with an active form in French, which seems to mean ‘sticks by itself’ are a bit surprising. But in this case, the external argument is not agentive, but simply causal: a more accurate paraphrase *autocollant/lit. self sticking/sticker* would be ‘sticks by itself’ with a by-phrase in the sense of ‘sticks because of itself’, still a passive like structure but of a causal external argument. In particular, note that this could not be a middle construction with an anti-assistive intensifier reading. Thus in cases that are unambiguously middles such as *Ce livre se lit facilement/ this book reads easily*, an adverbial intensifier (which would give rise to an anti-assistive reading) is ill-formed viz. **Ce livre se lit facilement lui-même / *this book reads easily itself*.

Finally, reflexive uses can be documented on the basis of the well formedness and wide use (hundreds of thousand or more hits on a Google search for French, more than a hundred thousand for English *self portrait of oneself* alone) of nominal expressions such as:

- | | | |
|---------|-------------------------|-----------------------------|
| (26) a. | auto évaluation de soi | self evaluation of oneself |
| b. | auto contrôle de soi | self control of oneself |
| c. | auto réalisation de soi | self realization of oneself |
| d. | auto estime de soi | self esteem of oneself |
| e. | auto portrait de soi | self portrait of oneself |
| f. | auto perception de soi | self perception of oneself |
| g. | auto découverte de soi | self discovery of oneself |

In all these examples all involving nominals with two theta roles, all interpreted as reflexive relations, is the presence of *de soi/ of oneself*, which is systematically interpreted as a theme, never as an agent or an experiencer. As said above *auto évaluation /self evaluation* must mean evaluation by X of Xself. But it could also equivalently mean evaluation of X by Xself. The examples above can immediately be accounted for if the latter is a closer paraphrase for these cases, making *auto* ‘standing’ for an incorporated version of the passive by-phrase *by X-self*:

- | | | |
|---------|---------------------------------|----------------------------------|
| (27) a. | auto évaluation de soi | self evaluation of oneself |
| | évaluation de soi par soi-même | evaluation of oneself by oneself |
| b. | auto contrôle de soi | control of oneself |
| | contrôle de soi par soi-même | control of oneself by oneself |
| c. | auto réalisation de soi | self realization of oneself |
| | réalisation de soi par soi-même | realization of one by oneself |
| d. | auto estime de soi | self esteem of oneself |
| | estime de soi par soi-même | esteem of one by oneself |
| e. | auto portrait de soi | self portrait of oneself |
| | portrait de soi par soi-même | portrait of one by oneself |
| f. | auto perception de soi | self perception of oneself |
| | perception de soi par soi-même | perception of one by oneself |
| g. | auto découverte de soi | self discovery of oneself |
| | découverte de soi par soi-même | discovery of one by oneself |

In other words, all these nominals are akin to impersonal passives (roughly like the pseudo English *there was danced the polka by many* and the version of these nominals with a missing argument are ambiguous, one version being passive nominals: *auto-critique/ self-criticism*, for example, either has an incorporated theme with a silent agent/subject, or has a passivized object, thus allowed to be silent and an incorporated *by X-self* phrase:

- (28) a. auto-critique
 b. [e_k [auto_m critique t_m]]
 c. [e_m [auto_k critique t_m t_k]]

Returning now to verbs, e.g. the verb *critiquer/criticize*, we have two variants of the reflexive constructions, with and without *auto*:

- (29) a. Jean doit se critiquer/ Jean must criticize himself
 b. Jean doit s'autocritiquer /Jean must self-criticize

where, as noted, the presence of *auto* requires the reflexive clitic *se*. The proposed analysis above leads to a subtle difference between the two: both can be properly glossed as *criticize oneself*, but the second is also glossable as *being criticized by oneself*, with the *by*-phrase incorporated as *auto*. This explains why *auto* incorporation can give rise to an anti-assistive flavor: choosing to add *auto* to the sentence in (29a) does not change its truth value and thus appears to be redundant unless *auto* is focused. It is therefore natural (as an implicature) assume as a hearer that it is focused, changing the sentence focus value. As a result, alternatives to the contribution of *auto* are understood to be excluded. If *auto/self* is an incorporated theme, this is saying that Jean is the sole theme. This option is illustrated in the following discourse:

- (30) A: Jean a incriminé Pierre /John incriminated Peter
 B: Non, Jean s'est auto incriminé / No, John self incriminated.

If *auto/self* is an incorporated agent, this is saying that Jean is the sole agent, yielding an anti-assistive flavor.

- (31) A: Jean a incriminé Pierre /John incriminated Peter
 B: Non, Pierre s'est auto incriminé / No, Pierre self incriminated.

English *self* also allows *self* to 'stand for' an (incorporated) internal argument (as in (25) or a *self-configuring program*, meaning 'a program configuring itself').²⁴ But the option of *self* looking like an incorporated external argument as in French is routinely available with *self*+passive participle as in *a self configured program* paraphrased by 'a program configured by itself'.

This said anti-assistive readings are available. For example in:

- (32) John self financed the construction of his house
 Jean a auto financé la construction de sa maison

the meaning is that of an anti-assistive *self*, exactly like in their adverbial counterparts *John financed the construction of his house himself/ Jean a financé la construction de sa maison*

²⁴ I am using 'stand for' loosely here, in fact not assuming that *self/auto* stand for arguments. How this should be precisely construed remains to be spelled out.

lui-même.

If, as mentioned before, there is a single lexical entry *self* underlying reflexives and intensifiers, the fact that bare *self* can yield either reflexive or intensifier readings is expected. But it does raise the question of why the anti-assistive reading is restricted as it is. Thus, examples such as:

- (33) Charles a auto évalué Maria / Charles self evaluated Maria

are ill-formed (but become fine if Maria is replaced by *himself*!): if the anti assistive reading was an option here, it should be well formed and mean ‘Charles evaluated Maria without help’.

Finally, there are cases such as these found in English, or its approximate French translation:

- (34) a. The strong attendance for a self-produced poetry reading fired up Jane (‘Just Kids’, Patti Smith, illustrated edition, 2018, p. 285)
 b. L’affluence pour ce spectacle auto-produit excita Jeanne

Here, a ‘standard’ reflexive reading is excluded, since the verb *produire* /*produce* takes reading/lecture as one argument, and, in this context, the other one, encoded by *auto/self*, means Patti Smith, the writer. This shows that taking *self* to be a predicate reflexivizer reflexivizing the predicate to which it attaches is plainly wrong.

Such cases could instantiate a logophoric usage of the reflexive, referring back to the person (Patti Smith) from whose point of view the event is reported. So there is still coreference between two expressions, but here, it is between the agent, the producer, and the logophoric center (which, following Charnavel (2020) and Charnavel (2019), I take to be a pronoun subject of a locally represented logophoric operator), possibly together with an anti assistive flavor for the same reasons as above.

But this could also be a pure intensifier, raising again the question of why such uses are restricted the way they are.

5.2 Self-marked predicates

Let us briefly return to the difference between the two examples below, all of which behaving like their French counterparts in the relevant respects, limiting the discussion here to suggestive remarks:

- (35) a. His criticism of/knowledge of/confidence in/ himself, he taught himself skills
 b. His self-criticism/ self-knowledge / self-confidence/ self-taught skills

Because *self* and *auto* in such cases share many descriptive properties, it is reasonable to attempt a unified treatment for both, in particular using what can be learned from the French cases.

Now, we assume that (35a) is handled classically: *himself* is an anaphor subject to Condition A and *self* incorporation is not involved, for reasons discussed earlier. Given examples such as (3) in contexts like (4), we take the coindexing requirement between the anaphor and its binder to be world parametrized.

How should the cases of *self/**auto*-prefixation such as (35b) be treated? Given the conclusion that lexical options are not needed for the cases we discussed, it is desirable to avoid lexical

options for these if possible, particularly in the absence of a coherent theory of what lexical operations are allowed to do.

Now, whether a verb, a noun or an adjective allows a *self*-variant depends in part on its lexical properties: if *self* is a reflexivizer, its host has to be reflexivizable in principle, else no coherent interpretation can be constructed. This need not be lexically encoded. Now *self*-forms are by no means marginal. A search of online databases for English returns thousands of attested *self*-forms, active verbs being the least represented category, but passive (stative or eventive) participles seemingly productively present. In addition, speakers do not reject novel forms, although they tend to be aware that they are novel. Naturally, only some of the in principle eligible hosts are attested with *self* variants. This seems to be, at least in part, an arbitrary property possibly one having to do with pragmatic usefulness or relevance and does not say whether the forms result from syntactic composition or not. Furthermore, there are reasons to treat *self* forms, and the French equivalent *auto* forms as syntactically composed.

Recall the discussion in section 5.1 above. The French equivalent of English ‘incorporated’ *self* is *auto*. French *auto* like English *self* can be used to encode reflexive relations on nouns *autoévaluation/self evaluation* or adjectives *auto satisfait/self satisfied*, but much more easily on verbs *s’autoévaluer/self evaluate* than in English. When present, *self/auto* is present, the reflexive relation must hold *de dicto*.

Importantly, the reflexive relation need not be between semantic arguments of the same predicate:

- (36) a. S’ auto juger innocent objectivement est difficile
 se self judge innocent objectively is difficult
 To objectively judge oneself innocent is difficult
 b. Charles voulait s’ auto proclamer roi
 Charles wanted to se self proclaim king
 Charles wanted to proclaim himself king
 c. Un roi auto-proclamé
 a king self-proclaimed
 a self proclaimed king.

Here *oneself/himself* are not arguments of the verbs *judge/proclaim* but the subject of the adjectival or nominal small clause. This is also available on some participles at least as in (36c) (although not on nouns or adjectives which do not license ECM/small clause complement structures) where the reflexive relation (proclaim oneself king) also holds between the subject of *proclaim* and the subject of the nominal small clause headed by *king*. And of course, this is also true of English participles *self proclaimed king, self styled expert, self named prophet, self confessed murderer...* as well as a limited number of verbs such as:

- (37) a. Charles identified himself as...
 b. Charles self-identified \emptyset (as...)

It is thus not possible to take *self/auto* to, as a general rule, lexically covaluate two arguments of the predicate it modifies.

In addition, the existence of forms as in (32), in which there is no lexical connection between the intensifying *self* and the verb speaks against a lexical treatment.

Let us now very briefly sketch how a syntactic treatment could be formulated: such cases

could involve *self/**auto* mandatorily raising as a head when merged (superficially) bare, and would thus be subject to locality constraints on head movement. French would be similar but with *auto* never licensing an overt possessor and with mandatory *auto* movement. One main challenge is to derive the necessarily *de dicto* reading of such constructions. If *self/**auto* ended up in the spine, taking the predicate as argument, as in several analyses in options #2 and #3, this would be derived given footnote ???. But this would mean classic incorporation would not be quite what is involved: in classic incorporation, the incorporee is an argument or the incorporator; here it would be the reverse.

The following observations about French *auto* support the conclusion that movement (or simply the merging) is syntactic in French, since *auto* can merge in different positions, higher or lower than *re*:²⁵

- (38) a. Charles s' est re évalué
 Charles se is re evaluated
 Charles evaluated himself again
 b. Charles s' est re auto évalué
 Charles se is re self evaluated
 Again, Charles evaluated himself
 c. Charles s' est auto re évalué
 Charles se is self re evaluated
 Charles re evaluated himself
 d. Charles s'est lui-même re évalué
 Charles se is himself re evaluated
 Charles has himself reevaluated himself

[Sportiche \(2012\)](#) shows that French *re* basically behaves like an autonomous adverb, merging above (some) VP projection (which in a 'shell' could be the lower VP or the higher vP). So *auto* can be even higher. Sentence (38a), is ambiguous between two interpretations: a repetitive reading (Charles evaluated himself twice) and a restitutive (someone evaluated Charles, and then Charles did it, an ambiguity arising from the different merging positions of *re*).

Sentence (38b) is not ambiguous. As *re* outscopes *auto* what is repeated is Charles performing a self-evaluation: adding *auto* here removes the possibility that the first evaluation was done by someone other than Charles (and this is predicted by the analysis of *auto* proposed in section 5.1).

In sentence (38c), *auto* is added to 'Charles s'est réévalué' with *auto* outscoping *re*. *Auto* is felicitous as a way to emphasize that the reevaluator is Charles (and not someone else) (see again section 5.1), whether (38a) is interpreted restitutively (someone evaluated Charles, and then Charles did it), or repetitively (Charles evaluated himself, and then Charles did it again). So here the resulting meaning is very similar to that of (38d).²⁶ That *auto* can

²⁵ As discussed in [Sportiche \(2012\)](#), 're' followed by a vowel can for the author be pronounced [rö] or [re], the latter only allowing a restitutive reading, the former being ambiguous but preferably repetitive. The following examples only use the former.

²⁶ English *re-* has a much more limited distribution but the same facts can partially be observed in nominals. One can standardly have:

- (i) a. Maria did an evaluation; b. Maria did a self evaluation; c. Maria did a reevaluation; d. Maria did a self reevaluation
 (d) would be felicitous in a context such as: Maria's doctor did an evaluation of her but she didn't trust anything that he said, so she decided to do a self re-evaluation, to reevaluate herself herself.

merge higher than an autonomous adverbial casts doubts on an incorporation approach, raising anew the questions of why movement is local, and why the reflexive relation must be read *de dicto*.

Hebrew *hitpa'el* (as in (39a), where the specific morphology is glossed as ‘morph’) which is reportedly limited to covaluating coarguments would still need to be accounted for: while French (or English) allows reflexive readings without *auto* ((36a) without *auto/self* is well formed) in ECM/small clause cases, Hebrew does not.

- (39) a. Leila hitraxec *Hebrew*
 Leila morph-wash
 Leila washed herself
 b. Leila s'est lavée *French*
 Leila se is washed
 Leila washed herself

But the question arises as to how the reflexive reading in examples (39) arises. Here the answer requires understanding the role played by *s(e)* or the *hitpa'el* morphology as they not only license reflexive readings, but middle readings as well, and in the French case at least, anticausative readings. Because of this variety of possibilities, Sportiche (2014b) argues that there is nothing specifically reflexive in (39b), the reflexive reading arises as a by-product of independent factors. A unified analysis of the role played by the *hitpa'el* morphology may lead to similar conclusions (see Kastner (2016) for some discussion) and might at the very least show that the *hitpa'el* conjugation does not instantiate an arity reduction process.

Two additional remarks:

First one property that needs to be derived for all case discussed in this section is subject orientation: in all cases, the subject must be part of the reflexive relation. This is not a necessary property of such “prefixes”. Thus the French prefix *entre/inter* yields verbs such as *entrecroiser*, *entrelacer*, *entremêler* behaving as follows: they have bare variants *croiser*, *lacer*, *mêler*/ *cross*, *lace*, *mix* taking three arguments (A croise B with C / A cross B with C) and acquire a reciprocal reading on the object with *inter* (A makes the Bs cross each other). But subject orientation is possible too as with *s'entretuer*, *s'entredéchirer*, *s'entremêler*/ *kill each other*, *tear each other apart*, *mix with each other* (the last two being non causative). This in my view suggests a syntactic treatment, not in terms of presupposition of covaluation, but in which *self/auto* is higher than VP and attracts the closest argument it can (namely the subject) as one involved in the covaluation *self/auto* asserts.

A second remark is that reflexive *self/auto* attaches to nouns or participles, and otherwise can only covalue direct syntactic or semantic dependents, never adjuncts. This strongly suggests therefore that nouns do take arguments that *self/auto* can covalue, and that passive participles can retain the external argument that the corresponding verbs have as arguments and not adjuncts, which can then participate in the covaluation relation induced by *self/auto*.

5.3 Inherently Reflexive Predicates

Finally, consider verbs that look inherently or lexically reflexives:

- (40) Charles washed/ shaved

Are these instances of lexical reflexivization turning the verb *wash* into an intransitive

wash_R? There is evidence suggesting a negative answer, based on the properties of *again* which functions like French *re* discussed earlier. Thus *Charles evaluated himself again* is ambiguous between a repetitive reading (Charles evaluated himself twice) and a restitutive reading (someone else evaluated Charles after which Charles evaluated himself). As suggested in von Stechow (1996) (see Beck and Johnson, 2004, Sportiche, 2012 for supporting discussions), this can be derived by assuming that *again* modifies either the entire vP (roughly: ‘Charles cause Charles be evaluated’) or the inner VP only (roughly: ‘Charles be evaluated’). In other words, this can be handled by postulating two distinct merging sites for *again* roughly as below, where the lexical presupposition of *again* requires that what its sister describes has previously occurred:

- (41) a. Repetitive: [again [_{vP} A cause [_{VP} B evaluated]]]
 b. Restitutive [_{vP} A cause [again [_{VP} B evaluated]]]

With this background, consider the following:

- (42) a. Monday morning, Lydia shaved Charles
 b. Monday afternoon, Charles shaved again

Speakers report this as a well formed discourse.²⁷ Given that the shaver is not Charles the first time around, this means (42b) encodes a restitutive reading. So there must be a VP meaning ‘Charles be shaved’ that is modified by *again*. In other words, this means that the verb *shave* in (42b) is syntactically transitive. This could be handled by taking the VP in (42b) (or other structures with similar verbs) to allow a silent direct object *self* or *himself*. Further evidence for the conclusion that there is a syntactic direct object comes from what manner adverbials contribute:

- (43) a. Lydia washed thoroughly
 b. Charles shaved closely
 c. Maria dressed nicely

In all cases, these adverbials can modify the resulting state (of washing, shaving or dressing) holding of the subject and is analyzed as modifying VP, which would be consistent with the general observation that manner adverbials are structurally the lowest adverbs. In other words, the analysis would be:

- (44) a. Lydia_q v [[_{VP} e_q ‘resulting state’] thoroughly]
 b. Lydia_q v [[_{VP} e_q washed] thoroughly]

Furthermore, consider the following two sentences in the context provided:

- (45) Charles is a famous barber who loves to shave celebrities. Looking at a fuzzy picture of a famous barber, he says: I hope I will shave him! He does not realize it’s him in the picture, but I do. I report:
 a. Funny! Charles hopes to shave himself!
 b. Funny! Charles hopes to shave!

The first sentence is judged true, while the second is judged false. In other words, inherently

²⁷ The French verb *se suicider*/ *commit suicide* behaves differently: *Lydia a tué Charles, il est revenu à la vie, puis s’est suicidé *de nouveau* / *Lydia killed Charles, came back to life and committed suicide *again*, suggesting that *suicide* mandatorily contains *auto/self*, as its etymology suggests.

reflexive *shave* is a transitive verb, but behaves like predicates explicitly marked with *self*. To derive this, one option would be to assume that the object is a silent *self*. This object would have to mandatorily incorporate to form *self-shave*, something reasonable if what is idiosyncratic about these verbs is that *self-shave* is spelled out as *shave*.

Verbs such as *shave, wash, dress* etc.. are sometimes called "naturally reflexive" or "naturally self oriented". It is unclear what 'natural' means here. Surely, there is nothing intrinsically self directed about their meanings. Furthermore, it is far from clear that the most frequent use of such verbs is self directed. An alternative, consistent with the data discussed here, is that when used reflexively, they involve a canonical body part and are thus cases of inalienable possession (a reflexivization strategy overtly used in a number of languages - see e.g. Déchaine and Wiltschko, 2017): *Charles shaved his face/beard, Lydia washed her body, Eli dressed his body* in which the canonical body part denoting noun incorporates and remains (recoverably) silent. Such constructions display the *de dicto* property illustrated in (45).

References

- Ahn, B. (2015). *Giving Reflexivity a Voice: Twin Reflexives in English*. Ph. D. thesis, UCLA.
- Angelopoulos, N. and D. Sportiche (2022). Treating Greek *o eaftos mu* as a regular anaphor: Theoretical implications. ms. UCLA. Available at <https://ling.auf.net/lingbuzz/005653>.
- Bach, E. and B. Partee (1980). Anaphora and semantic structure. In *Papers from the Parasession on Language and Behavior at the 17th Regional Meeting of the Chicago Linguistics Society*, pp. 1–28.
- Baker, M. (1988). *Incorporation*. Chicago, Illinois: University of Chicago Press.
- Beck, S. and K. Johnson (2004). Double objects again. *Linguistic Inquiry* 35(1), 97–123.
- Büring, D. (2005). *Binding Theory*. Cambridge Textbooks in Linguistics. Cambridge University Press.
- Büring, D. (2012). Reciprocal reflexives. In T. Graf, D. Paperno, A. Szabolcsi, and J. Tellings (Eds.), *Theories of Everything: In Honor of Ed Keenan*, Volume 17 of *UCLA Working Papers in Linguistics*, pp. 22–34. <http://www.linguistics.ucla.edu/faciliti/wpl/issues/wpl17/wpl17.html>.
- Charlow, S. (2010). Two kinds of de re blocking. Talk handout, MIT Ling Lunch, March 18 2010.
- Charnavel, I. (2019). *Locality and Logophoricity: A Theory of Exempt Anaphora*. Oxford Studies in Comparative Syntax. Oxford University Press.
- Charnavel, I. (2020). Apparent exemption from condition A: a perspective-based theory. *Linguistic Inquiry* 51(4), 671–723.

- Charnavel, I. and D. Sportiche (2016). Unifying long distance binding: Icelandic reflexive *sig* is clause-bounded, or logophoric. In E. Clem, V. Dawson, A. Shen, A. H. Skilton, G. Bacon, A. Chen, and E. H. Maier (Eds.), *Proceedings of the 42nd annual meeting of the Berkeley Linguistics Society*, pp. 47–62. Berkeley Linguistics Society Berkeley.
- Charnavel, I. and D. Sportiche (2021). Taking a strong position on strictly read reflexives. In *the forthcoming proceedings of the 39th meeting of the West Coast Conference on Formal Linguistics (WCCFL 39)*, University of Arizona.
- Charnavel, I. and D. Sportiche (2022). Unifying intensifiers ourselves. In B. Pratley, O. Bakay, E. Neu, and P. Deal (Eds.), *To appear in the 52nd North East Linguistics Society meeting proceedings*. Presentation at NELS 52, Rutgers University. A longer more detailed version is available at <https://ling.auf.net/lingbuzz/006618>.
- Charnavel, I. and D. Sportiche (2023). one *self* to bind them all. Presented at NELS 53, University of Göttingen.
- Chomsky, N. (1981). *Lectures on government and binding*. Dordrecht, The Netherlands: Foris Publications.
- Collins, C. and P. M. Postal (2012). *Imposters: A study of pronominal agreement*. MIT Press.
- Cresswell, M. J. (1973). *Logics and Languages*. Methuen and Co Ltd., London.
- Déchaine, R.-M. and M. Wiltschko (2017). A formal typology of reflexives. *Studia Linguistica* 71(1-2), 60–106.
- Drummond, A., D. Kush, and N. Hornstein (2011). Minimalist construal: Two approaches to A and B. In C. Boeckx (Ed.), *The Oxford handbook of linguistic minimalism*, pp. 396–426. Oxford University Press Oxford.
- Haiden, M. (2020). Combien y a-t-il d’arguments dans une construction réfléchie du français? *Langages* 216 (4/2019), 33–52.
- Heim, I. (1994). Puzzling reflexive pronouns in *de se* reports. Unpublished Handout.
- Heim, I. and A. Kratzer (1998). *Semantics in generative grammar*. Malden, MA: Blackwell.
- Hole, D. (2002). Agentive *selbst* in German. In *Proceedings of Sinn und Bedeutung*, Volume 6, pp. 133–150.
- Hovav, M. R. and E. Doron (2009). A unified approach to reflexivization in semitic and romance. *Brill’s Journal of Afroasiatic Languages and Linguistics* 1(1), 75–105.
- Kastner, I. (2016). *Form and meaning in the Hebrew verb*. Ph. D. thesis, New York University.
- Kayne, R. S. (2002). Pronouns and their antecedents. In *Derivation and Explanation in the Minimalist Program*, pp. 133–166. Oxford: Oxford University Press.
- Keenan, E. L. (1987). Unreducible n-ary quantifiers in natural language. In *Generalized quantifiers*, pp. 109–150. Springer.

- Lebeaux, D. (1983). A distributional difference between reciprocals and reflexives. *Linguistic Inquiry* 14(4), 723–730.
- Lechner, W. (2012). Towards a theory of transparent reflexivization. Ms. University of Athens.
- McKillen, A. (2016). *On the interpretation of reflexive pronouns*. Ph. D. thesis, McGill University Libraries.
- Patel-Grosz, P. (2013). The principle A problem. *Journal of South Asian Linguistics* 6.
- Percus, O. (2000). Constraints on some other variables in syntax. *Natural Language Semantics* 8(3), 173–229.
- Reinhart, T. and E. Reuland (1993). Reflexivity. *Linguistic Inquiry* 24(4), 657–720.
- Reinhart, T. and T. Siloni (2005). The lexicon-syntax parameter: Reflexivization and other arity operations. *Linguistic Inquiry* 36(3), 389–436.
- Reuland, E. (2001). Primitives of binding. *Linguistic Inquiry* 32(3), 439–492.
- Reuland, E. (2011). *Anaphora and Language Design*. Cambridge, Massachusetts: MIT Press.
- Rooryck, J. and G. J. vanden Wyngaerd (2011). *Dissolving binding theory*. Oxford University Press.
- Safir, K. (1996). Semantic atoms of anaphora. *Natural Language and Linguistic Theory* 14(3), 545–589.
- Sauerland, U. (2013). Presuppositions and the alternative tier. In *Semantics and Linguistic Theory*, Volume 23, pp. 156–173.
- Schlenker, P. (2005). Non-redundancy: Towards a semantic reinterpretation of binding theory. *Natural Language Semantics* 13(1), 1–92.
- Spathas, G. (2010). *Focus on Anaphora*. Ph. D. thesis, University of Utrecht. LOT dissertation series.
- Spathas, G. (2017). On the semantic non-uniformity of anaphoric reflexivization strategies. Talk given at the 2017 Debrecen Workshop on Pronouns.
- Spathas, G., A. Alexiadou, and F. Schäfer (2015). Middle voice and reflexive interpretations: afto-prefixation in greek. *Natural Language & Linguistic Theory* 33(4), 1293–1350.
- Sportiche, D. (2012). Re re again. *Functional Heads: The cartography of syntactic structures* 7, 253–262.
- Sportiche, D. (2014a). Assessing unaccusativity and reflexivity: using focus alternatives to decide what gets which θ -role. *Linguistic Inquiry* 45(2), 305–321.
- Sportiche, D. (2014b). French reflexive se: Binding and merge locality. In *Locality*, pp. 104–137. Oxford University Press Oxford.

- Sportiche, D. (2022a). Binding and point of view. ms, UCLA. to appear in Footprints of Phrase Structure, Studies in Syntax for Tim Stowell, M. Arche, H. Demirdache and C.J.W. Zwart, eds., Benjamins.
- Sportiche, D. (2022b). Binding, relativized. ms, UCLA.
- von Stechow, A. (1996). The different readings of *wieder* “again”: A structural account. *Journal of Semantics* 13, 87–138.