

The Acquisition of Contrastive and Non-contrastive Anaphoric Forms in Brazilian Portuguese

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1. Introduction

In this article I discuss the main syntactic, semantic and pragmatic characteristics of the Brazilian Portuguese (BP) proform *ele* (he/him) and the intensified proform *ele mesmo* (him-self). Contrary to what is commonly assumed in the Brazilian literature, I will argue that the proform *ele* is not a pronoun and is not regulated by Principle B of Binding Theory. Also, I will argue that the intensified proform *ele mesmo* is not subject to Principle A of the Binding Theory. These observations will then be taken into consideration in order to discuss their acquisition. I will present the results of a study conducted with children acquiring BP as their mother tongue, showing that the anaphor *se* and the non-emphatic form *ele* are acquired before the emphatic *ele mesmo*. The paper is organized as follows. In section 2, I compare the emphatic *ele mesmo* to the reflexive *se* and to the non-emphatic proform *ele*. Syntactic, semantic and pragmatic aspects are discussed. In section 3, acquisition data from other languages are discussed. Section 4 discusses the acquisition data from BP. Section 5 is the conclusion.

2. *Se vs. Ele Mesmo vs. Ele*

2.1. *Syntactic issues: ele mesmo and ele are not regulated by Binding Principles*

The morphologically complex form *ele mesmo* involves a non-reflexive proform *ele* ('he') plus the focalizing form *mesmo*, which can be translated by *self*. This form exhibits gender and number agreement with the proform: *ela mesma* ('her self-fem'), *eles mesmos* ('them-masc selves-masc'), *elas mesmas* ('them-fem selves-fem').¹ Numerous languages display similar expressions, like *lui-même* (French), *hemzelf* (Dutch), *himself* and *his own* (English), *il proprio* (Italian), among others. In this study, I will confine myself to the contexts where this form is used in reflexive contexts, as illustrated in (1) below:²

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¹ The sequence *ele mesmo* is ambiguous between the one that exhibits (singular, masculine) agreement and the one that doesn't. The form without agreement is shown below [boldface = accent]:

(i) O João_i criticou ele_k **mesmo**.

The John_i criticized him_k mesmo/('John_i really criticized him_k.')

In this case, *mesmo* indicates emphasis on the verb, as the translation suggests. I will not deal with this construction in this paper. In what follows, the form used in the examples will be *ela mesma*, with feminine agreement, in order to assure that we are dealing with the agreeing form and not the verbal emphatic form.

² This means that I will leave aside cases where *ele mesmo* is adjoined to proper nouns, as in (i):

(i) O João, ele mesmo, arrumou a cama.

The John he self made the bed/('John himself made the bed.')

Also, I will not deal with cases where *ele mesmo* is the subject of the sentence, as in (ii):

(ii) O João não reclama quando seus alunos se atrasam para uma reunião; ele mesmo faz isso com frequência.

The John not complain when his students are late for a meeting; he self does it frequently

'John doesn't complain when his students arrive late for a meeting; he himself does that frequently.'

- (1) A Maria_i beliscou ela_i mesma.
The Maria pinched her_i self.
'Maria pinched herself.'

The expression *ele mesmo* shares some characteristics with the reflexive pronoun *se* ('himself'). For instance, both forms are anaphoric, in the sense of not being able to be used deictically. They contrast with the proform *ele*, which can be used deictically, as illustrated below:

- (2) a. Eu dei um livro para ele_i, ele_k e ele_m. [with pointing]
I gave a book to him_i, him_k and him_m.
- b. * Eu dei um livro para ele_i, ele_k e ele_m mesmo. [with pointing]
I gave a book to him_i, him_k and him_m-self.

Additionally, *se* and *ele mesmo* present bound readings in ellipsis contexts, differently from *ele*, which, besides the bound reading, can also have the referential reading:

- (3) a. A Maria_i se_{i/*k/*g} admira e a Joana_k também <se_{k/*i/*g} admira>.
The Maria se admire and the Joana too <se admire>
'Maria admires herself and Joana does too.'
- b. A Maria_i conversa com ela_{i/*k/*g} mesma e a Joana_k também <conversa com ela_{k/*i/*g} mesma>.
The Maria talks with her self and the Joana too <talks with her self>
'Maria talks with herself and Joana does too.'
- c. A Maria_i tem vergonha dela_{i/g} e a Joana_k também <tem vergonha dela_{k/g}>.
The Maria has shame of her and the Joana too <has shame of her>
'Maria is ashamed of her and Joana is too.'

The reflexive *se* is traditionally analyzed as an anaphor, whose distribution is regulated by Principle A of Binding Theory (Chomsky, 1981), stated below:

- (4) An anaphor must be bound in its governing category.

Principle A requires the anaphor to have a local, c-commanding, co-indexed antecedent. *Se* is clearly an anaphor, as the examples below show: (5a) shows that *se* must have a c-commanding antecedent and (5b) shows that this antecedent must be local:

- (5) a. [A mãe d[o João]_i]_k se_{k/*i} machucou.
[The mother of[the John]_i]_k se_{k/*i} hurt.
'John's mother hurt herself.'
- b. A Maria_i disse que o João_k se_{k/*i} machucou.
The Mary_i said that the John_k se_{k/*i} hurt.
'Mary said that John hurt himself.'

Although *ele mesmo* shares some characteristics with *se*, in what follows I will claim that *ele mesmo* is not an anaphor, in the sense that it does not obey Principle A of Binding Theory. In order to do so, I will compare Brazilian Portuguese *ele mesmo* with French *lui-même*, showing that, similarly to what happens with the French expression, *ele mesmo* can appear in contexts where (a) it is not c-

commanded by its antecedent, (b) it has a non-local antecedent, or (c) it has an antecedent in another sentence. The conclusion I reach is that *ele mesmo* is not regulated by a syntactic principle. Following Zribi-Hertz (1989/1990/1995/2007) and Menuzzi (1999), I will claim that semantic and pragmatic principles regulate its distribution.

In the case of *ele*, I will show that this form can appear locally bound, which suggests that it is not regulated by Principle B of Binding Theory.

As a start, first consider that both *ele* and *ele mesmo* can appear in accusative or oblique positions, as shown below:

- (6) a. A Maria_i viu ela_i (mesma) na TV.
The Mary_i saw her_i (self) on TV
'Mary saw herself on TV.'
- b. A Maria_i fala dela_i (mesma) o tempo todo.
The Mary_i speaks of-her_i (self) all the time
'Mary speaks of her_iself all the time.'

As mentioned above, *ele mesmo* cannot be used deictically, as it must have a linguistic antecedent. However, the examples below illustrate that such antecedent does not have to be in a c-commanding position. The same occurs with *lui-même*.³ In all the cases discussed below, the proform *ele* alone, without *mesmo*, is also possible:

- (7) A atitude da **Susana**_i prejudicou não só **ela**_i **mesma** como também as amigas dela_i.
'Susan_i's attitude hurt not only her_i self, but also her_i friends.'
- (8) A força da **Teresa**_i está dentro **dela**_i **mesma**.
'Teresa_i's strength is within her_i self.'

Besides the fact that it does not need to be c-commanded, the example below indicates that *ele mesmo* can be free in its clause:

- (9) **Ela**_i entrou na casa e olhou ao redor. Na mesa da sala tinha um envelope endereçado a **ela**_i **mesma**.
'**She**_i entered the house and looked around. On the dining room table there was an envelope addressed to **her**_i**self**.'

These facts indicate clearly that *ele mesmo* is not constrained by Principle A. It also indicates that it cannot be simply classified as a pronoun, since it cannot be used deictically. I will discuss below other contexts in which *ele mesmo* is possible and this will lead us to claim that its distribution is regulated by semantic/pragmatic principles, rather than syntactic ones.

Turning now to the proform *ele*, the examples below show that it can be free in its clause (as in (10)), can be non-locally bound, as shown in (11), and can be locally bound, as shown in (12):

- (10) **Ele**_i chegou.
'**He** arrived.'
- (11) O João_i acha que **ele**_i é inteligente.
'John thinks that **he** is intelligent.'

³ Many of the BP sentences presented in the text are inspired by the French data presented in several works by Anne Zribi-Hertz, who studied the French expression *lui-même* in depth. See Zribi-Hertz (1989, 1990, 1995, 2007) for detailed analyses.

- (12) a. O Paulo_i viu **ele_j** na TV.
‘Paul saw **him** on TV.’
- b. O Paulo_i só pensa **nele_j**.
The Paul only thinks of-**him**.
‘Paul thinks only about himself.’
- c. A Maria_i fez a lista de convidados, mas pro_i não incluiu **ela_i**.
The Maria did the list of guests, but not included her
‘Maria prepared the guest-list, but didn’t include herself.’

Ele can appear in almost all contexts where the complex form with *mesmo* can. This seems to indicate that in BP, similarly to French, the simplex form *ele* is not regulated by principle B of Binding Theory.⁴ The syntactic difference between *ele* and *ele mesmo* lies in the fact that *ele* doesn’t need a linguistic antecedent (i.e., it can be deictic), whereas *ele mesmo* does.

Ele is generally analyzed in BP literature as a pronoun, subject to Principle B of BT. However, cases like the ones in (12) above indicate that it is better analyzed as an *unspecified bindable expression* (UBE, Zribi-Hertz, 1995, p. 356). An UBE is unspecified for disjoint reference and locality, which means that it may be bound. Zribi-Hertz (1995) claims French anaphoric forms *lui* and *lui-même* are UBES. Other languages displaying elements like these are Frisian (Everaert, 1991), Haitian (Déchaine & Manfredi, 1993), Bamako Bambara (Zribi-Hertz & Hanne, 1994) and Malagasy (Zribi-Hertz, 1995).

2.2. Semantic and pragmatic issues: the distribution of *ele mesmo* and *ele*

As observed by Zribi-Hertz (1990) for French *lui-même* and Menuzzi (1999) for BP *ele mesmo*, the acceptance of these complex forms improves depending on the semantics of the predicate. In (13), we see predicates that accept both the simple form *ele* as well as the intensified form *ele mesmo*. In (14), we have predicates for which the form *ele* is not acceptable and only *ele mesmo* is possible:

- (13) Predicates which accept both *ela* and *ela mesma*
- a. A Maria_i tem vergonha dela_i (mesma).
‘Mary is ashamed of her (self).’
- b. A Maria_i fala dela_i (mesma) o tempo todo.
‘Mary speaks of her (self) all the time.’
- c. A Maria_i criticou/elogiou ela_i (mesma).
‘Mary criticized/praised her (self).’
- (14) Predicates which accept *ela mesma* but does not accept *ela*
- a. A Maria_i conversa com ela_i *(mesma).
‘Mary speaks with her self.’
- b. A Maria_i tem ciúme dela_i *(mesma).
‘Mary is jealous of her self.’
- c. A Maria_i esmurrou/esfaqueou/apunhalou ela_i *(mesma).
‘Mary hit/stabbed/punched her self.’

⁴ Cf. Galves (1986) and Lemle (1985) for descriptions of cases where *ele* can be locally bound.

The distinction above is also found for the French forms *lui* and *lui-même*, as reported in Zribi-Hertz (1990, p. 115, examples (68)-(69)):

- (15) a. Pierre_i a honte de lui_i-même/lui_i.
 ‘Peter is ashamed of him-self/him.’
- b. Pierre_i bavarde avec lui_i-même/?*lui_i.
 ‘Peter talks with him-self/him.’

Similarly to what happens in French, in BP predicates like *ter vergonha de* (‘be ashamed of’) and *falar de* (‘speak of’) accept the pronoun with or without *mesmo*. On the other hand, predicates like *conversar com* (‘talk with’) and *ter ciúme de* (‘be jealous of’) are only acceptable with *mesmo*. Co-reference between the arguments of the predicates in (13) and (15a) is natural, contrary to the predicates in (14) and (15b), where co-reference between the arguments isn’t natural. Zribi-Hertz claims that this is so due to the fact that the semantics of predicates in (14) and (15b) increases the probability of referential disjunction between its arguments, whereas the semantics of predicates like (13) and (15a) does not have this property. Thus, ‘talk with’ is generally an activity involving two distinct participants. The co-indexation of these two arguments isn’t impossible, but marked. Menuzzi claims that predicates like this display improbable reflexivity. Therefore, the adjunction of *mesmo* makes explicit that the index on the pronoun is marked. In the case of predicates like ‘be ashamed of’, such co-indexation isn’t surprising or improbable. Thus, the use of *mesmo* is possible, but not necessary.

Summarizing, the adjunction of *mesmo* to the pronoun *ele* in the examples above is used to focalize the referential index on the pronoun, that is, to make explicit its marked status. Such focalization seems optional in (13) and (15a), where the index is contextually unmarked, but is obligatory in (14) and (15b), where it is contextually marked.

These observations indicate that *ele mesmo* is not regulated by a syntactic principle, such as the Binding Principles, but by discourse principles, involving the notion of prominence and contrast. Baker (1995) proposes that intensive expressions, like *lui-même* and non-locally bound *himself* obey the following discourse restrictions:

- (16) a. Contrastiveness Condition (Baker, 1995, p. 77)
 Intensives are appropriate only in contexts in which emphasis or contrast is desired.
- b. Condition of Relative Discourse Prominence (Baker, 1995, p. 80)
 Intensives can only be used to mark a character in a sentence or discourse who is relatively more prominent or central than other characters.

The cases discussed above suggest that *ele mesmo* obeys these conditions as well. However, it isn’t the case that *ele mesmo* always displays this focalizing aspect related to contrast or prominence. In some contexts, *ele mesmo* obeys a semantic restriction of logophoricity. This means that the sentence must convey the thoughts or feelings of the antecedent. As Zribi-Hertz (1989, p. 705) puts it, “the antecedent of a LDB (long distance bound) reflexive pronoun must be interpreted in discourse as a SUBJECT OF CONSCIOUSNESS.” When the antecedent of *ele mesmo* is the subject of consciousness, the sentence is possible, and it does not need to obey the focalizing restrictions discussed above (data adapted from Zribi-Hertz, 1990, p. 109, example (40)):

- (17) a. *Essa pobre coitada_i, o João ama todo mundo menos ela_i mesma.
 ‘This poor girl_i, John loves everyone but her_iself.’
- b. Essa pobre coitada_i está convencida de que o João ama todo mundo menos ela_i mesma.
 ‘This poor girl_i is convinced that John loves everyone but her_iself.’

(17a) is a topic-comment structure, in which the antecedent of *ela mesma* ('this poor girl') is not the subject of consciousness of the sentence. We have John's feelings expressed and he is the subject of consciousness of the sentence. Thus, only John could be the antecedent of a complex pronoun with *mesmo*. On the other hand, (17b) expresses the opinion of 'this poor girl,' the antecedent of *ela mesma*. Thus, *ela mesma* is possible, since its antecedent is the subject of consciousness of the sentence.⁵

Finally, it should be noted that focus is a relevant notion in order to properly describe the distribution of *ele mesmo*. Zribi-Hertz (2007) observes that *lui-même* is licensed with primary accent and construed semantically under narrow focus. Adapting the data from Zribi-Hertz for *lui-même* to the BP *ele mesmo*, we see below that the Brazilian form works in the same way:

- (18) A: O que a Maria descobriu sobre o João?
 'What did Mary find out about John?'
 B: Que ele é mais ALTO que ela (*mesma). [focus on the predicate]
 'That he is TALLER than her (*self).'
- (19) A: A Maria pôs o livro atrás dela?
 'Did Mary put the book behind her?'
 B: Não, ela pôs DO LADO dela (*mesma). [narrow focus on the preposition]
 'No, she put it NEXT to her (*self).'
- (20) A: A Maria pôs o livro atrás do João?
 'Did Mary put the book behind John?'
 B: Não, ela pôs atrás DELA mesma. [narrow focus on the pronoun]
 'No, she put it behind HERself.'

As observed above, if we have focus on the pronoun, *ele mesmo* is possible. On the other hand, if focus falls on the predicate, the adjective or the preposition, *ele mesmo* isn't possible. In these cases, we can only have the pronoun without *mesmo*.

The discussion above indicates that, similarly to *lui-même*, *ele mesmo*: (a) cannot be used deictically; (b) can be locally bound, non-locally bound, or free in its clause (but bound in the discourse); (c) must have an unexpected antecedent or logophoric antecedent in its context; and (d) has narrow focus with primary accent on the pronoun.

⁵ Klein (2001, p. 47) presents the example below and claims it to be evidence that *ele mesmo* cannot be co-referent with a non-c-commanding antecedent:

- (i) [O pai_i [do João]_k]_i deu um tapa nele_{*k/i} mesmo.
 The father of-the John gave a slap at-him self
 'John's father slapped him.'

Indeed, in the example above, *ele mesmo* must have the DP *o pai do João* 'John's father' as its antecedent. However, such requirement isn't always present, as shown in (7) and (8) above. The c-command requirement seems to come from the fact that the DP *o pai do João* 'John's father', being the subject of the clause, is the most prominent element in the sentence and potentially the subject of consciousness in discourse. *O João*, being embedded within this DP, does not stand as the central element and is not the subject of consciousness. Zribi-Hertz (1989, p. 718), presents two groups of examples, adapted here to BP:

- (ii) * O pai do João_i bateu nele_i mesmo.
 '* John_i's father hit himself_i.'
 (iii) A impulsividade do João_i se virou contra ele_i mesmo.
 'John_i's impulsiveness rebounded against himself_i.'
 (iv) O filho do João_i, Louis_k, recebeu mais livros do barão do que dele_i mesmo.
 'John_i's son Louis_k received more books from the Baron than from himself_i.'

Zribi-Hertz observes that, although these sentences have similar structures, in (ii) the subject NP that includes the antecedent for *himself* is a potential subject of consciousness (being mainly agent or experiencer). This is not the case in (iii), where the subject NP is [- human]. In (iv), the subject is marked as theme. In both cases, the subject NPs cannot be the subject of consciousness for the sentences and *ele mesmo* can have the non-c-commanding NPs as its antecedents.

That is, *ele mesmo* needs an antecedent, but it does not need to be local. It is an intensifying form in cases where it has an unexpected antecedent. Where there is no unexpected antecedent, it is logophoric. It is possible in cases of contrast, when narrow focus falls on the pronoun.

Since both *ele* and *ele mesmo* can be used in the same contexts (exception only to the deictic one), the choice for the complex form is motivated by some semantic effect that the adjunction of *mesmo* brings to the sentence, like its focalizing function, its logophoricity, or the improbable index in an argument.⁶

Keeping in mind these aspects about *ele* and *ele mesmo*, I turn now to the discussion about the acquisition of anaphoric forms in other languages and in BP.

3. The acquisition of simplex and complex forms in other languages

Jakubowicz (1994) studied the acquisition of French forms *se* and *lui-même* and Danish forms *sig* ('himself') and *sig selv* ('him-self'). With respect to the French *se*, Jakubowicz tested 46 children between 3;0 and 5;11 years of age. She observed that the form *se* was acquired early, at around 3;0 years.

Children's behavior with *lui-même*, on the other hand, was considerably poor. The rates of correct responses increased with age, but they remained around 58% even for the older children (5;6-5;11 years). This rate was quite low when compared to those of adults (100%). This low rate of correct responses remained low for both types of predicates tested (those in which reflexivity is probable, like *parler de* ('talk about') and *rêver de* ('dream about'), and those in which reflexivity is improbable (*parler avec* ('talk with') and *crier après* ('yell at'))).

The acquisition of the Dutch forms *sig* and *sig selv* was investigated with 100 children between 3;0 and 9;11 years of age. In relation to *sig selv*, the rate of correct responses was high even for the younger children (above 80%). The form *sig* can be locally or non-locally bound. Children displayed a high rate of correct responses when it was locally bound. However, when it was non-locally bound, the rates of correct responses were quite low, even for the 9 year olds.

These results lead Jakubowicz to conclude that French *se* and the Dutch *sig selv* and local *sig* are acquired early, around 3 years of age. One possible explanation for the late acquisition of non local *sig* is the lack of robust input data, since this form is rare in the speech of adults. The same explanation does not seem possible for French *lui-même*, which is absent from children's productions, but is frequent in the input. Jakubowicz concludes that more studies are necessary in order to understand why this form is absent from children's productions and why children have low rates of correct responses in the experiments.

In English, Chien and Wexler's (1990) study is the most influential work on the acquisition of anaphoric and pronominal forms. The authors tested 156 children between 2;6 and 6;6 years of age. Three methods were used. The first one was the "Symon says" game, in which the puppet orders the child to do something. The sentences used had the following structures:⁷

- (21) a. Kitty says that Sarah should point to herself/her.
b. Kitty wants Sarah to point to herself/her.

⁶ One anonymous reviewer points out that, for a complete characterization of *ele mesmo*, an issue that needs to be addressed is whether *ele mesmo* is just an intensifier or whether it works as a reflexive marker, in the sense of Reinhart and Reuland (1993). Given that *ele mesmo* can appear in sentences without a c-commanding antecedent (cf. (7) and (8) above), or even without an antecedent in the same sentence (as in (9) above), I believe it is not a reflexive marker, but just an intensifier.

⁷ Kitty was the name of the puppet and Sarah was the name of the child being tested. If the child was a boy, the puppet was also male, Snoopy. Each sentence was tested with the reflexive and with the pronoun. So, sentence (21) was tested twice with the same child: (a) Kitty says that Sarah should point to herself and (b) Kitty says that Sarah should point to her.

So, for example, for a sentence like ‘Kitty says that Sarah should point to herself’, the child had to point to herself. For the counterpart with the pronoun, the child had to point to the puppet. Children had better results with the reflexives than with the pronouns.

The rates of correct responses for the reflexive condition (with the verb *want*) increased with age, with 4-year-olds having 75,9% of correct responses. In 20% of cases, 4-year-olds made the mistake of assigning the non-local DP as antecedent for the reflexive. Chien and Wexler’s conclusion is that the mistakes made by the younger groups can be explained by the fact that children are still learning the lexical forms *himself* and *herself*. As for the pronoun condition with the verb *want*, children overall had poorer performance if compared to the reflexives: 4-year-olds, for example, pointed to the correct referent (Kitty) 46,8% of the time and to the incorrect one (themselves) 48,46% of the time.⁸

The discussion above seems to indicate that, around 4 years of age, children show knowledge of the French reflexive *se*, English *himself* and Danish *sig selv*. Similar conclusions are reached in the studies of McDaniel, Cairns, and Hsu (1990), McDaniel and Maxfield (1992), Zukowski, McKeown, and Larsen (2008) for English, and Grodzinsky and Kave (1993/1994) for Hebrew. What seems to take longer is the acquisition of more specific forms, such as French *lui-même* or Danish non-local *sig*. The acquisition of pronominal forms also seem to take longer than the acquisition of anaphors.

4. The acquisition of *ele* and *ele mesmo*

The acquisition of *ele mesmo* involves acquiring its morphological, syntactic and semantic properties. Children must learn that *ele mesmo* is a maximal projection, and that the particle *mesmo* has number, person and gender features that agree with those of the proform to which it adjoins. These morphological properties should not be problematic for children to learn. The difficulty seems to come from its semantic and pragmatic properties. We claimed that *ele mesmo* is an intensifying form in cases where it has an unexpected antecedent. Thus, children must master the semantics of the various predicates in order to evaluate whether co-reference between their arguments is unexpected or not. If it is, the use of the complex form is licit. Besides this, we claimed that *ele mesmo* is possible with narrow focus. Studies on the acquisition of focus, mainly in association with the operator *only*, indicate that 4- and 5-year-olds do not behave like adults in tests with this operator (cf. among others, Baauw et al., 2003; Gualmini et al., 2001; Gualmini et al., 2002; Halbert et al., 1995; Hornby and Hass, 1970; Szendroi, 2003; and Tavakolian, 1974). Considering cases of contrastive stress (as in (18)-(20) above), we can predict that structures such as those would be problematic for children as well.

When there is no unexpected antecedent, *ele mesmo* is logophoric. The literature on the acquisition of logophoricity isn’t vast, but in Sigurjónsdóttir and Hyams (1992), for instance, it is observed that children acquiring Icelandic master the aspects of logophoricity with the long distance anaphor *sig* at 4;6 years of age. Based on these observations, we predict that the acquisition of *ele mesmo* will not be early. However, due to its complexity, the experiment reported below does not cover all of its aspects. It is a first study, to be soon followed by others. Nonetheless, although it will leave some questions unanswered, it will give us an idea of how children handle this complex form.

As a control item, we included in the experiments the anaphor *se*, which is regulated by Principle A. This anaphoric form does not present the semantic and pragmatic properties associated with *ele mesmo*. *Se* is a neutral form, used in contexts without contrast or focus, and is more frequent in children’s input. It does not display gender and number agreement. We predict therefore that it will be acquired before *ele mesmo*.

As for the proform *ele*, since it is a neutral, non-emphatic form, we predict that children will not have developmental problems and will show knowledge of such form early on.

In what follows, we discuss the production of *mesmo* in longitudinal data (section 4.1) and the experimental data in section 4.2.

⁸ It should be noted that the results obtained for *want*-sentences were comparable to the results for *say*-sentences, with children having slightly better performance with *want*-sentences.

4.1. Spontaneous production of *mesmo* in early Brazilian Portuguese

In order to acquire the correct distribution of *ele mesmo* children must first learn the lexical form *mesmo*. Thus, to have a better overview of the acquisition of the complex form *ele mesmo*, we collected spontaneous production data from two children, who were acquiring BP as their native language: R. (recorded between 2;0 and 5;0 years of age) and L. (recorded between 2;0 and 5;6 years of age). We looked for occurrences of the form *mesmo* and its gender and number variations (*mesma*, *mesmos*, *mesmas*), preceded or not by the proform ‘*ele*’, ‘*ela*’, ‘*eles*’, ‘*elas*’.

In R’s data, we found three occurrences of *mesmo* used as an adverb, but no occurrence of this form used emphatically, adjoined to a proform. At 2;7, the first production of *mesmo* as an adverb is found (cf. (22)). At 2;8 and 3;2, we find other occurrences of *mesmo* as an adverb:

- (22) *MOT: (vo)cê foi lá ## (vo)cê foi lá pinta(r),, é ?
 ‘you went there, you went there to paint, is it?’
 *CHI: pinta(r) mesmo.
 paint really
 ‘really paint’

L. produced 11 sentences with *mesmo* as an adverb. The first one appeared at 4;05 (see (23)). The first (adjectival) feminine form appeared at 4;6. Note that the noun ‘*cor*’ (*color*) is feminine and the child uses *mesmo* in the correct agreeing form ‘*mesma*’ (see (24)):

- (23) Eu quero ficar ai mesmo
 I want to stay there really
 ‘I want to stay right there.’
- (24) Mas tem que ficar na mesma cor se não elas não voam mais.
 But has to stay in-the same-fem color-fem, if not, they-fem not fly anymore
 ‘But it has to stay in the same color, if it doesn’t, then they don’t fly anymore.’

As expected, there are no productions of *ele(a,es,as) mesmo(a,os,as)* in the spontaneous production data of these two children, although *mesmo* can already be found in its adverbial and adjectival functions.

4.2. Experimental data

Subjects. We interviewed 18 children, between 4;0 and 4;11 years of age. The children attended the day care center *Emir Macedo Nogueira*, in São Paulo. They are all Brazilians, with Brazilian parents and are only acquiring BP as their native language. Five adult native speakers of BP were also tested to serve as controls.

Method. We used the “Simon says” game, following Chien and Wexler’s study, experiment 1. We presented a puppet to the child, and invited her to participate in a game, where she should do what the puppet ordered. If the child being tested was a girl, the puppet was also female, a dog named “Pinky”. If the child was a boy, the puppet was a male donkey named “Billy”. The child was interviewed in a separate room, where there were only the child and two experimenters. Firstly, the child was presented to the puppet and the game was explained. Then, in order to be sure that the child understood the task, a training session was undertaken, in which the puppet gave orders and the child did what was asked.

Materials. We tested the complex form *ele mesmo*, the proform *ele* and the anaphor *se*. These three conditions are shown below (X represents the name of the child being tested):

- (25) a. SE: {O Billy/a Pinky} mandou X **se** coçar.
 {Billy/Pinky} asked X to scratch {him/her}self
- b. ELE MESMO: {O Billy/a Pinky} mandou X cheirar **ele mesmo**.
 {Billy/Pinky} asked X to smell {him/her} self
- c. ELE: {O Billy/a Pinky} mandou X beliscar **ele/ela**.
 {Billy/Pinky} ordered X to pinch him/her

There were 4 sentences for each condition, giving a total of 12 sentences tested. The verbs used in these conditions were the same: *coçar* ('scratch'), *abanar* ('fan'), *beliscar* ('pinch') and *cheirar* ('smell'). These are verbs of *possible* reflexivity, but not of *probable* reflexivity. That is, the criterion for choosing these predicates was to pick verbs with which a reflexive action is possible (although sometimes weird, like 'pinch' and 'smell') but not the only one possible. Thus, it is also possible to have a non-reflexive action with them. Following this reasoning, we excluded verbs of probable reflexivity, like *pentear* 'comb' and *vestir* 'dress', which favor a reflexive action.

After each test sentence there was a filler sentence, with orders that did not involve any of the proforms being tested, but involved performing actions on toys displayed in front of the child (such as "Pinky ordered X to raise Shrek's arms"). Before conducting the experiment, there was a pretest session, where the task was explained to the child and then some orders similar to the filler ones were presented. The child had to provide 4 correct answers (out of 6) in order to be included in the study.

All the test conditions had a sentence with a matrix clause and an embedded one. The form *se* is an anaphor, which requires a local, c-commanding antecedent. Thus, on the *SE* condition, children were expected to perform the action on themselves, as their name was the local antecedent for the anaphor in the sentence uttered by the puppet. For the *ELE MESMO* condition, the verbs used in the test involved marked actions, like pinching, which generally involve two distinct arguments. Due to this semantics of the predicates, we expected that, on this condition, children would perform the action on themselves rather than on the puppet. Observe that this condition is not intended to cover all aspects of *ele mesmo* discussed in the previous sections. For this experiment, we are only checking, for the first time on BP literature, how children will handle this complex form. Our prediction, as stated above, is that they will not handle it in an adult-like fashion. Finally, for the *ELE* condition, children were free to choose either the puppet or themselves as the antecedent, since this form can be locally bound and non-locally bound. For this condition, there are no incorrect answers, only preferences that can be observed.

Results. In the tables below, we provide children's and adults' responses. The tables present, for each condition, the type of answer provided: if the child performed the action on herself (column "self"), on the puppet (column "puppet") or on another person or toy (column "other").

Table 1
Children's responses (N = 18)

	SELF	PUPPET	OTHER
SE	79,1%	20,9%	0
ELE MESMO	65%	30,5%	4,1%
ELE	55%	45%	0%

Table 2
Adults' responses (N = 5)

	SELF	PUPPET	OTHER
SE	100%	0	0
ELE MESMO	100%	0	0
ELE	40%	60%	0

Discussion. In order to discuss the results, it is important to keep in mind that for conditions *SE* and *ELE MESMO*, the correct response is a reflexive action. That is, performing the action on the puppet or another participant is not possible for adult speakers and is therefore an error. For the condition *ELE*, there is no right or wrong answer; all three logical possibilities (reflexive, puppet or other) are acceptable in the adult language. Therefore, for this condition, we will not check whether children made errors or not. We will instead compare children's preferences to the adults'.

Starting with condition *SE*, we observe that children correctly performed the action on themselves in almost 80% of the cases. Upon hearing the order, children did what was asked with no apparent problems. They provided the incorrect response around 20% of the cases. The adult speakers performed the action on themselves 100% of the time.

In the case of the condition *ELE MESMO*, adults performed the actions on themselves 100% of the time. For children, however, the actions were not as clearly performed. When they heard an order with *ele mesmo* for the first time, many children asked: "he who?", in doubt on how to proceed. We observe that, despite children's strong tendency to perform the action on themselves, for this condition this tendency is somewhat absent, as they performed the action on the puppet 30% of the time. They had 35% of incorrect responses, compared to 20% of errors in the *SE* condition. We found here the only cases where children performed the action in another referent present in the room. That is, children's hesitant responses make it clear that, at 4 years of age, they have not acquired this form yet. It is not only the fact that they had 35% of incorrect responses that leads us to this conclusion. It is the hesitant nature of their reactions that makes us see clearly that this complex form is still being acquired by children. The difference between *se* and *ele mesmo* might show different behavior, but statistical tests with more subjects should be made in order to give us a definite answer.

For the condition *ELE*, as mentioned above, there are no incorrect answers: this condition was included with the goal of checking whether children's preferences in choosing an antecedent are the same as adults'. The results indicate that children show knowledge of the fact that this form can be locally bound (55% of responses) and non-locally bound (45%). This behavior, similar to chance performance, should not be seen as a guess strategy. Their 50% pattern of response indicates that they are aware of the possibilities in the language. They showed a similar pattern of response as that of adults, who provided the local answer 40% of the time. The BP data indicates that children at 4;0 show knowledge of *ele*; more specifically, they know that this form can be locally bound.

In section 3, it was observed that, in languages such as English, children show better performance with reflexives than pronouns. Chien and Wexler relate the problem with pronouns to a pragmatic deficit. They argue that children lack the pragmatic Principle P, responsible for excluding the reading where the pronoun is coreferent with a local antecedent.⁹ In the case of BP, this state of affairs does not hold, since the proform *ele*, as argued above, is not a pronoun. Not being a pronoun, it is not subject to either Principle B or Principle P. As discussed above, *ele* can be locally bound in adult BP and children show knowledge of its distribution early on.

5. Concluding remarks

Similarly to what happens in French, more children give target-like responses in the case of the anaphor *se* than in the case of the emphatic form *ele mesmo*. This is not surprising, as we saw above that in languages such as Danish and French children usually acquire the simplex forms before acquiring the more specialized ones. The same holds between *ele* and *ele mesmo*: at 4;0 children are already on target with respect to the non-emphatic form. We claimed that in the case of BP *ele mesmo* this late acquisition is due to the fact that *ele mesmo* involves knowledge of pragmatic aspects, such as

⁹ In English, the bound reading for the pronoun is excluded by principle B. Chien and Wexler argue that children are constrained by this principle. Evidence for this comes from their experiment 4, in which children correctly excluded the reading where pronouns had QPs as antecedents. This indicates that they do not allow the QP to bind the pronoun. In the case of experiment 1 (discussed above), the antecedents were DPs, which can bind the pronoun or be coreferent with it. Given that children are constrained by principle B (as evidenced by their performance on experiment 4), their poor performance could only be due to coreference issues.

focus and contrast, which we know from the literature are acquired late. Children's perplexed reactions upon hearing this form made it clear that they did not know how to choose the referent to the expression, and consequently did not know how to respond. More studies are needed in order to check more directly all the variables involved in constructions with *ele mesmo* and when this form is fully acquired.

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