

## **“I SHAVE JUST LIKE MAN”: INTRINSIC AND EXTRINSIC REFLEXIVE CONSTRUCTIONS IN CHILD ENGLISH**

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### **1 Introduction**

The goal of this study was to examine children’s production of reflexive predicates in English, in light of Maturational accounts proposed for the development of reflexive constructions in Polish (Rivero and Golezinska 2001) and A-chains in general (Borer and Wexler 1992). The main research question explored here is the extent to which the verb argument structure interacts with the acquisition and comprehension of reflexive pronouns in English. I first briefly review the theoretical approach to reflexivity adopted in this paper, before outlining proposals regarding the acquisition of reflexivity in child language. In the next section findings from spontaneous child English are presented, and discussed in terms of lexical and frequency limitations, as well as syntactic deficits. In brief, English speaking children do not exhibit intrinsic/extrinsic reflexive ordering of acquisition as observed in the Slavic type languages, and this finding has been attributed to pragmatic constraints, based on lexical limitations, in addition to children’s problems with language specific types of A-chains. The last section raises additional questions regarding the intrinsic/extrinsic distinction in both adult and child language in other Germanic-type languages, for example Dutch, calling for a refinement of theoretical discussion of this specific aspect of reflexivity theory.

#### *1.1. Reflexivity theory (Reinhart and Reuland 1993)*

The standard structural approaches to reflexivity (Government and Binding, Chomsky 1982) have been substituted by lexically-based principles whereby the type of pronominal element, in addition to its relation to predicate’s argument structure, determines the type of interpretation invoked (Reinhart and Reuland 1993). Pronominal categories are classified as either pronouns or anaphoric expressions, and the latter are further divided into simplex expressions (henceforth SE), which in many languages allow long-distance binding, and local anaphors, analogous to English complex reflexive forms (i.e. him-SELF forms). Although both SE and SELF anaphors are referentially defective NPs, only SELF anaphors function as reflexivizers, i.e. turn a transitive predicate into a reflexive predicate.

SE elements, on the other hand, lack full phi-feature specification, and resemble pronouns in the sense that although SE is not an argument, both categories lack reflexivizing function.

The typological classification outlined above makes it possible to account for a wide range of what have been previously thought language specific binding phenomena and numerous apparent exceptions to purely structurally based binding principles. Furthermore, Reinhart and Reuland's formulation of reflexivity distinguishes between the two types of reflexive predicates, those that are lexically reflexive (intrinsically reflexive predicates) and predicates marked reflexive in the syntax via SELF anaphor. In languages such as Dutch, which use both SE and SELF elements, the former are used with intrinsically reflexive predicates, as shown in the example (1), and the latter reflexivize an otherwise transitive predicate, as example (2) illustrates.

(1) Jan<sub>i</sub> gedraagt **zich**<sub>i</sub> / \*zichzelf<sub>j</sub> (Dutch)  
(John behaves (himself))

(2) Jan<sub>I</sub> haat \*zich<sub>i</sub> / **zichzelf**<sub>i</sub> (Dutch)  
(John hates himself.)

Most Slavic languages, as illustrated in the examples (3) and (4) below from Serbian, lack SELF elements, and use fully underspecified clitic SE forms with both types of reflexive predicates.

(3) Marko<sub>i</sub> **se**<sub>i</sub> brije. (Serbian)  
(Marko shaves (himself))

(4) Marko<sub>i</sub> **se**<sub>i</sub> grebe. (Serbian)  
(Marko scratches himself).

And finally, in languages such as English, which do not have simplex anaphors available, intrinsically reflexive predicates are those in which the internal argument suppression is optional (example 5). In syntactic reflexivization, however, a SELF anaphor must be overtly present (example 6).

(5) Adam<sub>i</sub> shaves<sub>i</sub> (himself)<sub>i</sub>

(6) Adam<sub>i</sub> scratches **himself**<sub>i</sub>

In summary, although languages vary with respect to the types of anaphoric expressions available, the lexically driven division into intrinsically and extrinsically reflexive predicates seems to hold crosslinguistically.

### *1.2. Argument augmentation or suppression?: Maturational evidence*

When syntactic theory offers competing accounts of a specific structural phenomenon, acquisition studies provide us with indirect evidence as to which structural analysis may potentially underline our competence system. Various proposals have been put forth to describe structural properties of intransitive and transitive predicates. One group of linguists advocates the reduction approach to transitivity, under which reduction turns a two-place predicate into a property, applying only to a pair of free co-theta roles, one of which is external (Chierchia 1989, Reinhart 1996, Reinhart and Siloni 1999, among others). The augmentation approach, on the other hand, postulates that intransitive entries are basic, and that transitive predicates are derived via structural augmentation (Hale and Keyser 1994). Rivero and Goledzinowska (2001), based on their analysis of the emergence of various reflexive predicates in child Polish, demonstrate that intrinsically reflexive predicates (the one argument structures) emerge before the extrinsically reflexive predicates (the two argument structures). Their findings thus provide direct support for the argument structure augmentation analysis. Furthermore, since (reflexive) argument structure ‘grows’ as children’s cognitive system develops, Rivero and Goledzinowska (2001) argue for the maturational account of language development, along the lines of Borer and Wexler (1992).

## **2. What’s English got to do with it?**

The aim of this study was to examine the emergence of different types of reflexive predicates in child English in light of Maturational accounts outlined above. Since most of the studies dealing with the two types of reflexive predicates treat as lexically reflexive verbs those that allow optional drop of reflexive pronouns in English, our goal was to test the reliability of such criteria for other languages by describing and discussing the precise behavior of these lexical items in child, as well as adult grammatical system of English. Additionally, as English is the only language which allows (reflexive) object drop with intrinsically reflexive predicates, yet has a complete system of fully specified SELF pronouns, our aim was also to examine how children acquire and use this specific grammatical device which is abundantly unambiguous in its syntactic function.

## 2.1. General observations

Numerous studies have addressed the problem of the acquisition of reflexive pronouns, on one hand, and the acquisition of argument structure, on the other, but the specific contrast between intrinsically and extrinsically reflexive predicates and simplex and complex reflexive forms in child grammar has yet to await a full analysis.

Results from comprehension studies have demonstrated that English-speaking children have no significant problems with interpreting reflexive pronouns (Chien & Wexler 1990, McDaniel et al. 1990, among others). Additionally, Bloom et al. (1994), based on their analysis of spontaneous production of *me/myself* constructions, argue that children exhibit sensitivity to binding and coreference requirements, producing no semantic errors (i.e. Principle A violations). In sum, although the reflexive forms themselves do not seem to pose significant difficulties during the normal language development, it has been recently shown that in some populations, such as Down Syndrome, subjects demonstrate surprising comprehension problems with A-binding of complex SELF forms (Perovic 2001).

General findings from the studies on the acquisition of argument structure in English suggest that intransitive predicates are easier to acquire than the transitive ones, and even with ambiguous frames children prefer one-argument predicates (Valian 1991). However, upon detailed reexamination of Valian's (1991) data, Theakson et al. (2001) argue that the argument structure of a verb is not selected on the basis of its syntactic complexity, but is a direct consequence of the lexical frequency of a specific frame in the input. Additionally, it has been argued that children's earliest constructions may be lexically specific, not organized around abstract word classes or structure but rather around particular verbs (Tomasello 1992). At last, although children more often create transitive usages of intransitive frames than the other way round, their early argument structure acquisition suggests that they initially learn lexically specific constructions, and only gradually differentiate verbs as lexical items from abstract linguistic entities, such as argument structure (Brooks and Tomasello 1999). In summary, the preference for one-argument predicates in child language, as some studies suggest, may be due to lexical and frequency limitations rather than differences in structural complexity.

## 2.2. Research questions

Under the assumption that one-argument predicates (intrinsically reflexive predicates) are easier than two-argument structures (transitive predicates marked reflexive in the syntax), other things being equal, we set out to answer the following research questions. First, do children produce intrinsically reflexive

structures (e.g. “he washes”) before they produce syntactically reflexive predicates (e.g. “he washes himself”)? Second, are children late with extrinsically reflexive predicates (such as “he hurt himself”)? Third, what role, if any, does the lexical frequency of a particular verb and its different lexical frames, reflected in the input the child receives, play in the intrinsic/extrinsic distinction? Fourth, how do, if at all, relative frequencies of anaphoric expressions and the types available within a language (language specific properties) affect the acquisition of a language universal grammatical function, i.e. reflexivity? And last, but not least, what do child data tell us about the current theoretical approaches to reflexivity?

### **3. The facts**

#### *3.1. Procedure*

Spontaneous production from 50 children aged 1;2-3;6 from the CHILDES data base (MacWhinney 2000) was examined, and all child and adult utterances containing intrinsically and extrinsically reflexive predicates were extracted for analysis. A total of 1345 files from the following corpora were examined: Bloom70, Brown, Clark, Kuczaj, Manchester, Wells, Sachs and Suppes.

#### *3.2. Findings*

Our main findings are the following.<sup>1</sup> Thirty-one children do not produce any reflexive predicates during the relevant ages recorded. Sixteen children produce only extrinsically reflexive predicates. Only three children produce at least one example of intrinsically reflexive predicates. In sum, there seems to be no correlation between emergence of intrinsically reflexive predicates and structural complexity associated with this type of argument structure. Moreover, parents and caregivers also tend to use many more extrinsically reflexive predicates in their speech, and intrinsically reflexive predicates are used only sporadically, by a small number of adult speakers.

Additionally, the use of reflexive pronouns in English is not limited to syntactic reflexivization, and children (as well as adults) employ complex SELF forms in a variety of syntactic functions, i.e. emphatic, formulaic (within a by-phrase) and embedded within PP complements/adjuncts. In fact, purely reflexive uses of SELF forms account for approximately 10-15% of total usage in both child and adult English (for a similar observation about Old and Middle English see Van Gelderen 2000).

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<sup>1</sup> The details of corpus-specific findings are given in the Appendix.

## 4. Discussion

### 4.1. *Development of reflexive predicates in English*

The longitudinal child data presented above do not provide direct evidence for the maturation of reflexive argument structure in English. Namely, intrinsically reflexive predicates are produced by few children, and appear to illustrate sporadic uses of a particular lexical item rather than preferences in use based on structural complexity. Extrinsically reflexive predicates, on the other hand, are produced by most children across different ages, and exhibit lexical variation. As the development of reflexivity in English does not seem to correlate with structural complexity, we now examine non-structural factors that appear to play a major role.

### 4.2. *Lexical frequency and reflexivity*

First, as observed by Reinhart and Reuland (1993), the rules for intrinsic predication are no more productive in the language. Thus intrinsically reflexive predicates in English are lexically restricted (to three or four verbs at most), and form a limited subset of grammatical ways for expressing reflexivity. Lexical restrictions are not unusual problems that child learners are faced with in the course of language acquisition, but unlike lexical restrictions of other types (for example, control verbs, which children master without significant problems) the language offers a variety of ways for arriving at a similar interpretation, which do not invoke argument suppression.

Additionally, adults' use of intrinsically reflexive provides evidence for the limited frequency accounts. Namely, adults do not differ appreciably from children regarding their use of intrinsically reflexive predicates, a finding which suggests that intrinsically reflexive predicates, or rather lexical items used, have a special status in the grammar of the English language. Table 1 illustrates the frequency of use of a particular lexical frame used to express reflexivity for two intrinsically reflexive predicates.<sup>2</sup>

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<sup>2</sup> I have picked randomly one corpus for this specific analysis. Although it is a representative of the British English, there appear to be minor lexical differences between the British and American English corpora examined regarding this particular phenomenon. Low numbers of uses illustrate not only limited frequency of particular lexical items, but also relative infrequency of reflexivity in general in the language.

TABLE 1: Number of instances of adults' uses of different lexical ways for expressing reflexivity extracted from the Wells corpus

	INTRINSIC	EXTRINSIC	GET V-ed	HAVE a NP
WASH	0	1	1	6
DRESS	0	0	8	/

As shown in Table 1, the adult grammatical system not only offers, but also encourages alternative means for expressing the intended meaning. Not only is the number of lexical items restricted but also syntactic frames in which they are used are additionally divided (note that Polish does not allow for such a variation to arise).

Moreover, children's real world knowledge affects the frequency of reflexive uses of certain predicates in their speech. Namely, it has been noted that children talk about themselves most of the time. This observation is generally irrelevant for some strictly syntactic phenomena, but may contribute to low percentage of intrinsically reflexive uses in child speech. Namely, most intrinsically reflexive predicates presuppose that agents are capable of doing actions expressed by predicates by themselves, and unless children are engaged in a pretend play (most of Adam's uses of 'shave' are in this context) or referring to adults, the discourse conditions for intrinsic uses in child speech are very infrequent.

Second, children prefer the passive reading of 'wash' and 'dress' predicates in languages in which the structure is syntactically ambiguous between a reflexive and passive interpretation. In a sentence picture matching experiment in Serbian, children's preferences in interpretation on structurally ambiguous sentences such as (7) below were tested (Stojanovic 2000).

- (7) Decak se oblaci. (Serbian)  
 boy<sub>NOM</sub> SE dress-3<sub>PSgPres</sub>  
 (The boy is dressing himself/ The boy is being dressed)

The sentence is ambiguous between a reflexive and a passive interpretation. Table 2 illustrates child and adult responses to sentence frames that contain the two extrinsically reflexive predicates under investigation in this study.

TABLE 2: (adapted from Stojanovic 2000): Percentage choices (17 child (mean age 3;9) and 8 adult speakers of Serbian) on a sentence picture matching task

	WASH			DRESS		
	REFL	PASS	!PA	REFL	PASS	!PA
Child	33	41	26	28	40	32
Adult	94	3	3	94	3	3

REFL=reflexive, PASS=passive, PA=pronominal anaphor (null object)

As shown in Table 2 above, for both predicates adults prefer the reflexive interpretation. Children, on the other hand, show a higher percentage of passive than reflexive responses, a finding compatible with the pragmatic bias outlined above.

In conclusion, children's production of intrinsically reflexive predicates seems to provide evidence for the lexical-learning approach, limited by pragmatic constraints and derived from general frequencies of lexical items, in addition to frequencies of particular lexical frames, along the lines of Theakson et al.'s (2001) and Tomasello's (1992) accounts.

#### 4.3. *Syntax really plays no role?*

The aim of this section is to provide a closer look at syntactic properties of intrinsically reflexive predicates, and reexamine strictly lexically-based approaches to the acquisition of intrinsic reflexivity in English.

##### 4.3.i *Movement and binding: The chain condition revisited*

Reflexivity theory of Reinhart and Reuland (1993) distinguishes between two types of anaphoric expressions (simplex and complex) and two types of reflexive predicates (intrinsic and extrinsic), but attempts at unifying anaphors and reflexive predicates through a common syntactic property, formulated as the A-chain condition. In Reinhart and Reuland's terminology, the most important characteristic of an A-chain is the underspecification of its tail in phi- and structural case features (*A-Chain condition*: The tail of an A-Chain must be [-R]). Since both SE and SELF anaphors are [-R], reflexive predicates do constitute well formed A-chains. Pronouns, on the other hand, are [+R], and as such are ruled out from reflexive environments due to A-chain condition violations.

Furthermore, all reflexive verbs have *two* syntactic positions in their grid, that is, even with intrinsically reflexive predicates (such as 'John washed'), an internal



argument position is projected and realized as an empty category ('pro'), resulting in a two-member A-chain.

Based on the analyses presented above, it may be argued that intrinsically reflexive predicates in English represent non-movement covertly tailed A-chains. This approach to intrinsic reflexivity in English is not in line with most unaccusative-based analyses of reflexive constructions, in which the external theta-role is absorbed, resulting in a movement derived A-chain. What makes intrinsically reflexive predicates in English language-specific is this unique type of A-chain in which the tail (underspecified in all the relevant features) is covert, due to internal argument suppression, and no movement takes place. It will be further argued that these language-specific properties, in addition to difficulties that language learners exhibit with A-chains in general, contribute to a certain extent to both late development and limited frequency of use of intrinsically reflexive predicates in English.

#### *4.3.ii Acquisition of A-chains*

Numerous acquisition studies have demonstrated that most A-chain constructions (passives, unaccusatives and reflexives) pose problems for different language learning populations. First, normally developing English-speaking children demonstrate problems with verbal passives and unaccusatives, the constructions which involve A-chain formulation (Borer and Wexler 1992, Maratsos et al. 1983, among others). Additionally, as no apparent problems with unergative predicates are observed, it has been proposed that A-chain formulation may be problematic in early language development. Moreover, the proposal about general difficulty of A-chains is supported by cross-linguistic data. For example, Russian-speaking children demonstrate problems with unaccusative verbs in genitive of negation constructions, but not with unergatives (Babyonyshev et al. 2001).

Second, majority of individuals with Down Syndrome demonstrate problems with passive constructions in English (Bridges and Smith 1984). Furthermore, some individuals with Down Syndrome show significant problems with reflexive constructions in English, in addition to failing on simple passive tests (Perovic 2001).

In summary, studies on early language acquisition (both typical and delayed) demonstrate that A-chain postulation and interpretation is not available from the onset, but matures around 4-5 years of age, an observation that has led Borer and Wexler (1992) to propose the maturational account of language acquisition.

The findings from this study replicate the general pattern of development outlined above. Absence of intrinsically reflexive predicates in early child English,

in addition to frequency and lexical limitations, is argued to be caused by problems with (anaphoric) A-chains that children have no direct evidence as to how to postulate or interpret. First, as no overt ‘filler’ is present (unlike wh-movement or passivization) the child will have significant difficulties postulating the presence of a chain. Second, chain postulation is additionally hindered by the fact that the tail of the chain is not pronounced (unlike extrinsically reflexive predicates in English or intrinsically reflexive predicates in Dutch or Polish). We would thus like to argue that these findings may be interpreted as indirect evidence for the maturation of language-specific A-chain constructions.

## 5. Concluding remarks

The analysis of the data outlined above suggest that English is far from being an ideal testing ground for the study of emergence of (reflexive) argument structure. As Reinhart and Reuland’s theory of reflexivity adopted here is based on the data from Dutch, one may wonder whether the syntactic difference between ZICH and ZICHZELF in Dutch provides a reliable basis for making crosslinguistic generalizations.

As far as the adult grammatical system of Dutch is concerned, ZICH seems to be used only sporadically (Sergio Bauuw p.c.).<sup>3</sup> Namely, it is limited to standard Dutch, third person singular forms. Additionally, it is replaced by pronouns after both locative and non-locative prepositions, and even after some inherent verbs (such as ‘vergiszen’: be mistaken), and in argument positions ‘z’eigen’ (lit. his own) form is used.<sup>4</sup> Moreover, even ZICHZELF is not used by the majority of speakers, and most of the time it is replaced by the ‘z’eigen’ form. Interestingly, Afrikaans shows a similar tendency in avoiding ZICH forms, and Frisian does not license simplex expressions, resorting to pronouns in these structures.<sup>5</sup>

With regards to the adult system presented above, and the theoretical analysis of reflexivity based on the presence (or absence) of the two types of reflexive predicates, can child data from Dutch provide us with reliable evidence regarding the acquisition of reflexivity? I have examined three corpora of early child Dutch from the CHILDES data base (MacWhinney 2000), and found no instances of either ZICH or ZICHZELF forms (until the ages of 2;11, 3;7, and 3;10, no recordings

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<sup>3</sup> I am grateful to Sergio Bauuw for providing me with detailed accounts of the distribution of ZICH/ZICHZELF in adult and child Dutch.

<sup>4</sup> “Jan sloeg z’n eigen = Jan hit his own = himself”.

<sup>5</sup> Reinhart and Reuland (1993) argue that absence of ZICH form in Frisian is due to an economy principle. As for Dutch, a common assumption is that since ZICH/ZICHZELF forms have been borrowed from German, Dutch speakers (even after a few centuries) still resist their use.

available for later stages). Additionally, experimental data suggest that even at six years of age children demonstrate problems with interpreting ZICH and ZICHZELF forms, and often replace them with non-standard forms (Bauuw 2000, Coopmans and Avrutin 1999, Siguronsdottir and Coopmans 1996)

What does the Dutch child data illustrate? In light of cross-linguistic evidence it is very unlikely that Dutch children, especially the six year olds, would lack knowledge of anaphoric expressions. More likely, absence of ZICH forms in early child Dutch may be argued to reflect absence of this specific type of anaphoric expression, or its restricted use in the adult grammatical system. If this were the case, the importance of the theoretical approach to reflexivity based on the ZICH/ZICHZELF distribution should be taken with caution. Namely, if ZICH in Dutch is discussed and analyzed as the dominant reflexive form in the language, without acknowledging its marginal status in the adult grammar and its complete absence from the child language, cross-linguistic support for such a general phenomenon would be hard to find. If, however, the theoretical approaches to syntactic and semantic properties of ZICH/ZICHZELF, putting aside the limitations of the Germanic type systems, are employed in analyzing the systems in which anaphoric expression do exhibit a wide range of grammatical functions and uses (such as most Slavic languages), a unified account of both competence and performance properties of reflexive phenomena may begin to emerge.

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## Appendix

Wells corpus (198 files from 32 British children aged 1;6 to 3;6)

- 29/32 children do not produce any reflexive forms until 3;6 years of age.
- 2/32 children produce extrinsically reflexive predicates (first use: 3;0.4 and 3;5.0 respectively)
- 1/32 child produces one intrinsic reflexive at 2;6.1 (neil06. "We've got to dress") and has no other reflexive uses until 3;6 years of age.

Adults: 3/32 adult corpora contain no reflexive predicates.

- 29/32 adult corpora contain examples of emphatic, formulaic, direct object (extrinsic) and prepositional object uses of reflexive forms
- No instances of intrinsic reflexives in any of the 32 adult corpora.

Manchester corpus (804 files from 12 British children aged 1;8-3.0)

- All children produce a reflexive pronoun in at least one of its grammatical functions (emphatic, formulaic, DO, PP)
- Three children do not produce reflexives in a reflexive function.
- First instances of extrinsic reflexive uses: Anne 2;5.2, Aran 2;7.28, Becky 2;7.6, Dominic 2;4.11, Gail 2;3.17, Joel 2;5.26, Liz 2;6.5, Nicole 3;0.3, Ruth 2;11.14.
- No intrinsically reflexive predicates produced by any child.

Adults: Produce a variety of extrinsically reflexive predicates, plus emphatics, formulaic and PP.

- One instance of an intrinsic reflexive in the 12 corpora (Nicole corpus)

Sachs corpus (89 files from one child aged 1.2 –3;5)

- First produces an intrinsically reflexive predicate with a reflexive form at 2;1.7 (n45 ‘you washing yourself’) and four more extrinsically reflexive predicates, in addition to emphatic, formulaic and PP’s functions.

Adults: Produce a variety of extrinsically reflexive predicates, plus emphatics, formulaic and PP.

- No “shave” or “dress” reflexives, and 2 instances of intrinsically reflexive “wash” by two different speakers (files n35 and n56)

Bloom70 corpus (20 files from one child aged 1;9 –3;1)

- Produces the first extrinsically reflexive predicate at 2;4.15 and 7 more until 3;1.20.
- One potentially intrinsically reflexive predicate in his corpus at 2;5.22 years of age (“How do people use a sink?” - CHI: “to wash”).

Adults: Produce reflexive forms in different grammatical uses, including 30 extrinsic reflexives.

- No intrinsically reflexive predicates are produced by adults.

Suppes corpus (52 files from one child aged 1;11-3;3)

- Starts with an extrinsic reflexive use at 2;5.27 and produces 8 more extrinsic reflexives.
- One intrinsically reflexive predicate with a reflexive (nina31 ‘wash myself’) at 2;5.28 .

Adults: Produce two extrinsically reflexive predicates, plus emphatic, formulaic, and PP.

- One instance of intrinsically reflexive predicate (nina43: MOT “he’s shaving”)

Clark corpus (40 files from one child aged 2;2-3;2)

- Produces his first extrinsically reflexive predicate at 2;8.20 and has 7 more extrinsic uses.
- No intrinsically reflexive predicate in the data (one ambiguous predicate at 2;11.10).

Adults: 16 extrinsically reflexive predicates, in addition to emphatic, formulaic, and PP.

- Two instances of intrinsic “shave” predicates, uttered by two different speakers

Kuczaj corpus (110 files from one child aged 2;4-3;6)

- Starts with an extrinsic reflexive use at 2;5.0 and produces 13 extrinsically reflexive predicates until 3;6.
- Also produces one intrinsically reflexive predicate with a reflexive pronoun (abe056 “did you wash yourself?”) at 2;11.13
- Does not produce any intrinsically reflexive predicates.

Adults: 18 extrinsically reflexive predicates, in addition to emphatics, formulaic, and PPs.

- No intrinsically reflexive predicates in the adult data.

Brown corpus (32 files from one child aged 2;3-3;6)

- Starts with an intrinsically reflexive predicate (adam17 “I #shave # just like man”) at 2;11.0 and produces 9 ‘shave; predicates until 3;0.10 (no intrinsically reflexive ‘wash’ or ‘dress’ predicates)
- Produces his first extrinsically reflexive predicate (adam20 “why fall and hurt myself?”) at 3;0.10 and 13 other same predicate types until 3;6.

Adults: Produce 34 extrinsically reflexive predicates (16 are produced before Adam utters his first extrinsic example), in addition to emphatics, formulaic, and PP usages.

- Produce 8 intrinsically reflexive ‘shave’ predicates (the first example is uttered in the same session as Adam’s first use of this predicate type), no ‘wash’ or ‘dress’ predicates.