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Yosef Grodzinsky & Gitit Kave
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Do Children Really Know Condition A?

Yosef Grodzinsky and Gitit Kave
Tel Aviv University

It has been claimed that children use a nonlinguistic strategy in the interpretation of reflexives, despite their apparent knowledge of Condition A of the Binding Theory. This claim, that children equate the presence of a word containing *self* in a sentence with an action on oneself, has been a part of a general account of children's performance on structures governed by the Binding Conditions (Grimshaw and Rosen (1990)). We conducted an experiment to test this claim, in which the use of the strategy would result in erroneous performance. This experiment, done in Hebrew through a truth-value judgment task, presented the children with sentences containing reflexives and pictures with corresponding reflexive actions, where the antecedent did not match the one in the sentence. It also presented the same pictures along with sentences that contained reflexive predicates and no reflexive. It was found that children of the relevant age group (5- to 6-year-olds) made no errors, thus providing strong evidence against the use of the strategy. We also found that younger children made some errors but that these were equally spread over the Condition A sentences (i.e., with reflexives) and the sentences with reflexive predicates, indicating that the errors were unrelated to knowledge of the Binding Theory in its standard formulation. We argue that the results for the older children support an alternative view of their abilities in binding, proposed by Grodzinsky and Reinhart (1993). We also note that the findings from the younger children provide suggestive evidence favoring the formulation of Condition A of the Binding Theory over reflexivity.

1. THE ISSUE

The developmental study of Binding Theory has recently reached a level of intensity that makes it one of the busiest research areas in language acquisition. Although it is widely accepted by now that children know

Requests for reprints should be sent to Yosef Grodzinsky, Department of Psychology, Tel Aviv University, Ramat-Aviv, 69978, P. O. Box 39040, Israel. E-mail: YOSEF1@CCSG.TAU. AC.IL

Condition A of the Binding Theory at a relatively young age (Chien and Wexler (1990) and many others), the developmental status of Condition B is not as clear (see Chien and Wexler (1990), Grimshaw and Rosen (1990), Grodzinsky and Reinhart (1993), among others). Grimshaw and Rosen (1990), GR henceforth) attempted to account for the difference between children's performance levels on Condition A and Condition B sentences in an especially interesting way, which has implications to their abilities with respect to Condition A as well. In this study we examined GR's claims, by focusing on Condition A, and exploring experimentally one possible explanation as to why children do so well on Condition A cases, whereas their performance indicates a lesser ability to detect Condition B violations.

The fairly standard finding, replicated by GR, is the following: When children are presented with sentences as in (1) and (2) and are required to judge their grammaticality through a truth value judgment task, they perform well on the grammatical cases (bound interpretation for the cases in (1) and disjoint reference in (2)).

(1) This is A. This is B. Is A touching himself?

(2) This is A. This is B. Is A touching him?

This task, devised by Crain and McKee (1986) and used successfully in many experiments since, is as follows: The child is presented with a sentence and an acted scene (or a picture or a video clip) and is asked to judge whether or not the two match. In the context of binding, each sentence is presented twice—once for the grammatical reading and once for the ungrammatical reading. One picture presents a character performing some action on herself or himself, whereas a second character is present at the scene, yet is uninvolved, and the other picture depicts one character performing an action on the other. The judgments regarding the matching are, of course, reversed for Condition A and B.

Whereas the children perform at near-perfect levels on the grammatical cases in (1) and (2), the performance levels on the ungrammatical counterparts of these sentences are different: In ungrammatical Condition A cases, children correctly reject the interpretation in which the reflexive has an antecedent outside the governing category; yet in ungrammatical Condition B cases, in which the pronoun is bound in its governing category, children fail to reject it systematically. Rather, they incorrectly accept it as grammatical about 40% of the time. The findings of many experiments are summarized roughly in (3), where the numbers stand for percentage of "yes" responses:

(3)	grammatical	ungrammatical
Condition A	80–90	10–15
Condition B	80–90	40–50

These findings have generated controversy. Jakubowitz (1984) has argued, for instance, that pronouns are treated as reflexives initially. It has also been claimed that these findings, when coupled with others (i.e., children's better performance on pronouns with quantified NP antecedents (Chien and Wexler (1990))), leads to the conclusion that Condition B is innate but also that its scope is restricted to bound pronouns only, following Reinhart (1983). This way, the discrepant performance levels in (3), as well as children's performance on structures which have quantified NP antecedents, are explained (Chien and Wexler (1990), Grodzinsky and Reinhart (1993)). These accounts both assume that the standard expectation from a subject who knows a grammatical principle is to accept every case it rules in and to reject every case it rules out. Any deviation from this expectation (such as the result for the ungrammatical Condition B case in (3)) is unexpected and needs to be explained.

GR, however, offer an interesting alternative. They contend that both Conditions A and B (in the standard GB formulation of the latter) are innate, yet they propose that the natural performance level to be expected on the ungrammatical cases is, in fact, the one observed in Condition B cases, namely, chance. On this account, children know Condition B but do not always obey it. What needs now to be explained, then, is why their performance level is so high on the ungrammatical cases of Condition A; why they correctly reject almost every instance in which a reflexive does not have a local antecedent.[1] If chance is the natural response level, then how do we explain the fact that the very same children reject ungrammatical Condition A sentences at near perfect levels? To escape this dilemma, GR raise several possibilities, one of which is the focus of our study. They propose that the measured performance levels are actually artifacts, due to the nature of the task the children face. They argue that although the sentences for both Binding Conditions A and B are presented with the same pictures (with reversed judgments), there is an inherent asymmetry in the

[1]It may be argued, as some reviewers propose, and as GR argue in an early version of their article, that because Conditions A and B are separate grammatical principles, there is no reason to expect similar performances on sentences that are governed by them. This argument is misguided (as GR themselves realized), because even if the principles themselves are different, they are still governed by the same logic that dictates the interpretation of acquisition experiments. Thus, if the null hypothesis is chance performance for the ungrammatical cases of Condition B, then, unless a special proviso is made, it is also the natural expectation for the ungrammatical cases of Condition A.

task, which is reflected in the outcome of the experiments. Condition A sentences contain a reflexive, and the occurrence of a word like *himself* or *herself* is, in fact, a giveaway: Once the child hears a sentence containing a reflexive he or she immediately knows that a reflexive action must be involved. Thus, when faced with a reflexive and a nonreflexive action, the child

> could be successful on the anaphor cases just by picking the picture of what we might call 'reflexive action,' and not by virtue of grammatical knowledge. In this task, a subject who always selects the picture of a reflexive action when the sentence contains an anaphor will always be correct. The subject need only recognize that the sentence names an action of self-pointing, or self-seeing, and then pick the picture to match. (GR, p. 208)

This, according to GR, is the reason for the high rejection rates in the ungrammatical Condition A cases. In Condition B sentences, however, no word denoting reflexivity is present, hence the lower rate of "no" responses on the ungrammatical cases.[2]

This claim is important for two reasons: First, it means that the baseline level of performance we should expect for the ungrammatical cases is chance (or 40% "yes," rather than 0%), as reflected in the children's performance on Condition B cases. Secondly, because what follows is that the high performance level on the reflexives in Condition A cases is due to an experimental artifact, then the consequence is that all the accumulated evidence regarding children's abilities on this condition is actually worthless, because it has all been prone to this artifact. This claim, then, is very important, because clearly, if GR are right, then the whole literature on the development of Condition A should be ignored.

Both points did not seem credible to us, conceptually. It seems strange, for one, that GR, who maintain that both Binding Conditions are innate, assume that the natural performance level one would expect is 50%, and when faced with correct performance they resort to nonlinguistic, cognitive strategies such as the one they propose. And it is clear that a strategy it is:

[2]A reviewer objects to this presentation of GR's proposal. She or he claims that "what GR clearly intend is that children attend to the predicate phrase of the test sentences, and not the subject phrase. If children can ignore everything but the predicate phrase and still make correct responses, GR's argument goes, then they may appear to exhibit knowledge about governing categories and so on that they actually could lack." We do not see how GR's claims could be interpreted in this way (the reader is invited to compare their quoted text with the reviewer's rendition of it). Worse yet, even if this were their claim, how could such a strategy for action be justified? What are the conditions in the child's experience that would have led her or him to follow such a strategy? These are not specified, and we believe they cannot be, because, unlike the formulation by GR, this kind of strategy is totally bizarre, and we cannot imagine how it could be formulated inductively over experience.

It equates a reflexive action with the presence of a reflexive, regardless of what the grammar dictates.[3]

Further, a strategy like this should have empirical consequences of two kinds:

1. If children use such a strategy, its use must be motivated. This must, presumably, follow from the semantics of reflexives, which, for GR's claim to follow, must be fixed, always denoting reflexive actions. Yet this is plainly false, as evidenced by well known examples such as *physicists like yourself are a godsend,* or *pictures of myself were on the wall* (see Grodzinsky & Reinhart (1993) for further discussion).
2. As stated, the strategy predicts that children of the relevant age group would invoke the strategy even in inappropriate contexts once the right experiment has been designed, and, conversely, would be less likely to accept the grammaticality of sentences that denote reflexive actions but do not contain reflexives.

It is the latter issue that we sought to address. Given the importance of GR's claims and its potentially damning consequences to all previous research on Condition A, we wanted to provide strong empirical evidence against the existence of the strategy. We therefore derived two predictions that come as a corollary to GR's claim: First, because the children are said to match the reflexive with reflexive action (which amounts to the use of a nongrammatical matching strategy), then regardless of grammaticality, a reflexive action in a picture, coupled with a sentence containing a reflexive, should always elicit "yes" responses. In the cases that have been tested, it so happened that grammaticality and "self-action" always overlapped, but what if the two conflicted with one another? If, for instance, the picture attached to a sentence like (1), repeated hereafter, would show B touching himself, GR's proposal predicts that the children would still say "yes," indicating that they see a match between the sentence and the picture, contrary to what the grammar dictates.

(1) This is A. This is B. Is A touching himself?

If this were to be the outcome, then GR would be right and considerations of reflexivity in the pictures and their match to the reflexives in the sentences would be demonstrated to override grammatical considerations.

[3]A reviewer raises a question regarding the strength of the strategy. Namely, it is possible that such a strategy kick in just some of the time, and not in every case. This may be true, yet even if the strategy operates only some of the time, several questions arise: (a) Why is the strategy there to begin with, especially if it replaces Condition A only partially, and (b) if it operates only some of the time, what are the conditions that determine its operation? All these questions are left unanswered.

Second, if reflexive actions are matched with reflexives, then what about a predicate denoting reflexive action without a reflexive? It is true that GR's strategy does not necessarily entail failure in these cases, given that it supposedly works in one direction only (that is, reflexive implies self-action). Yet we sought to test an even stronger interpretation of the strategy, as control of the task.

2. THE STRUCTURE OF THE EXPERIMENT

The study was designed to investigate children's understanding of reflexivity from two angles. First, as already noted, the idea was to see whether the match between reflexive action in a picture and the presence of a reflexive in the sentence would override all other grammatical considerations, as suggested by GR. If a reflexive in the sentence, and an action directed at oneself, is all it takes for the child to confirm a sentence–picture match, then even an antecedent outside the governing category, which results in an ungrammatical sentence, should do. Thus, in a sentence like (4a), a picture like (4b) should yield, incorrectly, a "yes" answer from the children.[4]

(4) a. sentence: This is A. This is B. Is A touching himself?
b. picture: B touching himself.

Secondly, we wanted to see whether the same children understood reflexivity when marked through the verb morphology rather than by an overt reflexive. This seemed important because GR's claim hinged on the co-occurrence of reflexives with reflexive actions, and we wanted to separate the two. One kind of separation exists in reflexives in phrases that do not denote reflexive actions, and we wanted to test the other kind, in which reflexive action matches a sentence without a reflexive. For that we took advantage of a property of Hebrew—its *hitpa'el* verb class (*binyan*)—in which some verbs are intrinsically reflexive predicates as in (5a), similar to the English forms in (5b), except that in Hebrew, these predicates are marked morphologically for reflexivity, and are very common in use.[5]

[4]This type of test probes the "self-action" strategy directly. It has been argued, however, that the child, though acting strategically, also takes into account other factors, and that in this case, the match between the picture and the sentence in (4) would be rejected because the antecedent is not within the same governing category as the reflexive. Yet this kind of objection is unwarranted, because to say that this kind of consideration is operative amounts to saying that the child follows Condition A. If so, then there is no need to assume a self-action strategy.

[5]Importantly, this verb class is not restricted to intrinsically reflexive predicates, but rather, change of state, whether actual (cf. *hit'aslem* 'turned Muslem') or psychological (cf. *hitya'esh* 'became desparate', *hizta'er*, 'was sorry'). So it could not be argued that reflexivity is signalled by the morphology.

(5) a. dani hitraxec
Danny washed-self
b. Danny washed

As we remarked previously, the strategy as stated could not be operative in this case: There is only reflexive action in (5), and no reflexive. Hence, this case is outside the scope of the Binding Conditions and the strategy and is taken as a control of the task itself, as well as a test of the validity of a stronger version of the self-action strategy.

The structure of the experiment, then, is the following. The task requires checking a sentence against a picture. The sentence always denotes a reflexive action performed by its subject. The picture, though, shows either the subject performing the action reflexively (the Match), or the subject performing a transitive action on another character previously mentioned in the discourse (the Transitive Mismatch), or that second character performing the action reflexively (the Reflexive Mismatch). The sentences themselves are divided into two types, one expressing reflexivity with a reflexive, and the other, through a reflexive predicate.

If GR are correct, and the children use the strategy to associate reflexives with reflexive actions, they should respond "yes" to both the Match (as has been shown before) and the Reflexive Mismatch and correctly reject the Transitive Mismatch (which has also been demonstrated in the past). The other half of the experiment, with the sentences containing reflexive predicates, would demonstrate something else. Children's performance on it would indicate whether or not the grammatical concept of reflexivity is related to their performance. If they would not be aware of grammatical reflexivity, then GR's proposed strategy would seem justified: It would be plausible to assume that at the stage children are not aware of this grammatical notion, they are using a strategy that is based on their knowledge of the lexical content of reflexives, even if Condition A of Binding Theory is innate. On the other hand, it is clear that GR's claim can be falsified directly if the outcome of the experiment is different from that just specified.

3. THE EXPERIMENT

3.1. Method

In order to elicit children's grammaticality judgments, we followed GR and constructed a game in which the child was supposed to teach a toy monkey how to speak (to avoid response bias). The child and the monkey were

shown pictures, the monkey said a sentence, and the child had to either reward or punish the monkey, depending on whether or not there was a match between the sentence and the picture.

3.2 Subjects

Thirty subjects were tested, all native Hebrew speakers from two kibbutz kindergartens. The children ranged from age 3;0 to age 6;0, and were classified into three groups of 10 subjects each (3–4, 4–5, 5–6), where each group was roughly half male and half female.

3.3 Materials

The test pictures consisted of six different actions (washing, combing, scratching, drying, covering, soaping), for which verbs that come in both transitive and reflexive forms exist whose frequency of occurrence is high.[6] Sentences were constructed in two varieties as exemplified in (6): one for the transitive verbs, which appeared with reflexives, and one for the reflexive predicates.

(6) a. Dani roxec 'et acmo
Dani washes ACC himself
b. Dani mitraxec
Dani self-washes

Each sentence was presented three times, once for each possible picture, which are described in (7).

(7) a. A is washing himself, B is standing next to him.
b. B is washing A.
c. B is washing himself. A is standing next to him

Altogether, there were 36 sentence/picture pairs in the experiment (6 actions × 3 pictures × 2 constructions). These were presented in random order (identical across children).

[6]The Hebrew verbs, presented in both their transitive and reflexive forms, were: *roxec, mitraxec* 'wash,' *mesarek, mistarek* 'comb,' *megared, mitgared* 'scratch,' *menagev, mitnagev* 'dry,' *mexase, mitkase* 'cover;' *mesaben, mistaben* 'soap.'

3.4 Procedure

Subjects were tested individually in two sessions of 18 sentences each. There was a training session in which the experimenter explained the task to the child, who was asked to identify the participating characters and was then presented with five training sentences (of types different from the experimental ones), for which he or she received feedback. The instructions were as follows: "Now we are going to play a game. Every time I show you a picture, the monkey is going to say what he sees in the picture. If he says it right, he deserves a prize; if he says it wrong, he has to be punished." The child was trained to respond appropriately. After the experimenter made sure that the child was familiar with the procedure, the experimental phase began. The child was presented with the sentence/picture pairs without any feedback.

3.5 Results

The results are very straightforward. They are presented in Tables 1 and 2, the left sections of the 5–6 group and the right ones for the younger children. First, for the transitive verbs, Tables 1 and 2 show the percentage of prizes (equivalent to 'yes' responses, or confirmation of grammaticality) for each picture type (consisting of 60 tokens per group, 10 children × 6 different sentences).

Even the naked eye can detect a big difference between Condition 1 on the one hand, and Conditions 2 and 3 on the other, for all groups. A repeated measures one-way analysis of variance (ANOVA) revealed a significant difference, $F(2, 27) = 12.63$, $p < .0001$ for the 3–4 group; $F(2, 27) = 23.9$, $p < .00001$ for the 4–5 group; and, most importantly, a very highly significant difference was found for the relevant group, $F(2, 27) = 206$, $p < .000\ldots$ for the 5–6 group.

Table 2 presents, in the same format, the results for the reflexive (*hitpa'el*)

TABLE 1
Transitive Verbs: Confirmation of Grammaticality

The 5–6 Year Olds (% "yes")				*The Younger Children (% "yes")*			
picture	*1 Match*	*2 R-mis*	*3 T-mis*	*picture*	*1 Match*	*2 R-mis*	*3 T-mis*
	96.6	3.3	8.3	3–4y.o.	96.6	45	36.6
				4–5y.o.	95	35	18.3

Note. #1 = A is doing something to A—the match; #2 = B is doing something to B—the reflexive mismatch; #3 = A is doing something to B—the transitive mismatch.

TABLE 2
Reflexive Verbs: Confirmation of Grammaticality

The 5–6 Year Olds (% "yes")				*The Younger Children (% "yes")*			
picture	*1 Match*	*2 R-mis*	*3 T-mis*	*picture*	*1 Match*	*2 R-mis*	*3 T-mis*
	93.3	13.3	0	3–4y.o.	90	41.6	43.3
				4–5y.o.	100	28.3	11.6

Note. #1 = A is doing something to A—the match; #2 = B is doing something to B—the reflexive mismatch; #3 = A is doing something to B—the transitive mismatch.

TABLE 3
Reflexive Mismatch vs. Transitive Mismatch

	Picture Type	
Age (years)	*2 Reflexive Mismatch*	*3 Transitive Mismatch*
3–4	[$df = 18$; $t = .206$, $p < .8$ ns]	[$df = 18$; $t = -.47$, $p < .6$ ns]
4–5	[$df = 18$; $t = .44$, $p < .66$ ns]	[$df = 18$; $t = .57$, $p < .57$ ns]

verbs with the same pictures. Here, too, a significant difference was found between Condition 1 (the Match) and the others in a repeated measures one-way ANOVA, $F(2, 27) = 9.98$, $p < .0006$ for the 3–4 group; $F(2, 27) = 39.5$, $p < .00001$ for the 4–5 group; and again, a very highly significant difference, $F(2, 27) = 309$, $p < .000$ . . . for the 5–6 group.

A one-tailed t test, done for comparison between the two syntactic conditions for each of Picture Types 2 and 3 (the Reflexive Mismatch vs. the Transitive Mismatch) revealed no significant difference for any group, as seen from Table 3.

Finally, an analysis of the performance levels of individuals revealed the following: For the 3–4 group; 2 subjects (out of 10) answered "yes" more than three times on all picture types, for both syntactic conditions. No subject answered "yes" more than three times on Picture Types 2 and 3, but not on 1, and the remaining 8 subjects responded as predicted, "yes" more than three times on Picture Type 1 and "yes" less than three times on types 2 and 3 (for both syntactic conditions).

4. CONSEQUENCES OF THE FINDINGS

The results strengthen the claim that Condition A is innate, expressing itself fully right from the start. This is so because they rule out decisively the

possibility that children who reject ungrammatical Condition A cases (i.e., sentences containing a reflexive without a local antecedent) do so without appealing to grammatical knowledge, namely via a strategy. In every case where GR's strategy would predict systematic errors, the subjects made hardly any (0% to 13% on the various cases). Specifically, in the case of the Reflexive Mismatch the subjects systematically detected the mismatch between the sentence and the picture (and correctly rejected it), although the strategy should have led them to overwhelming acceptance.

Note that even the youngest age group we tested (3–4) showed a marked difference between the grammatical and both ungrammatical conditions in every instance. These children are younger than those who usually test successfully on Condition A.[7] It turns out, then, that children not only know Condition A, but also obey it in every instance.

One part of the data remains to be explained. That is, if children never rely on a strategy that equates reflexives with reflexive actions, why do the younger age groups, when presented with the Reflexive Mismatch pictures, still agree about half the time that it does match the sentence, even when they reject the Transitive Mismatch? To explain this, we must give the data a closer look. We should emphasize, however, that this issue has little to do with GR's claims, given that it does not apply to the age groups they discuss, namely the children in the 5–6 group, who reject the ungrammatical Condition B cases only 50% of the time.[8] We tested younger children to see whether strategies are at work for them even though it was clear that these are not the relevant group, because their performance on both Condition A and Condition B is far from perfect (see Chien and Wexler (1990)). Thus we feel compelled to explain their performance. Yet in doing so, we do not intend to divert the reader's attention from the main finding of this study, which is that the children who succeeded in Condition A cases, while failing on Condition B, did so for grammatical, not strategic, reasons.

[7]The reason why Israeli children show command of Condition A earlier than their peers may be the fact that morphology (especially that of gender and number) is richer than in English, and has a more central role in the grammar of the language. The 3- to 4-year-old English-speaking children, as Ken Wexler notes, not only violate Condition A, but also are insensitive to agreement between a reflexive and its antecedent (gender control conditions in Wexler and Chien's experiments did not improve the performance of children at this age. Wexler (personal communication) suggests that the reason for that is their inability to analyze the reflexive morphologically. It might be, then, that Israeli children, who command morphological distinctions at an earlier age, thus have no difficulty with Condition A sentences because they are not hindered by morphological problems like their English-speaking counterparts.

[8]We have tested Hebrew-speaking children on the standard tests for knowledge of binding (Grodzinsky, Roth, and Tourgeman, 1993). By and large, their performance patterns are quite similar to those of their English-speaking counterparts.

Returning to the performance of the younger children, we observe that although all the children did very well in confirming grammaticality in the Match cases, each age group gave a different pattern on Picture Types 2 and 3 (both mismatches). The percentage of "yes" responses was higher for the youngest children, yet was similar across syntactic constructions and picture types (around 40%). For these children, then, it appears that any mismatch would result in some errors, even though their overall performance pattern shows that they know Condition A. Thus, whatever bias guides their behavior, it has nothing to do with reflexivity, because they erred equally on both the Transitive and the Reflexive mismatches. This bias, however, was evident in the performance of this group only. The next group (4–5) provide a more interesting performance pattern, in which the acceptance rates of the Reflexive Mismatch picture were double those of the Transitive Mismatch. We need to explain why the children in the 4–5 group, who showed high confirmation rates on the grammatical instances and had high rejection rates of the Transitive Mismatch (only 18.3% "yes"), vacillated when the Reflexive Mismatch was presented (35% "yes").

Notice that this performance pattern is typical not just in the case of a sentence containing a reflexive, but occurs to a similar degree in the sentences with the reflexive predicates. This means that if there was anything confusing or misleading for the children, it must have been in the pictures or the task itself, not the sentences, because this is precisely what the different conditions of the experiment controlled for. Whatever account we come up with, we should add, will have nothing to do with the claim we sought to test. The results, as they are, serve as a direct falsification of GR's proposal. Yet the children's performance still needs an explanation.

Consider, now, the nature of the task. In every case we tested, whether with reflexives or reflexive predicates, the child has to construct a semantic representation of a sentence like the last sentence in (8a) (in which the predicate denotes reflexivity), which looks, roughly, like (8b) (see Reinhart & Reuland (1993)).

(8) a. This is John. This is Bill. John washed himself
b. John $\lambda x P(x,x)$

This is true of both sentence types: In one case the predicate is reflexive-marked lexically (the *hitpa'el* reflexive verbs), whereas in the other, it is reflexive-marked by a reflexive.

Now the child has to match representation (8b) with the meaning of the depicted scene. There are three such scenes, represented in (9).

(9) a. Match - John $\lambda x P(x,x)$
b. Transitive Mismatch - John $\lambda x P(x,\text{Bill})$
c. Reflexive Mismatch - Bill $\lambda y P(y,y)$

Looking at these, it is clear why the child overaccepts mismatches of the reflexive type (9c). Two thirds of the stimuli he or she is presented with contain reflexive actions (i.e., the correct one (9a) and the Reflexive Mismatch (9c)). No wonder, then, that when the child cannot reach a definite conclusion, whether due to lack of ability to check these against Condition A, or due to an inability to concentrate (remember, these children are 4 years old), he or she would rely on the properties of the stimulus that can be detected. And given that two thirds of the stimuli contain reflexive actions, the child would be more inclined to check for congruence between the internal structure of the predicate and his or her semantic representation of the picture than to check for the identity of the subject. That is how the difference in performance rates across conditions follows. The upshot of this is that at this age, children may be using a strategy of some sort, but it is not the one that GR propose. It is instead some decision guideline that may be influenced by the nature of the stimuli. This strategy, or bias, that the younger children use has nothing to do with binding, because identical scores were obtained on both predicate types (the lexically and the reflexively marked). So, if there is a strategy that is related to reflexivity, it has nothing to do with the presence of *-self* in the sentence, and hence the putative asymmetry between Condition A and B with respect to the task disappears. Yet the scores of the 5- to 6-year-old children on Conditions A and B (for which this asymmetry is invoked by GR) are still different from one another.[9]

In fact, the finding that in every age group the children performed identically on the sentences containing reflexives and reflexive predicates, and did so across the different conditions, provides suggestive evidence for the formulation of the Binding Conditions over reflexivity, rather than over anaphors, which is what Reinhart and Reuland (1993) propose. For them, Condition A is as in (10).

(10) A reflexively marked predicate must be reflexive.

Reflexive marking is done either through a reflexive, or lexically, as in the case of reflexive predicates. The error patterns evidenced for each age group we tested are identical for both types, providing empirical support for this view of Condition A.

Finally, our findings allow us to rule out decisively any interpretation of previous findings regarding Condition A other than that children indeed know it and that it, and nothing else, guides their behavior. This falsifies GR's claim regarding the strategy-based performance on Condition A. It leaves their overall account, according to which children know Condition B

[9]At any rate, the percentage of 'yes' responses was too low on either mismatch to warrant their conclusions.

but do not necessarily obey it, incomplete. They still have to explain why children obey Condition A on both grammatical and ungrammatical constructions that fall under it, yet fail to do so when Condition B is at issue. Grodzinsky and Reinhart's account, by contrast, does not suffer these drawbacks, because it attributes these so-called Condition B cases to an independent inference rule that is dissociated from Binding Theory and predicts correctly the children's behavior in all conditions.

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