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conversational constraints on
speech modifications

MARILYN SHATZ

*Department of Psychology, University of Pennsylvania, Philadelphia,
Pennsylvania 19174, USA and The Graduate Center, City University
of New York, 33 West 42nd Street, New York 10036, USA*

ROCHEL GELMAN

*Department of Psychology, University of Pennsylvania, Philadelphia,
Pennsylvania 19174, USA*

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MARILYN SHATZ¹

Department of Psychology, University of Pennsylvania, Philadelphia, Pennsylvania 19174, USA and The Graduate Center, City University of New York, 33 West 42nd Street, New York 10036, USA

ROCHEL GELMAN

Department of Psychology, University of Pennsylvania, Philadelphia, Pennsylvania 19174, USA

It is by now a well-documented fact that the language addressed to very young children is different from adult-directed speech. Utterances spoken to young children are generally short, simple, well-formed and well articulated (e.g. Brown & Bellugi, 1964; Phillips, 1970; Broen, 1972; Snow, 1972). Even four-year-olds direct shorter, simpler utterances to two-year-olds than they do to adults or peers (Shatz & Gelman, 1973; Sachs & Devin, 1976). In this paper we question whether these speech modifications are produced in order to facilitate young listeners' acquisition of syntax. Even if one were to grant mothers such language teaching tactics, one would hardly expect four-year-olds to be little linguists who produce at will a special syntax that is tailored to the needs of language learners. Our position is a more plausible one: a speaker's understanding of the context-sensitive constraints operating on conversational interaction governs his or her speech adjustments. The ways in which these constraints influence the speaker's output depend on the specific communicative demands of a given situation as well as the cognitive--social status of the given participants in an interaction.

We introduce the notion of conversational constraints in order to

deal with the kind of child-directed speech that cannot be explained on the basis of syntactic simplification: alone; the occurrences of complex constructions in speech addressed to young children. To illustrate the problem, we consider some data on four-year-old speech collected for an earlier study (Shatz & Gelman, 1973).

As reported in Shatz & Gelman (1973), we observed four-year-olds talking to two-year-olds and adults in two different situations. In the toy-task situation, the children were told specifically to talk about a particular toy to each of their separate listeners. Likewise, in the unstructured situation, children played with each of the listeners separately; but, this time there were no constraints on talking about or demonstrating particular toys. In both situations, the mean length of utterance, as measured in words, was shorter to two-year-olds than to adults. In both situations, this reduction in utterance length was accomplished to a large extent by decreasing the use of coordinate and subordinate conjunctions (and their attendant compound and complex utterances).

While the speech for two-year-olds tended to be syntactically simple, one cannot postulate that four-year-olds follow a general rule barring syntactically complex utterances to young children. For some of the utterances directed to two-year-olds were syntactically complex. For example, when four-year-olds talked to two-year-olds about the workings of a toy, they did use 'wh' predicate complement constructions as in (1)

(1) I'll show you how it moves.

Still, in the same conversational setting, they did *not* use similar complement constructions introduced by 'that' as in (2)

(2) I think (that) this is a cat.

One could account for these observations by postulating a more specific syntactically-based rule, i.e. 'I do not use "that" predicate complement constructions with two-year-olds'. However, the data across situations are inconsistent with such a rule. When we change the situation in which four-year-olds talk to two-year-olds, we do find them using 'that' predicate complements. In particular, when four-year-olds are not expected to explain a toy to a two-year-old and instead are left to talk about whatever they wish, utterances like (3) appear in their speech.

(3) I think we'll get washed.

The change from the toy-task to the unstructured setting has no

Table 7.1. Frequencies of 'that' and 'wh' predicate complement constructions in long utterances produced by four-year-olds to two different-aged listeners in two situations

| Complementizer | Situation | | |
|----------------|-------------------|----------------------------|---------------|
| | Toy-task | Unstructured | |
| 'That' | To adults: | Fairly common ^a | Uncommon |
| | To two-year-olds: | Very uncommon | Fairly common |
| 'Wh' | To adults: | Fairly common | Very common |
| | To two-year-olds: | Common | Fairly common |

^a Very common: 1 occurrence in every 10 or fewer utterances.

Common: 1 occurrence in every 10-20 utterances.

Fairly common: 1 occurrence in every 20-30 utterances.

Uncommon: 1 occurrence in every 30-100 utterances.

Very uncommon: 1 occurrence in every 100 or more utterances.

effect on the four-year-olds' tendency to use 'wh' predicate complements with two-year-olds. In both settings they appear fairly commonly in talk to two-year-olds. But the change in setting does alter the four-year-olds' tendency to use 'wh' construction with adults. In the toy-explanation setting, utterances containing such constructions occur fairly commonly, just as they do with two-year-olds. In the unstructured situation, utterances with 'wh' constructions occur even more frequently in talk addressed to adults. The variations in the four-year-olds' tendencies to use 'that' and 'wh' constructions with two-year-olds and adults in the two different conversational settings is summarized in Table 7.1.²

If we choose to describe the speech adjustments of four-year-olds in terms of specific syntactically-based rules, we must conclude that children of this age are inconsistent in their application of rules governing the use of these sorts of complex constructions. There are two reasons for rejecting this sort of 'inconsistency' explanation of variation. One is that children tend to apply their rules about language very generally, even to the point of overgeneralization (e.g. Brown & Bellugi, 1964). Why, then, should rules blocking certain syntactic constructions to particular listeners be applied sporadically? The second objection concerns the very nature of the rules governing listener-dependent adjustments. As mentioned above, it seems implausible that the regulation of speech to very young listeners should be carried out at the level of syntactic selection. It is intuitively more plausible to assume that a child would (and could) choose not to talk about certain things with certain listeners than to assume he would

(or could) choose not to use certain syntactic constructions with certain listeners. Thus, the postulation of a listener-dependent rule regarding syntactic selection *per se* may be in error. For, it is meanings that are mapped onto syntactic devices, often a given surface structure can convey more than one sort of meaning, and selection for a particular listener may be made at the level of meaning rather than the level of syntax. It seems advisable here, therefore, to ask: what were the meanings of those utterances that contained the syntactic constructions which occurred with seemingly arbitrary frequencies? In particular, what meanings did the children in the toy-task convey by their use of 'that' constructions to adults; were they meanings that the speakers knew to be inappropriate for two-year-olds? Did utterances containing 'that' constructions convey different meanings in the unstructured situation? Finally, what meanings were conveyed by utterances containing 'wh' constructions which, despite their length and syntactic complexity, were apparently considered appropriate for both sorts of listeners?

To answer these questions we carried out a *function-meaning-in-conversation* analysis of the utterance in question. A detailed description of this analysis can be found in Gelman & Shatz (1977). Briefly, the procedure for determining the *functional meaning* of an utterance containing a 'wh' or 'that' predicate complement was as follows. First, together we assigned a functional meaning to each target utterance by considering its meaning in context. The context used included the speech preceding the target utterance, the listener's response, the speaker's subsequent response to the listener's response, what the participants in the interaction were doing and what the topic of conversation was. How much we relied on these contextual features depended on the ambiguity of the target utterance when considered out of context. Having assigned a functional meaning to each utterance, we then organized these meanings into categories. Several months later, we once again assigned functional meanings to the same utterances. The second round assignments of functional meanings agreed with over 90% of our initial assignments.

When we combined all the 'that' and 'wh' predicate complement utterances together and examined them in terms of the functional roles they played in conversational interaction, we found they served three main purposes: modulation, talk about mental state and directing the interaction.

In the first category are the predicate complement utterances in which the certainty of the asserted proposition was modulated or 'hedged', as Lakoff (1972) calls it. In cases like (4) and (5)

(4) I'm sure this fits too.

(5) I think these are dogs and these are lambs.

the children were explicitly marking the degree of certainty with which they expected the truth of their statements to be accepted. Such modulations often occurred when the children were being questioned or when they were voicing some sort of opinion that was open to argument from a knowledgeable listener.

Second, the children used these constructions in talking about their own or others' mental states. Utterances like (6) and (7)

(6) Wonder who put that wooden thing?

(7) She knows how to lift that up.

illustrate the use of complementation in talk about mental state.

Finally, (8)–(11) are all instances of the four-year-old directing the interaction. There were deictic utterances like

(8) That's how he's sitting.

and there were announcements of intent to demonstrate a toy, as in

(9) I'll show you how to get gas.

There were calls to attend to something as in

(10) Ann, see what you do?

Finally, there were attempts to initiate topics or activities politely, as in

(11) I think we'll get washed.

These various realizations of the speaker's intent to direct his listener's attention to some event, object or activity in the real world, or to direct his behavior in some way, we call 'show and tell' speech.

What functions did predicate complement utterances serve in the speech directed to two-year-olds? Table 7.2 shows that in the toy-task situation, 95% of the predicate complement constructions were used in 'show and tell' utterances; in the unstructured situation 82% were so used. Modulation and comments about mental state rarely occurred in either situation. Thus, predicate complement utterances mainly served the simple 'show and tell' function.

This limitation on functional meanings directed to two-year-olds can be taken as evidence that the four-year-old speaker utilizes a system of conversational constraints in formulating messages.³ A speaker who follows a system of, say, Gricean conversational rules (Grice, 1975) is primarily concerned with maintaining a cooperative

Table 7.2 Percent of 'that' and 'wh' predicate complement constructions falling into each meaning-in-conversation category

| Category | Situation | |
|---------------------------|-----------------------|---------------------------|
| | Toy-task ^a | Unstructured ^b |
| Directing the interaction | To adults: 25 | To adults: 59 |
| | To children: 95 | To children: 82 |
| Mental state | To adults: 28 | To adults: 22 |
| | To children: 5 | To children: 14 |
| Modulation | To adults: 31 | To adults: 13 |
| | To children: 0 | To children: 4 |
| Other ^c | To adults: 16 | To adults: 6 |
| | To children: 0 | To children: 0 |

^a Based on the 81 predicate complement constructions to adults and 21 to two-year-olds produced by 16 subjects.

^b Based on the 32 predicate complement constructions to adults and 28 to two-year-olds produced by 5 subjects.

^c A breakdown of this category can be found in Gelman & Shatz (1977).

interaction and does so by providing clear, relevant information adequate to the needs of his listener. Given the cognitive limitations of a two-year-old, abstract talk about mental state and qualifications about propositional certainty would be inappropriate. On the other hand, simple deictic utterances like 'Here is the shoe' and 'See the doggie' are common in speech to young children. Now we see that complex utterances like those containing predicate complements can serve the 'show and tell' function too. When a complex construction functions in a demonstrative or directive role, it can appear in speech to young children, provided it does not violate some other conversational constraint operating in the situation.

What might some of these other conversational constraints be? As an example, consider the differences in the way the children realized their intentions to direct the interaction with the two-year-olds in the two situations. In both the toy-task and unstructured situations, utterances like (8)-(10) appeared. 'Wh' complement constructions occurred in utterances that served to accompany or announce demonstrations and to direct the young listener's attention. But 'that' utterances like (11) appeared only in the unstructured situation. While (11) serves the same 'show and tell' function as (8)-(10), it incorporates a social element as well. It is a polite way of making a suggestion. The children were constrained to show some regard for politeness in one situation but not the other because situational differences produced different conversational priorities for the speaker.

We have already noted that maintaining a cooperative interchange is the speaker's primary goal in any conversational interaction. And Gricean maxims like Be relevant to your listener's needs, Say what you know to be true, Be polite and so on, provide guidelines for attaining that goal. But the priorities determining the application of these maxims require a consideration of context. A given maxim may be very important to successful interaction in one situation and less so in another; for, what is necessary to maintain the cooperation of one's listener varies with situation.

We can identify two aspects of the situations that we believe work together to produce different conversational priorities: one is the degree to which information transmission was important, the other is the presence or absence of the two-year-old's mother. In the toy-task situation, the four-year-old was under an obligation to get the younger child to pay attention to the experimenter's toy. He had information he had been directed to convey and a poor listener to whom to convey it. But he did have some help. The two-year-old's mother was hovering nearby. And two-year-olds are notoriously anxious to stay near Mother. So, the four-year-old, confident that the adult would help maintain the two-year-old on the scene, could concentrate on his task: unadorned information transmission, showing and demonstrating the toy. But in the unstructured situation, the two-year-old's mother was no longer nearby, nor was the four-year-old under any obligation to prove his prowess as an instructor. He was still in a position to direct the interaction by making suggestions, but now he had to take account of the increased possibility that his young listener would be unwilling to follow his lead and would wander off into activity of his own. By qualifying his suggestions, he both recognized the weakened constraints on his listener to follow his lead and communicated the increased flexibility of his own position; for in this situation, he could drop his own suggestions without loss of face, if it became necessary to do so in order to maintain the interaction.

The different demands created by the two different situations forced a reordering of conversational priorities. Clear information transmission, so important in the toy-task situation, was secondary to maintaining an amiable interaction in the unstructured one. While 'that' and 'wh' predicate complement constructions served roughly the same function in child-directed speech, they were used selectively to emphasize situation-specific conversational and social considerations that were differentially relevant to successful interaction.

We have focussed on what four-year-olds said to two-year-olds in

two different situations in order to illustrate the functional meaning of certain constructions in conversation and to show how the forms chosen to express functional meaning reflect the priorities given to conversational constraints in particular situations. The variations in the speech four-year-olds address to adults in the same situations can be similarly analyzed.

Table 7.1 shows that the rate of 'that' complementation to adults decreased from the toy-task situation to the unstructured one, while 'wh' complementation increased. These changes also can be explained in terms of the reordering of conversational priorities. In the toy-task situation, the adult was either the experimenter, or the speaker's mother in the presence of the experimenter, both of whom attended closely to the child. Clearly, talking about mental state was appropriate as was the hedging of statements to capable, attentive listeners. Table 7.2 shows that 31% of the predicate complements occurred in statements of modulation, 28% in comments on mental state, and only 25% in interaction-directing statements. In the unstructured situation, the adult listeners were behaving like typical mothers, attending to household chores as well as to children. The speaker's primary concern had to be with attracting his or her mother to the interaction, rather than qualifying statements for an already attentive listener. Accordingly, we expected to find many more calls for attention and much less modulation in this situation as compared to the toy-task one. As can be seen in the right-hand column of Table 7.2, this is indeed what happened. Fifty-nine percent of the complement constructions serve to direct the interaction; only 13% modulate the certainty of propositions. Since modulation typically involves 'that' complementation, and calls to attend utilize 'wh' complements, we can now understand why the frequencies of the two types of complementation changed with situation.⁴

It is also possible to explain the between-listener variation occurring in 'that' complementation in the toy-task study — fairly common use to adults, very uncommon to two-year-olds. Recall that the two functions served by 'that' complementation were modulation and polite directing of the interaction. In the toy-task situation, modulation was prevalent in speech to knowledgeable listeners, the adults, but virtually non-existent in speech to two-year-olds; and we have already seen that politeness, or flexibility, was not a prominent concern with the young listeners. 'That' constructions occurred with adults, therefore, but not with two-year-olds.

To summarize, the sorts of between- and within-listener variation in the use of predicate complementation that are illustrated in Table

7.1 can be explained in terms of the functional meanings these constructions carry in conversation, and the conversational constraints governing both the selection of these meanings and the specific forms appropriate to express them. The introduction of conversational constraints provides for an explanation of syntactic variation in cases where the hypothesis of syntactic simplification is insufficient to account for all the data.

Thus, it appears that speakers produce speech modifications for very young children not only because of their lack of linguistic ability but, at least as importantly, because of their general cognitive immaturity, which influences *what* is said to them as well as *how* things are said. Some things are just not said to young children even though they may be expressible in syntactically simple three-word sentences; for example, 'I know calculus'. We are not suggesting that the producers of speech simplifications make *no* use of notions of linguistic complexity or that cognitive simplifications, on the average, correlate merely coincidentally with linguistic simplifications. Rather, it seems likely that a speaker bases his modifications on a notion of *psychological* simplicity which involves cognitive, social and perceptual factors as well as syntactic ones. For example, the tendency to produce short utterances for very young listeners may be motivated as much by an attempt to deal with their short attention span as with their linguistic inadequacies. As we have seen, being polite or friendly is in some situations considered more important for maintaining interaction than is promoting the understanding of the propositional content of a message by using a short but possibly curt sentence. If extra-linguistic factors do play so central a role in the speech selection process, then we must question the position that speech simplification derives solely from some syntax-specific ability which has evolved in order to assure the new generation's acquisition of grammar.

Similarly, considering the task of the young listener, we must view with skepticism the idea that speech modifications to young children serve only, or even mainly, to teach the child the ideal grammar. In the first two years of life, a child makes enormous discoveries about the world around him. The primary function of the speech directed to him is to help him discover that world, and undoubtedly to help him to map language onto the invariances and relationships he discovers there. Moreover, the child learns all of this in a social environment, where sequencing, turn-taking and feedback are relevant at the earliest stages of language development (cf. Bruner, 1975; Shatz, 1975). Since attentional, social and cognitive considerations seem to

figure so prominently in speech modifications, it is likely that the adjustments function to provide social and cognitive, as well as linguistic, information to the developing child. We know very little of the young child's ability to make grammatical inferences based on his knowledge in other domains. Yet it would be surprising if he did not bring to bear on the language acquisition task all the capacities he had acquired in the perceptual, social and cognitive spheres. By fostering growth in other areas, speech modifications may contribute to the acquisition of grammar indirectly as well as directly.

Of course, we do not yet understand how speech modifications affect these simultaneously developing systems or how these systems may interact to affect language growth. Analyses of the functional meanings of speech in conversation together with a more fully explicated system of conversational constraints are one way to explore some of the interrelationships. But one thing has already been made clear by this line of investigation: speech modifications are based on more than syntactic rules for grammatical simplification.

NOTES

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2. In Shatz & Gelman (1973) only utterances five words or more in length ('long utterances') were analyzed for complex syntactic features. The discussion here is limited to those long utterances containing 'wh' and 'that' predicate complement constructions. Rates of occurrence reported in Table 7.1 differ from those reported in Shatz & Gelman (1973) in that here the data from children speaking to siblings and to non-siblings are combined.
3. See Garvey (1975, 1977) for additional evidence on preschoolers' conversational abilities.
4. On the basis of MLU analyses, we argued earlier that the children treated adult listeners the same in both the toy-task and the unstructured situations (Shatz & Gelman, 1973). We now see that the functional meaning analyses reveal a difference that was masked by the grosser MLU analysis.

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