DOCUMENT RESUME

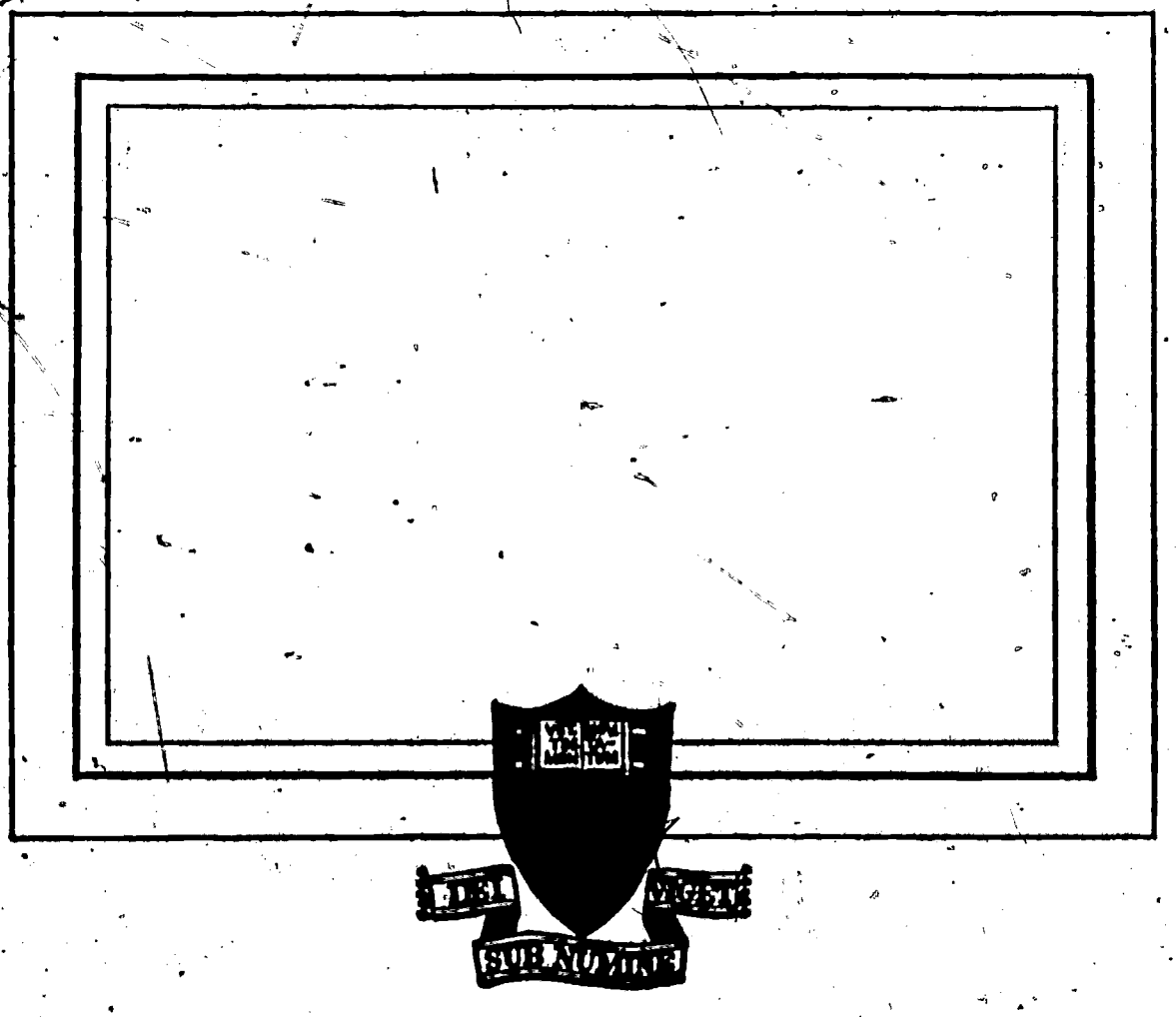
ED 112 645 FL 007 095

AUTHOR Glucksberg, Sam
TITLE Word versus Sentence Interpretation: Do Adults Overextend the Meaning of "Different"? Princeton University Research Report No. 16.
INSTITUTION Princeton Univ., N.J. Dept. of Psychology.
SPONS AGENCY Public Health Service (DHEW), Washington, D.C.
REPORT NO RR-16
PUB DATE Apr 75
NOTE 19p.; Draft version of a paper presented at the meeting of the Society for Research in Child Development (Denver, Colorado, April 1975)
AVAILABLE FROM Author, Dept. of Psychology, Princeton University, Princeton, N.J. 08540

EDRS PRICE MF-$0.76 HC-$1.58 Plus Postage
DESCRIPTORS Adults; *Cognitive Processes; *Language Development; Language Research; Linguistic Theory; Preschool Children; *Psycholinguistics; *Semantics; Sentences

ABSTRACT

Contrary to earlier assertions, young children do not interpret the word "different" to mean "same." Both two-and-a-half year old children and adults interpret requests for same or different objects appropriately, apparently following conventions of conversational discourse. These data offer no support for a discrete semantic feature model of acquiring word meanings. (Author)



PRINCETON UNIVERSITY
RESEARCH REPORT SERIES

DEPARTMENT OF PSYCHOLOGY

Word versus Sentence Interpretation: Do Adults Overextend the Meaning of "Different"?[1]

Sam Glucksberg

Princeton University

Draft version of a paper presented at meetings of the Society for Research in Child Development, Denver, April, 1975. Do not quote without permission. Comments welcome.

Princeton University Research Report No. 16

According to one class of models of language acquisition, children acquire word meanings by sequentially acquiring discrete semantic features (cf. Clark, 1973; McNeill, 1970). This hypothesis is derived from the linguistic position that word meanings can be specified by enumerating the unique set of features which define any given word (Katz & Fodor, 1963; but see critiques of this view by Bolinger, 1965; Glucksberg & Danks, 1975; Rosch, in press). The psychological extension of this linguistic view states that children initially do not know the "full" (that is, adult) meanings of the words they hear and use. For any given lexical item, a child may initially acquire only a subset of that item's criterial features. Hence, if only the feature four-leggedness had been acquired as the criterial set for the word dog, then a child would overgeneralize or overextend the referential usage of that word and call all four-legged animals dogs (Clark, 1973). While a plausible case may be made for this serial, discrete-feature model of word acquisition on the grounds that children often do overgeneralize in this way, it is also true that children over-differentiate as well (Anglin, 1975). For example, the word Daddy may be restricted to a child's own father; all other children's fathers are not "Daddies."

A more discriminating test of the semantic feature acquisition hypothesis is required. One possibility would be to test the knowledge of specified pairs of words which theoretically differ from one another by one and only one feature. If two words differ from one another by one and only one semantic feature, then it

follows that the member of the pair with fewer features (n features) would be acquired before the item with n + 1 features. Antonymic comparatives like same-different can be so characterized. The first member of the pair is considered "unmarked" and has n features. The second is "marked" and has n + 1 features. Given these properties, it also follows that:

(a) Until that last feature is acquired the two members of the pair will be treated as synonymous (because both have the same set of n features);

(b) the meaning of the unmarked member (with n features) will be taken as the meaning of the marked member, which, until the n + 1th or last feature is acquired, has the same set of n features as the unmarked member.

On a semantive feature hypothesis, then, children should acquire the correct meaning of same before they acquire the correct meaning of the word different, and they should also treat the pair as synonymous, with both same and different being understood to mean "same."

How can this hypothesis be tested? One line of attack was initiated by Donaldson & Wales (1970) who observed children's responses to the utterances:

(1) Give me one that is the same in some way.

versus:

(2) Give me one that is different in some way.

The experimental situation involved an array of either real objects (like toothbrushes and egg cups) or geometric forms (like squares and triangles). For example, if the experimenter held up a blue

toothbrush and asked question (1) or question (2), the child had the option of selecting, among other things, a red toothbrush or a white egg cup. In one of several conditions, all toothbrushes in the selection array were blue, and so if a blue toothbrush were the target object and question (2) were to be asked, a child could respond "correctly" by selecting some other object.

Irrespective of the characteristics of the selection arrays, "most of the children [aged about three-and-one-half] appear to make no distinction between the instructions Give me one that is the same in some way and Give me one that is different in some way." (Donaldson & Wales, 1970, p. 244). This straightforward empirical result was later interpreted by Clark (1973), among others, to mean that young children fail to differentiate between the WORDS same and different: "In effect, the word different was interpreted as though it meant same. Here, then, is another example of the meaning of one pair of antonyms being overextended to cover the other term. Both same and different meant "same" to these children. (Clark, 1973, p. 91).

This inference of a failure to differentiate between two words on the basis of a failure to differentiate between two utterances may be erroneous. In normal adult conversation, many utterances containing different and contrasting words are nevertheless responded to in the same way. For example, I might utter either:

(3) I drank four quarts of gin last night--do you believe me?

or

(4) I drank four quarts of gin last night--don't you believe me?

Whether you believe me or not, you will answer utterances (3) and (4) in the same way: by saying "yes" to both if you do believe me, and "no" to both if you don't. Clearly, it would be inappropriate to infer that an adult does not or cannot discriminate between the utterances do and don't simply because he responds to utterances (3) and (4) in exactly the same way.

On purely logical grounds, then, the evidence that young children treat pairs of utterances equivalently says nothing of the words contained in those utterances. Let us assume as a working hypothesis that children, like adults, respond to utterances by trying to infer what a speaker's intended message is. If they do so, then varying the identity of one word in an utterance while holding the rest of the utterance and the social-physical context constant need not lead to differential responses to the two utterances, even with ideally competent speakers. In the case of the same-different sentence frames, one might argue that children were responding in the most appropriate fashion possible, namely, just as normal adults would. When someone holds up an object, say a pencil, and asks "give me one that is different...," one may very well interpret that utterance as a request for another writing implement, and not as a request for a watermelon, a chair, or any other "different" object in the universe. Donaldson & Wales (1970) acknowledged this possibility. We tested it in two ways. In Experiment I, we tested young children in two different same-different tasks; the original Donaldson & Wales paradigm involving requests for "same"

and "different" things, and a second task in which the relevant attribute for sameness and difference was unambiguously specified. In Experiment II, we tested adults in the original Donaldson & Wales paradigm to see if adults, like children, treat the two utterances equivalently.

The subjects in Experiment I were six preschool children aged two years eight months to three years three months (note that this sample is a bit younger than the original Donaldson & Wales sample, whose average age was about three years six months). Each child was first given a replication of the Donaldson & Wales procedure in which each was asked "Can you give me one that's different from this one?" In each case, the experimenter picked up a target object from a table, showed it to the child, and asked the question. In each case, the child could select a response object from an array that consisted of (a) an identical object, (b) the same type of object but differing in size and/or color, and (c) an object of a different type. For example, if the target were a small red car, the child could choose from an array of a small red car, a large blue car, or a doll. The results were unequivocal. On virtually all trials, the responses to requests for "same" and "different" did not differ. The overwhelming choice in either case was the object most similar to the target, essentially replicating Donaldson & Wales' (1970) findings.

However, in a second task administered to each of these same six children, no evidence for synonymy of "same" and "different" was found. Here, the children were given an array of colored

pop-beads in which at least two pop-beads of each color were available. The children were asked to "give me one that's the same color as this bead" or "... a different color than this bead," and indicated their choice either by pointing to a bead or by handing the experimenter a bead. Each type of question was asked three times for each child. For the "same" requests, only one child made an error, and that only once. For the "different" requests, two children each made one error apiece. Clearly, children know the difference between a request for the "same" color and a "different" color, even when these same children do not discriminate between the utterances "give me one that's the same..." versus "give me one that's different..."

Is this because they have yet to learn how to interpret these latter utterances, or is it because they have already learned to interpret these utterances as adults ordinarily do? In order to evaluate these alternatives we tested a sample of twenty male subjects whose mean age was 20 years 7 months. The twenty Ss were randomly assigned to one of two groups, ten per group. These groups were Group N, natural conversational context, and Group E, experimental test context.

A subject in Group N would be seated at a table before a microphone, two response keys, a tape recorder and an interval timer with flashing lights. To S's right was a second table with various tools and other objects haphazardly arranged. After S had been seated, the experimenter excused himself, picked up either a pair of pliers or a screwdriver from the table, and left

the room saying "I have to fix something. I'll be right back." He reappeared in the doorway several seconds later holding the tool he had just picked up and asked S, "Give me one that's different from this one." S then had a choice of the following objects to give to the experimenter: two tools of the same type the experimenter displayed (either two screwdrivers or two pairs of pliers), three tools of a different type (either three pairs of pliers or three screwdrivers), three pencils, three felt-tip pens, an ash tray, a book of matches, a pack of cigarettes, a two-pronged electric plug, an electric switch, some lengths of insulated bell wire, some paper clips and a pad of paper. The tools (screwdrivers and pliers) varied in size; the pens and pencils varied in color. The experiment ended for Group N Ss when they had responded to the experimenter's request for a "different" object.

Group E was tested in the identical physical situation, but in an experimental rather than natural context. Each S was seated facing the object-laden table, and the experimenter held a scoring pad as he picked up objects, one at a time, and asked "give me one that's different from this one" for six successive trials, in the following order: pliers, screwdriver, pencil, pack of cigarettes, electrical plug and finally, pliers or screwdriver again. Half the Ss were shown a pliers on the first trial, half a screwdriver, and the last trial was a repetition of the first. Same-object or same class-of-object choices were possible on Trials 1, 2, 3, and 6. Trials 4 and 5 were intended to break any set that might develop to choose same or same-type-of objects.

The data of interest for Group N were frequency of tool choice versus any other type of object; for Group E, frequency of same or same type of object choices on Trials 1, 2, 3, and 6 (only "different" choices could be made on Trials 4 and 5).

One procedural point should be noted. The Ss were never asked for a "same" choice in Group N because the naturalistic condition would have been jeopardized had repeated trials been used. For Group E "same" instructions were not used in order to avoid calling attention to the specific word(s) of interest. Ideally, of course, the question we are asking - do adults treat utterances of the type "Give me one that's different from (same as) this one" equivalently - requires a within-Ss design. The next best choice would be a between-Ss design with half the Ss being asked for "same" choices. Rather than collect such data we felt that the strongest test of our hypothesis - that "same" and "different" utterances would be treated equivalently - could be made by postulating an "ideal" set of data for a gedahken control group, a group which always chooses that object in the selection array that is most similar to the target object.

The results, shown in Table 1, are unequivocal. Six of ten Ss in Group N selected the same object in response to the

Table 1 About Here

"different" request - a screwdriver when the target was a screwdriver, and a pair of pliers when that was the target. The other four Ss chose the only other tool available - either a pair of

pliers or a screwdriver in response to a screwdriver (or pliers) target, respectively. On the assumption that an "ideal" control group would have shown 100% "same" choices, only six of our ten real Ss treat the two utterances (same vs. different) equivalently. The other four choose the most similar in function rather than the same. These data should not, of course, lead us to infer that six of our real Ss do not differentiate between the words same and different. Instead, the appropriate conclusion is that native English speakers treat the utterance "Give me one that's different..." as a request for another object of the same type (or function) as the target object, at least when that request is made in the context of normal conversation.

To our surprise, however, a natural conversational context was not critical. The behavior of Group E was virtually indentical to that of Group N on Trial 1, with only one S in Group E choosing a non-tool to a tool target. As we had expected, more variable choices were made on Trials 2, 3 and 6, although only four Ss strayed from the target category on any given trial. When questioned all Ss in Group E expressed puzzlement as to what the experimenter wanted, and the Ss who did stray from the target category said that the experimenter seemed to want "really different" choices beyond Trial 1 or 2.

Clearly, adults routinely treat the request to "give me a different one..." as a request for another member of the category or class of objects represented by the target. The word "one" used in the request is interpreted as "one of these," and people

respond accordingly. Children as young as two and a half or so have already learned how to treat these utterances as indirect requests and to do so appropriately. Rather than demonstrating that children have not yet acquired semantic competence, the original Donaldson & Wales findings seem to demonstrate the acquisition of conversational (or discourse) competence quite convincingly! (As, perhaps, Macnamara (1972) might have expected).

The methodological conclusions we may draw from these two small studies are clear. Within the context of a semantic feature theory of word meanings, we would argue that it is inappropriate to make inferences about one aspect of word meanings - namely, the dictionary component - while ignoring other aspects of word meanings, such as semantic rules and semantic interpretations (cf. Katz & Fodor, 1963). Semantic rules and semantic interpretations - along with the appropriate rules of conversational discourse - must, by definition, be involved in children's responses to sentential utterances. Until we can specify what these rules are and how children process utterances, any inferences we wish to make about semantic competence per se are highly suspect. We are on relatively firm ground if children perform in ways that lead us to infer that they "know" the meanings of words. That is, they respond to a variety of utterances in widely ranging contexts in ways we consider to be "correct" or "appropriate." Inferences of incompetence, on the other hand, are highly susceptible to error on the grounds that children may "fail" tests of comprehension for any one of a number

of reasons. The inferential paths from la parole to la langue are, as Saussure (1916) noted, neither simple nor direct.

The substantive conclusion is that we have found no evidence that children treat the words "same" and "different" as equivalent in meaning. That we may sometimes find children confusing the two terms in certain contexts is not terribly surprising. After all, the words are confusable if the context is not clear, and they are sometimes confusable even when the context is crystal clear. One demonstration of the confusability of these two terms is in the title of this paper itself. By this time, the reader may have noticed that the title should read "do adults overextend the meaning of same?" instead of "different" as it does, in fact, read. This was originally my own unintentional error in typing the first draft of the paper. It was not picked up the the reviewing committee for this conference, nor, I daresay, by very many of you in the audience. If we take this rather large sample seriously, we might be forced to conclude that adults, rather than children, confuse the meanings of "same" and "different."

The appropriate conclusion, of course, is that neither adults nor children confuse the meanings of these terms when they are used appropriately in context. Of course, it is still possible that the acquisition of comparative terms is asymmetrical as predicted from a psychological extension of semantic feature theory.[2] However, one last point merits consideration. When young children overextend the meaning of a word, we consider that to be an error.

We should also be alert to the possibility that extension of a formal linguistic theory to psychology may be an overextension, and thus may be erroneous and misleading as well.

Footnotes

1. The research reported here was supported in part by U.S. Public Health Service Grant MH23401 - 01 to Princeton University, S. Glucksberg, Principal Investigator. I thank Joseph H. Danks for his important insights, and Anne Hay for collecting the data on young children as part of her senior thesis at Princeton University.

2. Comparatives other than "same-different" are also of interest, and I was delighted to learn that Susan Carey Block (personal communication) has completed a study of "more-less" with conclusions similar to those reported here. James Coots' study, reported at this conference, involved a number of comparative terms. He, too, finds no evidence for asymmetry between marked and unmarked terms in children's acquisition of those comparatives.

References

Anglin, J.M. On the extension of the child's first terms of reference. Paper given at meetings of SRCD, Denver, April, 1975.

Bolinger, D.L. The atomization of meaning. Language, 1965, 41, 555-573.

Clark, E.V. What's in a word? On the child's acquisition of semantics in his first language. In T.E. Moore (Ed.), Cognitive development and the acquisition of language. New York: Academic Press, 1973. Pp. 65-110.

Coots, J.H. Polarity and complexity in spatial adjective acquisition. Paper given at meetings of SRCD, Denver, April, 1975.

Donaldson, M., and Wales, R.J. On the acquisition of some relational terms. In J.R. Hayes (Ed.), Cognition and the development of language. New York: John Wiley & Sons, 1970, Pp. 235-268.

Glucksberg, S., and Danks, J.H. Experimental psycholinguistics. Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1975.

Katz, J.J., and Fodor, J. The structure of a semantic theory. Language, 1963, 39, 170-210.

Macnamara, J. Cognitive basis of language learning in infants. Psychological Review, 1972, 79, 1-13.

McNeill, D. The acquisition of language. New York: Harper & Row, 1970.

Rosch, E. Universals and cultural specifics in human categorization. In R. Breslin, S. Bochner, & W. Lonner (Eds.), Cross-cultural perspectives on learning. London: Sage Press, in press.

Saussure, F. de. Cours de linguistique generale. (1st ed., 1916), English translation by W. Baskin, Course in general linguistics. New York: McGraw-Hill, 1966.

Table I

Responses to requests for "something different"

	Object Selection			
	Same Class Same Object	Same Class Different Object	Different Class	Total
Group N	6	4	0	10
Group E:				
Trial 1	6	3	1	10
" 2	4	2	4	10
" 3	2	4	4	10
" 6	3	3	4	10