

## Editor's overview

This is the first issue of AP devoted entirely to disorders of first-language development, with one article concerned with language delay (Bond), one dealing with problems of children of hearing-impaired parents (Sachs, Bard, & Johnson), and three addressing issues in the language of autistic children (Schwartz; Tager-Flusberg; Blank & Milewski). Sachs et al.'s article, however, also addresses a fundamental issue in normal first-language development, namely, that of the role of linguistic input in language development. According to these authors, "(1) . . . some of the characteristics of adults' speech to children may not be necessary for language learning to take place. (2) . . . indirect sources [TV and the speech of groups of hearing playmates] seem to provide at best an inefficient means for the child to learn the structure of a particular language. (3) The characteristics of the input may have more effect on the acquisition of certain aspects of syntax [certain grammatical morphemes] than they do on the emergence of the ability to express the basic semantic relations."

It appears that Sachs et al.'s observations present a picture of differential biological sensitivity to linguistic input that tends to favor a limited exposure to certain aspects of linguistic input in a direct, interactive setting, and a picture, I might add, that is buttressed by recent research on mothers' talk to young children, and on the impact of environmental deprivation on first-language development.

In regard to (3) above, correlations between characteristics of linguistic input and assessments of language competence do not, of course, constitute a full explanation (or the most important part of an explanation) of the language competence in question, since we still must determine how the child perceives the input and utilizes it to induce the appropriate linguistic knowledge. But this issue has been raised elsewhere in the literature more than once.

Another observation by Sachs and her colleagues that I found interesting is that impoverished linguistic input did not appear to prevent the expression of complex cognitions (ideas). It remains to be determined, however, whether continued impoverishment will retard nonlinguistic cognitive development in hearing children of deaf parents.

Finally, one of the findings in this study suggests that linguistic impoverishment does not retard the development of conversational competence (e.g., turn-taking; conversational repairs) as readily as it retards aspects of syntactic competence. Conversational competence, however, was not examined by Sachs and her associates as thoroughly as was syntactic competence.

Similar findings regarding conversational versus syntactic competence have been reported for mentally retarded subjects (Abbeduto & Rosenberg, 1980; Bedrosian & Prutting, 1978; Price-Williams & Sabsay, 1979). More-

over, mentally retarded individuals, like the linguistically impoverished, appear to be particularly vulnerable in the domain of grammatical morphology (Rosenberg, in press). This is not the place to attempt to fully interpret these similarities. Suffice it to say that what these observations suggest is that there are some built-in biases in the capacity for first-language (including pragmatic) acquisition that are protected from widely differing sources of developmental insult (see also my comments on Quigley & King's article on the language of the deaf in the *Editor's overview* for 1:4). Furthermore, inasmuch as conversational competence includes other factors besides a knowledge of linguistic structure, it is likely that the biases in question are both linguistic and nonlinguistic.

Language-delayed children present a picture of language disorder uncomplicated by any obvious neurological, sensory, nonlinguistic cognitive, emotional, or environmental problems. Their problem appears to be mainly one of a slowdown in language development, the cause or causes of which are still to be determined. (Whether their final achievements in language acquisition are the same as those of normal individuals is, to the best of my knowledge, still to be determined.) Bond, in the present issue of AP, offers additional support for the quantitative developmental-lag view of language delay. According to this investigator, "Language-delayed children . . . appear to be employing the same acoustic-phonetic realizations of phonological contrasts as normally-developing children, but acquiring them at a slower rate."

Schwartz's paper is the first methodological article we have had in AP thus far. In the course of revealing statistical problems in the interpretation of published laboratory studies of autistic children's memory for linguistic input, Schwartz identified some crucial design problems (confoundings) as well.

In an attempt to determine whether certain subjects tend to code linguistic input appropriately, and thus to utilize their linguistic knowledge to facilitate information processing performance, an experimenter creates verbal materials that are thought to display certain linguistic characteristics (e.g., different levels of semantic relatedness), and presents them for the subjects to memorize in a standard verbal learning task. If semantic relatedness influences performance, the experimenter can conclude that the input was coded semantically (in the same fashion as he or she had coded it in designing the study) and the resulting coding used to mediate memorial performance. The experimenter can infer, too, that the subjects must have been in possession of the requisite linguistic knowledge. If, on the other hand, semantic relatedness is not observed to influence performance, the results are impossible to interpret, for the simple reason that we have no way of knowing whether or not they were due to problems in utilizing the requisite linguistic knowledge, or to a failure to acquire the requisite linguistic knowledge in the first place, or to both these possibilities. Thus, without an independent (normative) assessment of whether or not the requisite linguistic knowledge has been acquired, negative findings can only indicate that there is some kind of problem in the semantic domain.

Such confounding as we have been discussing was identified by Schwartz in studies of linguistic coding in autistic children and, in addition, he noted instances in which attempts to manipulate semantic relatedness were confounded with syntactic differences.

Unfortunately, it is likely to prove to be very difficult to assess semantic relatedness normatively in many autistic children, due to frequent aversions to nonimitative tasks.

Tager-Flusberg's brief review of research with autistic children suggests that, whereas their phonological and syntactic development are delayed rather than deviant, they may have special, as yet unidentified, difficulties with the semantic component of language. In addition, according to Tager-Flusberg's review, the source of the failure to identify the specific semantic difficulties of autistic children lies in the problem of interpreting the results of studies of memorial performance vis-à-vis the knowledge versus utilization issue, and in the fact that little is known about the semantic characteristics of the spontaneous speech of such children.

The focus of Tager-Flusberg's research, however, was the comprehension capabilities of autistic children and, more specifically, their utilization of sentence comprehension strategies (i.e., the probable-event and word-order strategies) that have been observed to characterize the performance of young children developing language normally. These strategies are interesting from the standpoint of the development of language performance (as contrasted with competence) in that it appears "that young children tend to depend on various strategies or heuristics and contextual information to decode sentences which go beyond their limited grammatical competence."

The probable-event strategy, I should point out, is of particular importance to students of autistic language, inasmuch as it has to do with semantic knowledge and its utilization.

Two features of Tager-Flusberg's research that I found particularly noteworthy were her attempt to assess the mature semantic constraints in sentences normatively, independent of comprehension performance, using young normal adults, and her use of relatively high-level autistic subjects from the standpoint of nonlinguistic cognitive maturity. Her findings suggest, among other things, that both knowledge and utilization problems exist among these children in the semantic domain.

The above articles, like many others in the literature, indicate that applied psycholinguists are making progress in understanding disorders of language development. The big payoff for applied psycholinguistics, however, will have to come in the area of language intervention for language-disordered children. Some studies, such as the present one by Sachs, Bard, and Johnson, have rather obvious practical implications in the domain of language training. In the long run, however, applied psycholinguistics needs to develop a mature experimental-developmental psycholinguistics and cognitive psychology of language intervention, and, for this reason, I was very pleased when we received the article by Blank and Milewski, which describes a language training program for an autistic child that combined implications of basic research and theory, the findings of research on language development in

autistic children, and operant language training technology in an effort to facilitate the development of functional (communicative) language.

A special problem their subject had at the beginning of training, (and that persisted after training as well) in the area of pragmatics and the social interactive aspects of language use, confirms what others have found regarding this area of development in autistic children. Regarding our earlier discussion, the persistent difficulties autistic children have in this area could be responsible for the special difficulties they appear to encounter vis-à-vis the acquisition and utilization of semantic knowledge.

Thus, unlike mentally retarded children and hearing children of deaf parents, the communicative capabilities of autistic children do not outdistance their syntactic achievements. I was intrigued to note, however, in reading the introduction to Blank and Milewski's article, research reviewed that appears to indicate that autistic children generally, like mentally retarded and linguistically impoverished children, are particularly vulnerable in the domain of grammatical morphology.

## REFERENCES

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