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ABSTRACT

The language of twins allows researchers in language development to examine acquisition in a unique environment. Researchers investigating the nature-nurture controversy, the order of acquisition, and other linguistic features find the twin situation particularly interesting because of the children's shared genetic makeup and environment. A substantial amount of relevant literature is available. Review of this material and analysis of the language samples of a set of fraternal twins give insight into the language development process and reinforce the concept of individual differences in language use and acquisition. Samples of the 3-year-old twins' language used in free conversation, event representations, bedtime routine, parent-child interaction, and child-babysitter interaction were examined for linguistic characteristics, differences, and similarities. Results suggest strongly that individual preferences and personalities shape linguistic performance, and that the children's abilities reinforce the influence of environment on language development. It is concluded that the twin situation is an example of language variation within a single household, in which the linguistic support offered a child must complement his perceptions if abilities are to be developed fully. It also illustrated that parental support for twins during difficult stages is challenging. (MSE)

The Linguistic Environment of Twins:

Literature Review and Language Analysis

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Twin language allows researchers in the area of language development to ponder acquisition in a unique environment. Researchers investigating the nature-nurture controversy, the order of acquisition, and other linguistic features find the twin situation particularly intriguing because of the children's shared genetic make-up and environment. It is no surprise that a fair sample of relevant literature is available. A review of this material and an analysis of the language samples of a set of twins provide insight into the language development process and reinforces, more than anything, individual differences in language use and acquisition.

Most research on twin language involves longitudinal studies contrasting twins and singletons. Before these are examined though, a review of material on the linguistic environment of twins seems necessary. Lytton, Conway, and Sauve (1972) discussed the impact of twinship on parent-child interaction and the resulting unique, though perhaps detrimental, language-learning environment. Though its primary focus was behavior, the study realized a secondary concern: language. Thus, the twinship environment is the appropriate beginning for this discussion.

Lytton, Conway, and Sauve emphasized the altered relationships between parent and children in homes where two children are the same age. Analyzing parent-child interaction of 92 twin and 44 singleton 2 1/2 year old boys, Lytton, Conway, and Sauve found that the unique

socialization in a twin situation led to language differences contrasting singletons' use. These resulted from the nature of parental input, which was directive and controlling in order to govern behavior and draw as well as hold, simultaneously, the attention of two children. In exchanges, twins had less speech than singletons did, which caused researchers to conclude that twins' speech was less mature than singletons'. The study emphasized the triadic situation which forced parents to divide time between children, often in the presence of both, thus directing less toward and likewise receiving less from each child. The triadic situation sharply contrasts singleton-parent exchanges which thrive on undivided attention. Lytton, Conway, and Sauve concluded that the socialization factor in the twinship situation hindered language development because of limited verbal exchange.

The critical nature of the environment for all language learners was emphasized by Nelson's review of research (1981). Her insight on the significance of the environment during a particular, crucial period prompted a study by Tomasello, Mannle, and Kruger (1986) of the linguistic environment of 1 to 2 year old twins. In her review, Nelson emphasized that individual differences are evident by the second year of life and are attributed to this critical time period. Considering Nelson's message and Lytton, Conway, and Sauve's description of directive, limited input by twins' parents, Tomasello, Mannle, and

Kruger explored the twin linguistic environment at a much earlier stage: 12 to 24 months. The study involved six sets of first-born, white, middle class twins and 12 first-born singleton children, who were videotaped in their homes twice, at 15 months and 21 months.

Tomasello, Mannle, and Kruger found that twins' language learning environments differed from those of singletons. These differences were not related to individual characteristics of mother and children but to the special demands placed on adults in twin triads, which, ultimately, resulted in slower language learning patterns for twins. Twins' mothers were constrained in both the quantity and quality of their interactions with their children, and this behavior did not result from poor speech but from the fact that they had to allocate their speech. In addition, the triad demanded management of the children and, thus, a directive style. Also, twins' mothers tended to imitate their children's utterances rather than sustain conversations as singletons' parents did. The differences noted at such early ages caused the researchers to conclude the following: 1) the twin triad makes language learning difficult and may delay it; 2) environment is crucial in the earliest stages of language acquisition.

Support for this conclusion is offered by studies which contrast the language of twins and singletons. Matheny and Bruggeman (1972) administered the Templen-Darley Screening Test of Articulation to 140 pairs of white twins

(3 to 8 years old) and 94 singletons who were siblings of the twins. All children were tested individually. Data showed that the twin children were delayed in their language skills when compared to singleton peers; these differences were evident in all age groups evaluated. In addition, Matheny and Bruggeman suggested that the cause of the delay was the unique psychosocial conditions of the twin situation whereby twins used each other as models of language more than they did adults. Under these circumstances, twin language appeared immature, a perception that was explored further in other studies.

Thomas (1979) described the private language of twins, idioglossia, which is characterized by screams, groans, and made-up words that are quite meaningful to their users. Thomas's informal survey identified this feature in six of the seven sets of pre-school twins he observed. Though perceived in early research as pathological behavior characterizing serious language disorder, idioglossia is not necessarily a hindrance to language, for it represents communication and the beginning of twins' language development. (Scheinfeld, 1967) Thomas observed another twin behavior which may pertain to siblings close in age, too. The twins observed often completed each other's utterances, which suggested a special linguistic relationship based on underlying semantics and pragmatics.

The unique nature of twin language is described further in Malmstrom and Silva's discussion of twin status

in the speech of toddlers. Malmstrom and Silva's work is a longitudinal study of a pair of twin girls whose language was tape recorded in various situations with adults, siblings, and each other from 2;1 to 2;7 and whose crib talk was recorded from 2;6 to 3;9. The results of the study emphasize language acquisition in a special setting.

The children developed conventional syntax and vocabulary which they adapted to express their twin status. One example of their twin speech was their tendency to use a double-name and thus refer to themselves as a team. The subjects, Kelda and Krista, often referred to themselves as "Kelda-Krista." (p. 296) In addition, they often used single verbs when they referred to themselves together, saying "Is Krista and Kelda sleeping?" (p. 297) Finally, they used the word "me" to refer to themselves as a team. Though these examples could be perceived as samples of immature syntax, Malmstrom and Silva felt this usage resulted from an overgeneralization of the strategy for naming pairs. Furthermore, the researchers suggested that twin language was a manifestation of the children's complex identity, for they had individual identities as well as a team identity. The immature language style of the twins was not perceived as delayed but, rather, as altered because of their twinship.

With this statement, Malmstrom and Silva argued the large number of dated studies (Day, 1932 and Davis, 1937) which labeled twin language as inferior. In developing their

theories, Malmstrom and Silva were encouraged by other studies. First, Wilson (1974) reported the results of the Wechsler PreSchool and Primary Scale for Children which he administered to 142 four, five, and six year old twins. Wilson's findings were revolutionary. Previous research had reiterated twin language deficiencies, yet though Wilson's initial twin scores, particularly verbal IQ, lagged behind singleton norms at age four, they achieved parity with them by age six. In a later study, Wilson (1977) contended that twins were not handicapped in the area of language development. His administration of the Wechsler Intelligence Scale for Children to 314 twins and 221 of their singleton siblings noted that 44.5% of the twins' scores were as high as their non-twin siblings. Malmstrom and Silva concluded then that what appeared to be language delay in twins was a temporary phenomenon, related to their unique psychosocial development.

This review of literature would not be complete without reference to significant developments in the general area of language development which apply to the analysis of twin language that follows. Nelson (1981) examined individual differences evident between ages 1 and 5 which emphasize variety in both the process and structure of acquisition and in production itself. In her article, Nelson reviews the personality types she labeled as referential and expressive in her 1973 monograph and the vocabulary that characterizes these types, the abundance of object names

used by referential children and the social routines or formulas employed by expressive children. In addition, Nelson suggested that children can shift between referential and expressive styles, depending on the context of their language. Her hypothesis regarding this shifting was stimulated by Peters's research in language learning styles (1977).

Peters suggested children utilize a gestalt, expressive, wholistic approach in free play or interpersonal contexts whereas the referential, analytic style is employed in situations that seem referential in nature; a book reading exercise with a parent is a good example. Thus, Nelson concluded that speech is, oftentimes, a result of context, and different contexts may force children to alter their approaches to language function. In addition, the content of children's speech also reflects their preferences and thus their individuality, for, ultimately, they control choices regarding lexicon, grammar, and style. Nelson's segment on form-function relation seemed to suggest this idea. She also reminded the reader that a child's language is often a reflection of the language he has been exposed to, and, thus, Nelson reiterated that environmental features, such as input and context, contribute to individual differences in language development.

The influence context has on language was explored further by Lucariello and Nelson (1982) who observed children's language in three situations: a novel context; a

formless, free play situation; and a period of routine discourse. Of the three, only routines elicited sophisticated language competencies. Routines constructed familiar sequences for the children to which they could respond readily. Conversations regarding rituals tapped children's memories, and they were able to share experiences of known situations with ease. In contrasting conditions, in which no context was recognizable, children labored with the burden of creating a reason for talking as well as speech itself. At these times, their language faltered. Thus, Lucariello and Nelson developed Nelson's 1981 message further. Children do reveal different language competencies and uses, depending on the context. Furthermore, routines succeeded in eliciting rich linguistic performance.

Continued research on the significance of context in language production was conducted by French, Lucariello, Seldman, and Nelson (1985) who considered pre-school children and their event descriptions, their conversations with each other, and their conversations with parents, in order to document the impact of discourse content and discourse context on language use. Results indicated that scripting generated cognitive and linguistic abilities that superseded expectations for children in this age group, yet the researchers perceived the children's rich linguistic performance as a result of the ease with which people can talk about something familiar to them. Scripts offer practice (and eventual mastery) in temporal, conditional,

and other relationships, both mental and verbal, and thus serve as a significant source of language. Structured on shared knowledge between members of a speech act, routines are exercised frequently, thus developing and subsequently revealing competencies that are not necessarily expected of young children.

This review of literature is accompanied by an analysis of the language of a set of twins, Bryan and Annie, at 3;9. The material gathered for this small-scale study includes 1) a language sample of each child involving free conversation and event representations, 2) a language sample for each child recorded during their pre-bedtime routine, 3) observation of parent-children interaction, and 4) a recorded conversation involving the children and their sitter. The idea of studying the children's speech evolved with the need to obtain a child's language sample. Both the children's mother and their sitter suggested Bryan as the better subject since his language was superior to Annie's. These remarks raised questions: Was Bryan's speech really better than Annie's and, if so, why? To address the issues that surfaced, this study will contrast the children's conversations, scripts, and bedtime routines first; these will be followed by analysis of triadic interaction with parent as well as sitter, which explains the contrasts in part.

Initially, the idea that the twins' language differed seemed surprising, given the common genes and environment.

However, the children's language samples verify the claim. Table 1 (p. 17) outlines the analysis of the each child's free conversation. In general, Bryan spoke more than Annie did, and perhaps the amount of his speech and his consistent attention could give the impression that he is, indeed, the better speaker of the two, as his mother suggests. Bryan's MLU in free conversation was 1.6 while Annie's was 1.0. In contrast to Bryan, Annie drifted during her conversation. She did not maintain eye contact and often walked away to get an object about which she wanted to talk. Annie's object-orientation made her appear referential while Bryan seemed to exhibit an expressive, social style. Though the two differed dramatically in what they used speech for, they both showed awareness of procedures in conversations; for example, they asked direct questions in order to advance the discussion.

Other techniques for maintaining the language exchange were employed by Annie. Her speech included three turnabouts; in addition, she introduced new topics six different times, something that Bryan never did. Though Bryan seemed to be the better speaker because of his social style and his dynamics, Annie controlled the content of her conversation more. Annie knew what she wanted to talk about and shifted the conversation towards these subjects, a tendency which distresses her mother who thinks Annie does not pay attention and often strays from the discussion. However, though some of Annie's utterances were quite

fragmented and though she relied on objects to continue her conversation, she used speech perceptively for her purposes. She succeeded in establishing her identity and personal interests in conversation. Bryan's interests surfaced in conversation, and whatever he spoke about was sustained by the interviewer's scaffolding simply because he possesses a social style conducive to interaction. Annie has developed very different linguistic techniques. One may hypothesize that she has learned how to "survive" in conversations which include her brother (whose conversational charm overshadows her object-orientation) by developing disjointed, abrupt strategies.

The question of the children's linguistic abilities and whether one child is more competent than the other became significant in the event descriptions of morning routines. The striking differences between the two are recorded in Table 2 (p. 18). In this exercise, Bryan's MLU was 3.0 whereas Annie's was 5.4. Annie used the temporal terms "when" and "before" while Bryan used none. Annie presented some activities in sequential order whereas Bryan's presentation of a morning's activities was random. The results, of course, were interesting, and the major question involved Annie's linguistic performance, which seemed much stronger in this activity than in free conversation. When describing a morning's event, Annie obviously drew sequences from her memory. Much of her speech reflects her keen recall of details and past events. For

example, when discussing Halloween during free conversation, she referred to last year's costume and activities. More important, the task, talking about a routine, offered Annie a context in which she could put her memory to use and share knowledge of events and related language that are familiar to her. No longer responsible for the task of identifying a subject for or engaging in a conversation, Annie simply focused on something she knew: morning rituals. As a result, she produced language that was superior to her free conversation.

Annie's memory and linguistic abilities surfaced once again during the children's pre-bedtime ritual when they share something special without interruption. The children's "speeches" were recorded by their sitter one evening. Annie, whose original intention was to "read" a story aloud, told her own "story" instead:

> The little boy ate cake. Soon the little boy went upstairs and took his clothes off. He sat down here and ate and ate and ate before he went to bed. He went upstairs and brushed his teeth and he went to the bathroom, and then he went to sleep. His dad carried him in and sang him a song.

Annie's story describes a suppertime to bedtime routine. In contrast, Bryan did the following during his "turn":

> I can't tell my own story. I'll talk about Lady and the Tramp. The dogs were outside. Some people didn't like dogs. Can we talk now?

Bryan proceeded to draw his sitter into conversation, which he seemed to prefer. Annie enjoyed her storytelling and the individual language experience it presented. Her story revealed again her sometimes undetected linguistic

abilities. Bryan, on the other hand, avoided story telling. He apparently enjoys language as a means of socialization. The notion of interacting with people appeals to him. The linguistic variation that Bryan and Annie reveal, despite their common genes and environment, can be a result of their very different personalities and their triadic social situation as well. Whether the triad causes different perceptions of language to develop or whether differing perceptions shape the interaction of the triad remains unclear. Nonetheless, the unique exchanges in the twin triadic situation offer interesting insight on language development.

The parent-children interaction observed one afternoon identified definite patterns among the three. First, the mother was quite directive; she issued commands and solicited vocabulary from her children. Actual conversation among the three was limited. The reason for her style seemed to be Bryan, who is quite active and needs to be controlled with constant attention. The mother seemed to address Bryan a great deal. As a result, Annie seemed passive and enjoyed few turns. Oftentimes, Bryan even answered questions directed towards her. Ultimately, one could say that the exchange was "Bryan-centered" because of his conversational charm as well as his energy. The demands of a triadic situation on both parent and children seemed quite obvious during this particular visit. Not only did the mother have to work to control the group, but the children labored to

express themselves and their identities. Conversing was much easier for Bryan than Annie, who was forced to develop unique strategies (abrupt introduction of unrelated topics) in order to compete in the exchange.

The behaviors cited above are documented in a recording of the sitter and the twins. An analysis is outlined in Table 3 (p. 19). On this particular occasion, the sitter was asked to avoid being directive as much as possible, and Annie's unique conversational skills designed for entry into the "Bryan-centered" exchanges of the triadic situation were quite apparent. Annie drifted but focused periodically to introduce a topic or an object about which she wanted to talk. Again, Annie has realized the need to emerge in conversation; she seems to spend time thinking about her linguistic strategies and thus appears distracted as she plans her speech. A good example of the dynamics among the three occurred when Annie, after having been quiet, said she wanted to sing "Daisy." The sitter honored her request immediately and began singing. Annie joined in, enjoying the activity very much. Bryan, however, did not sing and spent the time removing cushions from the furniture and tossing them in the air!

Bryan and Annie had individual moments with the sitter while still in the triad. Once Annie gained control, Bryan was excluded and vice versa. Most likely, this behavior rests with the notion that Annie and Bryan obviously enjoy language for very different reasons. At other times,

conversation among the three revealed that Bryan and Annie were focusing on different topics at the same time. This happened when the three were discussing Halloween:

Sitter: How was Halloween?
Bryan: We went to your house.
Sitter: You did?
Bryan: Yeah.
Annie: We saw Fritz.
Sitter: Did he bark?
Annie: Yeah, I petted him.
Bryan: Your dad was home.
Annie: I like aminals.

Two different conversation evolved, because of personal interests, and the difficulty of sustaining both, a common feature of triadic exchanges, is obvious.

Overall, the session with the sitter reinforced the children's differences, and though Annie enjoyed quite a few turns that evening (24), Bryan still dominated the interaction (33 turns), which has, perhaps, become a habit for him. The triadic situation exposed linguistic behaviors that paralleled and explained the children's other samples. In this particular segment, Bryan's MLU was 4.7 while Annie's was 4.3. These figures are consistent with the children's dyadic MLU but different from their event description data. Overall, Bryan's skills appear impressive when he converses, for language is a social act for him. Annie, on the other hand, savors a private use of language through story-telling, singing, or just sharing her likes and dislikes. Her language appears fragmented as she "interrupts" conversations to draw attention to her favorite objects, stories, or songs, the foci of her language,

perhaps because of her introspective personality or because of the twin triadic situation.

Bryan's and Annie's language offered real-life examples of the theories set forth in studies on twins and language development in general. Bryan and Annie demonstrate, without a doubt, individual preferences and personalities that shape linguistic performance. Furthermore, the various abilities they revealed reinforce the influence environment and setting have on language development. Thus, both children manifested strengths and weaknesses in their language, depending on the situation, and, in actuality, Annie, whose speech is perceived as fragmented, unfocused, and weak, displayed certain competencies, when given the opportunity for uninterrupted speech or when focusing on a particular context, that her brother never demonstrated. The twin situation, in which genes and environment are uniform, offers a strong example of language variation within a single household. With that idea comes the significance of the individual and how, in each and every case, the linguistic support offered a child must complement his/her perceptions if abilities are to be developed fully. As Bryan and Annie demonstrated, though, parental support during developmental stages is difficult and challenging in twin situations.

TABLE 1: FREE CONVERSATION

	Bryan	Annie
MLU	4.6	4.0
Longest Utterance	10	10
Focus and Continuity	Strong	Limited
Turnabouts	0	3
Questions	2	2
New Topics	0	6
Nelson's Type	Expressive	Referential
Unusual Usage	"selled"	"rake-did" "I color them"=past

TABLE 2 EVENT DESCRIPTION

	Bryan	Annie
MLU	3.0	5.4
Longest Utterance	8	10
Temporal Terms	0	when, before
Sequencing	No	Yes

TABLE 3: CONVERSATION
BRYAN, ANNIE, AND THEIR SITTER

	Bryan	Annie
MLU	4.7	4.3
Longest Utterance	12	10
Number of Turns	33	24
Turnabouts (All involved direct questions)	0	4
Temporal Terms	0	1 (before)
New Topics	0	3

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TABLE 1: FREE CONVERSATION

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Questions	2	2
New Topics	0	6
Nelson's Type	Expressive	Referential
Unusual usage	"selled"	"rake-did" "I color them"=post

TABLE 2: EVENT DESCRIPTION

	Bryan	Annie
MLU	3.0	5.4
Longest Utterance	8	10
Temporal Terms	0	when before
Sequencing	No	Yes

TABLE 3: CONVERSATION
BRYAN, ANNIE, AND THEIR SITTER

	Bryan	Annie
MLU	4.7	4.3
Longest Utterance	12	10
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Turnabouts (All involved direct questions)	0	4
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