



# Recommending Intervention for Toddlers With Specific Language Learning Difficulties: We May Not Have All the Answers, But We Know a Lot

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This paper presents a review of the literature designed to identify child behaviors that shape a profile of toddlers who should receive intervention. The review presents empirically documented predictors of language change and risk factors for language impairment. It examines research addressing the children having difficulty learning language and children developing typically. The argument presented is that

toddlers who exhibit few positive predictors of change and many risk factors are more likely to have a true impairment and need intervention than toddlers who exhibit many predictors of change and few risk factors. The review attempts to paint a profile of toddlers for whom treatment should be recommended and those for whom a watch and see approach should be followed.

## **I**ntrouction *The Problem*

It has become increasingly clear that most toddlers who are identified as late talkers or as having specific language impairment (SLI), specific expressive language impairment (SELI), or slow expressive language development (SELD) gradually move within normal limits in language performance during the first years of school. Research by several teams of investigators, including Paul, Rescorla, Thal, and Whitehurst, have contributed to this body of literature, and the results have been surprisingly similar (see Paul, 1996; Thal & Katich, 1996, for review). Although this is the case, recommendations concerning intervention remain confusing. The confusion seems to reflect wariness about a “watch and see” (Paul, 1996) approach for such young children, disagreement about the actual diagnosis and underlying cause of their delay in learning language, and prognosis for immediate change.

Generally these children are the toddlers who are slow at producing first words and word combinations and may persist in having grammatical errors as syntax emerges. They are the children who show no other signs of developmental delays, such as cognitive, emotional, or sensory problems, but who are demonstrating difficulty learning language. They may be identified first as late talkers, or many are diagnosed as having SLI or SELD. The underlying cause of the language-learning difficulty is not known, but theories abound, many of which seem plausible (see Thal & Katich,

1996). Although the children are perceived as a cohesive group, the heterogeneity among them is obvious as one discovers discrepant research findings or one sees these children in clinical settings. Certainly the continued debate about diagnosis and prognosis and the apparent heterogeneity among the children serve as major catalysts for the question about whether to recommend early intervention. In addition, parents continue to ask for intervention, and clinicians (and researchers) find themselves recommending and providing the services based on their desire to help. For example, Paul, who advocates a policy of watch and see for children with SELD, has stated that if her own child’s language was at risk, she would obtain “assistance now even if the chances were very good that the problem would be outgrown sooner or later” (Paul, 1996, p. 6). This paper will argue that sufficient data are available for clinicians to make informed decisions about whether or not to recommend early intervention for toddlers who are having difficulty learning language. The fact is, we know a lot about language development and language delay during the first years of life; decisions regarding whether to recommend intervention need not be based on good intentions alone, but rather on the data that are available.

### *Early Intervention: Goals and Issues*

Early intervention is designed to bring about short-term change that will influence long-term progress. The primary objective of early intervention for children with delays in

language is to bring a child's performance within normal limits for his or her chronological age as quickly as possible. Even if some toddlers outgrow their language problems, concerns about cumulative effects of the delay and the impact on emotional and behavioral development have prompted recommendations for intervention. Further, parents often feel the need to "do something" to ease their minds or to have strategies for getting through the day-to-day frustrations of living with a child whose language is not emerging on schedule. These immediate needs support the benefits of short-term intervention, whether or not long-term effects occur. Perhaps these reasons alone should make the recommendations for early intervention clear, but they don't. Health and education reform, declining resources, and demands for cost-effective programs have caused practitioners to take a second look at their delivery of services. These pressures, coupled with the data from the longitudinal studies suggesting that the majority of the children with SELD outgrow their problems and lack of agreement about the underlying cause of the disorder, have prompted the debate about intervention.

In this paper we are viewing intervention as short-term, intensive involvement with a speech-language pathologist that is designed to bring about immediate, significant gains in performance. The intervention may involve direct contact (either one-to-one or in a group) with the child or the parent, but it is by definition a significant expenditure of the clinician's time for several months. Intervention is designed to facilitate or accelerate the change that is likely to occur on its own (Olswang & Bain, 1991). The treatment may serve to prevent or reduce severity of language problems in the long run, but the focus is on short-term gains. Numerous treatment strategies are known to be successful with toddlers, but no one treatment appears significantly more successful than others (see Girolametto, Pearce, & Weitzman, 1996; Olswang & Bain, 1991; Weismer, Murray-Branch, & Miller, 1993, for a discussion of treatment strategies). The question about recommending early intervention then is, can treatment serve to trigger language learning? If a parent calls a clinician and asks whether his or her child should be in treatment, the clinician must be able to make an informed judgment about the immediate cost benefits of this recommendation. This must be a well-informed decision. Because research has not directly linked a single diagnosis with a particular treatment, clinicians must make an informed decision on the basis of their knowledge of the disorder as it relates to typical language learning. This involves the clinician assessing the child's performance by identifying behavioral characteristics of the disorder (i.e., documenting the symptomatology of the problem) and projecting possibilities for change in the immediate future. In addition, the parents' needs will influence the clinician's decision. Parents' beliefs and concerns will need to be weighed against the child's performance in making a final recommendation.

What follows is a review of the literature designed to identify child behaviors that shape a profile of toddlers who should receive intervention. The review presents empirically documented predictors of language change and risk factors for language impairment. Predictors of

language change are behavioral characteristics that suggest that a child who is delayed in language learning will catch up to his or her peers, or behavioral characteristics that suggest that a child is ready to move ahead to the next language milestone. Risk factors are familial or behavioral characteristics that suggest that a child is likely to have a true language impairment, as opposed to being a late bloomer. Research addressing children having difficulty learning language and children developing typically are examined.

This literature review includes research with children who were considered late talkers or late bloomers; children with specific language impairment, specific expressive language impairment, slow expressive language development, language impairment due to other causes; and children who are developing typically. The breadth of research allowed for a thorough view of predictors and risk factors of language change in toddlers. The premise driving our thinking was as follows: Children who exhibit few positive predictors of change and many risk factors are more likely to have a true impairment and need intervention than children who exhibit many predictors of change and few risk factors. The review that follows will aggregate these data in an effort to describe children for whom treatment should be recommended versus children for whom a watch and see approach should be followed.

The research presented in this review includes findings that support predominant trends. As with all types of research, discrepant data or negative findings are available. The discrepancies may be due to variability across research, including subject inclusion and exclusion criteria, procedures, or data analysis, or a combination of these factors. The aim of this review is to form a consensus view of our knowledge to date. Therefore, this paper presents the trends as supported by at least three studies suggesting similar findings. The paper will present predictors of change first, organized according to speech and nonspeech behaviors, followed by risk factors.

## Predictors of Change

### *Language Production*

The earliest characteristic of a language learning difficulty is most often a delay in the production of first words. A 2-year-old with fewer than 50 words is clearly at risk for continued delay; the risk grows as a child ages with little change in language production (Paul, 1989; Paul & Alforde, 1993; Rescorla, Roberts, & Dahlsgaard, 1997; Rescorla & Schwartz, 1990). Specifically, expressive vocabulary size in relationship to age appears to be a strong predictor of continued language growth (Fischel, Whitehurst, Caulfield, & DeBaryshe, 1989; Olswang, Long, & Fletcher, 1997). However, the picture may not be as clear as to permit saying that expressive vocabulary alone predicts later language learning. Some research indicates that expressive vocabulary in relation to comprehension is a good predictor. Thal and colleagues (Thal, Oroz, Evans, Katich, & Leasure, 1995) examined word production and percentage of receptive vocabulary produced (i.e., number of words produced divided by the

number of words understood) as measured by the MacArthur Communicative Development Inventories (CDI; Fenson et al., 1993) as a predictor of language learning. Their results indicated that measures taken at first visits (either 13 or 20 months of age) reliably discriminated the children with delays and the children without delays at the second visits (20 and 26 months of age). Thal, Tobias, and Morrison (1991) reported that children with delayed comprehension also had the lowest vocabulary and remained delayed one year later.

The makeup of early vocabulary has also revealed differences between children who are developing typically and those with language impairments. Watkins, Rice, and Moltz (1993) found that children with SLI had less diverse verb repertoires than typically developing children. Rice and Bode (1993) further examined verbs and discovered that children with SLI relied on general all purpose verbs (GAPs) in their conversations, even though they were capable of greater variety. Approximately 8 to 10 percent of their verb types accounted for 40 to 50 percent of verb possibilities. GAPs included such words as *want*, *go*, *get*, *do*, *put*, *look*, *make*, and *got*. Recently, Loeb, Pye, Redmond, and Richardson (1996) investigated verb production through a structured elicitation task. They found that children with SLI tended to label fewer verbs, particularly low frequency of occurrence verbs, than the age comparison group. Further, they labeled fewer fixed intransitive verbs compared to same-age peers. Olswang et al. (1997) also investigated vocabulary composition as possible predictors of immediate change for children with SELI. This study found fairly high correlations between lexical composition (production of nouns, verbs, and modifiers) and mean length of utterance (MLU) over a 9-week period. On examining verb types, the results indicated high correlations for the production of intransitive and ditransitive<sup>1</sup> verb types with subsequent MLU scores, but not transitive verb types. This study further explored the verb production of children who began producing two-word utterances during the 9-week study period (“changers”) and those who did not (“nonchangers”). They found that the changers produced approximately twice as many single-word verb types as the nonchangers at the beginning of the study period. The changers and nonchangers produced equivalent numbers of transitive single-word verbs. However, the changers produced almost three times as many intransitive single words as the nonchangers and two times as many ditransitive single words. These results were found to be statistically significant. Children who moved on to produce word combinations produced approximately twice as many intransitive verbs as transitive and almost six times as many ditransitive verbs as transitive verbs. Thus, quantity and variety of vocabulary appears related to language change. In summary, these data suggest that a toddler with a small vocabulary in relation to age and a less diverse vocabulary composition, particularly in regard to verbs, is likely to be a good candidate for intervention. Particular red flags would be

<sup>1</sup>Ditransitive verbs are those that may or may not take a direct object, such as the word *smell*.

the production of general all-purpose verbs and few intransitive and ditransitive verbs.

### **Language Comprehension**

Receptive vocabulary in infants and toddlers who are developing typically is correlated with later word production (Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979; Bates, Bretherton, & Snyder, 1988). Several studies have documented residual expressive language deficits in children with receptive language delays at 2 years of age (Scarborough & Dobrich, 1990; Thal et al., 1991). Weismer et al. (1994) found shifting receptive language performance across 3-month assessment intervals, reflecting a need for continued monitoring of the late talker. Receptive deficits, in general, seem to suggest a more severe impairment and a poorer prognosis for change (Bishop & Edmundson, 1987; Thal & Tobias, 1992). Several studies have examined the size of the comprehension-production gap as a predictor of change. Thal et al. (1991) reported that children who caught up had the greatest comprehension-production gap. However, this was the case when comprehension was age appropriate. In another study with SELI children, the degree of the receptive-expressive gap was correlated to immediate change in toddlers moving from single words to multiword productions; the greater the gap, the slower the change (Olswang & Bain, 1996). The conflicting data regarding comprehension suggests caution in drawing strong conclusions. The consensus suggests that toddlers with significant expressive and receptive language delays of 6 months or more are most at risk for continued language delay. Further, for those children delayed in both comprehension and production, the larger the comprehension-production gap, the poorer the prognosis.

### **Phonology**

Babbled speech has also been examined as a predictor of future language learning. Amount of prelinguistic vocalization appears to be predictive of emerging verbalizations (i.e., meaningful speech) in children developing typically and those with delays (Camp, Burgess, Morgan, & Zerbe, 1987; Kagan, 1971; Rescorla & Ratner, 1996). This includes future vocabulary and amount of talking. Vocalization structure also appears related to later language production. Canonical babbling seems to be most strongly related to emergence of language in children developing typically (McCarthy, Warren, & Yoder, 1996). More specifically, several studies of children with language learning difficulties have found that size of consonant inventory in toddlers' babble appeared related to their future vocabulary growth (Paul & Jennings, 1992; Rescorla & Ratner, 1996; Whitehurst et al., 1991). Whitehurst et al. (1991) found that the proportion of vowel-to-consonant babble was predictive of those children who did better in language production 5 months later. Similarly, research has shown that complexity of babbling as measured by consonant use correlated with emergence of first words (Stoel-Gammon, 1989). Finally, when children begin to produce their first words, the

percentage of consonants that is correct has been a variable separating children developing language typically from those with future language learning problems (Paul & Jennings, 1992). In addition, children who were slow to develop expressive language were less accurate in their production of consonants, less varied in their consonant repertoire, and more restricted in the complexity of syllable structure. Stoel-Gammon (1987) has indicated that typically developing toddlers produced 62.1% consonants correctly at 21 months and 70.7% consonants correctly at 24 months during conversation. Moreover, the research suggests that, at 24 months, a child with a phonetic inventory composed of only four to five consonants and a limited variety of vowels would be viewed as at risk for continued delay (Stoel-Gammon, 1991). Stoel-Gammon (1991) has indicated that many phonological errors get resolved between 24 and 36 months. She suggests that the following error patterns persisting until 36 months would be cause for concern: numerous vowel errors, widespread deletion of initial consonants, substitution of glottal consonants or /h/ for a variety of consonants, substitution of back consonants for front ones (particularly velars for alveolars), and widespread deletion of final consonants. Thus, variety and accuracy of sound production are important variables to examine in toddlers' speech; the greater the variety and accuracy, the better the prognosis for language learning. Therefore, the evidence suggests that a toddler with few prelinguistic vocalizations, limited phonetic inventory, restricted syllable structure, vowel errors, and less accurate production of consonants is presumably at greater risk for continued delay and thus a good candidate for intervention.

### **Imitation**

In studies of children developing language typically and those with impairments, evidence has consistently indicated that spontaneous imitations of new linguistic structures precede the subsequent spontaneous productions of these same structures (Bloom, Hood, & Lightbown, 1974; Leonard, Schwartz, Folger, Newhoff, & Wilcox, 1979; Scherer & Olswang, 1984; Scherer & Olswang, 1989; Weismer et al., 1993). For children with SELI, this has been studied directly by Olswang and Bain as part of their investigations of dynamic assessment (Bain & Olswang, 1995; Olswang & Bain, 1996). In examining toddlers with SELI who were producing single-word utterances but appeared ready to produce word combinations, success at producing word combinations with and without models was investigated. Results showed that children who did not imitate any two-word utterances during the dynamic assessment did not begin to produce word combinations during the 9-week study period. Further, those toddlers needing fewer prompts and cues to imitate word combinations (i.e., fewer models) were the children who made the greatest gains in language production, specifically in combining words (Olswang & Bain, 1996). We conclude that toddlers who do not imitate word combinations, particularly with a variety of prompts and cues, should be considered appropriate candidates for treatment.

### **Play**

A considerable amount of research has examined the relationship between prelinguistic play and later language learning. Play appears to serve as a foundation for the content of first words and word combinations. The most fruitful areas of investigation have examined combinatorial/thematic play (i.e., using toys together in meaningful ways) and symbolic play (i.e., using objects or toys to stand symbolically for other objects or toys—pretend play). In both children who are developing typically and children with language impairments related to other disorders, combinatorial play and symbolic play appear correlated to later language comprehension and production (Bates et al., 1979; Casby & Ruder, 1983; Mundy, Sigman, & Kasari, 1990; Mundy, Sigman, Kasari, & Yirmiya, 1988). Late talkers seem to engage in higher frequency of manipulations, handling, and grouping of toys and objects than in combinatorial/thematic play and symbolic play (Rescorla & Goossens, 1992). In contrast, toddlers who are slow in their language learning but who demonstrate more elaborate play schemes (closely linked to combinatorial/thematic and symbolic play) appear to have a better chance of catching up with their chronological age peers (late bloomers) (Thal et al., 1991). Weismer, Murray-Branch, and Miller (1994) observed that three of their four late talkers demonstrated a notable increase in performance on a symbolic play test about the time they achieved a 50-word vocabulary, followed by an extended surge in word production.

Play behavior also appears to be an important building block for early forms of requesting and commenting because object manipulation and interpersonal engagement are the focus of these communicative functions. Early interventions involving object manipulation and play have been shown to be fruitful for facilitating requesting and commenting in children with language impairments associated with motor impairments and mental retardation. (Olswang & Pinder, 1995; Pinder & Olswang, 1995; Yoder, Warren, & Hull, 1995). In fact, Yoder et al. (1995) reported that amounts of combinatorial and symbolic play in treatment were directly related to improved prelinguistic requesting in children with mental retardation. These findings suggest that play is an important instrument for language learning, both for language content and language use. Specifically, a clinician would be justified in voicing concern about a toddler whose play consisted primarily of grouping and manipulating toys, rather than combinatorial or symbolic toy use, or both. A child exhibiting delayed play behaviors of this type would be an appropriate candidate for intervention.

### **Gestures**

Several studies have investigated toddlers' use of representational or communicative gestures as predictors of change. Thal and Tobias (1992) reported that late bloomers (toddlers who caught up to their peers within a year's time) used significantly more communicative gestures than age- and language-matched controls. Research has also documented that production of sequences of symbolic gestures discriminated those 2-year-olds who outgrew their language

delays from those who did not (Rescorla & Goossens, 1992; Thal & Bates, 1988; Thal, Tobias, & Morrison, 1991; Thal & Tobias, 1994).

As children move from producing predominantly single words to multiword combinations, they appear to use gestures to support the transition. This change has been documented in children developing typically and children with specific expressive delays (Belleville & Tretter, 1994; Iverson, Volterra, Pizzuto, & Capirci, 1994; Olswang, Johnson, & Crooke, 1992). Two types of gestures occurring with single words have been identified in children developing typically: complementary and supplementary gestures (Goldin-Meadow & Morford, 1985). Complementary gestures appear to code the same meaning as the single word that is produced (e.g., shaking one's head while saying "no"); thus, the gesture does not expand the meaning of the utterance. Supplementary gestures appear to code new or additional meaning in conjunction with the single word (e.g., shaking one's head while saying "juice" to mean "no juice"); in this case, the gesture expands the meaning of the utterance. During the transition, children appear to move from using single words predominantly to single words plus a complementary gesture, to single words plus supplementary gestures, and finally to word combinations. In two studies designed to explore this concept, the gestures plus single words were examined in children with SELI who began producing word combinations during a 9-week study period (Belleville & Tretter, 1994; Olswang, Johnson, & Crooke, 1992). In both studies, the results revealed that children with SELI who began using word combinations had more supplementary gestures than complementary gestures in their repertoires at the beginning of the 9 weeks. These data suggest that children who are using representational gestures in sequences and producing supplementary gestures along with single words are attempting to create more elaborate messages with the tools they have. Further, these are the children who appear to be most likely to make immediate gains in their language production. Therefore, toddlers who exhibit few, if any, representational gestures, sequences of gestures, and supplementary gestures plus single words to convey more complex thoughts would be considered better candidates for intervention.

### **Social Skills**

Social skills have been examined along several dimensions. Whitehurst and colleagues (Fischel et al., 1989; Whitehurst & Fischel, 1994) have discussed the impact of specific language delay with the comorbidity of behavior problems. They suggested that children with behavior problems are less likely to outgrow their disorder. Several studies of preschoolers with language impairment have examined the children's participation in conversation. Preschoolers with SLI prefer to initiate interactions with adults, not peers (Craig, 1993; Hadley & Rice, 1991; Rice, Sell, & Hadley, 1991). Conversationally, these children tend to be more passive than assertive in interactions (Rice et al., 1991). They respond to their communicative partners, but seldom initiate. Compared to children who are developing typically, preschool children with SLI tend to

participate in proportionately fewer peer interactions, and they have difficulty in gaining entry into peer activities (Craig & Washington, 1993). Recently Tretter (1996) examined these conversational skills in three toddlers diagnosed with language impairments. Her results indicated a varied performance among the children; only one of the children demonstrated a preference for responding rather than initiating, reluctance to gain access to a group, and willingness to interact with adults but not peers. This child was enrolled in a toddler language group and appeared to benefit from treatment in terms of language and conversational growth. Paul, Looney, and Dahm (1991) examined the socialization of late talkers using the Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 1984) and found that socialization skills along with receptive and expressive language were lower than in matched normally speaking toddlers. A follow-up of the same subjects at age 3 revealed that nearly half of the late talkers were still behind in expressive communication and socialization. This literature suggests that toddlers who exhibit socialization problems, including reluctance to initiate and participate in conversations with peers, may be of greater concern for a clinician, and they may be likely candidates for intervention.

### **Risk Factors**

#### ***Heritability***

Research investigating heritability as a risk factor for specific language impairment has yielded fairly consistent results. These studies have reported a higher proportion of relatives with histories of language impairment or learning disability in families of children diagnosed as SLI than in those of typically developing children (Bishop & Edmundson, 1987; Bishop, North, & Donlan, 1995; Lahey & Edwards, 1995; Lewis & Thompson, 1992; Paul, 1991; Tallal, Ross, & Curtiss, 1989; Tomblin, 1989; Tomblin, Hardy, & Hein, 1991; Weismer, Murray-Branch, & Miller, 1994). Discrepancies in this literature have primarily centered around the definition of SLI. Examination of related language disorders and family history has yielded somewhat conflicting results (Spitz, Tallal, Flax, & Benasich, 1997; Whitehurst, Arnold, et al., 1991), revealing the complexities of this issue. However, the results consistently support a family history of language impairment or learning disability as a risk factor for a toddler who is late in learning to talk. In summary, if one of the toddler's parents or siblings demonstrates persistent language and learning difficulties, the risk of continued language delay in this toddler is increased. This, then, becomes a risk factor that might alert a clinician to more positively consider intervention for a child.

#### ***Otitis Media***

Investigations examining the relationship between otitis media and language development have yielded inconsistent results. Teele, Klein, and Rosner (1984) found that children who had prolonged periods of time with otitis media had significantly lower language scores. However, a

later study demonstrated that a history of otitis media in early childhood did not have a major negative impact on later language development (Roberts, Burchinal, Davis, Collier, & Henderson, 1991). More recently, Paul and her colleagues (Paul, Lynn, & Lohr-Flanders, 1993) followed a group of late talkers and normally developing toddlers with and without histories of middle ear involvement. They found that children who were late to develop expressive language were at risk for prolonged slow language growth, at least until age 3, whether they had a history of frequent middle ear involvement or not. Thus, the risk for chronic expressive language delay did not appear to be increased significantly by a history of middle ear involvement.

Studies have found no difference in the frequency, duration, or timing of otitis media between normally developing and language delayed children (Bishop & Edmundson, 1986; Lonigan, Fischel, Whitehurst, Arnold, & Valdez-Menchaca, 1992). One of these studies did suggest that children with a higher frequency of treated otitis media between 12 and 18 months were more likely to show improvement in their expressive language than children without such a history (Lonigan et al., 1992). These findings suggest that the expressive abilities affected by otitis media improved when otitis media and its transient effects on hearing were no longer present.

Increasingly, investigations have documented an association between otitis media and articulation difficulties. Late-talking children with a history of middle ear involvement before age 3 seemed to have a somewhat greater risk for prolonged difficulties with articulation (Paul et al., 1993). Similarly, Lonigan and colleagues (Lonigan et al., 1992) reported that children who had more persistent episodes of otitis media when they were between 18 and 24 months had significantly poorer articulation than children with less experience with otitis media. The current evidence suggests that a history of middle ear involvement places a child at greater risk for articulation difficulties.

In summary, prolonged, untreated otitis media places a child at greater risk of continued language delay. Further, evidence suggests that toddlers with a history of persistent otitis media are at greater risk for difficulties with articulation.

### **Parent Needs**

Finally, in deciding whether to recommend intervention for children with specific language impairment, clinicians must consider parent needs. In fact, parent variables may outweigh the child's factors in the decision-making process. Two aspects of parent needs are examined here: parent characteristics and parent concerns. Both contribute to a parent's influence on deciding whether to recommend intervention and to the type of intervention that is considered most advantageous.

Parent characteristics have been examined extensively as they relate to their children's language and intellectual development, but results have been anything but clear. Few isolated characteristics appear to be directly related to children's development. However, a few characteristics

repeatedly emerge as part of clusters of variables. Socioeconomic status (SES) is one of those characteristics. SES seems to be an important variable in predicting children's development; low-SES families appear to be at higher risk for negative child outcomes (Hart & Risley, 1995; Siegel, 1981, 1982).

Another parent characteristic, interaction style, has also been linked to language development, although the research results are mixed. Literature on children developing language typically suggests a number of styles that seem to best facilitate language learning. These include frequently engaging children in reciprocal social interactions, following the child's lead and participating in contingent interactions, maintaining joint attention around objects and events in the environment, and providing language models in a simplified register (Hart & Risley, 1995; Tannock & Girolametto, 1992). Generally the literature has suggested that the interaction loop between a parent and child is altered when a child has a language impairment. This then may alter the parent's style of interaction. Parents of children with delays often become less contingently responsive and more controlling in their activities and topics (Tannock & Girolametto, 1992). This, coupled with excessive talkativeness and complex utterances in speech directed to toddlers who are exhibiting delays in language development, may not create the best environment for language learning. Over the years, these behaviors have become the focus of parent-training programs, which have been shown to be successful for toddlers with specific vocabulary delay (Girolametto et al., 1996; Girolametto, Pearce, & Weitzman, 1997).

Parents bring a host of beliefs to child rearing. These beliefs reflect each parent's own cultural, religious, educational, and socioeconomic background and as such influence the way the parent views development and disorders of development. Sometimes beliefs are such that they prompt concerns that are more or less consistent with the child's performance. The day-to-day difficulties of raising a child who is not developing on schedule adds to the challenge of child rearing. When communicative interactions with a child are interrupted, the interactions become increasingly burdensome, and this contributes to the degree of the parents' concerns. Without a doubt, some intervention is warranted when parents are demonstrating extreme concerns, such that they are no longer able to enjoy their child or participate fully in parenting activities. Parents may need information about language development and delay or specific techniques to help foster better interactions with their children, but it is the parents' concern that is the focus of the treatment.

### **Summary**

This review of the literature suggests several characteristics that indicate whether change in a toddler's language production is imminent (predictors) and whether the presence of a true language impairment is likely (risk factors). To some extent, the characteristics can be viewed as addressing severity of the language problem and, therefore, the degree of concern. Unfortunately, the

research to date does not support prioritizing or weighting the characteristics. Essentially, the fewer predictors of change demonstrated by a toddler and the greater the number of risk factors, the more concerned a clinician should be about language development. Even though we are left with a long list of individual characteristics, together they begin to paint a picture of a toddler who is in serious trouble for language development and for whom intervention would be the most appropriate recommendation. Simply, the more characteristics the toddler—and the child’s family—demonstrate, the more serious the concern, and as a result, the more likely the clinician should be to recommend intervention. Intervention may take several forms: direct one-to-one treatment with the child, group treatment with the child, parent training, or some combination of these alternatives. Degree of concern may be able to help dictate the form of intervention. It follows that the fewer the characteristics a toddler presents, the more likely a clinician would consider a watch and see approach, reviewing the child’s status at 3- to 6-month intervals (Paul, 1996).

## Conclusions

Table 1 presents a summary of the findings presented in this article. It highlights predictors and risk factors that suggest a profile of serious concern for a toddler who is having difficulty learning language. This list, and the profile it paints, is meant as a guide in helping clinicians decide who to enroll in intervention.

We would all like to make foolproof clinical decisions. If the world were perfect, research would consistently point us in the right direction for making decisions about intervention recommendations for all toddlers with language learning difficulties. This, of course, is not the case, nor is it ever likely to be. This reality must not put us at a standstill or head us in the direction of making decisions based solely on good intentions. This article was designed to highlight what we know to be true about the development of language in toddlers. Research has revealed robust trends about language learning in toddlers who are typical and atypical in their language development. These trends have brought to light characteristics that allow us to decide whether we should be seriously concerned about a toddler’s actual and potential language growth. The argument being made from this literature is that the magnitude of our concern should directly translate to our recommendations. To our way of thinking, and the thinking of others (Thal & Katicich, 1996; Whitehurst & Fischel, 1994), this is not only a reasonable position, but also an ethical and intellectually defensible one.

Down the road, a treatment approach may surface that challenges this perspective. In this scenario, the treatment will most likely be tied to the etiology of language impairment. As such, diagnosis will lead directly to treatment, and even perhaps, a cure. Recently, Tallal and colleagues have reported a treatment that is designed to directly address the auditory-processing skills that they believe underlie the language disorder in many children with specific language impairment (Tallal & Merzenich, 1996;

**TABLE 1. Predictors and risk factors of language change in toddlers.**

Predictors		Risk Factors
Speech	Nonspeech	
<p><b>Language Production</b>            Small vocabulary for age            Few verbs            Preponderance of GAPS            More transitive verbs            Few intransitive and ditransitive verb forms</p> <p><b>Language Comprehension</b>            Presence of 6-month comprehension delay            Large comprehension-production gap with comprehension deficit</p> <p><b>Phonology</b>            Few prelinguistic vocalizations            Limited number of consonants            Limited variety in babbling structure            Less than 50% consonants correct (substitution of glottal consonants and back sounds for front)            Restricted syllable structure            Vowel errors</p> <p><b>Imitation</b>            Few spontaneous imitations            Reliance on direct model and prompting in imitation tasks of emerging language forms</p>	<p><b>Play</b>            Primarily manipulating and grouping            Little combinatorial and/or symbolic play</p> <p><b>Gestures</b>            Few communicative gestures, symbolic gestural sequences, or supplementary gestures</p> <p><b>Social Skills</b>            Behavior problems            Few conversational initiations            Interactions with adults more than peers            Difficulty gaining access to activities</p>	<p><b>Otitis Media</b>            Prolonged periods of untreated otitis media</p> <p><b>Heritability</b>            Family member with persistent language and learning problems</p> <p><b>Parent Needs</b>            Parent characteristics:            Low SES            Directive more than responsive interaction style            Parent concern:            Extreme</p>

Tallal et al., 1996). These data have been impressive, and yet the studies from which they emanate are not without problems. This line of research may eventually allow clinicians to identify groups of children with SLI who will benefit from a particular form of treatment. That outcome will lead to other types of diagnoses and treatments and improved confidence in our recommendations.

We are not there yet. However, we are extremely knowledgeable about toddlers with delays in language. They are a heterogeneous group, bringing different individual and family needs. As a result, they need different recommendations for intervention. Even with this complexity, we can make informed decisions. The first decision is whether to bring them into our clinics for our professional help. We may work with the child directly, recommend a preschool language group, or provide parent training, but we must decide whether we should watch and see or treat in some way. The goal of this paper was to share state-of-the-art research that should allow us to make informed clinical decisions about recommending intervention. We may not have all of the answers, but we know a lot, and we need to start applying the information with confidence.

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