Spontaneous Recovery in Children With Expressive Language Delay

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Spontaneous Recovery in Children with Expressive Language Delay

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Abstract

By age 2, most children have an expressive vocabulary of approximately 200 words and begin to combine these words into meaningful phrases. However, some children acquire expressive language skills more slowly than others while displaying no signs of cognitive, receptive, or sensory delays. These children who experience an expressive language delay are often characterized in the literature as late talkers. Research shows that many of these children have delays early in childhood, but eventually catch up to their typically-developing peers, with no need for language intervention. Others, however, continue to experience expressive delays and have an increased risk of developing learning problems later in life. Possible predictors of spontaneous recovery have become a relevant and controversial topic in the literature on expressive language delay. This paper provides a review of the literature on expressive language delay, synthesizes the results of several studies to identify five key predictors of spontaneous recovery of expressive language skills, and presents a checklist for speech-language pathologists to use to provide an educated prognosis for children with expressive language delay.

Introduction

What is Expressive Language Delay?

Typically-developing toddlers at the age of 9 months have been reported to progress from speaking only a handful of words to speaking over 200 words by age 2 (Brent & Siskind, 2001). In recent years, there has been considerable interest in a group of toddlers referred to as “late talkers.” In simple terms, these children have been identified by their “early restrictive expressive language abilities” (Ellis Weismer, Murray-Branch, & Miller, 1994, p. 852), and failure to meet the developmental milestones for lexical output. This slower-than-normal
development of expressive language is most commonly referred to as expressive language delay (ELD).

**Problems with defining ELD.** One issue with which speech-language pathologists are faced with is precisely defining expressive language delay. After examining the literature on ELD, it seems that many researchers have introduced their own criteria for defining this group of toddlers. This is a concern, as it is not beneficial for the professional community to have inconsistency when defining a group of like participants, because it can make it difficult to compare findings across studies.

Researchers have used standardized assessment tools to define expressive language delay (Ellis Weismer et al., 1994; Rescorla, 1989; Thal & Bates, 1988; Whitehurst et al., 1991). They use a cut-off score from reliable and valid standardized assessments to distinguish between normal language development and a delay. One popular assessment tool used is the *MacArthur Communicative Developmental Inventory* (Fenson et al., 1993). This tool is a parent report checklist that assesses vocabulary comprehension and production. In their 1994 study Ellis Weismer, Murray-Branch and Miller (1994) used Rescorla’s (1989) criteria to identify their group of late talking toddlers. Based on the *Early Language Inventory* (Bates et al., 1986) (an earlier version of the *MacArthur Communicative Developmental Inventory* [Fenson et al., 1993]), if at age 2, toddlers had an expressive vocabulary of less than 50 words or used no multi-word utterances in spontaneous conversation, they were considered to be part of the “late talking” group. In the Ellis Weismer et al. (1994) study, efforts were made to provide evidence that the group being tested was developmentally at age level in areas other than expressive language production, through a battery of assessments. In the areas of cognition, comprehension, and
symbolic play, the late talking toddlers scored in the same range as the typically-developing toddlers and demonstrated delays in language production only.

In an earlier study, Ellis Weismer, Murray-Branch and Miller (1993) used the Early Language Inventory (Bates et al., 1986) to assess study participants, but the researchers defined delay differently. In the Ellis Weismer et al. (1993) study, toddlers were considered to be late talkers if they produced expressive vocabularies that fell more than 2 standard deviations below the average for typically-developing peers. In this investigation, measures were taken to ensure that all participants were experiencing delays only in productive (i.e., expressive) vocabulary and there were no delays in cognition or receptive language abilities or limitations in phonological skills. This study design was thought to be beneficial because participants of the study experienced the same type of delay. This made it easier for researchers to draw conclusions from the study because there were fewer factors that needed to be considered when reviewing the results of the intervention.

Thai and Bates (1988) used the Language Development Survey (LDS) (Rescorla, 1989) to classify late talkers in their investigation. This assessment is a parent checklist which reports vocabulary production and word combinations in an effort to identify delays. After reviewing the results from the LDS, children were considered to have expressive language problems if, between the ages of 18 to 29 months, they produced no two-word utterances and fell in the lowest 10th percentile for expressive vocabulary when compared to age-matched peers (Thai & Bates, 1988). It is important to note that in this study, all toddlers who demonstrated an expressive language delay were studied; the researchers did not distinguish between toddlers who had only an expressive language delay from the toddlers who exhibited delays in receptive language abilities, socialization, and/or phonological limitations.
Without a precise definition of expressive language delay, it is unclear whether or not the various studies described above are referring to the same population. One cannot compare two studies, side-by-side, when the groups of toddlers observed are not being defined by the same standards. Also, one cannot review the results of intervention research for toddlers who have expressive language delay and other delays without wondering how the additional delays affected the results of the toddlers' performance in the study. Regardless of how researchers define expressive language delay, it is important to understand that children identified as late talkers have a sole linguistic delay, with normal-range performance on sensory, motor and nonverbal cognitive measures (Robertson & Ellis Weismer, 1999).

**Spontaneous Recovery of Expressive Language Skills**

Although the definition of expressive language delay is not consistent in the literature, it is agreed that an estimated 10 to 15% of 2-year-olds have expressive language problems without delays in sensory or cognitive systems (Cable & Domsch, 2011; Rescorla, 1989; Rice, Taylor, & Zubrick, 2008; Tsybina & Eriks-Brophy, 2007). It is important to recognize that some children with expressive language delay are at risk for progressing to more significant linguistic delays by age 3 (Rescorla & Ratner, 1996). Studies have shown that many late talkers will continue to experience persistent language impairments and develop learning problems later in life (Rescorla, 2002). There are also, however, a number of children who experience expressive language delays as a toddler, but “recover” by school age (Rescorla, 2002; Thal, Tobias, & Morrison, 1991). The difference between the group of children who have persistent language impairment and those who recover is a relevant topic of research in the speech and language community.
Late talkers present speech-language pathologists with the dilemma of whether or not to provide intervention for the prevention of persistent expressive language delays. Research that examines the difference between children who spontaneously recover and children who experience persistent language delays is essential in order to provide insight to speech-language pathologists about the necessity and timing of the administration of intervention (Tsybina & Eriks-Brophy, 2007).

Prevalence of Spontaneous Recovery and Persisting Delays

Developmental language delay. Whitehurst and Fischel (1994) reviewed assessment data for children with early developmental language delays. Early developmental language delay is different from ELD, in that it is a broad term that encompasses all language delays (expressive and receptive) that occur both in isolation as well as with other developmental problems. Research findings on early developmental language delay can be helpful when determining the likelihood of the spontaneous recovery of expressive language skills. One specific dimension examined by Whitehurst and Fischel (1994) was the relationship between age and prevalence rates of developmental language delay. They suggest that there is an inverse relationship between age and prevalence rates of children with developmental language delays. For example, at age 2, the prevalence rates for children with developmental language delay range from 9 to 17%; however, by age 3, prevalence rates have been seen to drop to 3 to 8% (Whitehurst & Fischel, 1994).

Silva (1980) also studied children with developmental language delays. Silva (1980) conducted a longitudinal study that examined "the nature, prevalence, stability and significance of delay in verbal comprehension and expression among 3-year-olds" (Silva, McGee, & Williams, 1983, p. 783). The data collected suggest that prevalence rates among children with
developmental language delay may drop as much as 60% between the ages of 3 and 5. Silva (1980) noted that when follow-up testing was completed, the children who had a specific delay (in receptive or expressive language) were considered to be at low risk for later delays; whereas, children who showed delays in both receptive and expressive language were at high risk for experiencing persistent delays at age 5. Interestingly, the high-risk group also met criteria for low intelligence for their age bracket (Silva, 1980). These results suggest that children with one area of a specific delay are more likely to recover from that delay than are children with language delays coexisting with other delays (e.g., concurrent receptive language delays or cognitive delays).

The research conducted on developmental language delay is relevant to the topic of ELD; however, it is difficult to directly apply findings to late talkers because developmental language delay encompasses such a large and diverse population. Many researchers have acknowledged the importance of separating children with developmental language delay into smaller subgroups. For example, Rescorla and Schwartz (1990), Thal and Tobias (1992), and Rescorla (2002) have conducted longitudinal studies that focus specifically on children who have ELD. The conclusions from these studies provide a more clear indication of the prevalence of spontaneous recovery among children with ELD.

**Expressive language delay.** Rescorla and Schwartz (1990) conducted a study in which data were collected from 25 two-year-old boys. These boys were considered to have expressive delays based on data collected through testing, naturalistic observation, and parent reports at an initial intake, as well as a follow-up evaluation which occurred at age 3. To be included in the study, participants were required to achieve a score no lower than 85 on the *Bayley Scales of Infant Development* (Bayley, 1993) and obtain a score within 4 months of their chronological age.
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on the Reynell Receptive Language Scale (Reynell, 1977). The Reynell Expressive Language Scale (RELS) (Reynell, 1977) was administered to assess each participant’s expressive language skills. Participants in the study were required to have scored at least 6 months below their chronological age on the RELS. Typically, a 2-year-old child who scores at least 6 months below age level on an expressive language test is also likely to have a vocabulary of fewer than 30 words with few word combinations, which meets Rescorla’s (1989) definition of ELD. The tests conducted at intake were used to ensure that the children participating in the study were experiencing an expressive language delay which did not coexist with any cognitive or receptive delays (Rescorla & Schwartz, 1990).

In the follow-up procedure of the Rescorla and Schwartz (1990) study, expressive language data were drawn from a naturalistic language sample collected during a free play session between the parent and child. The researchers obtained a Mean Length Utterance (MLU) based on 100-utterances from the language sample. MLU data were then used to calculate a score for the Index for Productive Syntax (IPSyn; Scarborough, 1990). Based on follow-up results, the researchers concluded that about 50% of their participants were “late bloomers” whom had caught up in expressive language skills by age 3. Rescorla and Schwartz (1990) noted that at follow-up, all participants had made significant progress in their ability to produce longer utterances; however few, even those who proved to be late bloomers, “spoke in what appeared to be fully complete and mature sentences” (Rescorla & Schwartz, 1990, p. 404). This finding suggests that although vocabulary and utterance length may increase by age 3, children with ELD, even those deemed “recovered,” may have persisting problems with syntax and morphology (Rescorla & Schwartz, 1990).
In their 1992 study on gestural communication, Thal and Tobias observed 10 children between the ages of 18 and 28 months who were considered to be experiencing ELD. The participants of this study were selected based on their limited vocabulary production and lack of word combinations. It was also noted that the 10 children had “no history of ... mental retardation, behavioral disturbance, or neurological impairment” (Thal & Tobias, 1992, p. 1283). At initial intake, participants had a production vocabulary ranging from 0 to 64 words, which placed them in the lowest 10% for production vocabulary on the Language and Gesture Inventory (Fenson et al., 1991; Thal & Tobias, 1992).

One year after initial intake, Thal and Tobias (1992) reassessed the 10 participants using MLU and the Language and Gesture Inventory (Fenson et al., 1991). The researchers reported that when compared to an age-matched control, 60% of the participants appeared to have caught up one year from the initial intake; these participants were referred to as “late bloomers.” Participants were considered to have recovered if both the MLU and the production vocabulary scores on the Language and Gesture Inventory were within the normal range for their age group. The remaining 40% who showed signs of persisting delays were referred to as “truly delayed.” Results of this study found that the late bloomers used more gestures to communicate than the truly-delayed toddlers, suggesting a relationship between recovery and gestural communication (Thal & Tobias, 1992).

In another attempt to examine the long-term outcomes of expressive language delay, Rescorla (2002) examined the language and reading outcomes of 34 children considered to be late talkers as toddlers. At the initial intake at age 2, these children had less than a 50-word expressive vocabulary and had no multiword utterances in spontaneous conversation according to the Language Development Survey (Rescorla, 1989). The late talkers (who were reported to
have age-appropriate cognition and receptive abilities) were compared to 25 typically-developing children matched in the areas of cognition, age, and socioeconomic status. Data from these groups were collected and examined annually through age 9 (Rescorla, 2002).

Rescorla (2002) reported, based on clinical observations of conversational speech, that by age 6, only 18% (6 of the 35) of the late talkers continued to have expressive delays. It was also reported that the six late talkers who continued to experience delays also “demonstrated many grammatical morpheme errors, limited intelligibility, word retrieval problems, poor formulation skills, and weak narratives” (Rescorla, 2002, p. 364). This may indicate a relationship between persisting delays and the development of syntax and phonology.

There is clear variability in the results of the studies investigating long-term outcome and recovery from ELD. These inconsistent findings are a result of both the definition of recovery used by researchers and the various assessments used to determine such recovery. When considering this variability, it is important to evaluate the research methods used in the studies as well as the specific criteria used to determine recovery.

**Key Predictors of Spontaneous Recovery**

By examining the findings of the longitudinal studies previously mentioned, researchers can begin to develop hypotheses about the possible predictors of recovery of expressive language skills. There are five key predictors that have received the most attention in recent literature: age, severity of the delay, phonological development, comprehension abilities, and family history. These indicators allow speech-language pathologists to determine the likelihood of spontaneous recovery in children with ELD, and when considered collectively the indicators can be used as guidelines to inform professionals about the necessity of early intervention. It is important to
note that the following indicators should not be viewed in isolation, but rather as one component in the complex system of an individual's linguistic characteristics.

Age. It is important for a speech-language pathologist to take into consideration the age of the client when assessing the likelihood of recovery for a child with ELD. Rescorla and Schwartz (1990) suggest that if the gap between expressive language skills and normative age-expectations of language does not begin to close as the toddler approaches age 2; 6, the likelihood of a good prognosis for recovery begins to dissipate. Several researchers are in agreement with the statement that, in general, if spontaneous recovery is to occur, it will occur approximately between the ages of three and four years (Ellis Weismer, Murray-Branch, & Miller, 1994; Rescorla & Schwartz, 1990; Thal & Tobias, 1992).

Whitehurst and Fischel (1994) reviewed the development of specific components of language as they relate to children with developmental language delays. When focusing on age as a component of developmental language delay, Whitehurst and Fischel (1994) analyzed the results of previous studies (Rescorla, 1989; Silva, 1980; Stevenson & Richman, 1976). Their meta-analysis concluded that as age increases, the percentage of children with language delay decreases and plateaus around age four. They observed that as children enter their preschool years, a smaller proportion continue to have persisting delays (Whitehurst & Fischel, 1994). This suggests that if a child is experiencing expressive delays after age 4, spontaneous recovery is less likely, and intervention should be considered.

A similar conclusion was discussed in a study of language development in late talkers conducted by Ellis Weismer et al. (1994). In this study, the researchers observed how language develops differently for a child with an expressive language delay, when compared to a typically-developing toddler. The population for this study consisted of four late-talking toddlers
and 19 typically-developing toddlers. Measures were taken to ensure that the late talkers studied were experiencing expressive delays, only, and had no cognitive or receptive language disabilities. Participants were initially tested at 13 to 14 months of age and were reassessed at three-month intervals for 21 months. After the fifth assessment, the researchers invited the four late talkers to participate in a nine-week language intervention program that focused on social interaction and functional language use. Three of the four late talkers participated in this intervention program; one mother had reported that her child was going through a language spurt and decided that intervention was not needed. Although this late talker did not attend the intervention program, he continued to be assessed with the other participants (Ellis Weismer et al., 1994).

Follow-up assessments were conducted with the late talkers at age 3. Results indicated that three of the four late talkers had good outcomes. Ellis Weismer et al. (1994) found that one late talker continued to have significant delays in expressive language skills, one late talker had moved into the normal range, and two late talkers “were borderline with respect to combinatorial language skills (as indexed by MLU)” (p. 865). The late talker who moved into the normal range by age 3 was also the toddler who was reported to have undergone a language spurt and did not participate in intervention. Ellis Weismer et al. (1994) noted that this late talker is one of the 50% of children with ELD who initially experience delays but eventually recover without the need for intervention. Although the early intervention program may have influenced the findings of this study, one can speculate that there is a critical period for spontaneous recovery of expressive language skills to occur (Ellis Weismer et al., 1994).

Speech-language pathologists need to be cognizant of the suggested critical period for spontaneous recovery in children with ELD. As children approach 3 or 4 years of age, a clinician
should observe little to no gap between the child’s expressive language and the expected language abilities that correlate with his or her age (Rescorla & Schwartz, 1990). The age of a client is an important component to consider when determining if intervention is necessary. After reviewing the literature on expressive language delay, clinicians can determine that a child with ELD within the critical period of development (between the ages of 2; 6 and 3; 6) is more likely to recover spontaneously than a child with ELD who is close to or has outgrown the critical period of development (between 3 to 4 years of age). The children who have outgrown the suggested critical period and continue to experience expressive delays should be recommended for speech and language services.

Severity. Children with ELD have a wide range of communicative abilities; some late talkers will have delays that are more severe than others. According to Rescorla’s (1989) definition of an expressive language delay, a 2-year-old child who has a 50-word expressive vocabulary is categorized as having the same type of delay as a 2-year-old child with a 20-word expressive vocabulary. Researchers have provided evidence that the severity of the delay in expressive output plays an important role in determining the probability that spontaneous recovery will occur (Fischel, Whitehurst, Caulfield, & DeBaryshe; 1989; Rescorla & Schwartz, 1990; Tsybina & Eriks-Brophy, 2007).

Fischel et al. (1989) conducted a study that assessed 22 two-year-old children with ELD. A diagnosis of expressive language delay was determined based on a score at least 2 SD below the norm of a child’s chronological age on the Expressive One-Word Picture Vocabulary Test (Gardner, 1981), with age-appropriate scores on the Letter International Performance Scale (Leiter, 1976) and the Peabody Picture Vocabulary Test-Revised (Dunn & Dunn., 1981), which test cognition and receptive abilities, respectively. The researchers followed the late talkers for
five months to examine their rate of improvement with hopes of determining predictors of recovery.

After five months, the late talkers were reassessed with the standardized assessments used at intake. Fischel et al. (1989) reported that one third of the participants had shown no improvement, one third had shown mild improvement, and one third tested in the normal range for expressive language skills. These findings are consistent with the recovery rates found in other studies (Rescorla & Schwartz, 1990; Thal & Tobias, 1992). Fischel et al. (1989) determined that one possible predictor of improvement was the reported vocabulary size of the child at intake; they observed that there was a high correlation between vocabulary size at intake and expressive improvement over five months. Although late talkers have a limited vocabulary, this research suggests that the larger the expressive vocabulary a child presents initially, the greater the likelihood for future improvement (Fischel et al., 1989).

Collecting data about a child’s vocabulary size is an easy and efficient way for speech-language pathologists to determine if a child with ELD is likely to experience persisting delays. Rescorla and Schwartz (1990) agree that the severity of the expressive delay, rather than the “absolute language level” (Tsybina & Eriks-Brophy, 2007, p. 123) at intake, is an important predictor of spontaneous recovery of expressive language skills. Fischel et al. (1989) highly recommend that practitioners collect a parent’s report of the child’s vocabulary size to assist in creating a more accurate prognosis.

**Phonological development.** By definition, late talkers have significantly less expressive output than what would be normally expected for a typically-developing child of the same age. This lack of vocalization could be the result of a restricted phonetic inventory (Mirak & Rescorla, 1998). Mirak and Rescorla (1998) suggest that a child’s lack of expressive output will
decrease the opportunities for practice and reinforcement through verbal interactions, which is critical for language development. The question of how the phonetic inventory of a child relates to his/her expressive linguistic delay has been considered by several researchers (Girolametto, Pearce, & Weitzman, 1997; Mirak & Rescorla, 1998; Rescorla & Ratner, 1996; Tyler, 1992).

Rescorla and Ratner (1996) collected a spontaneous language sample from 30 two-year-old children who had been diagnosed with ELD, and compared them with an age-matched sample population of 30 typically-developing toddlers. The researchers used the Language Development Survey (Rescorla, 1989) and the Reynell Expressive and Receptive Language Scales (Reynell, 1977) to assess each child's linguistic skills. Speech samples were collected through a 10-minute free-play activity between the child and his/her mother in a clinic setting. The play materials used during the study were kept consistent for all free-play sessions. The language samples collected were used to assess the vocalization patterns, phonetic inventories, and syllable formations of each participant. When calculating the phonetic inventory of a child, the researchers recorded that a child had a phone “if it appeared any time, in any position, within vocalizations” (Rescorla & Ratner, 1996, p. 157).

Rescorla and Ratner (1996) found that participants with ELD had a significantly smaller phonetic inventory than those in the age-matched group. It was reported that participants with ELD had, on average, eight consonants and seven vowels in their phonetic inventories, whereas the typically-developing group had an average of 17 consonants and 12 vowels. They observed that the late talkers’ consonant inventories consisted mostly of “the voiced stops [b, d], nasals, glides, and [h]” (p. 163) in the initial position of vocalizations. After analyzing the phone usage of each group, Rescorla and Ratner (1996) stated that the late-talking toddlers seemed to be experiencing a delay, rather than a deviation, in their phonological development.
Mirak and Rescorla (1998) conducted a similar study that examined the consonant production of 2-year-old children with and without an expressive delay. Researchers collected language samples from 57 children, which included 37 late talkers and 20 typically-developing toddlers, all between the ages of 24 and 31 months. Language samples were taken in two contexts: a 5-minute free-play session between the parent and child, and testing with the Bayley Scale of Infant Development (Bayley, 1993) and Reynell Developmental Language Scales (Reynell, 1977). The assessment of language in different contexts provided the researchers with data in both a structured and an unstructured environment (Mirak & Rescorla, 1998).

The results of this study were consistent with findings discussed by Rescorla and Ratner (1996). Children who had expressive delays were observed to have significant delays in phonetic development. Mirak and Rescorla (1998) found that the normally-developing group produced over 5 times more consonants than the late-talking group. It was also observed that there was a positive correlation between the number of consonant sounds produced and the number of utterances produced. These data suggest that the lack of phonetic development correlates with a child’s lack of expressive output (Mirak & Rescorla, 1998).

Data like that discussed by Rescorla and Ratner (1996) and Mirak and Rescorla (1998) have led researchers to suggest that a child’s delayed phonetic development may result in a decrease in linguistic output. These and other studies have concluded that the number and variety of consonants produced could be related to the spontaneous recovery of linguistic skills (Girolametto, Pearce, & Weitzman, 1997; Mirak & Rescorla, 1998; Rescorla & Ratner, 1996; Tyler, 1992). Mirak and Rescorla (1998) hypothesized that a child with an expressive vocabulary of fewer than 50 words and a limited phonetic inventory at 30 months of age is more likely to experience persisting delays than a 24-month-old child experiencing the same problems. This
again suggests the importance of taking into consideration a child’s linguistic skills as it compares with developmental age norms. Clinicians can use the findings reported in these studies to make predictions as to whether a child with ELD has the potential to recover spontaneously.

**Comprehension.** One of the main problems of the early research on expressive language delay is that many studies have overlooked the distinction between children with specific expressive delays, those with specific receptive delays, and those who demonstrate both (Silva, 1980; Silva, McGee, & Williams, 1983; Whitehurst & Fischel, 1994). The results of several studies have created awareness among the speech and language community that the comprehension abilities of late talkers have an effect on the likelihood of spontaneous recovery (Thal, Tobias, & Morrison; 1991; Thal & Tobias, 1992; Spitz, Tallal, Flax, & Benasich, 1997). Studies completed by Thal, Tobias, and Morrison (1991) and Thal and Tobias (1992) have concluded that normal receptive abilities are an important predictor of the spontaneous recovery of expressive language skills in late-talking toddlers. As a result, recent studies examining ELD in toddlers have made a fervent effort to make the distinction between children who meet the true definition of ELD and children who have expressive delays that coexist with receptive delays or other disabilities (Ellis Weismer et al., 1994; Rescorla, 2002).

Thal, Tobias, and Morrison (1991) examined the language development of late talkers. These researchers observed 10 late talkers between the ages of 18 and 29 months who were reported to be in the single-word stage of language development. The late talkers also fell within the lowest 10% for lexical production for their age, based on developmental norms on the Language and Gesture Inventory (Fenson et al., 1991) (a parent report measure). The researchers collected data on language comprehension using the Language and Gesture Inventory and the
Peabody Picture Vocabulary Test (Dunn & Dunn., 1981). Data were also collected on gesture production and language production (Thal et al., 1991).

At the one-year follow-up, the researchers used the Early Language Inventory (Bates et al., 1986) and an MLU score to monitor expressive language growth. Analysis of the data determined that four of the children continued to experience delays in expressive output, while the remaining six late talkers had shown evidence that they had caught up to age expectations in the area of expressive language. In regards to language comprehension, Thal et al. (1991) observed that the four toddlers who experienced persisting delays at the one-year follow-up had also been delayed in language comprehension at initial intake. They concluded that vocabulary comprehension serves as a useful predictor of the recovery of expressive language skills and provides important prognostic information to clinicians (Thal et al., 1991).

Thal and Tobias (1992) further analyzed the data on gestural communication collected in Thal et al. (1991) and found a parallel relationship between the gestural communication and language development of late talkers. The data indicated that the six late talkers who had caught up to their typically-developing peers (referred to as “late bloomers”) also used more communicative gestures. Thal and Tobias (1992) noted that “the very fact that these children [late bloomers] used symbolic gestures communicatively demonstrated that they understand that one thing can represent another, that those symbols can be recruited for communication” (p. 1287). In contrast, analysis of the data collected on those late talkers who continued to experience delays in expressive language indicated that there was no use of symbolic or non-symbolic gestures for communicative purposes. Based on these observations, Thal and Tobias (1992) hypothesized that the late bloomers used gesturing to compensate for their small oral
expressive vocabularies. They later concluded that the reduced receptive language and gestural production of a child could be indicative of a persistent language delay.

By reviewing the conclusions of these and other studies, one can determine that children with expressive language delay who demonstrate age appropriate comprehension skills are more likely to eventually catch up with their peers (Silva, Williams, & McGee, 1987; Thal et al., 1991; Thal and Tobias, 1992; Whitehurst & Fischel, 1994).

Family history. As with many other speech and language problems, researchers have questioned how genetics determines the etiology and recovery of various language delays. Some studies have used a retrospective approach that relies on parent self-report of the language development of the child’s immediate relatives and extended family members (Tallal et al., 1989; Whitehurst et al., 1991). Other studies have used a prospective approach or twin and adoption data to determine the relationship between genetics and language impairments (DeThorne, Petrill, Hayiou-Thomas, & Plomin, 2005; Spitz, Tallal, Flax, & Benasich, 1997).

Retrospective studies. Whitehurst et al. (1991) conducted a study that questioned whether a positive family history was predictive of the course of language development in children with ELD. The study assessed 117 children between the ages of 24 and 38 months of age by means of spontaneous language samples, formal language assessments, and maternal reports of expressive vocabulary. These assessments were used to differentiate between children who were experiencing expressive language delays and those developing typically. The researchers determined that of the 117 children, 62 met the criteria for ELD (2 SD below the mean on the Expressive One-Word Picture Vocabulary Test [Gardner, 1981] with standard scores of at least 85 on the Peabody Picture Vocabulary Test-Revised [Dunn & Dunn., 1981] and the Leiter International Performance Scales [Leiter, 1976]). The other 55 children were considered
normally-developing and were used as a comparison group in this study. Once the subgroups of this study were determined, Whitehurst et al. (1991) asked the mothers of each child to complete a mailed questionnaire regarding the history of speech or language delays in the child's family. Each mother listed her child's immediate and extended relatives, indicating their ages and whether there was a history of late talking, speech problems or school problems (Whitehurst et al., 1991).

In contrast to their expectations, Whitehurst et al. (1991) found no strong correlation between family history and expressive delays. They observed that the families of children with ELD did not report more problems with expressive linguistic delays than the families of the comparison group. Surprisingly, the extended families of the comparison group were more likely to have been late talkers than the extended families of the ELD children. The findings of the Whitehurst et al. (1991) study contradict the conclusions made in several studies that used similar methods of research (Bishop & Edmonson, 1986; Paul, 1989; Tallal et al., 1989).

Ultimately, Whitehurst et al. (1991) attributed the conflicting results to the differences in sample populations (i.e., the inclusion of children with both expressive and receptive delays) and the inherent errors associated with collecting data by means of retrospective accounts. The researchers concluded that although the findings of this study argue against inherited influences on the developmental course of ELD, biology is still a related factor in the etiology of ELD (Whitehurst et al., 1991).

Prospective studies. Aware of the conflicting results of retrospective studies on language impairment, Spitz et al. (1997) examined the family histories of children with language impairments prospectively. In this study, the researchers examined the language and cognitive development of the younger siblings and offspring of individuals with language impairments.
The affected family member previously diagnosed with language impairment was confirmed in this study based on his/her current performance on standardized assessments. The researchers divided the 20 participants into two groups: Family History Positive and Family History Negative. Participants of the Family History Negative group were matched for age and gender to an individual in the Family History Positive group. The researchers used the MacArthur Communicative Development Inventory (Fenson et al., 1993) and the Preschool Language Scale-3 (Zimmerman et al., 1992) to collect data on the language performance of each group. The Mental Scale of the Bayley Scales of Infant Development (Bayley, 1993) was used to collect data on general cognition (Spitz et al., 1997).

The results of this study concluded that participants with a positive family history of language impairment, as a group, produced lower language scores for both receptive and expressive language, respectively. The Family History Positive group scored within the 34th percentile for receptive and 22nd percentile for expressive language, whereas participants from the Family History Negative group scored at the 68th percentile and 50th percentile for receptive and expressive language. Spitz et al. (1997) noted that not every child with a family history of language impairment experienced a linguistic delay; however, group results provide evidence that children who do not have a family history of language impairment have better receptive and expressive language skills than those who do. Based on the results of this study, one can hypothesize that if children with language impairment like ELD have no family history of language impairment, they may experience a greater likelihood of spontaneous recovery of expressive language skills (Spitz et al., 1997).

Twin studies. Few twin studies have been conducted to explore a genetic influence on children with expressive delays. One study completed by DeThorne et al. (2005) examined the
effects of genetic and environmental factors on delayed expressive language skills. This study assessed 4,274 pairs of 4-year-old twins from the Twins Early Development Study. The researchers collected data pertaining to the areas of expressive vocabulary and general cognition. Due to the large sample population, DeThorne et al. (2005) collected data using parent report measures. Expressive vocabulary was assessed via a shortened version of the *MacArthur Communicative Development Inventories*, referred to as the *MacArthur Communicative Development Inventories: U.K. short form* (MCDI: UKSF; Fenson, 1994). Parents were instructed to select the words that their child says from a list of 48 vocabulary words on the *MCDI: UKSF*. General cognition was measured using the *Parent Report of Children's Abilities* (PARCA; Saudino et. al., 1998), which combines parent-report and parent-administered items (DeThorne et al., 2005).

The findings of this study produced two significant results. First, results provided evidence that the severity of the expressive delay is not solely dependent on genetic factors, but rather are due to a contribution of both genetic and environmental influences. Second, genetic and environmental factors vary in relation to the severity of the expressive delay. In the extreme analyses, DeThorne et al. (2005) found that there was a negative correlation between the heritability of low expressive vocabulary and environmental factors in more severe cases of expressive vocabulary impairment. Researchers suggested that children with a poor genetic predisposition to vocabulary learning may be less able to take advantage of facilitative environmental factors. Thus, the combination of a genetic predisposition for ELD and environmental factors may affect the severity of the impairment. These factors may play an important role in predicting the possibility of spontaneous recovery of expressive language skills (DeThorne et al., 2005).
Summary

Most parents anticipate the day their toddler begins to speak in two-word utterances, continuing the lifelong journey of communication. However, for some 10 to 15% of children, cognitive and receptive language skills surpass expressive language abilities and there is a delay in the production of language (Cable & Domsch, 2011; Rescorla, 1989; Rice, Taylor, & Zubrick, 2008; Tsybina & Eriks-Brophy, 2007). Research shows that around 50% of this group of children experience a transitory delay and will catch-up to their typically-developing peers at around age four. The other half of these children will continue to experience persisting expressive language delays and may significantly benefit from speech and language services (Rescorla & Schwartz, 1990).

What does this mean for the Speech-Language Pathologist?

Generally, speech-language pathologists would agree that if a child is 4 years or older and has been diagnosed with ELD, intervention should be provided. Research supports this practice as there is evidence that the critical period for the spontaneous recovery of expressive language skills is around ages three or four (Ellis Weismer, Murray-Branch, & Miller, 1994; Rescorla & Schwartz, 1990; Thal & Tobias, 1992). Yet there remains some question about what should be done with younger children diagnosed with ELD. Recommending intervention to all late talkers would be a simple solution, but professionals should keep in mind that intervention may not be necessary for every client (Tsybina & Eriks-Brophy, 2007). Use of the five key predictors of spontaneous recovery of expressive language can help speech-language pathologists recommend an appropriate solution that reflects the individual’s needs.

Checklist. The results of the studies discussed have supported the development of a comprehensive checklist for the evaluation of the spontaneous recovery of expressive language
skills in young children (Appendix A). This checklist was created to serve as a tool for speech-language pathologists to aid in providing an educated prognosis for children with expressive language delay. The checklist is a compilation of several researchers’ conclusions regarding the five key predictors of the spontaneous recovery of expressive language skills. Professionals can use this tool to make predictions about the likelihood of spontaneous recovery and make recommendations for intervention if delays seem persistent. Appendices B through D provide examples of different results one might see. Below are suggestions of the actions one might recommend for the different results of each checklist.

**Wait and see.** Appendix B gives an example of a 24-month-old child who displays developmentally appropriate receptive and phonological language skills, yet there is evidence that the child is experiencing an expressive language delay because the child presents an expressive vocabulary of approximately 40 to 49 words. It was also reported that the child has a family history of speech and language problems in both his immediate and extended families.

Although the child is developmentally delayed in expressive output, research shows that the more words a child has in their expressive vocabulary at intake, the greater the likelihood that spontaneous recovery will occur (Rescorla & Schwartz, 1990). A speech-language pathologist should also consider that even with the evidence of familial language problems, the child displays developmentally appropriate receptive and phonological abilities and is at the age of 24 months. Thus the child is likely to make substantial gains in the area of language production. Appendix B is an example of a child with expressive language delay that would benefit from a wait and see approach. In a wait and see approach, no therapy is implemented unless the child continues to have delays (Whitehurst & Fischel, 1994). The child is typically reassessed within
one year of the initial assessment; therefore, this child's development would be monitored again at age 3.

**Watch and see.** Appendix C gives an example of a 40-month-old child who displays developmentally appropriate receptive and phonological language skills; however, there is evidence that the child is experiencing an expressive language delay because the child presents an expressive vocabulary of approximately 50 words. It was also reported that the child has a history of late talking with accompanying academic problems in his immediate family.

Although this child has typically developing receptive and phonological language skills, his expressive vocabulary delay is moderately severe for a 40-month-old child with expressive language delay. His age is also a concern because research shows that if spontaneous recovery is to occur, it will occur approximately between the ages of three and four years (Ellis Weismer et al., 1994; Rescorla & Schwartz). This child is in the midst of the critical period of recovery so although intervention may not be necessary yet, it is important for the speech-language pathologist to closely monitor the child's language development over the next few months.

Appendix C is an example of a child with expressive language delay that would benefit from a watch and see approach (Paul, 2000). In a watch and see approach, intervention is withheld, but language is aggressively monitored. The child is typically reassessed within the following three to six months after the initial assessment.

**Recommend intervention.** Appendix D gives an example of a 45-month-old child who experiences both receptive and expressive language delays. It was also reported that the child has a history of late talking and academic problems in both his immediate and extended families. Considering the results of this checklist, this child is not likely to improve his expressive
language abilities without intervention because the child is close to the end of the critical period for spontaneous recovery and also has coexisting receptive language delays.

Appendix D is an example of a child with expressive language delay that would benefit from immediate intervention. In this instance, spontaneous recovery of expressive language skills does not seem likely and implementing intervention would be the most beneficial solution to prevent persisting delays.

**Needs for the Future**

Expressive language delay has been the topic of discussion among the speech and language community for the past three decades. Spontaneous recovery in children with ELD has become a controversial, but nonetheless, important area of study (Tsybina & Eriks-Brophy, 2007). The checklist presented here is just one example of how five key predictors of spontaneous recovery can be incorporated into a tool used in clinical practice. In the future, researchers could use a tool similar to the comprehensive checklist to collect data on late-talking toddlers. These data could then be used to create a valid and reliable assessment tool that professionals can use to predict the likelihood of the spontaneous recovery of expressive language skills in children with ELD.
References


Appendix A

Comprehensive Checklist for the Evaluation of the Spontaneous Recovery of Expressive Language Skills in Young Children

This checklist was created to serve as a tool for speech-language pathologists to use to aid in providing an educated prognosis for children with Expressive Language Delay. The checklist provides a compilation of the five key predictors of the spontaneous recovery of expressive language skills. The ultimate goal is to use the checklist in conjunction with a spontaneous language sample and a developmental inventory completed by the parent/guardian to determine if spontaneous recovery of expressive language skills is likely to occur without intervention. Speech-language pathologists can also use this tool to make recommendations about whether intervention would be appropriate for the child.

Name of child: ___________________ Age (year; month): ___________________
Gender: _______ Birthdate: _____________ Native Language: _____________
Examiner: ___________________ Date: ___________________

Instructions: For each section, please indicate the response that applies.

Section I: Severity (as determined by expressive vocabulary size)
Note: Please have parent/guardian complete the MacArthur Communicative Developmental Inventory (Fenson et al., 1993) before completing this section. Date inventory was completed: ___________________

Child presents:

A vocabulary of 50 words or more. ( )
A vocabulary between 40-49 words. ( )
A vocabulary between 30-39 words. ( )
A vocabulary between 20-29 words. ( )
A vocabulary of 20 words or less. ( )

Section II: Comprehension

Yes No

Client recognizes routine phrases (e.g., "time for bed" "Pattycake"). (8-12 months)
Child understands words for objects/people that are:

a. In view (12-18 months) ( ) ( )
   b. Not in view (18-24 months) ( ) ( )

Child responds to:

a. Yes/no questions (e.g., "Is this color red?") (24 months) ( ) ( )
b. Simple what/who/where questions (e.g., "What is that?" "Who is that?") (30-36 months)

Child understands:
a. Two-word combinations (e.g., agent-action; possessor-possession; action-object) (18-24 months)

b. Three-word combinations (e.g., agent-action-object) (24-36 months)
c. Prepositions (e.g., in, on, under) (30-48 months)

Section III: Family History

Does anyone in the child's immediate family have a history of late talking, speech/language problems or academic problems? ( ) ( ) ( )

If so, who? __________________________

Problem: __________________________

Does anyone in the child’s extended family have a history of late talking, speech/language problems or academic problems? ( ) ( ) ( )

If so, who? __________________________

Problem: __________________________

Section IV: Phonology

Instructions: After collecting a spontaneous language sample, please indicate the response that applies.

Yes No

Does the child have more initial position than final position sounds? ( ) ( )

Are there stops, nasals, a glide and a fricative in the child’s inventory? ( ) ( )

Does the child produce CVC and CVCVC shapes? ( ) ( )

Does the child have a cluster represented in either initial or final positions of words? ( ) ( )

Determined Prognosis:

______ Wait and See

______ Watch and See

______ Intervention
Appendix B

Comprehensive Checklist for the Evaluation of the Spontaneous Recovery of Expressive Language Skills in Young Children

This checklist was created to serve as a tool for speech-language pathologists to use to aid in providing an educated prognosis for children with Expressive Language Delay. The checklist provides a compilation of the five key predictors of the spontaneous recovery of expressive language skills. The ultimate goal is to use the checklist in conjunction with a spontaneous language sample and a developmental inventory completed by the parent/guardian to determine if spontaneous recovery of expressive language skills is likely to occur without intervention. Speech-language pathologists can also use this tool to make recommendations about whether intervention would be appropriate for the child.

Name of child: ___________________________ Age (year; month): 2; 0
Gender: M Birthdate: ______________ Native Language: English
Examiner: ___________________________ Date: ___________________________

Instructions: For each section, please indicate the response that applies.

**Section I: Severity (as determined by expressive vocabulary size)**

Note: Please have parent/guardian complete the MacArthur Communicative Developmental Inventory (Fenson et al., 1993) before completing this section. Date inventory was completed: ____________________

Child presents:

- A vocabulary of 50 words or more. ( )
- A vocabulary between 40-49 words. ( x )
- A vocabulary between 30-39 words. ( )
- A vocabulary between 20-29 words. ( )
- A vocabulary of 20 words or less. ( )

**Section II: Comprehension**

Client recognizes routine phrases (e.g., “time for bed” “Pattycake”). (8-12 months)

- ( x ) ( )

Child understands words for objects/people that are:

- a. In view (12-18 months) ( x ) ( )
- b. Not in view (18-24 months) ( x ) ( )

Child responds to:

- a. Yes/no questions (e.g., "Is this color red?") (24 months) ( x ) ( )
Child understands:

b. Simple what/who/where questions (e.g., "What is that?" "Who is that?") (30-36 months)

Section III: Family History

Does anyone in the child's immediate family have a history of late talking, speech/language problems or academic problems?

If so, who? Older sister

Problem: Speech - articulation

Does anyone in the child's extended family have a history of late talking, speech/language problems or academic problems?

If so, who? Grandfather

Problem: Late-talker

Section IV: Phonology

Instructions: After collecting a spontaneous language sample, please indicate the response that applies.

Does the child have more initial position than final position sounds?

Are there stops, nasals, a glide and a fricative in the child’s inventory?

Does the child produce CVC and CVCVC shapes?

Does the child have a cluster represented in either initial or final positions of words?

Determined Prognosis:

X Wait and See

Watch and See

Intervention
Appendix C

Comprehensive Checklist for the Evaluation of the Spontaneous Recovery of Expressive Language Skills in Young Children

This checklist was created to serve as a tool for speech-language pathologists to use to aid in providing an educated prognosis for children with Expressive Language Delay. The checklist provides a compilation of the five key predictors of the spontaneous recovery of expressive language skills. The ultimate goal is to use the checklist in conjunction with a spontaneous language sample and a developmental inventory completed by the parent/guardian to determine if spontaneous recovery of expressive language skills is likely to occur without intervention. Speech-language pathologists can also use this tool to make recommendations about whether intervention would be appropriate for the child.

Name of child: ______________________ Age (year; month): ___________ 3:4
Gender: _______ M _______ F Birthdate: ___________________________ Native Language: _______ English
Examiner: ______________________ Date: ______________________

Instructions: For each section, please indicate the response that applies.

Section I: Severity (as determined by expressive vocabulary size)
Note: Please have parent/guardian complete the MacArthur Communicative Developmental Inventory (Fenson et al., 1993) before completing this section. Date inventory was completed: ________________

Child presents:
A vocabulary of 50 words or more. ( x )
A vocabulary between 40-49 words. ( )
A vocabulary between 30-39 words. ( )
A vocabulary between 20-29 words. ( )
A vocabulary of 20 words or less. ( )

Section II: Comprehension

Client recognizes routine phrases (e.g., “time for bed” “Pattycake”). (8-12 months)
( x ) ( )

Child understands words for objects/people that are:
   a. In view (12-18 months) ( x ) ( )
   b. Not in view (18-24 months) ( x ) ( )

Child responds to:
   a. Yes/no questions (e.g., "Is this color red?") (24 months) ( x ) ( )
b. Simple what/who/where questions (e.g., "What is that?" "Who is that?") (30-36 months)

Child understands:

a. Two-word combinations (e.g., agent-action; possessor-possession; action-object) (18-24 months) ( x ) ( )
b. Three-word combinations (e.g., agent-action-object) (24-36 months) ( x ) ( )
c. Prepositions (e.g., in, on, under) (30-48 months) ( x ) ( )

Section III: Family History

Yes No Unknown

Does anyone in the child's immediate family have a history of late talking, speech/language problems or academic problems?

(x) ( ) ( )

If so, who? Father

Problem: Late talking; Academic learning disability

Does anyone in the child's extended family have a history of late talking, speech/language problems or academic problems?

( ) ( x ) ( )

If so, who?

Problem:

Section IV: Phonology

Instructions: After collecting a spontaneous language sample, please indicate the response that applies.

Does the child have more initial position than final position sounds?

( x ) ( )

Are there stops, nasals, a glide and a fricative in the child's inventory?

( x ) ( )

Does the child produce CVC and CVCVC shapes?

( x ) ( )

Does the child have a cluster represented in either initial or final positions of words?

( ) ( x )

Determined Prognosis:

Wait and See

Watch and See

Intervention
Appendix D

Comprehensive Checklist for the Evaluation of the Spontaneous Recovery of Expressive Language Skills in Young Children

This checklist was created to serve as a tool for speech-language pathologists to use to aid in providing an educated prognosis for children with Expressive Language Delay. The checklist provides a compilation of the five key predictors of the spontaneous recovery of expressive language skills. The ultimate goal is to use the checklist in conjunction with a spontaneous language sample and a developmental inventory completed by the parent/guardian to determine if spontaneous recovery of expressive language skills is likely to occur without intervention. Speech-language pathologists can also use this tool to make recommendations about whether intervention would be appropriate for the child.

Instructions: For each section, please indicate the response that applies.

Section I: Severity (as determined by expressive vocabulary size)
Note: Please have parent/guardian complete the MacArthur Communicative Developmental Inventory (Fenson et al., 1993) before completing this section. Date inventory was completed: ________________

Name of child: ____________________ Age (year; month): 3: 9
Gender: _ M _ Birthdate: ________________ Native Language: ________________
Examiner: ____________________ Date: ________________

Child presents:
A vocabulary of 50 words or more. ( )
A vocabulary between 40-49 words. ( )
A vocabulary between 30-39 words. ( x )
A vocabulary between 20-29 words. ( )
A vocabulary of 20 words or less. ( )

Section II: Comprehension

Client recognizes routine phrases (e.g., “time for bed” “Pattycake”). (8-12 months)

Child understands words for objects/people that are:
a. In view (12-18 months) ( x ) ( )
b. Not in view (18-24 months) ( x ) ( )

Child responds to:
a. Yes/no questions (e.g., "Is this color red?") (24 mthds) ( x ) ( )
b. Simple what/who/where questions (e.g., "What is that?" "Who is that?") (30-36 months)

Child understands:

a. Two-word combinations (e.g., agent-action; possessor-possession; action-object) (18-24 months) (x) ( )

b. Three-word combinations (e.g., agent-action-object) (24-36 months) ( ) (x)

c. Prepositions (e.g., in, on, under) (30-48 months) ( ) (x)

Section III: Family History

Yes No Unknown

Does anyone in the child's immediate family have a history of late talking, speech/ language problems or academic problems?

(x) ( ) ( )

If so, who? Mother and Father

Problem: Mother: late talking; Father: academic-reading disability

Does anyone in the child's extended family have a history of late talking, speech/ language problems or academic problems?

(x) ( ) ( )

If so, who? Grandmother and Uncle

Problem: Grandmother: late talking; Uncle: academic-learning disability

Section IV: Phonology

Instructions: After collecting a spontaneous language sample, please indicate the response that applies.

Yes No

Does the child have more initial position than final position sounds? (x) ( )

Are there stops, nasals, a glide and a fricative in the child's inventory? (x) ( )

Does the child produce CVC and CVCVC shapes? (x) ( )

Does the child have a cluster represented in either initial or final positions of words? ( ) (x)

Determined Prognosis:

Wait and See Watch and See N Intervention