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Language Abilities in Children Who Stutter: Toward Improved Research and Clinical Applications

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ABSTRACT: The nature of the association between language and stuttering in young children has been the focus of debate for many years. One aspect of this ongoing discussion is the status of language abilities in children who stutter (CWS). Available research findings and associated interpretations of these findings are equivocal. This article asserts that an important contributor to the ambiguous nature of this literature may be differences in research traditions and methods that typically have been employed in the study of language development and in the study of stuttering. Cross-disciplinary investigations are inherently complex and, in designing and interpreting research of this nature, a larger set of issues must be considered and more diverse variables must be addressed and/or controlled. This article presents five principles that can be used to guide future research in the area of language and stuttering. These principles also assist in interpreting and applying the current research literature to clinical concerns.

KEY WORDS: early childhood stuttering, language abilities, developmental pathways

This article provides five principles that can be used to interpret literature and develop future research on language and stuttering in young children. The broad aim is not to review the research literature in this area exhaustively or resolve the extant controversy surrounding the status of linguistic abilities in young children who stutter (CWS); other authors have completed such reviews (see Nippold, 1990, 2001, 2002, for examples). Instead, this article seeks to help disentangle methodological and interpretative barriers to understanding language abilities in young CWS better by looking at the literature on early childhood stuttering through the lens of child language research methods and approaches. The principles that are presented are relevant for both research practices and clinical applications as they assist readers in (a) interpreting the current research literature and developing their own conclusions; (b) designing future research of high quality with the potential to untangle the nature of the relationship between language and stuttering; and (c) applying existing research to assessment and intervention decision-making, and in assisting families of young CWS.

A number of current articles in the theoretical and research literature contain claims and theories built on the premise of delayed, disabled, or different language acquisition in young CWS (for details, see a review by Ratner, 1997). Bloodstein (2002), in a recent manuscript on the nature of stuttering, argued that "some children may reveal their tenuous grip on language…by stuttering" (p. 165). Wingate (2001) asserted that the bulk of evidence in the field suggests that CWS have difficulties with language and concluded that studies that have not found a language delay in CWS are methodologically flawed.

In contrast to these views, there appears to be a growing body of evidence indicating that the language skills of young CWS are not discrepant from average expectations. These findings are strengthened by the fact that converging

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empirical data are coming from a range of independent research labs and are not based solely on data from English speakers (e.g., Häge, 2001). Also, a number of these studies have used a prospective, longitudinal design, coupled with linguistic data collected from a large number of young children at or near stuttering onset. These methodological designs have provided an informative context for gaining a better understanding of expressive language abilities in conjunction with incipient stuttering. An example of such a project is the Illinois Stuttering Research Project. Over the course of the past decade or so, the Illinois Stuttering Research Project has aimed to (a) elucidate the nature and character of early childhood stuttering and (b) identify factors that may aid in the differentiation of children whose stuttering will persist from those whose stuttering will abate (see, for example, Yairi, Ambrose, Paden, & Throneburg, 1996). Language has been one of the variables investigated as part of the larger project.

Findings of many recent studies of language abilities in young CWS are intriguing. For example, expressive and receptive language skills were found to be at or above expectations for a group of children around 5 years of age who stutter by a group of German scholars who used a prospective, longitudinal design (see Häge, 2001; Rommel, Häge, Kalehne, & Johannsen, 1999). Anderson and Conture (2000) used a variety of both expressive and receptive standardized tests and language sample measures and found language skills ranging from the 61st to the 90th percentile on the Peabody Picture Vocabulary Test–III (PPVT-III; Dunn & Dunn, 1997) and the Test of Early Language Development–2 (TELD-2; Hresko, Reid, & Hamill, 1991) in a group of 20 English-speaking 4-year-olds who stuttered. Miles and Ratner (2001) reported percentile ranks of 48–70, scores at and above test means, for the speech and language skills of 12 English-speaking 3-year-olds who stuttered on standardized measures of vocabulary (Expressive One-Word Picture Vocabulary Test–Revised, EOWPVT–R, Gardner, 1990; Peabody Picture Vocabulary Test–Revised, PPVT-R, Dunn & Dunn, 1981) and grammatical skills (Clinical Evaluation of Language Fundamentals–Preschool, CELF-P, Wiig, Secord, & Semel, 1992).

For participants in the Illinois Stuttering Research Project, both standardized tests (e.g., Preschool Language Scale–Revised, PLS-R, Zimmerman, Steiner, & Pond, 1979) and measures gathered from language samples (mean length of utterance, MLU; number of different words, NDW; and developmental sentence scoring, DDS) have demonstrated that a large group of young CWS did not demonstrate delays or disabilities in expressive language skills. On the contrary, many of these children displayed expressive language abilities at or above normative expectations. These findings proved to be robust both with relatively large groups of participants (cf. Watkins, Yairi, & Ambrose, 1999) and with subsets of the larger participant group (cf. Johnson, DeThorne, Watkins, Ambrose, & Yairi, 2003; Watkins et al., 2003), and have pertained to children whose stuttering would eventually persist (i.e., continue for at least 4 years after the initial data point/onset), as well as those children whose stuttering eventually proved to be transient in nature (i.e., stuttering ceased within 3 years of the initial data point/onset; see Watkins et al., 1999, for comparisons of children whose stuttering persists vs. recovers).

One is left to ponder, then, what factors might account for this discrepancy between recent empirical findings and the existing interpretations of the literature, as well as the range of findings regarding language abilities in young CWS that has been reported. A reasonable beginning point is that, historically, a number of methodological and interpretative issues have likely contributed to this tension. For example, variables such as the age of participants, the time since stuttering onset, the measures of language used, and the use or absence of an appropriate normative comparison could influence outcomes and are highly relevant in study design and interpretation. It is also plausible that differences in research approaches and traditions between scholars whose expertise is language development in children and those whose work centers on stuttering have further contributed to current uncertainties at points of interface between the domains.

The majority of recent studies in this area, such as those discussed above, have shared a set of common features that have enhanced their methods of examining the nature of the relationship between language and stuttering in young children. These studies include the following features: (a) they focused on young children; (b) participants were studied at or near the onset of stuttering; (c) psychometrically solid measures of language were used; and (d) findings were reported through percentiles, standard scores, or other appropriate normative comparisons. Consistently, these studies found no cause to assume or predict a language delay in the majority of CWS. We propose the following five principles as a means for arriving at an even clearer picture of the relationship between language and fluency in young children.

PRINCIPLE 1: CONSIDER/CONTROL VARIABLES THAT ARE RELEVANT FOR LANGUAGE DEVELOPMENT

A cursory review of studies of language skills in young CWS reveals that these investigations have differed markedly in variables such as (a) the age of the participants, (b) the age of stuttering onset and time elapsed between onset and data collection for a particular study, (c) the socioeconomic background of participants (if reported at all), (d) the length of time stuttering has persisted and/or consideration of whether stuttering is chronic versus transient, (e) the types of language skills measured, and (f) the tools used to measure language abilities. The variability introduced through these highly relevant factors may exert a significant influence on research findings.

Consider some examples. During the preschool years, language change occurs relatively rapidly. Children are mastering many linguistic skills and are doing so with remarkable speed and efficiency. Learning the grammatical system of the language, including morphosyntactic markers such as plural *-s*, past tense *-ed*, and third person singular *-s* verb marking, represents a linguistic challenge for

typically developing children around 2½–4 years of age (Brown, 1973; de Villiers & de Villiers, 1973). During and around this time frame, studying morphosyntactic skills in CWS could be informative; much beyond this time frame, however, these skills will no longer have much potential to be informative except in children with very significant delays.

On a related point, if a study uses broad age ranges to evaluate language skills in young CWS, it becomes difficult to learn much about linguistic competence. For example, mastery of function words such as first- and second-person pronouns (i.e., I, you) typically occurs by age 3 (Huxley, 1970; Oshima-Takane, 1992). To investigate whether children are more likely to stutter on content words than on function words requires taking these developmental data into account. Grouping children ages 2–6 would be uninformative given that the children at the young end of this age range are still acquiring the target forms, whereas children at the high end of the age range are likely to have mastered these forms. Language matching (e.g., mean length of utterance [MLU]-matching) rather than age matching is an alternative that may be more informative when looking at this period of development. Thus, the rapid changes that are characteristic of early language development necessitate care in selecting language variables of interest at particular points in time.

Beyond the importance of measuring sensitive language abilities with children at appropriately constrained age ranges, the potential influence of another variable on language development is even more striking. There is now a compelling body of literature in the area of language development that reveals a strong influence of socioeconomic status (SES) and a related variable, parental education level, on language development. Many studies have reported that children from middle and upper middle income backgrounds have larger vocabularies and learn language at an accelerated rate relative to lower income peers (cf. Hart & Risley, 1995; Whitehurst, 1997). These early language differences tend to continue in reading and school achievement through the elementary years (Walker, Greenwood, Hart, & Carta, 1994).

Reporting SES is crucial in studies that seek to understand children's language development. Even more critical, if control groups are to be used, it is imperative that experimental and control groups be drawn from parallel socioeconomic backgrounds. A quick scan of studies of language skills in young CWS indicates that very few investigations have considered or reported potential influences of SES on children's language performance. One of the few exceptions is a recent study by Miles and Ratner (2001), who documented that in their study, the CWS and the children who did not stutter (CWNS) were from middle to upper middle class families, and both groups had average levels of maternal education of 16 years. Most often, though, in reading research that aims to contrast language skills in young CWS and a group of peers who do not stutter, it is not possible to know whether participants did or did not come from the same SES background.

Thus, in interpreting and designing research to understand language abilities of CWS, researchers and clinicians alike will want to consider, control, and report data on variables that have been demonstrated to be relevant for language. It seems reasonable that this has been a particular challenge for research focusing on both language and stuttering; variables that are not thought to be influential in stuttering, for example, may be particularly important contributors to language development.

Similarly, in clinical assessment and decision-making processes for young CWS, it is also imperative to consider variables that are relevant for language development. A unitary focus on the stuttering behavior could lead to overlooking details that are influential in the child's overall communicative development. Using language measures and tools that are informative at particular ages and stages will be essential to a full understanding of the child's developmental status. Futhermore, any clinical recommendations made to facilitate development in one domain must be considered in the context of potential influences on other domains. For example, if a recommendation were made to simplify parental language input as a means to enhance fluency, potential influences of reduced input on language development would need to be considered carefully and thoughtfully.

PRINCIPLE 2: USE APPROPRIATE COMPARISONS

The second principle for enhancing the informativeness of future research on language in CWS is closely linked to the first principle, suggesting that in order to fully understand the language abilities of young CWS, an appropriate form of comparison with expectations for typical language development is required. There are several options for how this comparison can be achieved. Traditionally, control groups have been used in experimental designs, wherein a group of CWNS is included in the research design, matched to their stuttering counterparts on selected variables (e.g., Anderson & Conture, 2000; Miles & Ratner, 2001; Silverman & Ratner, 2002; Yairi et al., 1996). This approach has a long history in behavioral science research and is empirically solid to the extent that the control participants are closely matched to the experimental participants on relevant variables. In practice, there have been a number of difficulties with this approach in studies of the language skills of young CWS. In reviewing the research literature on language skills in young CWS, the unexpectedly high performance of control groups on standardized measures of language is striking.

Selecting a few examples, more than 25 years ago, Murray and Reed (1977) reported a mean on the original version of the PPVT (Dunn & Dunn, 1965) at the 75th percentile for their control group versus the 50th percentile for their group of CWS, and a standard score of 113 for the control group versus 95 for the CWS on the PLS (Zimmerman, Steiner, & Pond, 1969; $M = 100$, $SD = 15$). More recently, researchers from the Illinois Project reported PLS-R (Zimmerman et al., 1979) standard scores of 133.5 for a control group, relative to 110 for a group of children

whose stuttering would ultimately persist (see Yairi et al., 1996). Anderson and Conture (2000) reported TELD-2 (Hresko et al., 1991) percentile ranks of 96 for the control group and 90 for the group who stuttered, as well as PPVT-III (Dunn & Dunn, 1997) percentile ranks of 83 for the control group and 61 for the CWS. Ratner and Silverman (2000) used a number of measures to contrast CWS and nonstuttering peers, reporting (a) PPVT-R (Dunn & Dunn, 1981) percentile ranks of 71 for their control group and 63 for their stuttering group; (b) percentile ranks of 67 and 75 for the control group and 50 and 48 for the group who stuttered on two CELF-P subtests (Word Structure and Linguistic Concepts subtests, respectively; Wiig et al., 1992); and (c) EOWPVT-R (Gardner, 1990) percentile ranks of 84 for the control group and 70 for the CWS. Ryan (1992) presented one of the few studies whose control group performed closer to the test mean, achieving a standard score of 111 on the PPVT-R as compared to 105 for the CWS, and a scaled score of 101 for the control group and 92 for the group who stuttered on the Test of Language Development–Primary (TOLD-P; Newcomer & Hammill, 1988). It is of interest that Ryan is one of the few studies in which one of the reported matching variables was SES. In many of these investigations, then, the control group performed .5 *SD* to 2 *SD* above the mean on measures of language skills, whereas the CWS tended to score at or slightly above the test means.

Overall, the high performance of control participants in these investigations suggests that they were not representative of typical language development. The basic premise that a control group can serve as an appropriate estimate of the typical population performance seems fundamentally flawed when the control group's scores are markedly above the test mean.

In investigations of CWS, the high language performance of control groups has led some scholars to infer language difficulties or differences in CWS when their linguistic performance has been well within, or even well above, the typical range of performance. The soundness of this reasoning rests on, among other things, the extent to which the CWS have been well matched to the comparison peers on key variables. Although a few studies of language and stuttering have attempted to match on SES and/or parental education (e.g., Miles & Ratner, 2001; Ryan, 1992), how such matches are ensured remains challenging. One attempt some researchers have made to address this issue is by identifying control participants from the same day care as experimental participants. Although this practice represents a beginning point, it does not ensure that, for example, parental education will be equivalent in the participant groups. Because of the potential influence of these variables, future attention to measuring and controlling SES and/or parental education seems of particular importance. In addition, when interpreting findings of statistically significant differences on standardized tests between two samples of children from the larger populations of CWS and CWNS, it is crucial for investigators to consider the standard error of measure. If there is overlap between the two groups in performance on the standard measures when the standard error of measure is considered, findings must be qualified very carefully (as done by Anderson & Conture, 2000, for example).

It is challenging to recruit a control group that represents a reasonable "match" for an experimental group. Recognizing the possible set of relevant variables can be challenging, and appropriately controlling for these variables through matching is often even more difficult. With the Illinois Project, our experience has been that recruiting control participants from outside the university community has been difficult (cf. the high language scores of the control group reported in Yairi et al., 1996). Doing so is particularly important, though, given that the university community is a highly educated and nonrepresentative subset of the broader and more diverse population from which experimental participants, that is, young CWS, have been drawn.

Given the difficulty of finding appropriately matched control and experimental groups, alternative approaches should be explored. One approach that has been used in language research is to use normative datasets, such as the database that is built into the Systematic Analysis of Language Transcripts (SALT) computerized language analysis system (Miller & Chapman, 1997; see also Leadholm & Miller, 1992). This dataset offers several advantages, most notably that means and standard deviations for various measures of expressive language are based on a relatively large number of children and include children from diverse socioeconomic and racial/ethnic backgrounds. The availability of means and standard deviations at a wide range of ages permits calculation of *z* scores, which enables interpretation of an individual's performance in standard deviation units from the mean. Although it is not known how precisely these participants compare to a group of CWS, the database includes a sufficient number of children at each age, from a range of backgrounds and communities, that this approach has the potential to provide a more informative comparison than a control group of small size with characteristics that do not match those of the experimental group—problems that have prevailed in much of the published research on language abilities of young CWS.

In summary, then, the key point of Principle 2 is that, in order to interpret linguistic data gathered from CWS, comparison to appropriate normative expectations is important. When differences are observed between two groups (e.g., CWS and a control group of CWNS), the importance of the observed differences remains an open question. The significance of such a difference has been interpreted differently by different groups of researchers. Some scholars have interpreted this difference as revealing a linguistic deficit in CWS (e.g., Bloodstein, 2002), whereas other scholars have assumed a weaker interpretation of this gap, arguing that discrepancies reveal subtle, yet important, differences between the groups of children (e.g., Anderson & Conture, 2000). Still others, such as the authors of this article (also Watkins et al., 2003), assert that the fact that observed differences occur within average limits is important and, further, that many apparent differences between groups may be tied to methodological issues and therefore may not be particularly informative. Additional work is needed to disentangle these competing

possibilities. The crux of this principle for future work is the importance of using an optimal standard for evaluation and comparison of the performance of CWS on language measures.

From a clinical standpoint, the application of a comparison for evaluating performance is common practice. It is routine to identify children as having a problem with stuttering or as language disabled based on comparison to standards of typical development. Just as in research contexts, however, the validity of any clinical identification or recommendation rests on the appropriateness of the comparison used as the point of reference for typical development.

PRINCIPLE 3: EVALUATE LANGUAGE ABILITIES IN CONJUNCTION WITH FLUENCY IN A LONGITUDINAL TIME FRAME

There is an increasing awareness of the interaction among different components of development on human performance within and across domains. The interconnectedness of various developmental domains yields research implications for the study of language development and language disorders, as well as the investigation of fluency disorders. Scholars in all areas of human communication have recognized the need to attend to the interconnectedness of relevant processes and to monitor these interactions over time in order to have a full understanding of both typical and atypical processes. In addition, a more complete view of strengths and challenges in development will emerge from longitudinal analyses of skills across domains. The bulk of research to date in the area of language abilities in CWS has used a cross-sectional approach, offering one view of developmental status at a single point in time. This research has been essential in developing an understanding of stuttering in young children and has greatly contributed to knowledge of the phenomenon. Much of what we now know about stuttering in young children has been achieved through such investigations. Yet, in order to flesh out and advance knowledge, additional methodologies are needed. Although some longitudinal investigations exist, many have not yet reported on development across domains (e.g., Mansson, 2000). Furthermore, relatively few studies have explored the potential of a connection between changes in fluency status and shifts in expressive language.

Data from the Illinois Project provide an example of the potential contribution of this type of work. A fundamental goal of the Illinois Project has been to identify characteristics, measured near stuttering onset, that would assist in the prediction of stuttering persistence versus recovery. Watkins et al. (1999) reported typical to above-typical expressive language, near onset, for children whose stuttering would ultimately persist as well as for children who would later recover. Indeed, from these results, expressive language did not appear particularly informative in terms of revealing the likely developmental course of stuttering, and data from the initial visit suggested similarity between persistent and recovered groups. However, when language and stuttering were contrasted in a longitudinal time frame, a somewhat different picture emerged. Watkins et. al (2003) charted expressive language development status, using *z* scores for comparison to a normative database, at one point each year across a 4-year period in 23 preschool CWS. The 8 children whose stuttering persisted over time had above-average language skills at stuttering onset, and these above-average language skills tended to remain stable over time. The 15 children whose stuttering resolved also had above-average language skills at stuttering onset; however, in contrast, their language skills appeared to normalize over time (i.e., group *z* scores for the expressive language measures of MLU, NDW, and NTW [number of total words] shifted from approximately .75 *SD* to 1 *SD* above the mean to near the mean over the five visits). Our research team hypothesized that the normalization of language skills in the children who recovered from stuttering might coincide with the decrease and ultimate cessation of stuttering—a possibility that requires an individual level of analysis to evaluate. The key point for this principle is that without examining connections between language and fluency over time, potential differences in the developmental pathway for persistent versus recovered stutterers in the language domain would not be uncovered.

Principle 3 also suggests several clinical implications. Specifically, in recognizing that the relationship between language and stuttering may change over developmental time, it is apparent that ongoing monitoring of language proficiency and performance is important for young CWS. The frequency and nature of this monitoring may differ for children with varying language abilities near stuttering onset (e.g., for children with above-average language skills near stuttering onset, only informal and/or periodic monitoring may be needed, whereas for a child with less sophisticated language, more frequent monitoring may be beneficial). However, the possibility exists of a child constraining language in order to reduce stuttering, independent of language status at onset. Less language practice and use could have negative social, linguistic, and academic consequences over developmental time and would be highly relevant from a clinical standpoint.

PRINCIPLE 4: INTEGRATE GROUP AND INDIVIDUAL DATA IN INVESTIGATING LANGUAGE ABILITIES IN YOUNG CWS

For the most part, existing studies of language skills in CWS have used group methodologies, contrasting mean scores or performance of a group of CWS with either control group means or a normative standard. This has been the approach used for the bulk of the research associated with the Illinois Project and for much of the research in the field. Clearly, it is cumbersome to evaluate individual patterns, and caution must be exercised in developing broad inferences from single case patterns. However, it has also been valuable to evaluate the extent to which individual

children follow group trends. As complements, the combination of analysis of group trends and evaluation of individual adherence to these trends has considerable promise. For example, in considering the results of the longitudinal study described above, Watkins et al. (2003) hypothesized that the normalization of language skills in the children who recovered from stuttering might coincide with the decrease and ultimate cessation of stuttering. In order to evaluate this possibility, Johnson et al. (2003) examined changes in language skills in conjunction with changes in fluency skills in the same 23 preschool CWS. Language change over time was charted for each participant, rather than by group. Changes in language skills for each child were then classified as either increasing, decreasing, or stable over time. The extent to which individual participants from persistent versus recovered groups adhered to expected patterns was considered. Then, results were pooled by group (persistent vs. recovered). Findings showed that there was a slightly greater tendency for children whose stuttering persisted to maintain stable language skills over time. In contrast, there was a slightly greater tendency for children who recovered from stuttering to decrease language production over time, in general, associated with time of recovery. Yet, not all children adhered to the patterns predicted for their group.

This investigation was undertaken with the prediction that the deceleration in expressive language observed in children who recover from stuttering would be closely associated with the timing of that recovery. Although the expected association held for several of the recovered participants, it was not applicable for all participants who recovered. In turn, although many children who persisted as stutterers maintained above-average language performance, not all persistent stutterers did. These unexpected patterns were only observable when we departed from a group-based analysis. More complete understanding of the development of stuttering in young children, and how stuttering connects with other developmental domains, will rest on accounting for patterns observed in individual children as well as groups of youngsters.

From a clinical standpoint, it is also valuable to recognize that individual children do not always follow group trends, even when group trends are robust. Although Watkins et al. (1999) reported that 83 young children who stuttered performed at or above normative expectations in expressive language abilities, not every youngster in the study conformed to this pattern. Consideration of individual patterns of strength and limitation in assessment and intervention decision-making for young CWS is imperative for optimal clinical practice.

PRINCIPLE 5: DISTINGUISH LINGUISTIC INFLUENCES FROM LANGUAGE LIMITATIONS

As a final principle, it is relevant to distinguish between a substantial body of research that has demonstrated that linguistic factors influence the likelihood of stuttering events and the literature regarding the status of language development in CWS. Certainly, it is well established that linguistic factors influence stuttering. For example, the grammatical complexity of an utterance is associated with the likelihood of stuttering, with sentences of greater complexity more likely to include a stuttering event than less complex sentences, above and beyond influences of sentence length (see Logan & Conture, 1995; Yaruss, 1999). Furthermore, research has demonstrated that the location of words within phrasal planning units influences the probability of stuttering (see Au Yeung, Howell, & Pilgrim, 1998; Howell, Au Yeung, & Sackin, 1999). Overall, cumulative evidence is convincing that language variables influence stuttering, but this evidence does not implicate a defective set of language abilities in CWS. Perhaps the most important information on this point is that linguistic factors tend to influence stuttering likelihood in a similar manner for CWS and CWNS alike. Points of breakdown seem linked to the way language is organized, planned, and produced, rather than to something unique about language in individuals who stutter, or differences across languages (e.g., see Jayaram, 1984, for a comparison of Kannada [which is spoken in Karnataka, India] and English speakers who stutter). It is possible that continued study may reveal particular aspects of language planning and production that prove especially troublesome for young CWS, or that seem to function differentially in individuals who do and do not stutter. At a general level, however, this line of inquiry is not designed to evaluate the status of language abilities in CWS and thus, cannot directly shed light on the question of language skills in this population.

On a similar note, the data on linguistic influences on the likelihood of stuttering events may have implications for the design of intervention strategies (cf. Logan & Conture, 1997) but do not indicate that particular features of language on which stuttering is likely to occur are problematic for young CWS. Linguistic influences on the likelihood of stuttering events are important factors to consider and control when assessing and monitoring therapy progress.

CONCLUSION

It is in the process of using expressive language to communicate that stuttering events occur. On a superficial level, it is in the course of selecting words and forming sentences that fluent production of speech and language is interrupted in young CWS. A link between language and stuttering is plainly logical. The perspective that young CWS are likely to have language skills that are inferior to those of their peers who do not stutter has been a long-standing view in the field. At present, however, some controversy exists in interpretation of the current data on language abilities in young CWS. A possibility raised in this article is that much of the current controversy may have been fueled by methodological issues and the need for clearer understanding of relevant variables and principles of research across the disciplines of language and stuttering. As an approach to assist in resolving this controversy and

to enhance future work, this article has offered five principles to guide the next phase of research, with the broad aim of facilitating investigations of language abilities in young CWS and enhancing theoretical and clinical interpretation of existing studies. Stuttering is clearly a complex, multifaceted phenomenon. Our approaches to understanding language skills in CWS must also be complex and multidimensional, taking care to (a) recognize and control relevant variables across domains, (b) use optimal comparisons, (c) examine skills and domains longitudinally, (d) interweave individual and group data, and (e) maintain the distinction between linguistic influences on behavior and language difficulties.

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