The challenge of providing appropriate fluency services to children is magnified when the fluency disorder coexists with either language impairment, phonological impairment, or both. Such a situation is not uncommon (Blood & Seider, 1981; Louko, Edwards, & Conture, 1990; St. Louis & Hinzman, 1988). In this article, I would like to provide some suggestions for identifying such children and for planning therapeutic intervention that accommodates the totality of the child’s communication disability.

PREVALENCE OF COEXISTING FLUENCY, LANGUAGE, AND SPEECH DISORDERS

Nippold (1990) thoroughly surveyed the literature collected over a 50-year period to ascertain whether children who stutter were indeed likely to demonstrate concomitant speech and language problems. Study findings are equivocal when viewed as a group, probably due to subject selection criteria, varying operational definitions of disordered performance, and a multiplicity of study methodologies. However, it is clear that coexisting communication disorders do occur with fluency disorder for a number of children.

Among the concomitant disorders seen when children who stutter are followed clinically or in research studies are articulation or phonological impairment, syntactic and/or morphological delay or disorder, word-finding difficulty, and voice problems (c.f., Blood & Seider, 1981; St. Louis & Hinzman, 1988; St. Louis, Murray & Ashworth, 1991).

Recently, Louko, Edwards, and Conture (1990) studied a cohort of children who stuttered and found that almost 40% of them displayed delayed and atypical phonological development, whereas only 7% of the control group children who were normally fluent demonstrated such a profile.

The prevalence of language disability in disfluent children has been more difficult to ascertain because of a tendency for research examining relationships between stuttering and language to screen out children with frank linguistic disabilities. Preus (1990) specifically notes the high frequency with which speech, language, and fluency problems coexist in the mentally retarded population. Although the prevalence of language disability in the stuttering population may turn out to be no higher than that in the population at large, clinicians should be alert to the real possibility that any child whose primary presenting complaint is fluency disturbance may demonstrate additional communication deficiencies, some of which may not be readily apparent without careful formal testing.

GUIDELINES FOR ASSESSMENT

Delineating Areas of Therapeutic Need

We take as noncontroversial the notion that, given the relatively high prevalence of multiple communication impairments in most groups of children seen for speech-language pathology services (e.g., Shriberg, Kwiatkowski,
Best, Hengst & Terselic-Weber, 1986), all children seen for evaluation of any aspect of communication development receive a full-scale assessment that not only examines a child's fluency abilities, but also includes formal appraisal of articulation and language skills. There may be concerns about obtaining adequate data on spontaneous speech and language performance when the presenting complaint is fluency disorder.

Nippold (1990) warns that it is entirely possible for children with significant fluency problems to demonstrate lowered performance on some linguistic measures, particularly those that measure the length and complexity of spontaneous conversational speech and latency of naming responses. In these cases, the child's hesitancy about producing disfluent output may cause paucity or simplification of the output or slowed response rate. As with any other child whose spontaneous speech is being sampled for developmental adequacy, extreme care must be taken to obtain a sample during relaxed and natural speaking situations.

Although it is unrealistic for clinicians in most school settings to extensively analyze possible interactions between levels of linguistic and phonological demand and stuttered behaviors (c.f. Meyers & Woodford, 1992; Ratner & Sih, 1987), some effort should be made to appraise fluency behaviors during tasks that reflect phonological and language formulation. The Stocker Probe (Martin, Parlour & Haroldson, 1990; Stocker, 1980), though relatively broad in its analysis of linguistic demand, is one option for quickly appraising the degree to which lexical and syntactic formulation demands affect the frequency and quality of stuttering in a child's speech.

A novel approach that maximizes the assessment of both fluency and language skills is that employed by Gaines, Runyan, and Meyers (1991), in which a Developmental Sentence Score (DSS) is obtained separately for the child’s fluent and stuttered utterances. Given the evolution of computer-assisted DSS and related analyses (MacWhinney, 1991 and in press; Miller & Chapman, 1989), such assessment procedures potentially improve the quality of appraisal for multiple domains of performance at reduced cost of clinical time and energy.

Comparison of fluent utterances with and without grammatical and phonological errors may reveal generalized sentence-planning stresses that do not track easily to the production of individual sounds, words, or phrases. First, disfluencies may be located reliably at particular locations within an individual child's utterances: at particular constituent boundaries (Bernstein, 1981), revealing sentence planning difficulty with elements such as verb phrases; or on or before words starting with particular sounds. Second, particular types of sentences, usually those acquired rather late in the developmental sequence, such as complex and coordinate constructions, may be uttered with relatively higher levels of disfluency than utterances containing late-developing grammatical constructions.

There is some experimental evidence that suggests that sentential complexity is most highly associated with the number of disfluent utterances, rather than the number of disfluencies per utterance (Ratner & Sih, 1987). That is, grammatically complex utterances are more likely to contain disfluencies, but the number of disfluencies they contain is not as highly predictable.

Similarly, although a phonological distribution is not calculated commonly for spontaneous fluency samples, a tally of disfluent tokens, when compared to errors on phonological testing, may reveal interactions between articulation planning and fluency failure.

Distinguishing Between Stuttering and Nonfluency

One particular clinical problem, which also bears on the interpretation of the research literature on coexisting communication impairments, has been adherence to a strict standard for distinguishing between clinical stuttering and other forms of nonfluency. Particularly when children demonstrate expressive language impairment (or nonnative language proficiency), fluency may be compromised in ways that do not meet the criteria for true stuttering.

Excessive use of normal nonfluencies such as unfilled pauses (hesitations), filled pauses (fillers such as um, uh, well, etc., either singly or repetitively), whole word repetitions, or phrase repetitions or revisions (so-called “maze” behaviors), may call attention to the child’s fluency abilities, but not meet recognized definitions of stuttering. Hall, Yamashita, and Aram (1993) noted that a proportion of preschoolers with developmental language disorders exhibited significant numbers of these kinds of disfluencies in their spontaneous language samples. Such behaviors may be more parallel to the distinction between stuttering and “developmental” disfluency.

It is telling that the research-based assumption that a proportion of children's nonfluencies evolve from linguistic pressures that exceed their productive capacities may be realized when a previously fluent child begins to "stutter" following intervention to improve expressive language or phonological skills (Hall, 1977; Meyers, Ghatak, & Woodford, 1990). The distinction between normal instances of fluency failure that are exacerbated, sometimes greatly, by linguistic formulation demands, and true stuttering (which may also wax and wane with the linguistic difficulty of the task) is important clinically for the simple reason that, for some children, improvement in the child’s language skills leads to resolution of the fluency problem without therapy specifically targeted to fluency enhancement. Alternatively, it also may be the case that the salience of a given child’s articulation or language problem effectively “masks” ready appreciation of a fluency problem. Not until the child’s speech becomes more intelligible do some fluency problems make an impression on the listener (Meyers, Ghatak, & Woodford, 1990).

Usually, there is little difficulty in discretely identifying fluency disorder from phonological disorder. However, Ratner (1993a) notes that sporadic reports of unusual forms of stuttering may mask a child’s efforts to overcome phonological difficulty. In particular, some published reports of “stuttering” on final consonants (Camarata, 1989; Mowrer, 1987) appear to follow parental and/or clinical
errately described as stuttering, and fluency therapy would con-sonant deletion. The parents may exaggerate or repeat children who previously demonstrated the process of final consonant closure in the speech of some stuttering children.

Finally, stuttering needs to be differentiated from cluttering, particularly in cases when a child presents with problems in the areas of fluency, articulation, and/or language (see St. Louis & Myers [this issue, pp. 187–195]). Recommended treatment of the symptoms of cluttering includes components (such as heightened self-monitoring) that are likely to aggravate fluency and speaking fears in some stuttering children.

**ESTABLISHING THERAPEUTIC GOALS AND PRIORITIES**

**Premise: No Skill Area Is an “Island”**

Models of stuttering such as the Demands and Capacity Model (Adams, 1990; Starkweather & Gottwald, 1990) implicitly acknowledge that demands in a variety of domains can result in fluency breakdown. Thus, the child who stutters and also demonstrates a phonological or language disorder faces a special challenge: Efforts to remediate areas of deficiency are likely to exacerbate patterns of fluency failure. “Trading” relationships among fluency, language, and phonological skill have been well established, both in research studies and clinically (Crystal, 1987; Masterson & Kamhi, 1992; Panagos & Prelock, 1982; Ratner & Sih, 1987). This situation places the clinician in a planning dilemma—how to improve skills in one domain without further compromising skills in another.

**Sequential vs. Concurrent Intervention**

In some cases, there are reasons to suspect that a sequential approach to multiple communication impairments is appropriate. For example, if patterns of disfluency appear to stem from expressive language formulation problems, as discussed above, language intervention is best targeted before structured fluency therapy is contemplated. Sequential approaches to combined phonological and syntactic delay are implicit in cases where a failure to realize particular syntactic or morphological markers can be related directly to an inability to pronounce the requisite forms (Paul & Shriberg, 1982; Schwartz, Messick, & Pollock, 1983). Thus, a child who demonstrates an inability to close both mono-morphemic and inflected syllables (i.e., side/ sighed; size/flies) requires closed syllable production (e.g., being able to say side and size) before expressive morphological skills can be advanced (e.g., inflecting for the past tense or third person singular agreement marker).

The usual concern in sequential therapy plans is the potential lack of utility in addressing fluency first, only to have it stressed and compromised as later intervention for phonological or language problems places demands on the newly acquired fluent speech. Conversely, parents, children, and clinicians all have individual and equally valid concerns regarding decisions to delay fluency intervention until phonological and language targets have received attention. Articulation and language therapy typically are both long-term intervention sequences, and there can be realistic worry that a fluency problem cannot go unresolved for an unspecified period of time without significant social, emotional, and educational consequences. It is telling that occasionally, sequential approaches seem to be taken when therapists feel unable to intervene effectively for a particular disorder. The clinician who feels more comfortable treating articulation than language, or language than fluency, may make decisions to treat disorders sequentially, hoping that either the unaddressed problem will resolve itself spontaneously, or be addressed by a subsequent clinician. Of the possible reasons for deciding to address multiple problems sequentially, this is, of course, the most indefensible.

**Guidelines for Concurrent Intervention: Language**

Concurrent intervention for fluency and additional communication disorders should attempt to place fluency skills practice within the context of lowest phonological and linguistic demand. Particularly given documented trade-offs between expressive syntax and fluency (Gaines, Runyan & Meyers, 1991; Gordon, 1991; Gordon, Luper & Peterson, 1986; Ratner & Sih, 1987; Stocker, 1980), the premise that all fluency therapy for children should introduce fluency skills at carefully graded levels of linguistic demand is all the more important when both expressive language and fluency are impaired. Fluency-facilitating activities should actively avoid requiring the child to produce utterances beyond those that are comfortably within the child’s expressive grammatical repertoire.

Reworking therapy plans when stuttering coexists with expressive language delay or disorder requires greater attention to the language demands posed by fluency assignments than is provided typically in published stuttering treatment programs. Though most stuttering treatment programs for young children are structured around some variation of what has popularly been termed GILCU (Gradual Increase in Length and Complexity of Utterance) (c.f., Ryan, 1984), close examination of the majority of available programs (c.f., those summarized in Peins, 1984 and Prins & Ingham, 1983; more recently, Pindzola, 1987) reveals little to guide the clinician in structuring goals based on developmental linguistic principles, rather than length of utterance alone (Brundage & Ratner, 1988; Ratner & Sih, 1987).

Ratner and Sih (1987) demonstrated that fluency breakdown is highly predictable from the developmental difficulty of syntactic structures, whereas length of utterance shows a much lower correlation with fluency failure. Importantly, this relationship is revealed even within the
quite confined task of imitating a model (Ratner & Sih, 1987) and may be exacerbated when the child is required to supply a structure parallel to one modeled by the clinician (Gordon, 1991). Thus, imitation and modelling tasks designed to address syntactic or morphological deficits, shown to be most efficient clinically in inducing changes in expressive language performance (Connell, 1987; Connell & Stone, 1992), may evoke fluency failure. Similarly, fluency practice, if structured in such a way that it does not address the demand it poses on a child's expressive language capacity, may not produce desired changes in fluency.

A primary need in such cases is to delineate areas of relative language competency to be used as initial fluency practice targets. Such competencies (as well as structures or activities likely to place undue linguistic stress on the child) need to be determined by individual analysis. For example, children's fluency can be appraised during spontaneous speech, on elicitation tasks, and during dialogue to determine whether utterances with a particular grammatical configuration (i.e., interrogatives, embedded clauses, coordinated constructions) or a particular pragmatic function (i.e., questioning, negating, explaining, etc.) should be left for later in the therapeutic plan than apparently easier-to-formulate-fluently utterances that contain other structures (i.e., prepositional phrases) or perform other functions (i.e., commenting; see also Weiss, 1993).

**Concurrent Intervention: Phonology**

Guidelines for concurrent intervention for phonological and fluency impairment have been proposed and piloted by Conture, Louko, and Edwards (1993). They advocate combining a fluency-shaping protocol with an indirect phonological intervention plan. The authors' premise is that other forms of therapy carried out concurrently with fluency therapy should avoid overt correction of the child's speech. Therefore, phonological intervention for the children in their pilot program, while following an array of traditional approaches to articulation remediation, omitted at all stages any direct feedback to the child on the accuracy of his or her articulation attempts.

Four children in the combined fluency-phonology group therapy program were compared to four fluency-matched children receiving stuttering therapy only during a similar time frame. Half of the children in the combined group reduced their stuttering by more than 15% over the course of an academic year, whereas three-fourths of the children receiving fluency therapy showed similar gains. All four children with phonological impairment demonstrated an average decrease of 25% in their use of inappropriate phonological processes.

However, there are problems with evaluating the efficacy of the Conture, Louko, and Edwards (1993) protocol for combining phonological and fluency intervention. As the authors note, it is unclear how much progress either group of children would have made in the absence of any intervention, especially given the high remission rate characteristic of fluency disorder in this age group (but see Ramig, 1993). Further, phonological development is subject to the same concern. However, it is evident that some progress was made in two discrete communication domains by two of the four children they treated, and, more importantly, that a coexisting fluency disorder was not aggravated by concurrent work to improve phonological ability. A logical extension of the Conture, Louko, and Edwards proposal is the premise that work done to improve articulation and/or language ability should be carried out in an environment that avoids overt evaluation of the accuracy of the child's attempts, as feedback to the child's errors are seen as stressful to the child's attempts to communicate.

**“Blended” vs. Discrete Intervention Approaches**

It is possible for a treatment program to “blend” fluency therapy into the context of ongoing work on phonology by incorporating the goals of fluency facilitation into other remediation activities. This is the approach adopted by the Conture, Louko, and Edwards's (1993) pilot program. That is, within the context of practicing articulation targets, children were encouraged to speak slowly, modify rate and rhythm, reduce interruptions in group speaking situations, increase inter-speaker turn latencies, and use a relaxed and nontense manner of speaking.

Note that such an approach contrasts with the potential decision to spend part of the therapy time allocation working on fluency, while spending the remainder on phonology (or language). There are a number of possible advantages to such a tactic. To the extent that all fluency-shaping goals need to be practiced in some communication activity, it is efficient to practice them while working on other areas of communication development. This practice holds true only to the extent that either the articulation/language skill to be worked on does not inherently stress the fluency system (a very large concern), or that the clinician's approach to remediation (e.g., feedback or reinforcement patterns) does not cause the child to experience various forms of stress while working on the articulation/language targets. If either premise is false, blended therapy may not be wise. Informal appraisal of the degree to which children can comply with fluency-shaping goals within the context of either articulation or language therapy can be made by performing a post hoc analysis of the relative fluency of the child's speech during blended intervention activities, and baseline fluency measurements taken during spontaneous interactions.

Although one method of reducing stress on the fluency system during work on other communication skills is to avoid overt feedback to the child's accuracy of production, an alternative approach is to blend therapy goals on a lagged basis. That is, a period of initial therapy time is devoted to improving performance in a particular area of phonological or linguistic performance. After the child has reached a comfortable level of performance (in a structured environment) within the targeted area, work on fluency can begin, using the recently mastered forms as the basis for practice. Theretfter, guidelines for fluent speech production are framed overtly during “review” activities, rather than during practice on newer targets.
Approaching fluency and other communication disorders in a discrete, rather than blended, fashion also presents its own advantages. Many of the principles of early fluency training operate on a discourse level, such as generalized rate of speech, relaxed and even tempo, smooth transitions between words in utterances, avoidance of interruptions, and increasing the latency of conversational contributions (Kelly, 1993; Kelly & Conture, 1992). Such targets may be difficult to incorporate into early stages of phonological, morphological, or syntactic intervention, where much more controlled output constitutes the initial performance from the child. The fluency, language, and phonological intervention literature all discuss the inherent problems in bridging such limited practice targets and more spontaneous and natural communication performance. When both fluency and phonological/language goals must cross the bridge simultaneously between controlled and spontaneous conversational behavior, both systems may fail to make the transition adequately. Clinicians may wish to target the “discourse” parameters of fluency shaping (e.g., rate and turn-taking) in activities that are distinct from the discourse-level practice of language or articulation targets.

A final option commensurate with discretely delineated approaches to multiple communication problems is to utilize a modified “cyclic” approach, such as that proposed for phonological intervention by Hodson and Paden (1991). In such an approach, fluency might be the focus for predetermined, alternating blocks of time within the semester or academic year, while work on phonological or language targets occupies other cycles within the annual plan. Cycles allow some spontaneous generalization by the child to occur outside of the clinical setting, while using clinical time to present and begin the initial practice of less well-established targets.

**Providing Parents With Realistic Communication Goals for Their Children**

It is especially important for clinicians to take a proactive, informational stance toward the parents, teachers, and additional significant others who interact with children having fluency problems as well as problems in other communication domains. Just as parents often expect more rapid improvements in children’s fluency, articulation, or language skills than is clinically reasonable, it is difficult for nonprofessionals to understand that fluency, language, or articulation may be more or less adequate given their interactions with one another.

It is desirable to inform parents that the child may experience relatively more disfluency when attempting more complex language targets. A skill that appears to have been mastered in the confines of carefully planned therapy sessions is unlikely to withstand the pressures of real-world communication for quite a long time. The pilot intervention program by Conture, Louko, and Edwards (1993) placed a high emphasis on parent counseling concurrent with children’s therapy sessions. Such an approach usually is not feasible in school settings, but efforts should be made to provide some form of guidance through specially scheduled meetings, phone calls, newsletters, or memos to parents whose children are being treated for multiple concurrent problems.

In particular, current advisement regarding the utility of slowing the pace of parental interaction with the child (Kelly, 1993; Kelly & Conture 1992; Stephenson-Opsal & Rainer, 1988) may aid the child with coexisting fluency, speech, and/or language problems in formulating more fluent and well-formed conversational output. Negative feedback to the child’s speech efforts, more likely because of the increased degree to which normal communication skills are compromised, should be avoided. However, parents should always be reassured explicitly that neither their usual speech rate nor their patterns of feedback have played an etiological role in their child’s communication problem (Ratner, 1993b). Rather, the purpose of such advisement is to facilitate the child’s fluency while reducing their child’s discomfort during speaking situations.

**FINAL THOUGHTS**

Very little attention has been paid to the needs of children with coexisting fluency, language, and articulation disorders, despite evidence of the relative frequency with which these multiple communication disorders co-occur. This is unfortunate for a number of reasons. First, as Schwartz and Conture (1988) suggest, there are likely to be subgroups of stutterers whose behaviors and therapeutic needs vary from one another significantly. We do not know, for example, whether the fluency behaviors of children with other coexisting communication problems can be differentiated from those of children without other confounding conditions. Response to therapy and relative prognosis for the eventual resolution of any of the coexisting disorders are unknown, which can frustrate clinicians’ and parents’ evaluation of the degree to which appropriate progress is being made in the affected domains.

However, some basic principles should guide the treatment of fluency disorder when it coexists with either phonological or language impairment. First, phonological and grammatical demands compete with resources that permit fluent speech production. A child can neither practice nor maintain fluency when the utterance to be encoded contains targets that exceed phonological and linguistic capacity. For this reason, there is a need to structure fluency therapy to progress hierarchically from areas of articulation and language integrity to those areas that pose greater demand.

Given a primary assumption in many fluency programs that overt attention to the child’s speech may impose counterproductive stress on the child’s system, there is some justification in structuring speech and language intervention for stuttering children to avoid overt feedback and reinforcement to the child’s articulation and language efforts in therapy. However, lack of feedback may slow progress in the correction of phonological and grammatical errors (Shriberg & Kwiatkowski, 1982; Conture, Louko, & Edwards, 1993).
Whether coexisting disorders are treated sequentially, cyclically, concurrently, or in blended therapeutic formats needs to be determined after careful analysis of the child’s particular needs. In some cases, a best approach given the child’s profile may be difficult to ascertain, and the clinician should be prepared to develop a therapeutic plan that is subject to change if either the presenting problems change in nature or severity, or interactions between the therapy components seem to be impeding progress. Fluency and progress toward remediation of articulation and grammatical errors need to be evaluated continuously to ascertain whether appropriate attention is being directed to the areas of greatest communication need and concern. Finally, possible progress in one domain at the expense of regression in another should be monitored carefully.

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