concerns about the existence of CAS. It will also provide us with a starting point to discuss differential diagnosis, assessment and treatment.

ASHA's Working Definition

The 2007 ASHA position statement[1] (p. 1) proposes the following definition:

> *Childhood apraxia of speech (CAS)* is a neurological childhood (pediatric) speech sound disorder in which the precision and consistency of movements underlying speech are impaired in the absence of neuromuscular deficits (e.g., abnormal reflexes, abnormal tone). CAS may occur as a result of known neurological impairment, in association with complex neurobehavioral disorders of known or unknown origin, or as an idiopathic neurogenic speech sound disorder. The core impairment in planning and/or programming spatiotemporal parameters of movement sequences results in errors in speech sound production and prosody.

If your reaction on reading this is 'holy cow!' (or words to that effect), don't feel bad. My reaction was pretty similar when I first read it. But once I took it apart, a little at a time, I actually found that it wasn't that far off what many of us thought of CAS before.

So, let's do a little dissection of this definition to see what we have.

1. **CAS is a neurological disorder.**

Like adult apraxia of speech, most have considered CAS to be a 'motor speech disorder', so it is not a surprise to see the problem being located in the nervous system.

2. **CAS is a speech disorder.**

It is primarily a problem with the production of speech sounds. Not much of a surprise here.

3. **CAS is a problem "… in which the precision and consistency of movements underlying speech are impaired …".**

The movements for speech lack precision; that means there is a problem hitting the exact target. Again, this should not be much of a surprise.

Then it says the movements for speech are inconsistent. Here we have to be careful, because the word 'inconsistent' can mean several different things. The ASHA expert panel noted that by inconsistent they meant something very specific: when a child with

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What About Dysarthria and Oral Apraxia?

So far, so good. We've identified some features that should allow us to separate CAS from phonological disorders and from articulation disorders, but we haven't yet mentioned anything that allows us to rule out dysarthria or oral apraxia.

Relative to dysarthria, we defined it earlier as being a neuromuscular problem that is manifest as either spasticity or weakness of the muscles. In this case, we can look once again to our DDK-like tasks. Dysarthria might show up as:

1. problems with AMR tasks at normal rate.

In the case of dysarthria planning is not the issue so the changing place of articulation is not necessary. Problems should show up in simple repetitions. Spasticity might show up here as productions that don't flow well from one syllable to the next (e.g., sudden stops and starts) and weakness would show up as inability to perform very many repetitions.

Relative to oral apraxia, we're looking for:

2. problems with sequencing non-speech, oral motor tasks.

There is a variety of possible tasks that could be used in this case. The key however remains 'sequencing' or 'planning and programming'. That means that although asking a child to stick out their tongue may represent a non-speech movement, it is only a single movement. It probably doesn't get at the question of sequencing. An activity such as asking them to 'stick out your tongue, move it to the left, move it to the right and then pull it back in' would involve sequencing and thus might help us here.

Volitional vs. Automatic Productions

One related issue that we might want to consider before we move on is the question of 'automatic' (reflexive) and 'volitional' (by choice) movements. This usually comes up in discussions of non-speech movements, but it also applies to speech to some extent. Back in Chapter 1 we mentioned that much non-speech activity like sucking, chewing, and swallowing is reflexive particularly in infants and young children. And even as adults we don't think much about them and just let them happen automatically. But we can deliberately suck and chew if we decide to. So we can't make the blanket statement that non-speech activities are all 'automatic'. And that means it's difficult to say whether we should focus on 'automatic' movements or 'volitional' movements when we test for the presence of oral apraxia.