**Lesson 15 : Classification of Speech-Language Impairments**

**Fluency disorders :**

**Cluttering :**

Cluttered speech is another type of disfluent speech pattern. It is characterized primarily by a rapid sounding rate of speech articulation, intermittent bursts of rapid and/or unintelligible speech (particularly in conjunction with multisyllabic words), excessive production of certain disfluency types (particularly revision of previously spoken words), and interjection of meaningless filler. For example, Revision might sound like this: She wants, I mean, She ne- She ne-She needs to, like she has to find another Person who.[[1]](#footnote-2)

Perhaps the most common and easily recognized speech disorder is a fluency disorder called stuttering. Current statistics show that more than 3 million Americans and more than 15 million people worldwide are known to stutter. In the United States about 5 percent of adults report stuttering at some time in their life. Most of them began stuttering between the ages of two and six. In about 65 to 75 percent of the cases the stuttering stopped within two years of its onset; in 10 percent it disappeared within a few years after that. Only in about 1 percent of the cases did the stuttering continue into adulthood.

A person who stutters involuntarily repeats sounds and syllables.

For example, a person may say “b-b-b-ball” for “ball,” repeating the first letter several times before finishing the word.

He or she may linger on one sound longer than is necessary, producing a voiced sound almost like a musical note. Or, they may interrupt the word they want to say with an involuntary pause by saying something like, “b’ all.”

People who stutter are usually self-conscious about their speech. They know very well that the sounds they are producing are not part of standard speech, but they are unable to control the flow. Those who stutter will often blink or contort their faces from the tension caused by their disorder. These involuntary movements only serve to increase the speaker’s discomfort and may lead to more frequent stuttering.

Most people who stutter find they share the same nightmares.

Situations that require them to speak publicly, on the phone, or to someone they do not know are all likely to dramatically increase their stress levels and, as a result, the frequency of their stuttering. Most people with a stuttering disorder quickly

learn to avoid these situations as much as possible—a practice that can have negative results.

**Cause of Stuttering:**

Because stuttering can have such a profound impact on a person, much research has been done to determine the cause.

Although the exact cause is still not known, researchers may be closing in on a possible answer. At this point, researchers know that boys are three to four times more likely to stutter than girls, but they do not know exactly why. They have also discovered that more than 50 percent of the people who stutter have a relative who stuttered at some point in his or her life. This suggests that stuttering may be genetic, possibly linked to a single gene.

**Articulation disorders :**

**Lisps :**

A lisp is an articulation disorder in which a person mispronounces the letters “s” and “z.” A person may say “yeth” for “yes” or “that” for “sat.” Sometimes a lisp is barely noticeable.

In extreme cases, a person’s tongue may actually protrude from the mouth during the formation of certain letters, producing a soft “th” sound. Although a lisp due to lost teeth is only

temporary, one that carries over into school and adult years can be a source of embarrassment and teasing. Fortunately, lisps can usually be corrected.

**Causes of Lisps:**

Lisping can happen for a variety of reasons. Defects in the teeth or structure of the mouth, cleft palate, hearing loss, or an unconscious imitation of other lispers may contribute to the presence of a lisp. A person may even be unaware of a lisp until

someone else points it out.[[2]](#footnote-3)

**Distortions :** produce a sound in an unfamiliar manner

 Imprecise sounds (“slushy” sounds, such as a lisp\* - “thip”/sip)

 A frontal lisp is an error pattern in which the child produces the “S” and “Z” sounds (sometimes “SH,” “CH,” and “J” as well) with their tongue between their teeth, instead of behind their teeth, making the “S” sound more like a “TH” (“think”/sink). A frontal lisp is a common error for preschoolers, and often resolves itself without direct intervention.

 A lateral lisp is considered atypical and generally is not corrected without intervention. A lateral lisp occurs when the student’s airflow is misdirected in the mouth, which causes distortions and “slushy” imprecise productions of “S,” “Z,” and

often “SH,” “CH,” and “J” sounds. For example, the airstream for the /s/ sound that is normally directed through the center of the oral cavity over the midline of the tongue is instead thrust down laterally around the sides of the tongue.

Motor planning – the ability to conceive, plan, and carry out a skilled oral motor act in the correct sequence from beginning to end.

Sequencing deficits – difficulties articulating sequenced sounds needed for clear speech.

Intelligibility – refers to speech clarity, or the proportion of a speaker’s output that a listener

can readily understand.

Phonological Processes – Phonology is associated with the rules and patterns of the sound

system of language, not the movement of the articulators. The phonological system of a

language governs the ways in which sounds can be combined to form words. With phonological

processes, errors have logical and coherent principles underlying their use. The errors can be

grouped on some principle and thus form patterns (e.g., final consonant deletion: no/nose,

ba/ball, pe/pen, consonant cluster reduction: poon/spoon, top/stop). The student’s patterns

of “simplification” of sound usage severely affect intelligibility. The advantage of identifying

phonological error patterns is that those patterns can then be targeted for remediation,

thereby affecting more than one sound at a time. For example, if a student exhibits a final

consonant deletion pattern, you may choose to target final consonants in general rather than

focus on each and every sound that is omitted at the end of words.

**Additions :** insert an extra sound within a word

 “balluh”/ball; “doguh”/dog.[[3]](#footnote-4)

• **Omissions:** Sounds in words and sentences may be completely omitted.

**Example:** "I go o coo o the bu." (I go to school on the bus.) "I re a boo." (I read a book.)

• **Substitutions:** An incorrect (usually easier) sound may be substituted for the correct one.

**Example: w/l** "I saw a wittle wamb."

**t/s** "I tee the tun in the ty."

**w/r** "I have a wed wadio."

**d/g** "I'm a dood dirl."

• **Distortions:** An attempt is made at the correct sound but it results in a poor production.

**Example:** A distorted /s/ sound may whistle, the air may come out the sides of the mouth causing a "slushy" sound or lateral lisp, or the tongue may be thrusting between the teeth causing a frontal lisp.

**Dysarthria:** Characterized by a paralysis, paresis or generally poor coordination of the oral musculature. This condition may result in speech that is slow, inaccurate, slurred and hypernasal.

**SPEECH DISORDER – VOICE :**

Misuse or organic changes of the vocal mechanism.

Causes in children – contact ulcers, vocal nodules (children > adults), vocal polyps, cancer, endocrine changes, granuloma, hemangioma, hyperkeratosis, infectious laryngitis, laryngofissure, leukoplakia, papilloma, vocal fold paralysis, webbing.

Most are caused by excessive effort & force while speaking.[[4]](#footnote-5)

**Resonance Disorders:**

Resonance determines the overall quality of the voice. It is the result of the function of the velopharyngeal valve, which sends sounds in the oral or nasal cavity as appropriate. It is also dependent on the selective enhancement of certain frequencies in the cavities of the vocal tract, based on the size and shape of these. Resonance disorders include the following:

• **Hypernasality:** Characterized by too much sound in the nasal cavity during speech. The cause is incomplete velopharyngeal valving due to a history of cleft palate, submucous cleft, a short palate, wide nasopharynx, a history of adenoidectomy, poor velar mobility, etc.

• **Hyponasality:** (Denasality): Characterized by a lack of adequate nasal resonance on nasal sounds (m, n, ng). Causes include nasal obstruction or allergies.

• **Cul-de-Sac Resonance:** Nearly a total blockage of sound in the oral, nasal or pharyngeal cavities. The voice sound muffled and low in volume as a result. [[5]](#footnote-6)

**Dysphagia:** Some children may have difficulty eating (chewing and swallowing food) and drinking without aspiration. The speech-language pathologist may be involved in developing a plan, along with other team members, to ensure that the child is provided with safe nourishment and hydration during school hours.[[6]](#footnote-7)

**Phonological disorders :**

Phonological disorders have phonemic errors. No difficulty executing movements for speech, but difficulties understanding the rules of language. Phonologic disorders are considered both speech and language disorders because it is the language system that is affected but they are also speech sound disorders in that the errors relate to use of phonemes, that makes it different from specific language impairment, which are primarily disorders of the morphology (word structure), syntax (grammar), semantics (meaning) and pragmatic (usage) of language rather than the sound system.[[7]](#footnote-8)

**Apraxia of speech :**

Apraxia of speech, or verbal apraxia, is a motor speech disorder caused by damage to the parts of the brain related to speaking. People with verbal apraxia have trouble saying what they want to say correctly and consistently. They may have trouble with the rhythm and timing of speech, or they may Say something completely different from what they intended, even making up words.

Apraxia may be exhibited as an articulation, fluency, or voice disorder, or a combination Of the three.

**Developmental Apraxia of Speech (DAS) :**

DAS (also sometimes called CAS for childhood apraxia Of speech) occurs in children, is present from birth, and generally affects more boys than girls. As expected, children who suffer with this disorder do not babble as infants, and first words are delayed. But as they get older they may also have difficulty with long phrases and may appear to be searching for the words to express what they are thinking. Although children with DAS are usually able to understand language well, listeners are likely to have a difficult time understanding their speech.It has been observed that children with DAS often Have family members who have a history of communication disorders or learning disabilities, which suggests a genetic cause. Some research has indicated that the brain’s natural ability to change its own structure (neuroplasticity) can help children with DAS create new learning pathways for the development of speech.

**Acquired Apraxia :**

Acquired apraxia of speech can affect a person of any age but typically occurs in adults and results in the loss or impairment of a person’s existing ability to speak. It may be the result of a stroke, head injury, tumor, or other illness affecting the brain. Due to damage in the left frontal lobe of the brain, the ability to plan and coordinate the precise order of motor movements for speech is lost.

Apraxia affects adults differently than children because language is already developed. The most common symptom in adults is difficulty in putting words and syllables together in the correct order. A person suffering from acquired apraxia is fully aware of his or her own speech errors and usually makes repeated attempts to correct them.

**Dysarthria:**

Dysarthria is a group of neurologically related speech disorders. Known as motor speech disorders, dysarthria’s are caused by lesions on the brain in areas responsible for planning, executing, and controlling the movements necessary for speech. This damage can cause speech muscles to become weak or paralyzed. Dysarthria is most common in people born with cerebral palsy (CP) or muscular dystrophy and adults who have experienced a stroke, tumor, or degenerative disease such as Parkinson’s disease

**Speech Affected by Dysarthria**

 Slow, slurred, and difficult to understand due to errors in the articulation of consonants.

 Unlike some other speech disorders these errors are usually consistent and predictable. Other indications of dysarthria may include a voice that sounds as though the speaker is talking through his or her nose (due to the inability to control air flow), hoarseness, or a rapid rate of speech with a “mumbling” quality.

However, the severity of the symptoms depends on the location and amount of damage to the nervous system.

**Speech affected by cleft lip or palate:**

Cleft palate produces speech that is nasal in quality and Can be hard to understand. Forming sounds for letters such As “t,” “k,” “s,” “sh,” “d,” and “x” is difficult because these and other consonants require contact between the palate and tongue. A cleft palate has less tissue for the tongue to touch. Vowels may sound especially nasal because they are produced inside the mouth on a controlled breath. People with an unrepaired cleft are unable to produce these sounds Properly because air escapes through the nose. They do not have the ability to “hold their breath” or control the release of a breath.

**Speech affected by Deaf and Hard hearing:**

As might be expected, the inability to hear the sounds of speech makes it particularly difficult to learn to produce them. [[8]](#footnote-9)

**Dysprosody:**

Dysprosody is the rarest neurological speech disorder. It is characterised by alterations in intensity, in the timing of utterance segments, and in rhythm, cadence, and intonation of words. The changes to the duration, the fundamental frequency, and the intensity of tonic and atonic syllables of the sentences spoken, deprive an individual’s particular speech of its characteristics.

The cause of dysprosody is usually associated with neurological pathologies such as brain vascular accidents, cranioencephalic traumatisms, and brain tumors .[[9]](#footnote-10)

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