

The effect of temporal manipulation on the perception of disfluencies as normal or stuttering

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Abstract

The purpose of this investigation was to study the effect of temporal features within repetition of speech segments on the perception of stuttering. Past research has provided evidence that certain temporal aspects of repetitions produced by people who stutter tend to be shorter than those produced by normally fluent speakers. The effect of these temporal factors on the perception of the disfluency as “stuttering” or “normal” has not yet been studied. Conversational speech of five children who stutter was recorded. Two short utterances, one containing part-word repetition (PWR) and one containing whole-word repetition (WWR), were identified in the speech of each child and then manipulated by the CSL and CSpeech computer softwares. Two selected elements within repetitions, namely the vowel of the repeated unit and the interval between the repeated units (e.g., but-but), were lengthened to simulate normal disfluency. Results indicated that both factors (interval duration and vowel duration) moderately affected listeners’ perception. In general, repetitions with short vowel and interval durations were judged as more representative of stuttering, whereas repetitions with longer vowel and interval duration were judged as more representative of normal speech. Learning outcomes: As a result of this activity, the reader will learn about (1) various factors that influence the perception of disfluent segments as stuttering, (2) the special effect of duration of specific elements within repetitions on the perception of disfluency as stuttering, and (3) the possible implications

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1. Introduction

Research concerning differences between disfluencies that are “normal” and those characterized as “stuttering” has taken on two major tracks: studies that focused on disfluency output and studies that focused on listener perception. The present investigation pertains to perception, an issue that was thrust into prominence after the early exposition of the diagnosogenic theory (Johnson, 1942). With its basic tenet that stuttering is caused by listeners’ erroneous judgment of a child’s normal disfluencies as being “stuttering,” the theory has provided an impetus for many studies of factors that influence such perception.

Studies concerning overall conditions and circumstances that affect listener judgment of a speaker as “a stutterer,” or specific disfluent events as “stuttering” or “normal,” have shown the impact of experience, background, psychological set, and experimental instructions on listeners’ shifting judgment (Cordes, Ingham, Frank, & Ingham, 1992; Curlee, 1981; Tuthill, 1940, 1946; Williams & Kent, 1958). Other perceptual studies have shown that certain types of disfluency, such as syllable repetitions and sound prolongations, are more likely to be judged as “stuttering” than other types (e.g., Boehmler, 1958; Young, 1961) and that the number of disfluencies in a given sample, regardless of type, is also likely to influence stuttering judgment (Curran & Hood, 1977; Hegde & Hartman, 1979a, 1979b). The number of repetition units per disfluent event was also found to influence listeners’ perception. Sander (1963) found that it took fewer instances of double-unit repetition (e.g., bu-bu-but) than single-unit repetition (bu-but) to be judged by listeners as stuttering. Curran and Hood (1977) reported similar perceptual findings.

Although perceptual studies have identified basic trends about disfluency typically perceived as stuttering or as normal, inconsistent judgments, overlap, ambiguities, and contradictory findings still exist (Curlee, 1981). For example, although changing instructions caused listeners to judge the same disfluencies as both stuttering and normal (Williams & Kent, 1958), some disfluent events were judged as stuttering more consistently than other disfluent events. Recently, Cordes (2000) reported that some disfluent events classified as “stuttering-like disfluencies” (SLD) were judged as normal. Thus, what makes a specific disfluent event more likely to be perceived as “normal” or “stuttering,” and what contributes to more stable judgment of a given disfluent event, is not yet understood.

One reason for the difficulty in achieving better appreciation of features that influence stuttering–normal judgment is the fact that traditional disfluency

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