Critical Review:
Is Speech Rate Reduction an Effective Strategy to Increase Listener Comprehension of Accented Speech?

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Accent modification is a service offered by Speech-Language Pathologists (SLPs), typically for clients that have acquired English as their L2 (second language) and are seeking to change, reduce, or eliminate their accent. The purpose of this review was to explore therapeutic strategies for prospective clients whose goals are to be more comprehensible to their listener without changing the integrity of the accent itself. One such strategy is speech rate reduction; thus, this critical review examines the effectiveness of reducing the speaking rate of accented speakers in order to increase listener comprehension. Four studies were selected for review. Three of the articles employed a single group design, and one article contained two experiments: one with a single group design and one with a randomized control design. Overall, the literature provides suggestive evidence that speech rate reduction is <u>not</u> an effective strategy for accented speakers to increase listener comprehension. Recommendations for further research are discussed, and the implications of the findings of this review for clinical practice are explored.

Introduction

Accent modification is an elective practice offered by Speech-Language Pathologists (SLPs) through which a speaker's native accent is reduced, minimized, and re-formed (Kim, 2012). Munro & Derwing (1998) define accentedness as "the extent to which an L2 [their second language] learner's speech is perceived to differ from native speaker norms". The authors

Objectives

The primary objective of this paper was to critically analyze the existing literature pertaining to the effectiveness of speech rate reduction as a speaker strategy to increase listener comprehension of L2 speakers. The secondary objective was to propose clinical implications and evidence-based recommendations for SLPs practicing in accent modification therapy.

Methods

<u>Search Strategy</u>
Online databases (PROquest, CINAHL and Google Scholar) were searched using the following terms:

[(accent) AND ((speech rate) OR (speaking rate)) AND (comprehens*)].

<u>Selection Criteria</u>
Studies selected to be included in this review were required to be peer-reviewed scholarly articles. Chapters from textbooks and summaries included in

The authors of this study provided sufficient information about the methodology, including the passages that were used, which yields a high replicability factor. The study is also strengthened by the use of natural speech rate adjustment, as opposed to digitally modified recordings, which increases the generalizability of the study. Additionally, the use of supplementary questionnaires accounted for bias or unconscious effort that listeners may use when communicating with accented speakers.

This study was limited in their implementation of impressionistic ratings to evaluate their variables. The authors used subjective evaluation of the complexity of the passages provided to the speakers, reporting that they were impressionistically judged to be of equal difficulty. Thus, the complexity of their vocabulary, length, or grammar complexity was not controlled for. The researchers also did not report the basis of which they made their impressionistic ratings. The recordings used in this study were from a small sample size and all non-natives were from the same linguistic background, which impacts the generalization of findings. The study also is limited in the lack of control of suprasegmental changes when the speech rate was altered, so it is difficult to know what characteristics of speech affect comprehension.

Overall, this paper provides equivocal evidence that reduced speech rate does not increase comprehensibility of L2 speakers, largely due to the methodology, lack of control variables, and the use of subjective impressionistic ratings.

Munro and Derwing (1998) conducted two single group experiments to evaluate how native English speakers rated the degree of accentedness and comprehensibility of native Mandarin ESL speakers at different speaking rates.

In the first experiment, 10 Mandarin ESL speakers and 10 Canadian English speakers read a simple narrative, which was recorded at two speaking rates: normal and slow. The Mandarin speakers' accents ranged from moderate to strong, and they all had a high level of English proficiency, indicated by their Test of English as a Foreign Language (TOEFL) scores. Twenty native English-speaking listeners rated the recordings for both accentedness and comprehensibility. The rating scales used ranged from 1 (no accent/high comprehensibility) to 9 (very strong accent/low comprehensibility).

Appropriate statistical analyses were conducted. Analysis of mean speaking rates (syllables/second, or syll/sec) revealed that Mandarin speakers tended to speak slower than native English speakers in both the normal and slow conditions. Both the Mandarin ESL speakers and the Canadian English speakers were rated as less comprehensible in the slow rate condition relative to the normal rate condition; however, Mandarin ESL speakers were rated significantly more accented and less comprehensible in the slow condition in comparison to Canadian English speakers.

In the second experiment, a different group of 20 Canadian English-speaking listeners were recruited. The normal rate recordings from the first experiment were used as a "normal rate" set. These recordings were then digitally modified to create 3 additional sets: a "mean English rate", adjusted to the mean speaking rate of English speakers [4.9 syllables/second (syll/sec)]; a "mean Mandarin rate" set, adjusted to the mean speaking rate of Mandarin speakers (3.8 syll/sec); and a "reduced rate" set, adjusted to be 10% slower than the mean Mandarin rate (3.4 syll/sec). Listeners rated the recordings on accentedness and comprehensibility using the same 9-point scale used in the first experiment.

Appropriate statistical analyses revealed that lower ratings of comprehensibility were assigned for recordings of the Canadian English speakers modified to the "mean Mandarin" and "reduced" rates. Recordings of Mandarin ESL speakers received significantly higher ratings of comprehensibility only under the "mean English" condition; thus, a reduction of their speaking rate did not contribute to improved comprehensibility.

The authors also provided specific descriptions of listener and speaker criteria (e.g., English proficiency of speakers, absence of second language fluency in listeners). This increases the replicability of their study; however, the design is limited by the lack of citation or presentation in appendices of the narrative passages read by the speakers. This study is also

limited by the homogeneity of the speaker's linguistic backgrounds. Given that non-native English speakers with different linguistic backgrounds than Mandarin ESL speakers may have different baseline speaking rates, this decreases the generalizability of the findings.

The authors conducted both experiments to control for potential distortions due to deliberate rate adjustments. Informal examination of the recordings from the first experiment revealed increased variability in pause time and unnatural intonation in both native English and Mandarin ESL speakers in the slow condition, as well as pronunciation errors by one Mandarin ESL speaker. Although these errors were not statistically significant, addressing this factor to confirm the findings of the first experiment by digitally

single clause with high-

rate recording. Participants were blinded to the conditions of the study. Then, listeners completed the comprehension test and rated the statements.

Appropriate statistical analyses were implemented to analyze the data. Results from a between groups t-test showed that reduced speech rate did not increase listener comprehension. Only the participant identified as having the hea

speakers, such as a conversational task. This method increases the strength of the evidence evaluated for a number of reasons. Munro & Derwing (2001) note that this is standard in research evaluating L2 speech production; the nature of this listening task reduces the complexity of data analyses as differential prejudices can be held controlled for.

Another consideration for one-way listening tasks is that they control for sociolinguistic variables. Although accentedness is described to be a fundamentally objective perceptual phenomenon, the literature also confirms that stereotyping of foreign accents and people does influence listeners' evaluations of accented speech (Munro & Derwing, 1998). The Anderson-

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