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Relating scientific theory to evidence based research and practice in AAC

D. Jeffery Higginbotham
University at Buffalo

Abstract

The purpose of this paper is to discuss the application of current research and theoretical modelling in psycholinguistics and the development of testable hypotheses in evidence based research and practice in Augmentative and Alternative Communication (AAC). The utilization of scientific theory in making testable predictions for Evidence-Based Practice (EPB) research in AAC may be used to overcome some of the current limitations associated with conducting this type of research with individuals with complex communication needs. In addition to making a case for theory driven EPB research, this presentation will review a number of established beliefs in AAC that run counter to current psycholinguistic research and discuss the role of scientific research and theory development in the design of AAC devices.

Description

The purpose of this paper is to discuss the application of current research and theoretical modelling in psycholinguistics and the development of testable hypotheses in evidence based research and practice in Augmentative and Alternative Communication (AAC). Additionally the paper is intended to challenge some of the standard assumptions in AAC for the purpose of showing how research in these areas can stimulate hypothesis development.

The development of a knowledge base for Evidence Based Practice (EPB) in AAC is in a somewhat tenuous position. It can be extremely difficult to apply group - level, Randomized Control Trial (RCT) methodologies to assess treatment efficacy and effectiveness of AAC interventions, due to a number of factors characterizing individuals with complex communication needs, associated communication technologies and service provision. As noted by Hays, Barlow & Nelson-Gray (1999), many clinical treatment paradigms (e.g., psychoanalysis) are ill-suited to RCT, for methodological and validity reasons. These reasons are even more pronounced in AAC, particularly with the marked differences in across individuals, communication devices, treatment procedures and intervention contexts.

Along with alternative methodological approaches like single case design, it will be argued that strategic use of empirically informed, theoretical models of communication and human performance can be used to bolster the power of EBP investigations in AAC. Single case or small group designs can gain considerable explanatory and predictive power if the hypotheses are closely tied to current communication theory. Further results derived from theory-based hypotheses can be evaluated in relationship to the underlying theory and/or whether the procedures comply or are at variance with the model.

In the last several years, some AAC researchers have begun to embrace recent findings and scientific theories from psycholinguistic research. Theoretical models based on Relevance theory (Sperber & Wilson, 1995; Hoag, Bedrosian, McCoy, Johnson, 2004), Language use in interaction (Clark, 1996; Clark, 2004; Higginbotham, Kim & Scally, 2007), language representation (Wray, A. & Perkins, M., 2000; Todman, 2000) and multimodality (Levelt & Wilkins, 2006; Soto, Hartmann, Wilkins, 2006; Müller & Soto, 2002) describe communication as inherently interactive and collaborative, providing models which explicitly address communication performance. Because of the extensive empirical research base with which the results can be compared, researchers can begin to make informed predictions for future experiments and recommendations for clinical application. In addition, the results of these theory-based research studies has considerable application evidence-based device design; another important, yet often overlooked aspect of evidence based activities.

The proposed presentation is will address the following issues: the first quarter (5 min) of the presentation will lay out the case for ensuring construct validity in AAC EPB research, address the current limitations for AAC in utilizing RTC, and discuss the need for relating research to current scientific theory. In order to succinctly address different aspects of current psycholinguistic theory relevant to AAC. The middle half (10 min) will review a series of 7 to 10 established beliefs in AAC that run counter to current research and theory development in psycholinguistics. Implications for EPB will be discussed. In the final quarter of the presentation (last 5 minutes) the relationship of theory and research findings to the design of communication devices will be explored. It is the intended purpose of this presentation to stimulate discussion around the relationship of contemporary communication theory to evidence-based research, practice and device design.

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