Chapter 15
A Tale of Transitions:
The Challenges of Integrating Speech Synthesis in Aided Communication

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ABSTRACT
Many aided communicators have used low-tech communication boards for extended periods of time when they receive a voice output device. Integrating sophisticated technology into conversational interactions draws on a range of skills for both the aided communicator and their speaking partners. A range of individual and environmental factors influences the transition from low-tech to hi-tech communication aids. This chapter considers the impact of these factors on intervention and the developmental course of two individuals, Niall and Cara. The potential benefits of synthetic speech are clearly illustrated in the stories of Niall and Cara and by the literature. However, the scaffolding needed to support effective use of voice output must be carefully constructed, if these benefits are to be realized in ways that lead to genuine social inclusion and to meaningful, positive changes in the communication experiences of aided communicators.

INTRODUCTION
The course of language development in people who lack the ability to speak and therefore have to express themselves with alternative means of communication, differs in significant ways from ordinary speech development (von Tetzchner & Grove, 2003), even in those who have good comprehension of spoken language (for a description of different groups of users, see von Tetzchner and Martinsen, 2000). Somewhat uniquely, these individuals may...
A Tale of Transitions

hear one form of language as input (speech), but produce a very different form of language for expressive output. The production process itself may be far less automatic, and require different and potentially greater cognitive resources than speech articulation. One important characteristic of aided language development (i.e., the development of expressive language with manual and electronic communication aids) is a discontinuity in production and form. Individuals who develop aided language typically change graphic systems, vocabulary organization structures and expressive communication modes, often several times across the lifespan (Williams, Krezman, & McNaughton, 2008) due to changes in intervention practice as well changes and innovations in technology (Arvidson & Lloyd, 1997; Hourcade, Pilotte, West, & Parette, 2004; von Tetzchner & Jensen, 1996). Many individuals who grow up with manual communication boards are introduced to electronic devices quite late in their language development careers.

This chapter describes the histories of two aided communicators that in quite different ways illustrate the diverse processes related to a shift from using a manual board to using an electronic device. The first history is about Cara, a young woman who transitioned from using a manual board with Blissymbols (Bliss, 1965) to an electronic communication aid with a communication system called “Language, Learning and Living” (LLL, (Jones, 1997)) and voice output at the age of seven. The second history is about Niall, a young man with cerebral palsy who was introduced to a voice output device after almost two decades of using manual boards with Blissymbols. Their histories highlight the importance of identifying the expectations of voice output use, and the role individual, environmental and cultural factors may have in facilitating and hindering the transition from manual boards to electronic aided communication. Cara’s history demonstrates the need for increased support and intervention during the transition to voice output technology, as well as the need for perseverance in order to integrate speech technology in everyday communication. In many respects, Niall’s history documents a failed transition, if increased use of synthetic speech output is the measure of success. Although Niall was successful in some activities over the course of a year of targeted intervention, his voice output device never became an integrated part of his communicative means. The chapter focuses on the ancillary factors that may be crucial in determining the extent to which a voice output device is integrated into the daily communication of an aided communicator.

The International Classification of Functioning, Disability and Health (ICF; World Health Organization, 2001) emphasizes participation in social and societal activities, and may be used as a general framework for evaluating the effectiveness of particular interventions, including interventions for individuals developing aided communication (Raghavendra, Bornman, Granlund, & Bjorck-Akesson, 2007). This chapter therefore also discusses the implications of being an aided communicator within the context of community and social inclusion and the challenges faced by aided communicators who may be perceived by others as being involved in their communities but who may yet be perceived as far from being part of these communities.

BACKGROUND

Aided Communication in a Multi-Modal Context

Augmentative and alternative communication forms are commonly categorized as aided or unaided. Aided communication “includes all forms of communication in which the linguistic expression exists in a physical form external to the user” (von Tetzchner & Martinsen, 1992, p.7), including picture communication boards, voice output devices and computers. By contrast unaided forms