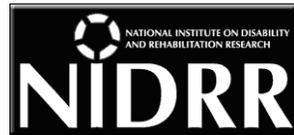


## Viewing AAC Through Authentic Social Interactions

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## Acknowledgements

- \* Sarah Blackstone
- \* David Wilkins
- \* Mary Hunt Berg
- \* Lisa Bardach
- \* Jennifer Cornish
- \* Fei Luo
- \* Jenny Schmich
- \* Katrina Fulcher
- \* Carrie Kirkland
- \* Haesik Min
- \* Neeraja Subrahmaniyan



The Rehabilitation Engineering Research Center on Communication Enhancement (AAC-RERC) is funded under grant #H133E080011 from the National Institute on Disability and Rehabilitation Research (NIDRR) in the U.S. Department of Education's Office of Special Education and Rehabilitative Services (OSERS).

Bibliography and Handouts  
are available at:  
<http://aac-rerc.com>  
(go to presentations link)



## Viewing AAC Through Authentic Social Interactions

### An Interaction Perspective

- \* Utterances are performed – in time
- \* Participants jointly coordinate their utterance contributions
- \* Utterances are multimodal
- \* Participants make pragmatic use of AAC technology features / affordances
- \* AAC devices are actively used by both participants
- \* Design features are not always user features

## Science and Paradigms

Principle II:

Widely Accepted Theoretical Constructs are Specifically Addressed in the Design and Development of AAC Technologies and Instructional Strategies

Blackstone, Williams & Wilkins, 2007

*“When we meet a fact which contradicts a prevailing theory, we must accept that fact and abandon the theory even when the theory is supported by great names and generally accepted.”*

Bernard (1865)

Technology influences on communication science

*Technology is imagined by culture and in turn constructs culture*

Benson & Anderson, 1990

Printing



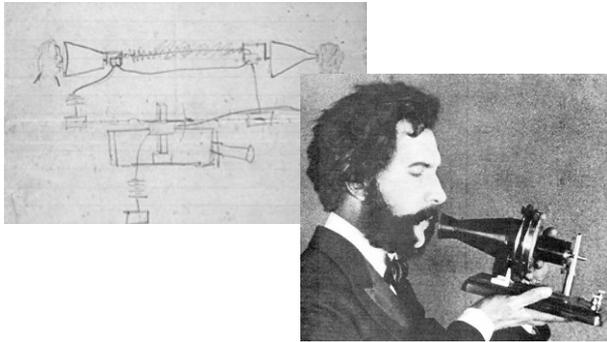
Phone



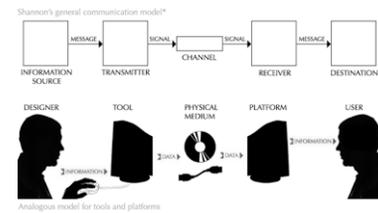
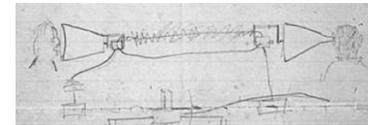
# Sender-Receiver Model of Communication

Print and phone influences

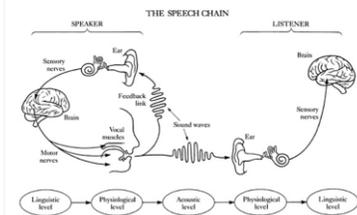
## Bell's Invention



## Sender-Receiver model of communication



## Sender-Receiver model of communication



## AAC Model

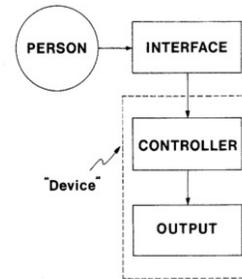


Figure 1. General form of a speech and language prosthesis.

Coleman, Cook & Meyer (1980)

## AAC Communication Model

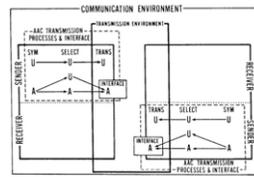
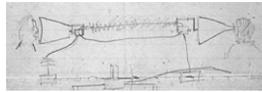


Figure 3. AAC transmitters and interface of the AAC communication model.

# Social Interaction

Language use  
Talk-in-Interaction  
Conversation Analysis

## Technologies that have influenced Social Interaction perspective



### 'LANGUAGE' (Currently accepted definition)

- \* Language is a multimodal, social, semantically and pragmatically based construct. (Bates & Dick, 2002; Slobin, 2003, etc.)
- \* An utterance is NOT just comprised of linguistic elements alone (Clark; 2009; Higginbotham, 2009)
- \* Gestures critical to both linguistic and cognitive development (Goldin-Meadows, 2003; Volterra, Caselli, Capirci & Pizzuto, 2004)
- \* Studies of language acquisition (Bowerman, Bates, Snow, Tomasello, etc.)

# Talk in Interaction

There is order in (mundane) interaction  
(Psathas, 1995)

- \* Human
- \* Ubiquitous, everyday, authentic, unremarkable
- \* Sequentially organized in time
- \* Local, situated
- \* Shaped by:
  - \* Participants
  - \* Purpose
  - \* Media
  - \* Context

At core of all human communication is the creation of shared meaning between interactants

- \* It is performed
- \* With our bodies
- \* Jointly, with others
- \* In time
- \* In context
- \* Through a variety of media and artifacts

Clark, 1996; Gudykunst & Kim, 2003; Grove, Clibbens, Barnett & Loncke, F. (1998). Wilkins, 2006; Wilkins & Higginbotham, 2005; Goodwin, 2003; Higginbotham, 2009

## Studying Technology Use in AAC

- \* AAC use is not special, it shares many characteristics of other kinds of technology use
- \* We adapt to the technologies that we build  
*(We rely on social interaction norms to help us find the way)*
- \* Design features are not always user features
- \* We make do with what we have  
*(there are communication costs associated with the media and strategies chosen)*

## What is an Utterance?

- \* An utterance consists of one or more observable communicative acts that participants within the interaction perceive as being intentional and meaningful.



## C & B: Collaborating on an Utterance

- \* Focus on mutual understanding
- \* Coordination through time and sequence
- \* Use of multiple communication modalities
- \* One species of interaction



## Similarities in Interaction (Installments)

<p style="text-align: center;">Talking on the phone (Goldberg, 1975)</p> <p>C: But anyway give me your name. L: Alright, it's Louise. C: Louise. L: A:nduh my last name is pretty long. C: Okay. L: B-i-l C: B-i-l L: e-z C: e-z L: i-k C: i-k L: j-i-a-n C: j-i-a:-n. L: That's right. C: O:kay.</p>	<p style="text-align: center;">Conversation using communication board (Higginbotham and Caves, 2002)</p> <p>L: What did he do? D: AND L: and D: HE L: he D: DID L: did D: /mazhizhma/ L: I don't understand, you'll have to do it again.</p>
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## Utterances are Jointly Inter-Acted in Real-Time




- \* Each individual's actions are coordinated with their partner's
- \* Participants choose the right communication tool (modalities, strategies) for particular purposes.
  - \* Accommodating temporal demands
  - \* Getting it "right"
  - \* Meeting partner needs & expectations
  - \* Meeting own needs (e.g., comprehension)

## Utterances are Multimodal (we use our bodies to talk)

- \* Verbal
- \* Vocal
- \* Gesture
- \* External Tools
  - \* AAC device
  - \* Manipulatables
  - \* Context
  - \* Other people

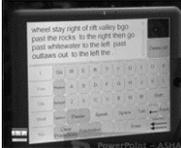





## Communication is Distributed

- \* Across People, Artifacts, Contexts
- \* Interdependent layers of media, no single layer is coherent by itself (Goodwin, 2000)
- \* We coordinate multi-media displays with our partners
- \* Communication artifacts serve different purposes by by each participant





## VOCA Features and Costs

<b>VOCA Features</b>	<b>VOCA Costs</b>
<ul style="list-style-type: none"> <li>* Participants need to be near, but not in same place,</li> <li>* Participants need to be in the same time.</li> <li>* Display not permanent</li> <li>* Production speed limited</li> <li>* Hard to direct speech</li> </ul>	<ul style="list-style-type: none"> <li>* Spatial and temporal mandates of com task &amp; context may influence modality choice</li> <li>* Production delays lead to problems with listener attention and understanding</li> <li>* Difficult to direct sound of VOCA to particular person</li> </ul>

Adapted from Higginbotham & Caves, 2003; Clark & Brennan, 1991

## Advice for Developers




- \* Communication is **Inter-action**
- \* Quickfires
- \* Voice controls
- \* Participant displays
- \* Provide task specific tools
- \* Design for use with other communication modalities

## Advice for Practitioners



- \* Recognize the constraints and affordances for each modality
- \* Teach flexible multimodal strategies
- \* Appreciate
  - \* Sequential order
  - \* time and timing