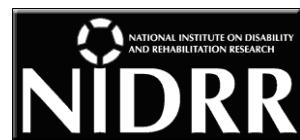


# Viewing AAC Through Authentic Social Interactions

Jeff Higginbotham  
University at Buffalo  
AAC-RERC

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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.”*

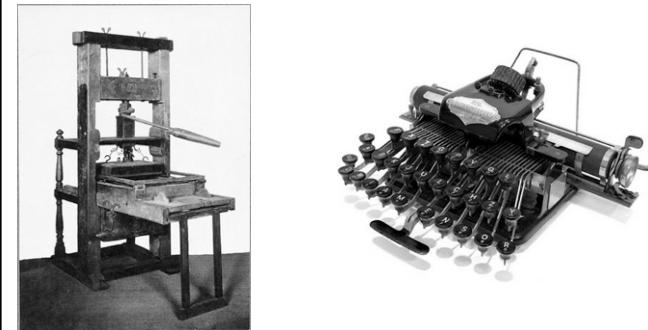
Bernard (1865)

Technology influences on communication science

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

Benson & Anderson, 1990

Printing



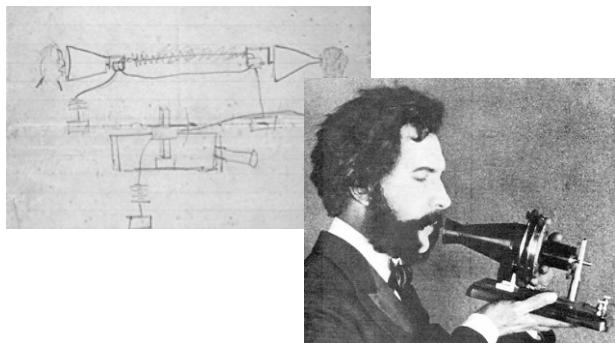
Phone



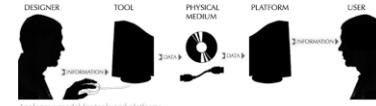
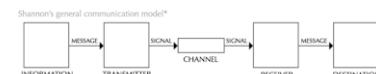
## Sender-Receiver Model of Communication

Print and phone influences

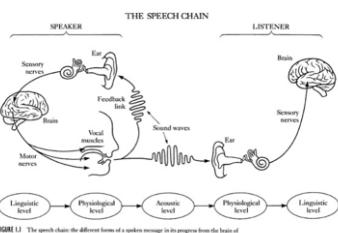
## Bell's Invention



## Sender-Receiver model of communication



## Sender-Receiver model of communication



## AAC Model

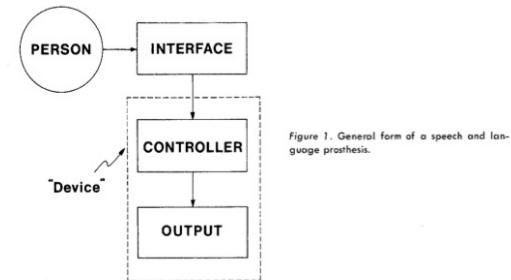
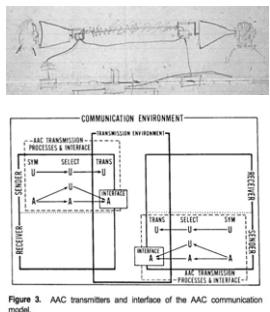


Figure 1. General form of a speech and language prosthesis.

Coleman, Cook & Meyer (1980)

## AAC Communication Model



# 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

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

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

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>* Human</li> <li>* Ubiquitous, everyday, authentic, unremarkable</li> <li>* Sequentially organized in time</li> <li>* Local, situated</li> </ul> | <ul style="list-style-type: none"> <li>* Shaped by:           <ul style="list-style-type: none"> <li>* Participants</li> <li>* Purpose</li> <li>* Media</li> <li>* Context</li> </ul> </li> </ul> |
|---|---|

## 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)

Talking on the phone  
(Goldberg, 1975)

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.

Conversation using communication board  
(Higginbotham and Caves, 2002)

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.

## 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 each participant



## VOCA Features and Costs

### VOCA Features

- \* Participants need to be near, but not in same place,
- \* Participants need to be in the same time.
- \* Display not permanent
- \* Production speed limited
- \* Hard to direct speech

### VOCA Costs

- \* Spatial and temporal mandates of com task & context may influence modality choice
- \* Production delays lead to problems with listener attention and understanding
- \* Difficult to direct sound of VOCA to particular person

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