Communication Breakdown in Young Children with Autism & Cerebral Palsy: Perceptions of Their Care Providers, Teachers, and Speech and Language Pathologists

Martha E. Snell, University of Virginia
Lih-Yuan Chen, National Chiayi University, Taiwan
Jan Allaire, University of Virginia
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Students with severe disabilities can learn to communicate, but they usually have

- Poorer and less varied receptive and expressive language,
- Difficulty responding to the initiations of others,
- Lack of sustained social interaction,
- Tendency to respond more to adults than to peers,
- More frequent breakdowns in communication

(Halle, Brady, & Drasgow, 2004; Hwang & Hughes, 2000; Jackson et al., 2003; Keene, 2003; Snell, Chen, & Hoover, 2006; Yoder & Warren, 2004).
Communication Breakdown

An interrupted or failed communication attempt due to a misinterpretation or inability to understand a message (Halle, Brady, & Drasgow, 2004).

Happens when people communicate (or try to communicate) with a partner but don’t receive a desired response from that partner.

Breakdowns often have happened when the partner requests clarification (Halle et al., 2004)
Forms of breakdown

- Needs for clarification
- Non-acknowledgments of communication
- Topic shifts

(Halle, Brady, & Drasgow, 2004; Wetherby, Alexander, & Prizant, 1998)
Video clip: Gracie and Breakfast

Play Gracie video

What was Gracie’s communication message?
What form of breakdown?
Child factors that contributed to breakdown?
Adult factors that contributed to breakdown?
Did Gracie try to repair?
Factors that contribute to communication failures

**Child factors**

- Inadequate communication system
- Poor intelligibility
- Motor delays
- Sensory limitations
- Less persistence during interaction
- Attention impairments
- Weak joint attention skills
Factors that contribute to communication failures

**Adult/Peer factors**

- Lack of familiarity with child
- Failure to understand subtle communicative behaviors
- Poor responsivity
  - Rapport
  - Paying attention: getting on the child’s level, establishing eye contact, waiting, and giving an expectant look
- Low expectations
- Little opportunity
- Poor instruction; team problems
Communication repairs

Efforts to *maintain* communication

• By noticing a message was not successfully conveyed
• And by making some adaptations (Erbas, 2005).

*Research suggests that individuals with severe disabilities have more breakdowns and fewer strategies to repair it* (Keen, 2003).
Three early types of repair

- Repeating the original message
- Revising the message
  - Changing content: leading, if vocalization ineffective
  - Intensifying form: getting louder; problem behavior
- Expanding or adding signals to original message
  - augmenting same message with gesture or vocalization

(Brady & Halle, 2002)

What did Gracie do?
The connection between breakdowns & problem behavior

- Researchers have suggested that in people with severe disabilities the skill of repairing breakdown contributes in important ways
  - to gaining desired outcomes
  - and avoiding problem behavior.

(Carr & Durand, 1985)
Research questions: Breakdown in children with autism and CP at home/school

What communication systems do children use?
Are there differences between home and school in the communication system the child uses most often?
How do adults respond to communication breakdown? Success?
How do children respond to communication breakdown?
What frequency and type of problem behaviors result from communication breakdowns?
Are there differences in communication breakdown between home and school?
Method: Interview/Survey participants

32 care providers were interviewed on their child’s communication

- 78% mothers
- Age (37 yrs)
- 53% HS degree; 44% college
- White (69%), AA (25%), Latino (6%)

51 school staff surveyed

- 26 Special education teachers, 63% >11 years
- 25 SLPs, 35% >11 years
Method: Child criteria for participation

Examined outpatient records of potential participants:

1. Diagnosis of autism or cerebral palsy
2. Between 2½ and 8 years old
3. Child used alternative or augmentative methods of communicating, including nonsymbolic communication
4. Family accepting of the diagnosis and interested in participating in interview
Children

- 24 (75%) were children with cerebral palsy
- 8 (25%) were children with autism
Interview and school survey procedures

**Care providers**
- Consent forms, Child care
- Interview (60 min.)
- Videotaping (10 min.)
- Gift certificates

**School**
- Mailed and returned by mail
- Phone introduction and followup
- Gift Certificates

**Data entry**
- Database program for SPSS analyses
- NVivo qualitative software
Care Provider Interview Survey
School Survey

- Parallel forms
  - Home/school; autism/CP
  - Forced choice & open-ended
  - ~ 70 items
- Demographics
- Communication system and use
- Communication breakdown

- Piloted 3 parents, 4 SLPs, 3 teachers
- Inter-rater agreement on 14/32 interviews
- Interviewer training
  - Average 97% agreement
  - Range of 80% to 100%.
Children’s characteristics \( N=32 \)

- **Average age** was 5.8 years
  - 2.6-8.9 years
  - SD=1.65 years
- **Gender**: 19 males and 13 females
- **Disabilities**
  - 24 (75%) had cerebral palsy
  - 8 (25%) had autism
- **Cognitive status***
  - developmentally delayed (25 or 78%)
  - cognitive impairment (16 or 50%)
  - mental retardation (8 or 25%)
- **Additional disabilities**: About half had (G-tube, seizures, microcephaly, etc.)
- **Sensory impairments**: More than half had one or more
  - vision: 11 or 34%
  - sensory integration: 11 or 34%
  - hearing: 1 or 3%
- Of those with cerebral palsy
  - 21 (88%) used a wheelchair,
  - 1 (4%) walked with help,
  - 2 (8%) walked independently
- **Ethnic**
  - 22 (69%) Caucasian
  - 8 (25%) Afro-American
  - 2 (6%) Hispanic
Schools they attended

**Schools**
- 17 (53%) were enrolled in preschool
- 15 (47%) in kindergarten to elementary school

**School location/inclusion**
- 20 (62%) neighborhood public school
- 7 (22%) public schools but not neighborhood school
- 3 (9%) publicly funded preschools
- 1 (3%) separate public school
- 1 (3%) private school

**Most (21 or 66%) spend more than half their time in special education classroom**
- 6 (18%) spend less than half the time in special education
- 2 (6%) spent the whole school day in general education
- 3 (9%) had other arrangements (homebound, etc.)
What system(s) of communication does _____ use the most often?

- Personalized system of communication*
- Use of gestures/signs/pictures without a talking device
- Talking communication device
- Speaking words with meaning (not AAC)
Communication system used most often at home and school.

(N=32, 26, 25)

Snell, Chen, & Allaire (2007)
What communication systems did children use?

91% (29) used more than one system, multi-modal

25% (8) used all four
Overall, how much do you think your child’s current communication system meets his/her communication needs?
Communication system that most meets child’s needs at **home** (N=32)

Snell, Chen, & Allaire (2007)
Communication system that most meets child’s needs at **school** (N=51)
Were there differences between home and school in the communication system the child uses most often?

• Personalized systems were relied on more often at home.
• Communication devices were not used that often at home or school,
• Nor were they identified as “often” meeting the students’ needs in either place.
How often do you experience a breakdown in communication with ___?

- almost always
- sometimes
- seldom or never
Frequency of adults experiencing a breakdown in communication.

Snell, Chen, & Allaire (2007)
How did adults respond to communication breakdown? Success?
What do you usually do when you cannot understand your child’s communication?

<table>
<thead>
<tr>
<th>Action</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guess (29%)</td>
<td>I usually start asking her questions to see if I can understand what it is that’s either hurting her or what she’s wanting. Try to figure out what he’s trying to tell me. I rely on cues and gestures from the child.</td>
</tr>
<tr>
<td>Ask clarifying questions (17%)</td>
<td>I ask him because I feel like he can understand what I am saying. Try asking yes/no questions and watch his facial expressions and listen.</td>
</tr>
<tr>
<td>Point (14%)</td>
<td>I try to get him to communicate clearly or to point to what he wants.</td>
</tr>
<tr>
<td>Offer choices (12%)</td>
<td>Give choices until I understand what he wants. I try to give him choices: Do you mean this or this?</td>
</tr>
<tr>
<td>Use pictures (10%)</td>
<td>I try and get him to either lead me by the hand or possibly pull out the picture system. I use the simplest, most familiar communication pictures.</td>
</tr>
</tbody>
</table>
What do you usually do when you cannot understand your child’s communication?

<table>
<thead>
<tr>
<th>Action</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repetition (8%)</td>
<td>The first thing I do is ask him to repeat what he is trying to say or tell me.</td>
</tr>
<tr>
<td></td>
<td>I just keep on talking to her, communicating with her.</td>
</tr>
<tr>
<td>Sign (7%)</td>
<td>I use hand signs, When he needs help he tells me he needs help in sign.</td>
</tr>
<tr>
<td>Rephrase (6%)</td>
<td>Rephrase the question, statement.</td>
</tr>
<tr>
<td></td>
<td>Rephrase simple sentences until I understand.</td>
</tr>
<tr>
<td>Check with others (5%)</td>
<td>Check with another family member</td>
</tr>
<tr>
<td></td>
<td>Get another opinion … the SLP</td>
</tr>
<tr>
<td>Simplify responses (4%)</td>
<td>Move to a simpler form of communication until he is able to communicate.</td>
</tr>
</tbody>
</table>
I will point to whatever it is she’s trying to communicate, or I will ask her questions to get her to describe to me more, to see what she really wants. And if that doesn’t work, I will pick her up and actually take her over and let her point. You know sometimes it just takes moving her to where the area is and maybe she can find it. (Care provider on her child with cerebral palsy)
I usually say, “What?” And often he’ll say the word again, and it sounds exactly the same and I still won’t understand, so I’ll say, “point.” And I think he’s just trying to tell me something because he’s not pointing at anything in particular. I can understand if he wants to watch a videotape or if he wants to eat something or drink something. But, usually, he’s trying to tell me something else and I don’t understand. (Careprovider on her child with autism)
### Successful in understanding child?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Care provider 28/32</th>
<th>SET* 7/26</th>
<th>SLP* 7/25</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Often / almost always</td>
<td>17 (61%)</td>
<td>4 (57%)</td>
<td>4 (57%)</td>
<td>25 (60%)</td>
</tr>
<tr>
<td>Sometimes</td>
<td>10 (35%)</td>
<td>3 (43%)</td>
<td>2 (29%)</td>
<td>15 (36%)</td>
</tr>
<tr>
<td>Seldom / never</td>
<td>1 (4%)</td>
<td>0</td>
<td>1 (14%)</td>
<td>2 (4%)</td>
</tr>
</tbody>
</table>

*Snell, Chen, & Allaire (2007)*
How did children respond to communication breakdown?

Most children made repeated effort to fix the breakdown in communication.
What does the child usually do to fix breakdowns?

<table>
<thead>
<tr>
<th>Actions</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repetition of sound, movement, gesture, words (41%)</td>
<td>Makes the same sound, keeps reaching for it. He’ll keep looking at what ever he wants to change. Repeats verbatim unless requested to slow down or clarify</td>
</tr>
<tr>
<td>Gave up/no effort (28%)</td>
<td>Not unless she is requested or pushed. After trying two or three times, he just “shuts down”.</td>
</tr>
<tr>
<td>Problem behavior (16%)</td>
<td>He’ll keep crying until we figure out what is wrong. He tries to be understood, when his needs not met, he will have a tantrum.</td>
</tr>
<tr>
<td>Pointing/leading (5%)</td>
<td>Take adult to what he wants/needs. Point, if we don’t understand.</td>
</tr>
<tr>
<td>Making sounds (3%)</td>
<td>He continues to make noises until you respond and he continually gets louder and louder. She’ll keep on trying and trying and she’ll make a little gargle noise.</td>
</tr>
</tbody>
</table>
What frequency of problem behavior resulted from communication breakdown?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Care provider</th>
<th>Teacher</th>
<th>SLP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Often/almost always</td>
<td>33%</td>
<td>20%</td>
<td>24%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>58%</td>
<td>75%</td>
<td>53%</td>
</tr>
<tr>
<td>Seldom/never</td>
<td>8%</td>
<td>5%</td>
<td>23%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>20</td>
<td>17</td>
</tr>
</tbody>
</table>

Snell, Chen, & Allaire (2007)
Most children *sometimes* engaged in problem behavior whenever communication broke down.

- One third or less said that problem behavior *almost always happened* (more for home)
- More than half (and up to 3/4 th) said that problem behavior *sometimes happened* (more for teachers)
- Very few care providers and teachers reported that it *seldom happened*,
  - while one fourth of the SLPs reported seldom/never having problem behavior.

**What kinds of problem behavior were reported?**
<table>
<thead>
<tr>
<th>Types</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crying (33%)</td>
<td>He would rock, roll around on the floor with his towel in his mouth &amp; cry. Shell get upset; she’ll normally start crying and have hand gestures.</td>
</tr>
<tr>
<td>Moving body (18%)</td>
<td>Gritting her teeth, crying becomes screaming, stiffening of the arms and legs. Turning her head away from me, stiffening her body.</td>
</tr>
<tr>
<td>Make noise, yell, scream (16%)</td>
<td>He continues to make noises until you respond; he gets louder and louder. Fretting, no crying. He yells and screams</td>
</tr>
<tr>
<td>Aggression (10%)</td>
<td>He …hits and bites you and rolls all over the floor. He get hostile and starts yelling or throwing things when he can’t be understood. He’ll… throw his arms around and kick.</td>
</tr>
<tr>
<td>Refuse (5%)</td>
<td>He’ll not respond. Says “no” and then refuses to attempt further communication.</td>
</tr>
<tr>
<td>Self injury (4%)</td>
<td>Head banging, eye gouging, and scratching. Scratches his knees and face a lot.</td>
</tr>
</tbody>
</table>
Summary

• Most children used > one system to communicate

• Home more reliant on personalized systems than school
  • Harder to understand, but easier for child to use

• Home & school: Talking devices far less useful as communication systems
• All adults experienced communication breakdown (CB) with kids,
  • Twice as often at home
  • Only 3/32 seldom/never
  • Half said “usually successful” – one third said “sometimes”
• Home & school responded to CB by guessing one third of the time
  • Less often: Asked questions, pointed, offered choices, used pictures
• Children responded to CB by repeating (41%)
  • Giving up/no effort 28%
  • Problem behavior 16%
• All adults experienced child problem behavior with CB
  • One half to three quarters of the time in response to CB
  • More problem behavior at home than school in response to CB
Recommendations

1. Improve child’s competence
   - Teach functional communication (conventional, symbolic) to replace prelinguistic communication
   - Teach functional communication to replace problem behavior (FCT)
   - Teach joint attention, turn-taking, eye contact, motor imitation (social-communication skills)
   - Teach child to repair CB

2. Improve adult responsivity (prevent CB; repair strategies)
   - Teach strategies: Follow, get close, wait, observe for NS forms, respond*
   - Understand and respond to child’s personalized communication*

3. Home and school learn from each other*
# Olivia’s Communication Dictionary

<table>
<thead>
<tr>
<th>Signal: What she does</th>
<th>Function: What it means</th>
<th>Partner’s Reaction</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbolic: Moves hand (knuckle) to mouth (not formed as Drink sign); touches mouth with finger</td>
<td>Soda</td>
<td>Verbalize drink, soda</td>
<td>Close to sign; sign may be difficult for soda unclear</td>
</tr>
<tr>
<td>Shakes head up and down (often short duration and small movement; subtle)</td>
<td>Confirming the meaning of staff’s statement; yes</td>
<td>Interprets Yes/OK; may shakes head yes</td>
<td>Not always clear that Yes is meaning</td>
</tr>
<tr>
<td>Contact pointing to item she wants or to items associated with what she wants</td>
<td>Requesting something; commenting on something</td>
<td>Give her what she wants</td>
<td>Not always obvious what she wants or whether she is just commenting</td>
</tr>
<tr>
<td>Vocalizes</td>
<td>To get your attention</td>
<td>Try to determine what she wants</td>
<td>Meaning not clear</td>
</tr>
<tr>
<td>Vocalizes and point to painful feel; unhappy expression</td>
<td>To express pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocalizes with a gestural movement, laughs; smiles; shakes head “yes”</td>
<td>Commenting on something she likes; agrees</td>
<td>May verbalize and agree with her satisfaction</td>
<td>Not always obvious what she is commenting upon</td>
</tr>
<tr>
<td>Claps hands</td>
<td>Not clear – end of task, satisfied with her work</td>
<td>May also clap</td>
<td>Meaning not always clear</td>
</tr>
<tr>
<td>Wiggles and wrings hands together</td>
<td>No particular meaning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looks angry while looking down or away</td>
<td>Not happy with situation; reject activity/person</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pushes something away</td>
<td>Reject item/activity</td>
<td>Remove activity</td>
<td>Does not often refuse or indicate protest; may just not engage in activity</td>
</tr>
<tr>
<td>Brings item to you</td>
<td>Wants assistance</td>
<td>Gives assistance</td>
<td>Assistance may not be the only intent</td>
</tr>
</tbody>
</table>