

Methodology: Systematic Review and Meta-analysis of the AAC Literature for People with
Autism Spectrum Disorder or Intellectual Disabilities who have Complex Communication
Needs through 2020

Appendix F

Coding for Dependent Variables Characteristics

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Appendix F

Coding for Dependent Variables Characteristics

Communication Function, Expressive and Receptive Communication, Communication Modes, and Social Functions Served by Challenging/Problem Behavior.

(a) Communicative function (i.e., behavior regulation, social interaction, joint attention). A produced communicative act that answers the question-why the act was produced. That is, what was its intended purpose or what effect does its emission have on a listener's behavior.

- **Behavioral regulation:** Communicative act produced to obtain or maintain access to an object, activity or person; or to escape or avoid contact with an object, activity, or person (e.g. requesting a hug, asking to go for ice cream, protesting bath time, protesting the offer of a food item; requesting help; requesting a break).
- **Social interaction:** A communicative act produced to direct attention to oneself. Communicative act emitted to direct a partner's attention to oneself (e.g. reciting story passages [where the objective is more taking turns than the importance of the information, telling a knock-knock joke, greetings, calling- "hey look at me"; requesting another's attention).
- **Joint attention/social interaction-** In a joint attention communicative act emitted to direct a partner's attention to an object or event external to the communicative partners. A joint attention act can also spontaneously comment on or name, for example; an object e.g. "dog"), person (e.g. "dog"), action (communicating "run" as a dog runs by the speaker or communicative partner), attribute (while looking at a group of green apples the learner sees one red one and communicates "red"), or adverbial (a dog is moving slowly and learner communicates "slow"). Social interaction communicative acts are emitted to direct a partner's attention to oneself (e.g. look at me; telling jokes; making animal sounds etc).

(b) Expressive and receptive communication (i.e., communication production, communication comprehension)

- **Communication Production (expression):** The emission of sounds, sound combinations, spoken words, gestures (including facial expression), manual signs, graphic symbols (e.g. miniature objects, object remnants (e.g. a button representing a shirt), photos, pictures, product logos, printed words, or combinations of the preceding to influence a communicative partner's behavior.
- **Communication Comprehension (understanding):** Deriving meaning (understanding) from utterances produced by others using speech, gestures/sign, or graphic symbols (e.g. parent says, "get your shoes" and child travels to bedroom and retrieves shoes). The participant demonstrates receptive understanding through action in response to the interventionist's language output.

Informational Note: A question came up about answering a question about both comprehension and production. If it is an intervention program, the interventionist should be teaching only one new thing at a time. As a result, one could be teaching comprehension or understanding of a question; or production of words or words used to answer the question. But-they likely would not be trying to teach both at the same time.

Also, consider that language production can be used to demonstrate that a learner comprehends a spoken word “e.g. Is this a cat-with the learner responding yes or no depending on the referent being shown.

(c) **Communication mode** (i.e., natural gesture, manual sign, low tech aided system, mid-to-high tech speech generating device, vocal, verbal). The medium through which communicative behavior is expressed. If one DV is categorized that contains multiple modes (e.g., "requesting" that includes verbal and AAC), check all of them

- **Natural gesture:** Natural gestures that may or may not include a facial expression (e.g. head shake yes or no) but exclude intelligible manual signs or sign approximations. May include the muscles beneath the skin of the face that purposely conveys emotional state to a communicative partner (e.g. frowning, smiling).
- **Contact gesture:** an action intended to influence the behavior of another person that involves coming in direct contact with a referent (e.g. proffering a cup to have it refilled), or with a prospective communicative partner (e.g. leading an individual to a referent that is the focus of the communicative act).
- **Distal gesture:** an action intended to influence the behavior of another person that does not involve direct contact with a referent or the communicative partner (e.g. pointing at a referent). Typically, distal gestures involve a shift in eye gaze between referent and communicative partner. **Idiosyncratic gesture:** an action that has no conventional meaning but is used under a consistent set of circumstances that permits individuals to ascribe communicative meaning based on its history of use (e.g. putting fist on one’s nose to communicate “I need a tissue”).
- **Manual sign language-** an unaided system that relies on no equipment and instead relies on the learner’s own body to produce communicative acts. An action that includes a specific handshape, location where the sign is produced and movement pattern that adheres to a sign language or sign system (e.g. ASL, Signed English).
- **Low tech aided AAC-**An application of a graphic communication mode that does not require electrical power or batteries to operate and do not have the capability to produce synthesized or digitized speech (e.g. graphic symbols housed in a wallet, a laminated card housing graphic symbols, a three-ring binder housing graphic symbols).
- **Mid-to-high tech aided AAC-** An application of an aided communication system. *High tech* applications involve the use of electrical or battery power. Typically, they permit the use of digitized (mid-tech). Additionally, high tech allows synthesized text to speech, environmental control and may support email and computer access applications. Additionally, they allow unlimited vocabulary, encoding capability, prediction, a variety of access methods, and permit linking any symbol to any other symbol location displayed (e.g., Tobii Dynavox, Prentke-Romich products).
- **Vocal-**Production of sound, sound combinations that are not intelligible word approximations. Examples: Sound- Air passing that vibrates the vocal cords that can be heard. This excludes wheezing, snorting, grunting and whistling.
- **Verbal-** Intelligible words or word approximations

d) Function of the challenging behavior (if challenging behavior)

Challenging (Problem) behavior- Source: Emerson, E (1995), cited in Emerson, E (2001, 2nd edition): *Challenging Behavior: Analysis and intervention in people with learning disabilities*. ‘Behavior can be described as challenging when it is of such an intensity, frequency, or duration as to threaten the quality of life and/or the physical safety of the individual or others and it is likely to lead to responses that are restrictive, aversive or result in exclusion.’

Social Functions of Challenging Behavior

- **Attention-** challenging behavior emitted to gain or maintain the attention of others (an example of positive reinforcement)
- **Escape-** challenging behavior emitted to avoid or gain escape from a person, activity, object, setting or state (e.g. too hot).
- **Tangible-**challenging behavior emitted to gain or maintain access to goods or services.
- **Self-stimulatory** (sensory or automatic reinforcement)-challenging behavior that does not require the mediation of a social partner. It is emitted to gain sensory reinforcement. It occurs regardless of events associated with the preceding three functions described.