Complexity of Communication Scale (CCS) Scoring Guidelines

These guidelines contain the following sections:
- General procedures
- Description of behaviors that correspond to the 11 point CCS scoring system
- Additional pointers for scoring

General Procedures

- After you view each of the scripted activities, you will mark in a score from 0 to 11 for each activity. The score corresponds to the CCS level of communication complexity, ranging from No Response to Pre-Intentional communication, to Intentional Non-Symbolic, to Intentional Symbolic communication.
- For reliability, each project will provide START and STOP times and specific utterances by the clinician for each "script/opportunity". This will be saved to the shared file server, saved under the same initials/code as the participant's video.
- The highest level of CCS behavior that occurs during the entire time between START and STOP for a script/or opportunity is coded.

Participant Behaviors and Scoring of CCS across Projects

General guidelines for scoring the CCS are presented below. These include operational definitions of behaviors that can be applied across participants in each of the projects.

Scores correspond to the most sophisticated behavior that occurs during the opportunity (i.e., the highest score between Start and Stop).

Score 0 – No Response

- No Response: Participant not attending or orienting to objects or examiner during the opportunity. Participant may look away, fuss, or otherwise protest. Routine behaviors that occur throughout the script, such as head weaving or consistent vocalizing, are examples. No response can also be coded if a participant’s behaviors are out of view.

SCORE 1 - Alerting Behaviors

- Alerting Behaviors: Participant changes his/her behavior within 10 sec after the onset of the opportunity. The change is a reaction to what is occurring, or what has stopped occurring, and not an overt response toward the object or person. Ceasing to smile, stopping body movement briefly, protesting or refusing or fussing may be examples.

SCORE 2, 3, 4 – Single Orientation without or with PCBs

- Single Orientation: For Pre-Intentional communication we need to determine if the participant focuses or orients on one object, event, or person only (Single Orientation Only) – that is, the participant focuses on/orients to an object but does not look up or orient body to the examiner; or the participant stares at/orients to the examiner but does not shift focus away to an object or the activity. The gaze or orientation is held for at
least 3 seconds. **Single Orientation only (without an accompanying PCB) is scored a 2**

Single orientation for someone with a severe visual impairment will not include a visual focus. Examples of behaviors that may indicate orienting toward an object are moving the torso toward or away from the object and remaining in that position, or lifting the head up or moving head to one side and holding the position for 3 seconds. If the individual has gross motor ability, it might be reaching across the tabletop in attempt to find an object, or moving the hands across the table, “finding” an object, and repeatedly touching the object for 3 seconds.

Single Orientation may be accompanied by **Potentially Communicative Behaviors (PCB’s)**, which refers to vocalizations, gestures or switch closures that are confirmed to be purposeful. Vocalizations include sounds (vowels, consonants, cv combinations), different from fussiness. Gestures include any use of body movements by the participant that appear to a part of the communicative interaction. Arms or hands in motion and in the direction of the toy or the examiner are coded as gesture/reaching. An arm extended reach may not always be possible with some of our participants, so judge whether the gesture reflects an effort to move towards the object or examiner. Arms or hands in motion but not in the direction of toy or examiner are not coded as a gesture. Gestures might include a head nod, head shake, shoulder shrug for the more motorically skilled participant. Less conventional gestures for communication should be coded, such as pushing a hand away, leaning, wiggling fingers or tapping someone. Common gestures are reach (to request, but not to grab an object), point, show, and give. Gestures must occur in conjunction with a coded scanning, dyadic or triadic eye gaze in order to be coded. Gestures may be quick or sustained. Motor behaviors that are part of motor movement overflow are not coded as gestures. Stereotypical behaviors are not coded as gestures. If a participant is holding a toy when the opportunity begins, a gesture is not coded. If the examiner is moving a toy towards the participant, then the participant reaches for it, this would not be coded as a gesture.

**Single Orientation with one PCB is scored as a 3:**  
**Single Orientation with more than one PCB is scored as a 4.**

**NOTE: For Single Orientation - a participant’s vocalizations do NOT need to be directed toward a person to be scored as single orientation. That is, if a participant vocalizes while playing with and looking at a toy, he would get a score of 3.**

Individuals with severe visual impairments or severe physical impairments may have atypical gestures. Someone with blindness, for example may lift his/her hands up off the table and toward a person, or may slap the table once or twice after attempting to locate the object by feel. Any vocalization other than laughing or crying will be scored as a vocalization.

**NOTE on VOCA use: If participant hits a VOCA a number of times indiscriminately, without intent, coded as a 2.**

**If participant hits VOCA repeatedly then adds a PCB such as vocalization or reach for another object – coded as a 3.**

Score 5 – Scanning without or with PCBs (also known as Dual Orientation between object and object).
- **Scanning without or with a PCB:** Scanning behavior includes looking from one object to another object. Rather than holding gaze on one object, the participant looks between objects, usually within a 3 second time frame. The behavior may look as though the participant is making a decision about wanting a toy or food item. Scanning does not include the examiner. If the participant is scanning between two objects and the examiner purposely gets included, code as dual orientation (see below). Extremely brief looks away during a scanning should be ignored. The PECS book is considered an object, so looks between the toy and the PECS book are coded as scanning. Looks between objects not visible on the video should not be coded.

- **Scanning without with PCBs is scored as a 5.**
  Individuals with severe visual impairments will scan by exploring their environment with their hands and then touching each item briefly. Holding available items simultaneously is not coded as scanning.

**SCORE 6 or 7b – Dual Orientation without or with PCBs**

- **Dual Orientation:** Dual orientation is defined as a shift in focus or orientation between object and person, or between an activity/event and person (or between person and activity) within approximately a 5 second window using vision (eye contact), body orientation, or gesture etc. Dual orientation can be communicated through vision, body orientation, or other means, or as a “give” to an adult. This does not require a shift in eye gaze or body orientation. **Note:** Some participants avoid eye contact but still connect objects to adults (e.g. grabbing adult’s hand to activate a toy). Other participants may have weak upper trunk control or head control and thus not make eye contact, but instead orient and turn their body to the examiner. Critical to dual orientation is “attending” to an object and an examiner within a reasonable time frame (suggested approximately 5 seconds). **Note:** Dual orientation is basically a two point look or body orientation, examiner-object or object-examiner. The looking is not held on the adult or object for 3 seconds or longer, but rather, these are brief points of contact between object and adult. Think of it as orienting to both object and person --- it is as if the child is “roping the adult into the interaction” (i.e., linking the object and adult in some observable fashion). **Note:** The shift in orientation needs to be participant initiated. For example, if the examiner is talking, moving, and the participant looks at the examiner, but then the client shifts orientation to an object on his /her own, then Dual Orientation is coded.

Persons with severe visual impairments will show dual orientation either using change in body orientation and/or reaching and touching. For example, the participant may pick up an item and extend the object toward a person.

**Dual Orientation only (without an accompanying PCB) is scored a 6.**

Dual Orientation may be accompanied by Potentially Communicative Behaviors (PCB’s). **Dual Orientation plus 1 or more PCB is scored as a 7b.** Activating a VOCA or touching a picture of the activity, when only one picture or VOCA is displayed, during an opportunity and not at other times, is scored as 7b – here the VOCA is considered a PCB and is being used intentionally.
*Note: Those with severe visual impairments may respond using a sequence that indicates orientation to the object, then the person, and then back to the object. An example would be reaching for an object, extending it toward a person (gesture), and then acting on the object after extending it.

Using the VOCA once after the start of an opportunity intentionally – coded as Dual Orientation + PCB – pushing a VOCA automatically places behavior at the level of 7b.

**SCORE 7b – Dual Orientation + PCB – a “give” or using an adult’s hand as a tool will always be coded as dual orientation + PCB at minimum; participant has to give and release object to get credit for intentional communication (visually impaired or otherwise)**

**SCORE 7a, 8, or 9 – Triadic Eye Gaze without or with PCBs**

- **Triadic Eye Gaze**: Triadic eye gaze is defined as a 3-point shift; that is, participant shifts gaze from examiner-object-examiner **OR** from object-examiner-object within **approximately a 5 second window**. **NOTE**: some participant’s motor constraints will alter our 5-second time frame. You will in part be using your judgment to determine a triadic eye gaze. Is the participant connecting the examiner to the object with his/her gaze? **We suggest** 5 seconds, but we know this may vary with each participant, depending upon motor abilities. Some participants literally get stuck, either with head movement or eye movement or a combination. So, watch carefully and judge whether the participant is in fact linking the gaze components and whether the triadic eye gaze reflects what the participant is capable of producing given motor constraints. The definition really relies on a connection between object and examiner and object again (or examiner, object, examiner), and the participant using his/her eyes to make the link. **Use the 5 seconds as a guide; use your clinical judgment based on the participant’s motor skills to make your ultimate decision**

If it appears that the examiner’s behavior caused or influenced a triadic eye gaze, such as distracting movements and/or comments from the examiner that draw the participant’s attention, while the participant is looking at the toy, this is not coded triadic eye gaze. For example, if the child looks from toy to examiner and then only looks back to toy after the examiner says, “What?” only count as dual orientation.

If the participant very briefly looks at a location between the toy and the experimenter as he/she is making the eye gaze shift, and this is brief and momentary, allow this shift within a triadic eye gaze code; however, a significant look away to a third location, or a prolonged look away, would terminate the eye gaze. A glance to the examiner as the participant is looking away is not viewed as looking as the examiner. Often times you will see a relatively long single focus gaze to an object followed by a shift to examiner and back to object. This would be a triadic gaze --- NOT single orientation followed by triadic eye gaze. This pattern illustrates a variation on triadic eye gaze due to a participant’s motor constraints.

**Triadic orientation with eye gaze (without an accompanying PCB) is scored 7a.**

**Triadic orientation with eye gaze plus 1 PCB is scored 8.**

**Triadic plus more than 1 PCB is scored 9,**

Persons with severe physical disabilities with vision may have triadic eye gaze, but may do so very slowly.
Score 10, 11 – Symbolic Behavior (word, sign, AAC symbol selection)

- **Intentional Symbolic Communication:** Intentional symbolic communication would be scored any time a participant uses words, signs, or AAC symbol selection to communicate; an unfamiliar observer needs to be able to recognize the word or sign. The participant does not need to use eye contact when showing intentional communication with words, signs, or symbol selection. Since we are only seeing short clips of our participants, we will be counting words and not trying to determine if an utterance is a “holistic phrase”.

  **NOTE:** If participant is hitting or banging on a symbol or VOCA without clear intention to communicate, this would be scored as a ‘1’ Single orientation only. Symbol selection includes behaviors such as giving and pointing to a symbol.

One word verbalization, sign or AAC symbol selection is scored 10.
Multi-word verbalization, sign or AAC symbol selection is scored 11.

**Some Additional Pointers in Videotaping and Scoring**

- When videotaping, make sure the examiner and the participant, and any toy/object are in view of the camera to ensure coders can see if participant makes eye contact or shifts gaze between objects and/or people. If either the examiner or toy/object are out of view, do not give credit for a shift in orientation to the examiner or toy/object. When possible, narrate the type of activity being introduced to the participant (e.g., joint attention, request, or choice).

- For scores related to “…more than 1 PCB” – participant must use the potentially communicative behaviors (e.g., gestures, vocalizations, switch closure) sequentially (immediately one after the other) or in combination (at the same time) within approximately 5 second window. Recall that some participants have motor constraints that result in movements that are quite slow; thus, sometimes behaviors that are truly linked (e.g., triadic eye gaze – looking between object, examiner, object) will go beyond the 5 second window.

- **DO NOT** score laughing, protesting, and crying as vocalizations

- If participant is manipulating a toy, this is not coded as a gesture

- Throwing an object is not a gesture (as if to say, “I don’t want it”)

- Only code spontaneous behaviors, including eye gaze, signs, words, or symbol selection; do not score examiner prompted communication – prompts can be verbal, e.g., “show me with your pictures” or physical, e.g., hand over hand prompting to sign or select a symbol. Consider a prompt as any examiner behavior that shapes a more sophisticated behavior (i.e., the behavior probably would not have occurred if the prompt was not given.) To score as scanning between objects, dual orientation, or triadic eye gaze there must be a physical object present that can be seen by the person watching the video. For example, if the examiner is holding the bubbles out of the angle of the camera, or the participant looks at place where bubbles were (after they popped), codes that include ‘object’ of focus would not be possible. However, looking for a source of sound, as looking at adult and then to the sound source would be coded dual orientation.

- Purposeful communication might not be about the stimulus of the task.