

**SSIS Coding Manual**  
Project ImPACT

## SSIS Coding Manual

### **What is the SSIS measuring?**

The variable collected from the SSIS represents the child's ability to imitate gestures and play actions.

### **Select the Media**

Consult the ImPACT Coding Log to determine which video to code. The log is located at the following location:

Krupa → ImPACT Study → Assessment Team → Coding → ImPACT Coding Log.xlsx (SSIS Tab)

### **Procoder**

Procoder will be used to playback the media and to make notes about the child's behaviors during each trial, while you manually code the SSIS using a score sheet.

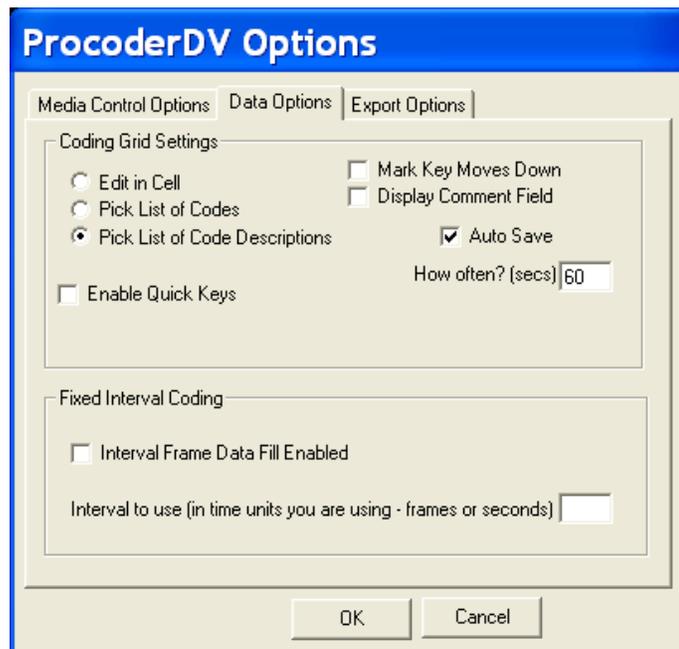
Please see the following information for setup, general use, and keyboard shortcuts.

#### A. Setting Options for Procoder

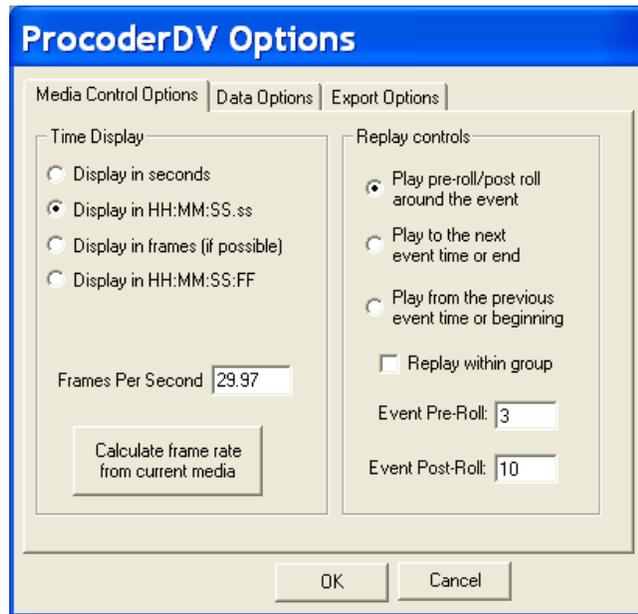
1. Open Procoder. The Procoder menu bar looks like the following:



2. Select 'Edit > Options' to get the following dialogue box:



3. Select the 'Media Control Options' tab and the settings:
  - a. 'Time Display' → 'Display in HH:MM:SS.ss'
  - b. 'Frames Per Second' → 29.97
  - c. 'Replay controls' → 'Play pre-roll/post roll around the event'
  - d. 'Event Pre-Roll' → 3
  - e. 'Event Post-Roll' → 10



4. Copy the media file that corresponds with the selected assessment from the media server (NAS-2) onto your hard drive
  - a. NEVER link a Procoder transcription file with a media file on the media server. Doing so can result in corrupting the media file.
  - b. Store the copied media file into a designated folder on your desktop.
  - c. Remove the media from your desktop folder after you've completed coding by placing it in the Recycle Bin. The original media file will still be accessible on the network.

## B. Using Procoder to code your media

1. Open Procoder
2. Open a new *transcription* data file by selecting 'File > New > Transcription Data File'
3. Name the transcription file using the following convention, separating each component with a hyphen.
  - a. Site initial + Research ID# (V101, U309)
  - b. Time of visit (T1, T2, T3, T4)
  - c. Procedure initials (SSIS)
  - d. Coder's initials, first and last
  - e. End the file name with "-reliability" if this is a reliability check by a second coder.

- f. Save the file to a designated folder on your computer.
  - a. “V104-T1-SSIS-ec” for a primary coded file or “V107-T1-SSIS-mw-reliability” for a reliability coded file.
  
4. Fill out the information in the ‘File Info’ tab (illustrated below):
  - a. ‘Subject Identifier’ → Site initial + Research ID# (Ex: V104, U304)
  - b. ‘Session Date’ → Date of Assessment (MM/DD/YY)
    - a. You may have to watch the beginning of the video to get the date from the assessor’s announcement, then go back and fill in this information.
  - c. ‘Session Time’ → The time-visit of the appointment
    - a. In the Impact Study, the SSIS occurs at each Time period (T1-T4).
  - d. ‘Location’ → The initials of the site where the assessment was recorded
    - a. Vanderbilt University = “VU”
    - b. University of Washington = “UW”
  - e. ‘Session Code’ → The initials of the assessment (SSIS)
  - f. ‘Observer/Coder’ → Your initials
  - g. ‘Date Started’ → Date you began coding this file
  - h. ‘Date Completed’ → Date you finish coding the file
    - a. While you can start coding a file and finish it at another time, be certain that the length of time between ‘Date Started’ and ‘Date Completed’ is no longer than two days. Never start coding a file on a Friday afternoon if you cannot finish coding it before the weekend.

U302-T3-SSIS.pdv

File Media Control Data

Save Export Media Replay Seek Delete Insert Mark Add Row

File Info Data

Start Frame:

Subject Identifier: U302 Ctrl+Click to Mark

Session Date: 12/31/15 Start Time:

Session Time: T-3 End Time:

Location: UW Date Started: 1/19/16

Session Code: cb Date Completed: 1/19/16

Observer/Coder: SSIS

Notes:

Media File: C:\Users\bushct1\Desktop\SSIS\U302-T3-SSIS.MP4

Source is DVD Player Browse... Use Current

Code File:

Browse... Use Current

Seek Start Seek End

[Click here to calc length](#)

#### 5. Link the media file

- a. Under 'Media File' in the 'File Info' tab, select the 'Browse' button.
- b. Browse to where you saved your copy of the media file and select the target video.

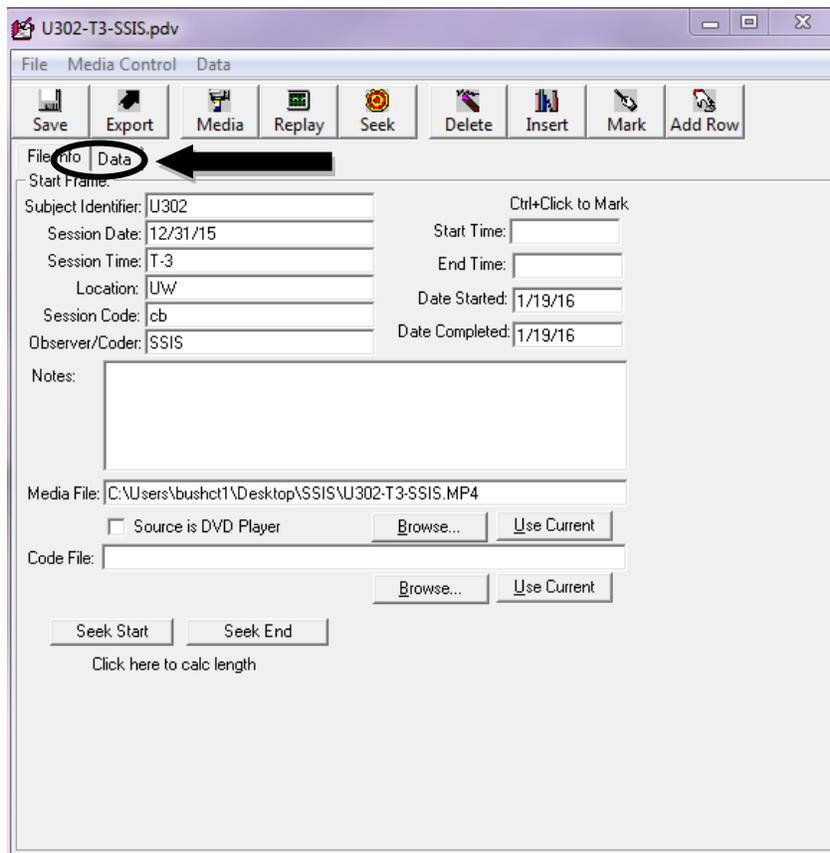
C. ProCoder Controls and Keyboard Shortcuts

1. Getting Ready to Code

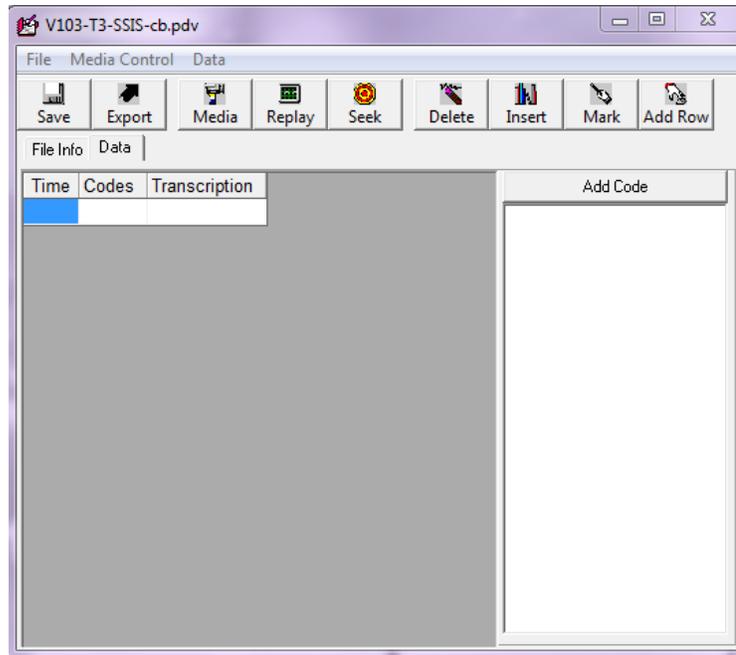
a. Make the media file visible

- a. Select the 'Media' button (it has an image of a hand holding a camcorder over the label 'Media') – this should make the media file open through ProCoder.

- b. In order to play the video while you manually code the SSIS, you must click on the Data tab at the top of the ProCoder File box:



- c. Now you will have a Video screen where your media is displayed and a Transcription screen that looks like this:



## 2. Controls while coding

### a. To begin playing media

- Use the mouse and place your cursor in any cell of the Transcription screen (Time, Codes or Transcription). **In order to manipulate the video, your cursor must always be in a cell in the Transcription screen or framing the cell with a bold border.**
- Press **Ctrl+D** on the keyboard.

### b. To stop playing/pause media

- Make sure the cursor is in the 'Time,' 'Codes,' or 'Transcription,' cells in the transcription window.
- Press **Ctrl+F** on the keyboard.

### c. To stop the media and make a note in Procoder or to **time an event**, make sure your cursor is in the correct position (not highlighting a cell blue, but rather framing it with a bold border).

- Press **Ctrl+X** on the keyboard.
- The video will stop at the time mark you've selected.
- The time will display in a newly created row at the bottom of the transcription rows.
- You may click in the cell and write an observation.
- This time also serves as the "pivot" for REPLAY and SEEK features in Procoder.
- To use this feature to time an event, you will press **Ctrl+X** at the beginning of the event, press **Ctrl+D** to play the video, and then press **Ctrl+X** again to mark the end of the

event. This will allow you to calculate how long it took the child to complete the play action coded for this measure (if needed).

- d. To pre-roll the media in 3-second intervals
  - Begin by pausing the media by pressing **Ctrl+F**, then press **Ctrl+B** to pre-roll the media in 3-second intervals. You may use **Ctrl+B** multiple times in a row to locate the event you would like to view.

3. List of keyboard controls to manipulate media playback

**Ctrl+A** = Pre-roll (3 sec.) & stop (at 10 seconds)

**Ctrl+B** = Pre-roll & play (3 sec. pre-roll that continues to play until stopped)

**Ctrl+D** = Play

**Ctrl+E** = Mark (no stop)

**Ctrl+F** = Stop

**Ctrl+G** = Go to start

**Ctrl+H** = Hide or unhide selected columns

**Ctrl+K** = Delete current row

**Ctrl+N** = Insert a row

**Ctrl+M** = Add a row

**Ctrl+R** = Find/Seek

**Ctrl+X** = Stop & mark

**F5** =  $\frac{3}{4}$  speed

**F12** = Sort Data Grid by time

### The Procedure

The SSIS consists of 10 items, divided into two scales. The Object Imitation Scale consists of 5 play object items and the Gesture Imitation Scale consists of 5 gesture items. The examiner administers one scale at a time in no particular order. After the object or gesture demonstration, which is accompanied with a verbal marker, the examiner waits for a response from the child. Each item is demonstrated three times (trials) and the examiner begins each trial with the phrase “Watch me!” The child’s response is scored for each trial; however, only the highest scored trial is used to compute the total score. See the score sheet below for an example.

During the SSIS there is a 5-minute, warm-up activity, where the examiner imitates the child with a variety of toys. The warm-up activity is not coded at Vanderbilt. At the conclusion of the warm-up activity, the examiner will remove some toys and leave a few items out. Coding begins when the examiner prompts the child with the carrier phrase, “Watch me!” followed by an Object or Gesture item from the score sheet.

The SSIS is complete after all 10 items (5 Object Imitation and 5 Gesture Imitation) have been administered or the examiner says “stop coding here.”

**Coding Guidelines: Also see Appendix A**

For each trial presented, child responses will be assigned a score ranging from 0 to 2, depending on the extent to which child's response resembles the target acts below. Imitation behaviors performed when the child's back is to the camera can still be coded if the child's response is at least partially visible to the coder.

**OBJECT SCALE**

**Sound tube** (Whee!)

- Picks up tube and the tube automatically makes noise w/o child turning it = 1
- Shaking it back and forth without wrist rotation = 1
- Moving the sound tube by rotating the wrist 1x. Not flexion and extension. = 2

**Train** (Oh no!)

- Drives it w/o dropping it = 0
- Pushes it toward edge w/o dropping off = 1
- Pushes train at least an inch, then it drops off table = 2

**Slinky** (Look!)

- Puts on nose but does not extend it = 1
- Puts it on interactant's nose = 1
- Puts on nose and extends it = 2

**Fish & Net** (I got it!)

- Puts fish in examiner's net = 1
- Puts something else in net = 1
- Puts fish in own net = 2 (Do not need to shake or swing net around)

**Tambourine and jingle bells** (Ta Da!!)

- Hits hand on tambourine = 1
- Hits shaker on something else or hits something else on the tambourine = 1
- At least one hit w/ shaker on tambourine = 2

## **GESTURE SCALE**

### **Finger to lips** (Shh, Baby's sleeping)

-Says shh w/o gesture = 0

-Finger to lips w/o "shh" = 2

### **Clap** (Yay, I did it!)

-Says "Yay, I did it" = 0

-One clap; the child's hands are open and come together at midline = 1

-At least two claps = 2

### **Point** (It went over there!)

-Says "It went over there!" = 0

-Points = 2

### **Hands up and pant** (I'm a dog)

-Says "I'm a dog" = 0

-Panting = 1

-Hands up (with or w/o panting) = 2

### **Finger in circle** (It's spinning!)

-Says "It's spinning" = 0

-Attempts to move fingers or hand in a circular motion; during the child's attempt at the circular motion, their fingers or hands return to the starting point of the motion = 2

## **Marking Time & Using the Score Sheet**

When using Procoder, follow this procedure to make notes about the child's behavior. These notes will aide in the manual scoring of the items on the score sheet.

1. Mark (using Ctrl+X) when:

The examiner begins the first trial and note the item administered.

2. Mark (using Ctrl+X) again:

AFTER the end of the first trial administration (usually indicated by the end of the examiner's verbal marker). In the transcription field, note the child's behavior in response to the first trial. If you find it helpful, you may indicate the score for each trial in the "Codes" column.

3. Mark (using Ctrl+X) again:  
AFTER the end of the second trial administration and before the child's response. Follow the same notation procedures for child response and scoring.
4. Mark (using Ctrl+X) again:  
AFTER the end of the third trial administration. This will be the time-point used for calculating the 5 second window allotted for a child's response during the third trial.
5. Mark (using Ctrl+X) the LAST time:  
AFTER 5 seconds have passed. If the child's response to the examiner's model occurs outside of the 5 second window, it is not coded. Write "End of T3" in the transcription field to indicate the end of the item administration.
6. Once you have made notes regarding the child's behavior for EACH trial, score the trials on the SSIS Score Sheet according to the Coding Guidelines noted above. Then continue watching the next item administered.

Complete these six steps for all 10 items.

### Coding Clarifications

Any response—meeting coding criteria—that the child makes after an item's first model and up until 5 seconds after the third model is considered codeable. This includes simultaneous and pre-emptive imitation to the examiner's second and third models.

If the examiner hands items to the child after modeling a gesture/toy movement, the child's response cannot be coded because the examiner has inadvertently prompted the child. However, if the child is reaching for the adult's toy after the examiner models a gesture/toy movement, the examiner may give her toy to the child and the child's response CAN be scored.

If the child imitates the appropriate gesture or toy movement but does not engage with the materials, the child's response CAN be coded. For example, the child imitates clapping without attending to the blocks. The SSIS is a measure of the child's ability to imitate the specific gestures or toy movements being assessed, not imitating everything the examiner demonstrates during a model.

For scoring the slinky item: The child only receives 2 points if the slinky begins on the nose in a collapsed state and is then released/expanded while still being anchored to the nose. Any extension of an already (even partially) expanded slinky that is set on the nose will only receive 1 point.

For scoring the train item: The edge referenced in the coding guidelines can refer to any edge of any surface from which the train can be pushed to the ground. Whether the child pushes the train off a different edge of the same surface as the examiner's model or the edge of a completely different surface is inconsequential.

For scoring the fish & net item: If the child's net is laying on the ground and the child puts a fish on the net (without picking the net up), the child receives 2 points for the trial. In the net and on the net will be coded the same in this instance.

**Your Procoder file and accompanying Score Sheet will look like this (see below):**

Time	Codes	Transcription
00:06:52.82		NET/FISH
00:06:56.72	0	T1: looks, holds bell shaker
00:07:05.82	0	T2: watches admin, doesn't move
00:07:15.99	0	T3: watches admin, looks at fish/net
00:07:20.99		End of T3
00:07:56.12		SLINKY
00:08:00.09	0	T1: puts down shaker, picks up slinky, vocs
00:08:12.75	0	T2: watches admin
00:08:24.06	0	T3: watches, picks up slinky
00:08:29.06		End of T3
00:09:05.30		TAMBOURINE/SHAKER
00:09:07.58	0	T1: child looks at admin--admin does not wait 5 sec. after modeling
00:09:12.26	0	T2: child watches--admin doesn't wait 5 sec. before next trial
00:09:20.04	0	T3: child watches
00:09:25.04		End of T3
00:09:57.95		SOUND TUBE
00:10:01.74	0	T1: child whines, retreats to Mom
00:10:11.50	0	T2: child whines, "no no no," reaches for Mom
00:10:15.45		Admin abandons item because it upsets child
00:10:24.68		TRAIN
00:10:27.24	0	T1: child watches admin
00:10:38.58	0	T2: child watches admin., turns away from Mom towards toys
00:10:49.54	0	T3: voc, looks at admin, trains
00:10:54.54		End of T3
00:12:04.48		CAR
00:12:08.31	0	T1: holds baby
00:12:20.29	2	T2: points, vocs, holds baby
00:12:32.08	2	T3: points, vocs, 2x
00:12:37.08		End of T3
00:13:20.55		BABY
00:13:24.82	0	T1: uncovers baby (pulls off blanket), vocs
00:13:45.81	0	T2: watches admin, picks up baby
00:14:03.74	0	T3: tries to put hat on baby
00:14:08.74		End of T3
00:15:19.56		SPINNING TOP
00:15:23.65	0	T1: voc, crawls to other side of room
00:16:28.77	0	T2: picks up top, vocs
00:16:44.96	0	T3: swats at tops
00:16:52.77		Admin does an extra trial--don't code--although child does gesture :(
00:19:09.97		BLOCKS
00:19:14.58	0	T1: low level prompt--child scoots self in chair
00:19:31.38	0	T2: child picks up dog, knocks blocks to floor
00:19:52.68	0	T3: reaches to put block near admin's, vocs, gasps when tower falls
00:19:57.68		End of T3
00:20:13.66		DOG
00:20:17.47	0	T1: holds dog, looks at admin.--admin doesn't wait 5 sec. after modeling
00:20:27.62	1	T2: plays with dog in hands, attempts panting
00:20:39.69	0	T3: child looks at admin, still holding dog
00:20:44.69		End of T3

The total score from the Score Sheet is entered into REDCap.

**SEMI STRUCTURED IMITATION SCALE**  
**GESTURE & OBJECT IMITATION ASSESSMENT**

Id V105 Time Period 2Date 10/4/15

Examiner \_\_\_\_\_

Scorer CB

(P) R

TOY SET ONE	ACTION		VERBAL MARKER	TRIAL 1	TRIAL 2	TRIAL 3	SCORE
Sound tube	Turn upside down 2 times		<i>Whee!</i>	0	0	N/A	0
Train	Let train roll off table		<i>Oh no!</i>	0	0	0	0
Slinky	Put slinky on nose and drop 1 end		<i>Look!</i>	0	0	0	0
Fish & Net	Drop fish in net		<i>I got it!</i>	0	0	0	0
Tambourine & Jingle bells	Hit tambourine with bells 2 times		<i>Ta Da!!</i>	0	0	0	0
TOY SET TWO	PLAY ACTION	GESTURE	VERBAL MARKER	TRIAL 1	TRIAL 2	TRIAL 3	SCORE
Baby & Blanket	Cover baby with blanket	Finger to lips	<i>Shh, Baby's sleeping</i>	0	0	0	0
Blocks	Make tower of 3 blocks	Clap	<i>Yay, I did it!</i>	0	0	0	0
Car	Push car across	Point to car	<i>It went over there.</i>	0	2	2	2
Dog	Show toy	Hands up and pant	<i>I'm a dog.</i>	0	1	0	1
Top	Spin top	Finger in circle	<i>It's spinning.</i>	0	0	0	0

**\*\*NOTE:** THE CHILD IS NOT SCORED ON WHETHER THEY IMITATE THE PLAY ACTIONS. THESE ARE JUST USED BY THE EXAMINER TO PLACE THE GESTURES IN CONTEXT

**Total Score**

(3)

Entered into REDCap

**When a trial is missing:**

There may be occasions when an examiner administers fewer than 3 trials for a particular item. In this case, use the highest scored trial for that item as the final score.

**When one or two items are missing:**

If the examiner fails to administer one or two **entire** items, i.e. all three trials for each item are omitted, then the child receives a score of 0 for the item. The remaining items are summed to compute the total score.

**When MORE than two items are missing:**

If the examiner fails to administer three or more items, the SSIS cannot be scored, and the coder should enter 555 on the score sheet and into REDCap.

If any of these scenarios occur, please alert the examiner so they can be mindful in the future of following the protocol.

**Coder Protocols:**

- A. Determine who will be the primary coder and who will perform reliability checks (or be the “reliability coder”).
  1. The primary coder will do the majority of coding, but both primary and reliability coders should follow all “Coder Protocols.”
  2. It is possible for there to be more than one primary coder. The primary coders will then be responsible for completing regular reliability checks on one another.
- B. Code in a quiet place with the headphones pre-approved by your PI.
  1. Use Sony Professional MDR-7506
  2. Never use earbuds or non-approved headphones to code a sample
  3. Limit distractions:
    - a. Turn cell phone on silent/off, minimize/close-out email, close door, and keep noises in office to a minimum.
    - b. Never code while listening to music
- C. Viewing Items
  1. You may watch each trial up to 3 times (if needed) in order to determine how the child responded to the examiner’s model.
  2. Do not view each trial more than 3 times because it may interfere with reliability. You should be able to make an informed decision after watching the trial up to 3 times.
- D. Finishing a Primary coded file: Once a video file has been completely coded through ProCoderDV, take the following steps:
  1. Save the primary .pdv to a specific folder designated on your computer.
  2. Place a copy of the completed .pdv file on the network:
    - Krupa → Impact Study → Assessment Team → Coding → SSIS Coded Files
  3. Delete the copy of the video from your computer (NOTE: the video **should still be saved on PRSA4!**).

4. Enter the following information into the Impact Coding Log:
  - a. Initials
  - b. Date coded
5. Ensure your SSIS Score Sheet is completed and placed in the appropriate location (to be determined by coding staff).

E. Reliability

1. In this project, 20% of all coded files will be coded for reliability; once a set of 5 video files has been collected, one of the 5 files will be selected randomly for reliability.
  - a. To be considered reliable, the ratio of the total scores from the primary and reliability samples must be greater than or equal to 0.85 (small/large).
  - b. All agreement checks during the first year of coding for the Impact Study need to be followed by a discrepancy discussion of items that are scored differently. Discrepancy discussions are to serve as a training context and an attempt to improve the coding manual. After the first year of coding (or staff hiring period), discrepancy discussions can be limited to sessions at which lower than .85 small/large ratio is derived.

F. Finishing a Reliability coded file: Once a reliability video file has been completely coded through ProCoder DV, take the following steps:

1. Save the reliability .pdv to a specific folder designated on your computer.
2. Place a copy of the completed .pdv file on the network:
  - Krupa → Impact Study → Assessment Team → Coding → SSIS Coded Files
3. Delete the copy of the video from your computer (NOTE: the video **should still be saved on PRSA4!**).
4. Enter the following information into the Impact Coding Log:
  - a. Initials
  - b. Date coded
  - c. Reliability ratios

G. Data Entry: After reliability for the selected file is complete, the set of 5 files will be ready for data entry. See the REDCap data entry manual for further instructions.

H. Unreliable files

1. If the file is unreliable, each coder must stop coding samples until the two coders can meet to discuss all discrepancies between the files.
2. Together, the primary and reliability coders will discuss the coders' discrepancy forms and review the video file side-by-side.
3. If the discrepancies are large, they may choose to code the video file side-by-side to create a consensus file.
  - Labeled: Project ID – Time period – Test name - Coders' initials – consensus
  - Ex: V103-T1-SSIS-mwec-consensus

4. If the two coders have three consecutive files that are unreliable, both coders must retrain and obtain three consecutive files at reliability before they can code again independently as primary coders.

## Appendix A: Coding Guidelines

### OBJECT SCALE

#### Sound tube (Wheel!)

- Picks up and the tube automatically makes noise w/o child turning it = 1
- Shaking it back and forth without wrist rotation = 1
- Moving the sound tube by rotating the wrist 1x. Not flexion and extension. = 2

#### Train (Oh no!)

- Drives it w/o dropping it = 0
- Pushes it toward edge w/o dropping off = 1
- Pushes train at least an inch, then it drops off table = 2

#### Slinky (Look!)

- Puts on nose but does not extend it = 1
- Puts it on interactant's nose = 1
- Puts on nose and extends it = 2

#### Fish & Net (I got it!)

- Puts fish in examiner's net = 1
- Puts something else in net = 1
- Puts fish in own net = 2 (Do not need to shake or swing net around)

#### Tambourine and jingle bells (Ta Da!!)

- Hits hand on tambourine = 1
- Hits shaker on something else or hits something else on the tambourine = 1
- At least one hit w/ shaker on tambourine = 2

### GESTURE SCALE

#### Finger to lips (Shh, Baby's sleeping)

- Says shh w/o gesture = 0
- Finger to lips w/o "shh" = 2

#### Clap (Yay, I did it!)

- Says "Yay, I did it" = 0
- One clap; the child's hands are open and come together at midline = 1
- At least two claps = 2

#### Point (It went over there!)

- Says "It went over there!" = 0
- Points = 2

#### Hands up and pant (I'm a dog)

- Says "I'm a dog" = 0
- Panting = 1
- Hands up (with or w/o panting) = 2

#### Finger in circle (It's spinning!)

- Says "It's spinning" = 0
- Attempts to move fingers or hand in a circular motion; during the child's attempt at the circular motion, their fingers or hands return to the starting point of the motion = 2

**SEMI STRUCTURED IMITATION SCALE**  
**GESTURE & OBJECT IMITATION ASSESSMENT**

Id \_\_\_\_\_ Time Period \_\_\_\_\_

Date \_\_\_\_\_

Examiner \_\_\_\_\_

Scorer \_\_\_\_\_ P R

TOY SET ONE	ACTION		VERBAL MARKER	TRIAL 1	TRIAL 2	TRIAL 3	SCORE
Sound tube	Turn upside down 2 times		<i>Whee!</i>				
Train	Let train roll off table		<i>Oh no!</i>				
Slinky	Put slinky on nose and drop 1 end		<i>Look!</i>				
Fish & Net	Drop fish in net		<i>I got it!</i>				
Tambourine & Jingle bells	Hit tambourine with bells 2 times		<i>Ta Da!!</i>				
TOY SET TWO	PLAY ACTION	GESTURE	VERBAL MARKER	TRIAL 1	TRIAL 2	TRIAL 3	SCORE
Baby & Blanket	Cover baby with blanket	Finger to lips	<i>Shh, Baby's sleeping</i>				
Blocks	Make tower of 3 blocks	Clap	<i>Yay, I did it!</i>				
Car	Push car across	Point to car	<i>It went over there.</i>				
Dog	Show toy	Hands up and pant	<i>I'm a dog.</i>				
Top	Spin top	Finger in circle	<i>It's spinning.</i>				
<b>**NOTE:</b> THE CHILD IS NOT SCORED ON WHETHER THEY IMITATE THE PLAY ACTIONS. THESE ARE JUST USED BY THE EXAMINER TO PLACE THE GESTURES IN CONTEXT							<b>Total Score</b>