

Partial Interval Time Sampling of Adaptive Strategies for the Useful Speech Project
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 5/27/09
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 1/19/10
 Draft 2
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 2/19/10
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 2/22/10
 Draft 3
 With Appendix
 3/1/10

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Overview

Purpose of the coding system

This manual is designed to guide observers through a process that will yield variable scores thought to reflect the amount of responsivity parents deliver to their children pro-rated by individual differences in the number of 5-second intervals that are codable. By "pro-rate", we mean dividing the number of a coded response strategy by the number of intervals that are "codable". Once data are collected on all children, the data analysis program will determine whether number of codable intervals will be used to pro-rate the responses. Considering whether this pro-rating is necessary is particularly important for the PCFP procedure because (a) the child and parent are allowed to move, thus potentially rendering the camera angle non-optimal and (b) the degree to which events are controllable is less in parent-child sessions than in examiner-child sessions. Some of these controlled events and off-screen or obscured camera angle periods are likely to occur more often in the PCFP than in other procedures.

Theory posits that parents who use many responses have children with better language later in development. The nonlinguistic responses (physical play) are thought to create more opportunities for the linguistic responses (follow-in utterances), which, in turn, are thought to stimulate language development by providing words at times the child is looking at, and has a short-term memory of the referent for the word, thus aiding the association of the adult-provided word and its meaning.

To reliably code these two types of responses, experience tells us that key terms need to be defined. Sometimes we define the terms because they have accompanying separate symbols (i.e., "codes") that are recorded in the Procoder data file. All "codes" are defined in a file used by Procoder called a "code file". Usually, we define the terms because they are used frequently and in a specific way in this manual. This degree of specificity will seem "picky" at times, but is necessary for variable values to be very similar across different observers for the same session (i.e., reliable).

Overview of coding process

Observers will do the following:

1. Download the code file onto his/her harddrive. This may only have to be done once for the project period.
2. Download the media file onto his/her harddrive. This will have to be done for all sessions and all participants.
3. Set up ProcoderDV software to use a 5-second interval behavior sampling method.
4. Use the Procoder DV software to code the media file.
 - a. Because different types of behaviors are to be considered for coding for each interval, the decisions are grouped into 3 "sets" of mutually exclusive codes. These 3 sets are: (a) Uncodable vs. codable; (b) look lead vs. touch lead vs. null; (c) physical play vs. follow-in utterance vs. null. "Null" means the interval is left blank (i.e., no code is selected from the pull-down menu for the target group for the target interval).
 - b. Two "passes" through the media file are strongly suggested. A "pass" through the media file means that the observer looks at each interval (perhaps several times) and makes a

decision how to code each interval until all 180 intervals are coded for that mutually exclusive set of codes.

- i. It is strongly suggested that a pass be used to determine codability of interval (i.e., uncodable vs codable) that is separate from the pass used to code lead (i.e., look vs touch vs null) and response (i.e., physical plays vs follow-in utterances vs null). The rationale for this is that the mindset for deciding codability is quite different from the mindset for deciding lead and response. Lead and response are thought to be best coded in the same "pass" because once a lead has been identified it is natural to determine if a response occurs.
5. Save the ProCoderDV data file on your personal hard drive and derive the variable scores using a software program called MOOSES.
6. After MOOSES analysis, store the ProCoderDV data file and the MOOSE analysis summary file on the secure text server.
7. Indicate in the coding progress chart that the coding has been completed.

Rationale for Level of Distinctions, Inclusion of Categories, Need for the Definitions, and Identification of Terms to be Defined

As mentioned earlier, a certain number of 5-second intervals will be "uncodable" because (a) it isn't appropriate for the adult to use a coded type of "response" or (b) either interactor or a potential referent is off-screen. Because this is a difficult category to reliably code, we define what is considered an uncodable interval. To aid in coding uncodable reliably, we will define the term "off-screen". Any interval that is *not* uncodable is, by definition, codable. That is, all intervals are either "uncodable" or "codable". There is no "null" option for the codability decision.

Both types of coded caregiver responses "follow the child's attentional focus". The child "owns" the focus of attention if it is (a) child-initiated or (b) child-adopted. These terms are not accompanied by separate codes but are defined to aid reliable application of the concept "child's attentional focus".

There are two ways children show attention that have separate codes: look leads and touch leads. These are given separate codes because experience tells us that coders are more reliable in coding responses if they mark (i.e., code) the type of lead the child provides. This occurs because different examples of responses can occur after different types of leads. For example, a type of nonlinguistic response, "imitates the child's action", can only occur after a child's touch lead. In contrast, the type of linguistic response coded here, "follow-in utterances", can occur after either a child's look lead or after a child's touch lead (or both).

A lead is, by definition, *to* something (i.e., an object, person or activity.) We refer to this "something" as a "referent" and thus define this term.

In this code, the types of nonlinguistic responsivity we code are ways parents physically play with their children's focus of attention. We label this type of nonlinguistic response as "physical play" to emphasize to the coder that we want to see whether the parent does more than just "sit back and talk to their child" (a common occurrence). None of the types of physical play (imitates child's action, aids child's action, elaborates or demonstrates new action in ways that relates to child's object) have separate "codes" due to infrequent occurrence of separate types and reliability issues. That is, if any of these occur, the interval is coded as having "physical play". However, these different types of physical play are defined to aid reliable coding of physical play. Historically, coders have had the most difficulty coding this category reliably out of the set of responsivity types coded in this project. The parental actions coded as "physical play" are those thought to maintain the child's focus of attention.

Maintaining the child's focus of attention is considered important so the adult has the opportunity to talk about the child's focus of attention. Talking about the child's focus of attention is thought to aid the child in learning new spoken vocabulary. We call talking about the child's focus of attention "Follow-in utterances". Therefore, follow-in utterances will be defined. Although one can distinguish types of following utterance (e.g., comments vs. directives), we do not do so because recent evidence shows that follow-in directives (a) are highly correlated with follow-in comments, and (b) are as highly correlated with later language in children with ASD as are follow-in comments.

We are interested in the type of caregiver talking that maps in a direct way onto the child's focus of attention. Thus, we will provide a list of utterances that may occur in response to a child's lead but do not make any specific semantic reference to the child's lead. This is an exclusive and exhaustive list to use in deciding whether to count an utterance that is contingent on a child lead as a follow-in utterance. The coder will likely think of or encounter other examples that seem very similar to the ones in the list; however, we ask that coders not add to the list to avoid unreliable coding about this point.

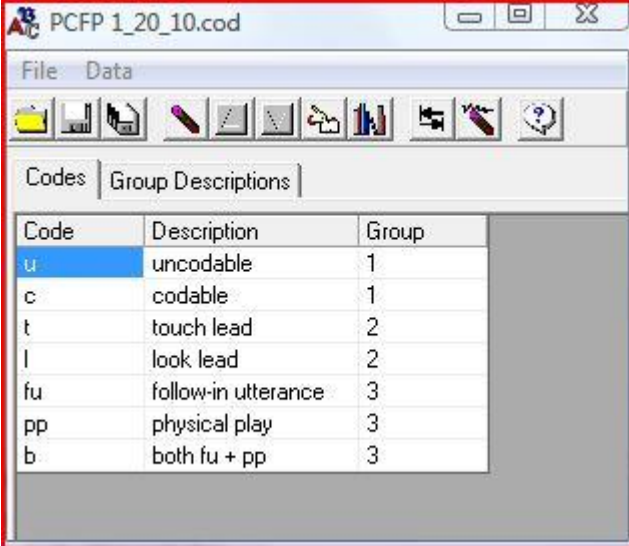
Preparing to Code

Putting the Media Files on Your Harddrive:

The media file will initially be on CD or the UNC USS Hard Drive. Video files must be copied into the **PCFP Media Files** folder located under **USS Procoder Files** folder on the desktop. Do not code from a CD or from the external hard drive.

Locating the Code File on Your Harddrive:

The code file named PCFP 1_20_10.cod is located in the **USS Procoder Files** subfolder: **Code Files for Procoder**. It should resemble the following:



The screenshot shows a software window titled "PCFP 1_20_10.cod" with a menu bar (File, Data) and a toolbar. Below the toolbar is a table with columns for Code, Description, and Group. The table contains the following data:

Code	Description	Group
u	uncodable	1
c	codable	1
t	touch lead	2
l	look lead	2
fu	follow-in utterance	3
pp	physical play	3
b	both fu + pp	3

Loading ProcoderDV:

To use ProcoderDV to code, do the following:

- a. Load ProcoderDV (2-left-click on the procoder icon-looks like an analogue clock).
- b. You should get the following:

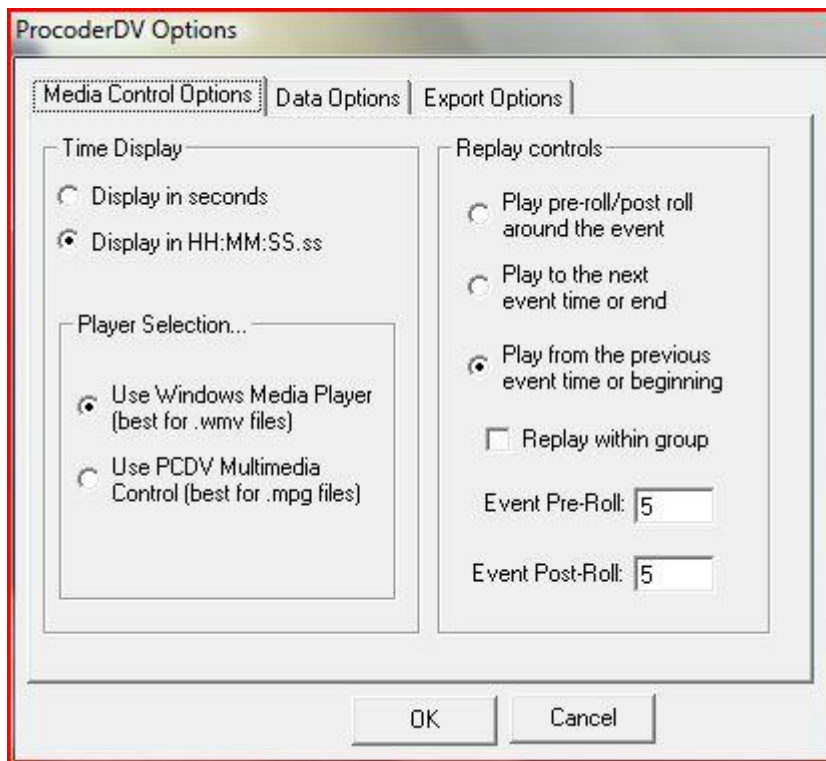


Setting ProcoderDV options:

If you are using ProcoderDV for the first time, you'll need to activate it. Select "Help", "Activate this copy", enter your email and user number. These can be obtained by emailing Jon.Tapp@vanderbilt.edu.

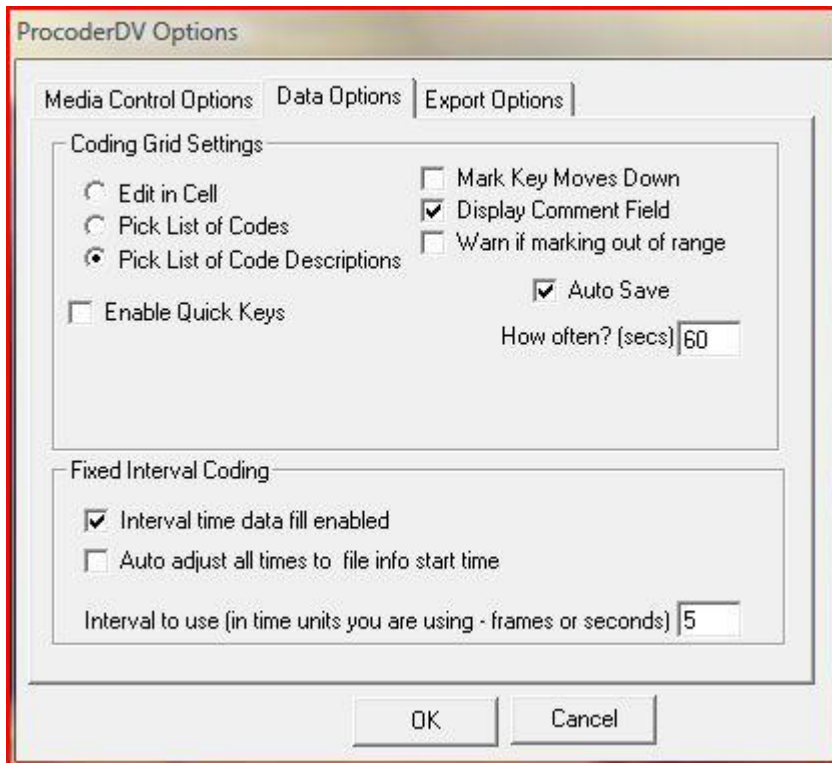
If you are setting up ProcoderDV for interval coding for the first time, check the option settings to make sure they are set correctly for interval coding (i.e., the type of coding you are doing).

Select, Edit, Option to get the following:



Under the “Media control options” tab, “Time display” should be set for “display in HH:MM:SS.ss”. “player selection” should be set for “.wmv”, “Replay controls” should be set for “play from previous event time or beginning”. The event pre-roll or event post-roll don't matter.

Select the “Data options” tab and get something like:



1. Now select “Data options” tab. Check “pick list of code descriptions” and “display comment field.” Check “auto save” and enter 60 seconds. Under “fixed interval coding,” select “interval time data fill enabled.” Enter “5” in “interval to use.”

The export options don’t need to be changed. So select “OK” to end the options set up.

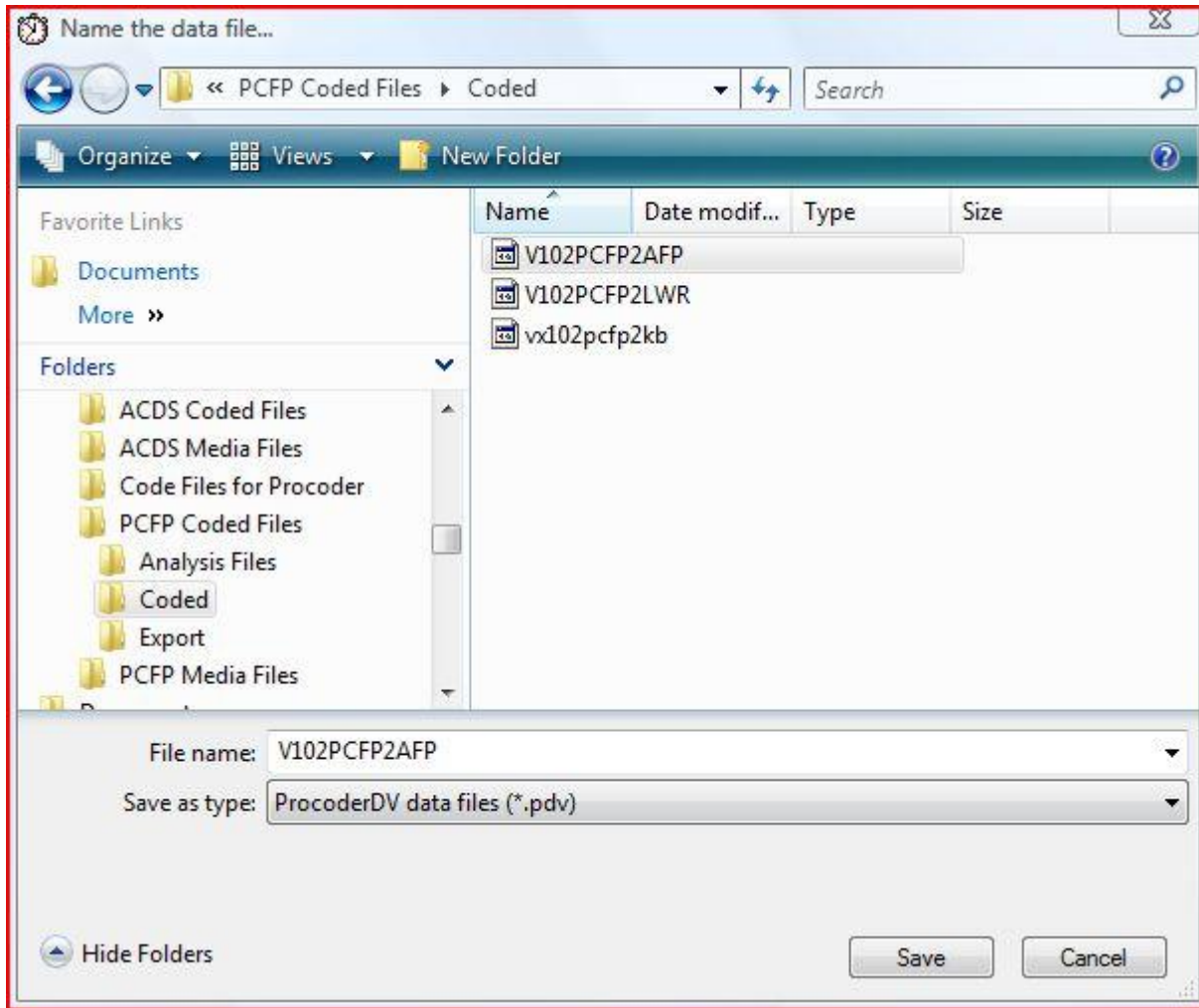
Once set, you won’t have to change the options unless they are changed for another type of coding system (e.g., timed event coding for child communication coding.).

Using Procoder to Code

Once the ProcoderDV software options are set up, you’ll need to (a) open an observation file (a file containing your record of the coding for each interval), (b) open the media file (a digital record of the parent-child procedure for the participant you are about to code), and (c) open the cod file (a list of letter symbols that are short hand for what you are coding) for the Parent-child code.

Open an observation file

On the welcome bar for procoderDV select, File, new (if haven’t started one yet for this session-but “open” if have already created an observation file for this session), observation data file. You’ll get a window that looks like the following:



In the “save in:” box, navigate to where the file is to be saved. These should be saved first on your desktop in a folder labeled “PCFP Coded Files; Coded” and after you are finished coding you will upload the completed procoder data file to the secure text server. In the “file name:” box, label the filename using the following convention:

Site initial-3 ID numbers-procedure initials-time period number-coder initials-coding type initial (primary or reliability). No extension is needed because procoder will attach “.pdv”.

Eg., for a Vanderbilt participant with the ID 102 in the Parent child free play procedure at time 2 coded by Ann Firestine as primary data would have a file name as follows:

V102PCFP2AFP

Case does not matter for these filenames.

Press “save” to create this file in the indicated location with indicated filename.

You should see something like the above.

Choose the **File Info** Tab. Fill in this information:

Start Frame:

- Subject Identifier: e.g., VX102 (Subject ID#)
- Session Date: e.g., 12/4/05 (if you know it)
- Session Time: e.g., 2 or 4 (assessment time period)
- Location: e.g., VU or UNC (site at which procedure occurred)
- Session Code: e.g., PCFP (initials of procedure)
- Observer/Coder: e.g., AF (your initials)
- Start Time: leave blank
- End Time: leave blank
- Date Started: e.g., 12/9/2009 (date you begin coding)
- Date Completed: e.g., 12/10/2009 (date you complete coding)

Notes: Indicate whether the data is primary or reliability data.

Media File: **Browse** to locate the media file to be coded; a link is created to this file.

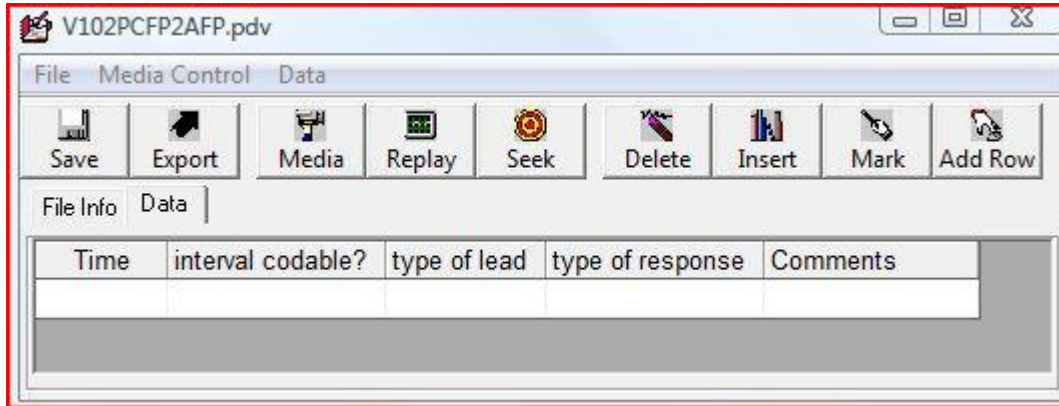
Make sure that file is copied to your hard drive. The folder containing your media file should be **“PCFP Media Files”**. It is very important not to code from a CD or from the media server.

Code File: **Browse** to locate the .cod file; a link is created to this file.

The code file is located in **“Code Files for Procoder”**. This file is labeled **“PCFP 1_20_10.cod”**.

It is important that you SAVE the data file at this point. Doing so will enable the program to "recall" the media and code file that you have linked. Otherwise, the files will not remain linked for the next time you open the data file.

Once the File info is inputted and you have saved the media and code file links, closed the File Info window, re-open the data file and select the "data" tab. You should see something like the following:



Set up the Data page for coding.

Adjust the comments field and the time cell by putting the cursor on the margins of the cells and holding the left mouse button down while you stretch the margin of the cells (like you might in excel).

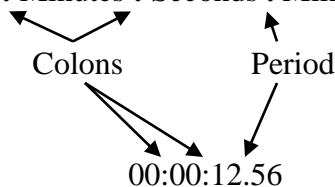
Open Media for coding.

Select Media button: The media file will open on your screen. If you are using two monitors, in the media window, select "Control", "Fit to Window". If you are using one monitor, use the cursor in the corner of the media file window to resize it to retain its width-to-height ratio while filling half the width of the monitor (the data file should fill the other half of the monitor display).

Create the times for the intervals in the data file.

In the data file window, (not media window), put the cursor in the first "time" cell. Use Ctrl+D to begin the media file. Mark the beginning of the session by using Ctrl+X keystroke at the offset of the examiner saying "start coding" or when the parent places a toy on the table. **If you are coding a reliability file, then begin the session at the point that the primary coder began the session by typing in that time in the 1st "time" cell.** If you do this, make sure that you attend to whether a " : " or a " ." is used to denote the time.

(Hours : Minutes : Seconds . Milliseconds)



Select "Data" from menu bar (not data tab), select "add rows" (not "add a row"), enter the number of rows you need to code for the duration of the session (e.g., you usually will have a 15 minute session and 5 second intervals, giving **180 intervals** [15 minutes x 12 intervals per minute = 180.]. This will result in 180 rows being inserted with time for 5 seconds after start time.

The screenshot shows a software window with a menu bar (File, Media Control, Data) and a toolbar with icons for Save, Export, Media, Replay, Seek, Delete, Insert, Mark, and Add Row. Below the toolbar is a 'File Info' tab with a table. The table has five columns: Time, interval codable?, type of lead, type of response, and Comments. The first row is highlighted in blue.

Time	interval codable?	type of lead	type of response	Comments
00:00:12.56				
00:00:17.56				
00:00:22.56				
00:00:27.56				
00:00:32.56				
00:00:37.56				
00:00:42.56				
00:00:47.56				
00:00:52.56				
00:00:57.56				
00:01:02.56				
00:01:07.56				
00:01:12.56				
00:01:17.56				
00:01:22.56				
00:01:27.56				
00:01:32.56				
00:01:37.56				

Begin coding in the 2nd interval. Place the cursor in the cell for the 2nd interval (the 2nd row from the top with a time by it) and use the replay function (e.g., ctrl-A) to “replay” this interval from the previous interval.

Begin coding in the 2nd interval.

Use the mouse or arrow key to move down to next interval. Repeat viewing the interval as often as needed to code each dimension. Assuming the cursor is "registered" on the cell for the interval, use the Ctrl A keystroke to do so.

Tips for Coding and Definitions

Tips for coding the codability column.

1. One of the following codes (u or c) is coded in all intervals on a 1st and separate pass. That is, the codability dimension is an exhaustive one. All intervals MUST have either a "u" or a "c" recorded in the corresponding cells.
2. Ask whether the interval is uncodable first. If it is not, then it is by default codable.

Definitions needed to code the codability column.

Uncodable:

A. The following are *examples* of distractions/situations that may occur during the session. During these instances, a parent would not be expected to use the coded responses, and therefore the interval would be marked as “uncodable.” **Regardless of the duration of the distraction during the interval (1 second versus entire 5 second interval), the interval will always be marked “uncodable.”** The interval will always be “uncodable” when:

(1) child is engaging in behavior that needs behavior modification (ignoring or intervening)

a. child is engaged in behavior that is reasonably judged as in need of active ignoring to extinguish

e.g., child playing with diaper bag, mother’s handbag, etc

e.g., child attending to door/door knob possibly indicating that he /she wants to leave the room

b. child is engaged in behavior that is in need of behavior control methods (including comfort or distraction)

e.g., Throwing toys.

e.g., Climbing on furniture.

e.g., Hitting/biting adult.

e.g., Crying uncontrollably; unable to attend to objects/adult

e.g., Banging on the observation window or self-stimming while looking in the mirror

(2) interval is not part of the prearranged session length.

e.g., parent leaves area where child is positioned to retrieve toys

(3) part of session is interrupted

e.g., bathroom break

e.g., fire drill

e.g., interruption for transition to books from toys, includes door opening and closing

e.g., cell phone ringing

e.g., child coughing/sneezing/parent wiping child’s nose

(4) beeping noise from timer to end session is heard during any part of the interval.

B. There may be instances when due to point of view of the camera and arrangement of the referents and/or parent and child, the coder cannot determine whether a lead or response has occurred. Because we do not want these unclear instances to count in the number of responses, we mark these intervals as uncodable.

(1) coder can’t see adult’s hands or what she is doing to judge whether adult “physically plays”.

(2) coder cannot see child’s hands to determine what object he/she is actively moving in order to score a touch lead or “physically play”.

(3) coder cannot see child’s face or head orientation to determine if there is attention to a referent.

(4) child is off screen for part of interval or video is so unfocused can't tell what child is doing. To maintain reliability, an interval in which the child is off-screen for part of the interval should be marked as uncodable, even if the child is on-screen and provides a lead during another part of the interval.

Codable: Any interval that is not "uncodable".

Tips for coding the "lead" column of the data file.

1. Intervals coded with "c" in the codability column are considered on the 2nd pass for "lead" and adult response codes. These two codes will be coded on a single pass, but are described sequentially below.
2. The type of lead is indicated in the "lead" column or it is left blank.
3. Sometimes the child's focus of attention changes during an interval, so multiple leads occur. In this case, the coder will first consider whether there is an adult response to any lead in the interval. If so, the coder would code the first child lead to which the adult responded.
4. Sometimes the child's foci of attention are unclear because the apparent referents of their gaze and touch differ. In such cases, looking is credited before touching (unless there have been multiple leads that are affected by rule 3 above).
5. If the referent for a touch and a look are the same, the touch lead is recorded in the interval cell. That is, look and touch codes are mutually exclusive (both cannot be coded). Because physical play can only be coded after a touch lead, when both types of leads occur, we code the touch lead.
6. Child leads often carry over from one interval into the next. For example, the child is playing with and looking at the beads in intervals 61, 62, 63, 64, and 65. She should be credited with a touch lead for each of these intervals.

Definitions needed to code the lead column.

Referent (the object of the child's "lead")

- i. table
- ii. parent or adult
- iii. any toy from the toy sets provided, including books
- iv. snack items (cheerios, juice bottle that child brings to session)
- v. jewelry on parent
- vi. pacifier
- vii. child's chair, chair buckle
- viii. a communicative word, gesture, or sign used by the child (?ASK PAUL ABOUT THIS)

A lead is shown by the child demonstrating attention. Attention is shown via looking for at least 1 second or actively touching for at least one second. Looking is inferred by the direction the nose is pointing, because we often cannot see the pupils or eye lashes. Active touching means to move the referent with one's hand or to move one's hand or fingers on the referent.

Adult responses can only be coded when the child "owns" their lead. Therefore, we only code leads the child "owns". The child comes to "own" a lead by (a) initiating it or (b) adopting it.

Child-initiated referents: Child attention (look or active touch) that the child begins without adult explicit verbal prompts or adult verbal direction. Child attention that is in response to the adult's

NONVERBAL material arrangements (e.g., connecting the fences together in the play set) will be considered “child-initiated”.

Child-adopted referents: (i.e., objects introduced by the parent to which the child has attended for at least 2 intervals prior to the target interval). When an adult introduces an object to the child, it is believed the child needs to be engaged with the new item for a period of time before benefitting from responses used by the parent. For this coding manual, this amount of time is defined as 2 consecutive intervals of child attention. The onset of the count for the 2 intervals is the interval after the interval in which the adult has introduced the new object. For example, if the adult modeled pushing the train and saying "choo-choo" in interval 40, and the child does this for interval 41, and 42, then child's touch lead is coded for interval 43. The child does not have to attend continuously to the object the parent introduced for 2 intervals, but s/he does need to attend to the object for at least part of each of the intervals.

Tips for coding adult response column.

1. All intervals with a lead are considered for a "response".
2. Only touch leads are opportunities for "physical plays" responses.
3. Either type of lead is an opportunity for a "follow in utterance" response.
4. An interval may be left blank if neither physical play nor follow-in utterance occurs.
5. When determining whether an adult's action is an example of physical play, the coder may need to advance the file 1-2 intervals to decide whether a parent's action is an elaboration. Once this determination is made, the coder must decide when the adult physical play began. The onset of the action is coded in the interval in which the parent action becomes recognizable to the coder as an imitation, aid, or demonstration. This requires more than the parent contacting an object. The onset of a behavior to sustain attention can begin as soon as the adult moves the object.
6. Adult responses (both physical play and follow-in utterances) must occur during the interval with the relevant child's lead (not an immediately following interval).
7. If there are multiple child leads or referents identified in the interval and the adult response is to only one of these still code the interval as having an adult response. In this case, be sure the child lead that has been coded matches with the adult response that has been coded.
8. At times the parent may respond with both a follow-in utterance and physical play within the same interval. In this case, code that the parent has responded with “both” types of responses. The child lead coded in this case must be a touch lead, because physical play responses can only follow touch leads, whereas follow-in utterances can follow look leads or touch leads.
9. If you cannot determine what the parent has said after listening to the utterance three times, the utterances will not be marked as a follow-in utterance. The physical play of the adult may still be codable even if you cannot determine what the adult has said.
10. If at least one follow-in utterance occurs in an interval with a child lead, code “follow-in utterance” for that interval.

Definitions needed to code adult response column:

Physical play: There are 4 types that are defined below but not distinguished with different codes.

Adult imitates the child's action with the same or similar touch lead referent (child and adult may be holding the object at the same time). The adult does a similar action as the child's. It may be a reduced (not all of the child's action) or expanded (all of the child's action plus some other action) or exact (all components of the child's action) imitation of the child's action.

Examples:

1. Rolling a ball back and forth between the child and adult (or driving a car back and forth).
2. Child shakes rattle. Adult picks up another rattle and shakes.

Nonexamples: Imitations of child's laugh or cough or other vocalizations are *not* coded.

Adult aids the child's action. The adult does something to receive or enable the child's action. This can involve moving something in the child's way, stabilizing the object the child is acting on, putting out a container or receptacle for the child's action.

Adult demonstrates a new action on child's referent. Modeling for the child what the child could do with the referent of the child's touch lead.

Adult demonstrates a new action on a different object and relates this object to the child's referent.

Relates to object child is actively touching. Our definition of "relating" to the child's object of attention is **(a)** deliberately moving objects into the perimeter of the child's object of attention, **(b)** deliberately moving the adult and/or child object so that they come into contact with each other, or **(c)** verbally relating the objects such that both are mentioned in the same utterance or adjacent utterances are conjoined (one begins with "and") or the combination of adjacent utterances and actions indicate to the coder that the adult intends for the two objects to be related.

Examples of Play Demonstration and Aiding

Baby doll + Bottle:

Feeds baby the bottle
Takes hat off baby
Undresses/dresses baby
Sits baby upright
Rocks baby in arms
Puts baby to sleep
Walks baby across floor
Hugs baby
Sits baby on/in car
Puts beads on baby
Pretends to drink from bottle
Gives baby drink from nesting cups
Makes baby shake rattle
Feeds baby food from the farm set

Nesting Cups:

Stacks cups
Line cups in row
Takes cups apart
Nests cups
Put other toy/s inside cups

Pretends to drink from cups
Puts cup on head (adult or child)
Puts cup on baby's head
Pours toys from one cup to another
Pretend pouring from cup to cup
Hides toys under cup

Beads:

Puts beads on neck/wrist
Puts on child's neck/wrist
Puts beads on baby
Puts beads in nesting cup
Puts beads in car
Holds out another string of beads for child to take (child already engaged in activity with beads)

Rattle:

Shakes rattle
Physically assists child to shake the rattle
Puts rattle in car
Gives to baby to shake
Pretend to give monkey drink from cup or bottle (rattle is a monkey)
Makes monkey rattle climb up or down the nesting cups
Feeds monkey food from farm set

Snap Beads:

Removes lid from container
Loosens lid for child to remove from container of beads
Places beads in nesting cups or bead container
Snaps beads together
Takes beads apart
Makes necklace
Puts necklace around neck
Swings connected beads back and forth
Aids child in putting beads together
Puts necklace on head
Pretends bead is a piece of food by eating or feeding to adult or toy
Hands beads to child as child is snapping them together

Pop Up Toy:

Pushes pop up buttons
Closes pop up
Physically assists child in pushing buttons or closing pop up
Pretends to give drink or feed the animals on the pop up toy

Car:

Spins tires
Pushes car along floor
Puts baby on/in car
Puts pop beads in car

Puts bead necklace in car
Helps child open car door
Pushes car back and forth with child
Places little people or animals in car
Crashes car into stacked nesting cups
Uses wooden plank to create a bridge with nesting cups as posts
Drives car under or over wooden bridge

Farm Set:

Actively manipulating the tractor

puts person on tractor
drives same tractor around table
puts animal in the trailer connected to the tractor
connects trailer to the tractor
rolling tractor back and forth
connects trailer/add person/add animal
places Little Person from either toy set in the tractor
pushes tractor back and forth with child
moves tractor towards barn
opens doors of barn so tractor can go in

Actively manipulating the water pump (use as a vehicle/pushing water pump/connect to barn)

pushes the water pump
connect it to the barn
brings animal to pump to drink
takes farmer to pump the water
places animal at water pump to drink
pretends to drink from water pump herself
puts hand under water pump and drinks from her hand

Active manipulation with barn

opening and closing barn doors
adult puts animal inside, along perimeter of the barn, puts farmer inside
drive the tractor towards the open doors or through it
put tractor inside for storage
connect water pump to side of barn
put the basket of apples/corn inside the barn
knocks on door
opens door w/ or w/out Little Person

Active manipulation with an animal

feeds the corn stalk or animals to the animal
presents the water pump for animal to drink
presents Little Person to ride on the animal's back or vice versa
present little person or animal to hug or kiss the child's animal

Active manipulation with little person

presents corn stalk or basket of food for littler person to pick from

Books:

Aids in opening flaps to reveal pictures underneath

Helps child turn page if child has difficulty turning and separating pages

Slinky:

Demonstrates how to make slinky step down

Bounces slinky up and down in the air

Extends/pulls up from floor or table

Demonstrates movement from hand to hand

Peeks through slinky at child

Puts small toy/animal inside a standing slinky

Adult follow-in utterance.

Parental utterance that is a **follow-in utterance** has the following attributes:

- a. it is about the child's focus of attention (object or event):
 - the referent of the adult's utterance is considered the same as the child's focus of attention if it:
 - has the same label as the child's referent (i.e. "block") **OR**
 - is spatially proximal to the child's referent/ in the child's field of vision **OR**
 - is related (through the parent's words or actions) to the child's focus of attention
 - A parent's comment on his or her own actions can be counted as a follow-in utterance IF the child has adopted that referent (i.e., has been attending to the object of the parent's action for two immediately preceding intervals). For example, the child has been looking at the horse for two intervals. In the third interval, the parent says "jump, jump" while making the horse jump along the table. This may be coded as a follow-in comment.
 - The parent can comment on a specific item or action, as well as the entire item or set of actions within the child's focus of attention. For example, if the child is looking at the barn set and the parent picks up a dog from the set, places it next to or in the barn (within the child's field of vision) and says, "Here is the dog," this would be a follow-in comment.

AND

- b. Has a specific semantic relationship to the child's focus of attention, including the object, properties of the object (e.g., color, size, texture, sounds associated with the object), an action, or qualities of the action.

Further discussion of follow-in utterances and examples:

The relationship between adult language models and child lexical development is complex and changes over the course of development, with shifts in the parental responsiveness characteristics that are associated with developmental changes in child's lexical growth. For example, Tamis-LeMonda et al. (2001) reported that while mothers' use of affirmatives (e.g., "good job") with 9-month-olds is predictive of later language development, mothers' use of affirmatives at 13 months

is not longer predictive of outcomes. In contrast, at 13 months, maternal verbal imitations of the child are predictive of children's achievement of language milestones. Support for the contribution of maternal verbal imitation was also found by Masur, Flynn & Eichorst (2005). For children in that study, maternal verbal imitation at the beginning of the second year (1;1) accounted for 43-47% of the variance in child's total (reported and observed) lexicons at the middle of the second year.

Some words used by parents in interacting with young children and early words acquired by children are not words that would be used formally, but they do have conventional meanings that are recognized and shared across individuals who share the same language and culture. Examples include words such as "uh oh," "moo," "night-night" and "yuck." The early acquisition of many such words is illustrated in the appendix included at the end of this coding manual provides data from the LEX database (<http://www.sci.sdsu.edu/lexical/select.php>) described by Dale and Fenson (1996) showing the proportion of children reported to understand or say each word at 10, 13, and 16 months. Thus, when parents use words such as these in responding to their child's lead, they are coded as follow-in utterances.

Examples of Follow-In utterances:

Some of these don't tell the child what to do:

- "The ball rolled away." or "The ball rolled away. Where is it?" The initial comment ("The ball rolled away.") is a [fc].
- "There's the ball. You like the big blue ball."
- Child is playing with beads and parent says, "Ooo, so pretty."
- Child is playing with cow and parent says, "Moo."
- A parent pretending to be the voice of toy or animal may provide follow-in comments as long as the statements are not directive. For example, the child is holding a basket of apples and parent brings horse to the basket while narrating, "I'm hungry, I'm eating apples."

Some of these do tell the child what to do

- The child has been playing with the horse for at least 2 intervals and the adults says, "Put it in the barn."
- The child has been looking at the book for at least 2 intervals, and as s/he reaches for the book the adult says, "Turn the page."
- The child initiates play with the blocks, and as the child holds a block above the container the adult says, "Block in."
- A child is playing with blocks for at least 2 intervals, and the adult uses a rising intonation with the statement "Put it back in?" This may be coded as a follow-in directive as it directs the child to perform an action with an object that is the focus of attention using a questioning tone of voice. A child is playing with blocks for at least 2 intervals, and the parent offers the choice, "Do you want the red one or the green one?" This may be coded as a follow-in directive because it obligates the child to respond to a question about his/her current focus of attention

Discussion of NONEXAMPLES of follow-in utterances:

As noted above, the use of affirmatives by mothers with 9-month-olds was associated with later language development, but this was not true at for 13-month-olds. For this study, we will not count

simple or nonspecific affirmatives that do not make specific reference to the child's focus of attention. For example, if a child is stacking the cups and the parent says, "Okay, that's good," the affirmative would be nonspecific and would thus not be counted as a follow-in utterance. But if the parent says, "That's good stacking," the affirmative would include a specific reference to the child's lead and would be counted as a follow-in utterance. In addition we are not counting interjections used to hold a speaking turn and/or while a parent is searching for a word. In addition, we are not counting highly routinized, recitative utterances such as counting in sequence, saying the alphabet in sequence, chanting a song or fingerplay, or reading story text.

Acknowledgment Affirmative, and Negative Response Words Not Counted as Follow-in Utterances

These terms used in the absence of a specific reference to the child's lead are NOT counted:

Allright

No (or any form reflecting simple negation, like "nah," "nope" and "uhn-uhn"). In contrast, forms of "no" *are* transcribed when they are part of a multiword grammatical construction meaning "not" [e.g., "no mine", "no hot"] or "don't/doesn't" [e.g., "no touch", "no go there"], or "not any" [e.g., "there's no beans," "no cookie now"].

Okay (used as a simple response to a request [Child: "Get that." Adult: "Okay"; or as a conversational device, "Okay, let's try."])

Right

Sure

Yes (or any form of the simple affirmative, like "yeah," "yep," "uh-huh").

Yay (as praise or celebration of child's action)

Good job.

That's right.

Way to go.

You got it.

Interjections and Vocatives Not Counted as Follow-in Utterances

Ah (screaming sound; satisfaction, delight, pain)

Eh? (as in requesting clarification)

Ha (resentment, wonder, triumph)

Hey

Hu (expression of surprise or fright - vocalized intake of breath)

Huh? (as in requesting clarification)

Um

Oh

Uh

Routinized Forms, Stories, and Songs Not Counted as Follow-in Utterances

*Counting (rote counting or counting with one-to-one correspondence)

*Alphabet

Songs

Rhymes

Fingerplays

Routinized word(s) or phrase(s) said in a sing-song like manner (e.g., rockyrockyrocky, teetertotterteetertotter)

Utterances consisting of all or part of a story text

NONexamples of Follow- in utterances:

- a. Descriptive comments about the parent’s actions IF the child has NOT been attending to the object of parent’s play for 2 immediately preceding intervals.

Examples:

- Child is looking at the horse. Parent pushes tractor on table and says, “I’m pushing the tractor.”
- Child is not attending to anything. Parent is looking at book and says, “I’m turning the page.”
- Child is pushing the car. Parent is shaking rattle. The child reaches for the rattle (lasting about 1 second). Parent says, “Mommy is playing now. You can play later.”

- b. Parental utterances that only contain words without a specific semantic relation to the child’s focus of attention. (See discussion above)

- c. Verbatim reading-Adult utterances that are being read verbatim from a book (during book sharing) are not follow-in comments. This does not include labeling picture items in a book.

- d. Adult statements intended to keep the child from doing something in the future.

Examples:

- “You’re supposed to play with that, not eat it.”
- “Don’t throw the toy.”

- e. Comments that do not pertain to the child’s focus of attention or child’s actions or adult’s actions that the child has been attending to for at least 2 immediately intervals, but do pertain to the current play session are not coded as follow-in comments.

Example:

- Parent says “We hardly ever get to play together, do we?”

For example, statements that ask the child to recall experiences from memory. These are not about the child’s immediate focus of attention. “You had cereal for breakfast today, didn’t you?”

Another example of statements that are not coded as pertaining to the child’s focus of attention are descriptive comments in which the child’s focus of attention cannot be seen or determined (see criteria for determining codeable and uncodable intervals when this occurs).

- a. The adult initiates play with the horse, gives it to the child and says, “Put it in the tractor.” This is not a follow-in utterance because the child has not been attending to the horse for 2

immediately preceding intervals and the adult initiated the play with the horse.

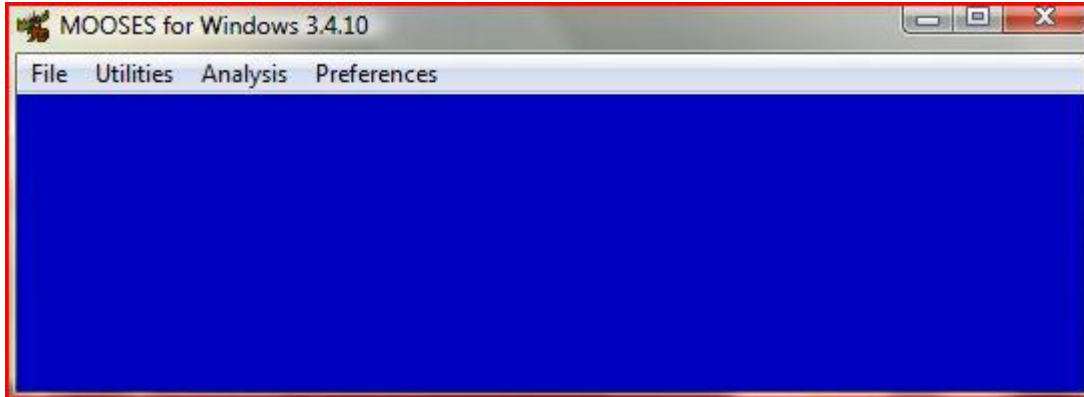
- b. The child is playing with the tractor and the adult says, “Give the sheep a drink of water.” This utterance is not considered a follow-in utterance because it is a directive about the adult’s, not child’s, focus of attention given at a time when the child is already engaged with something else. .
- c. The child is not engaged with anything and the adults says, “Look at the truck.” This is a not coded as a follow-in utterance because the child was not already attending to the truck.

Save the file: Press the SAVE button. SAVE FREQUENTLY. Many coders save after every coding decision.

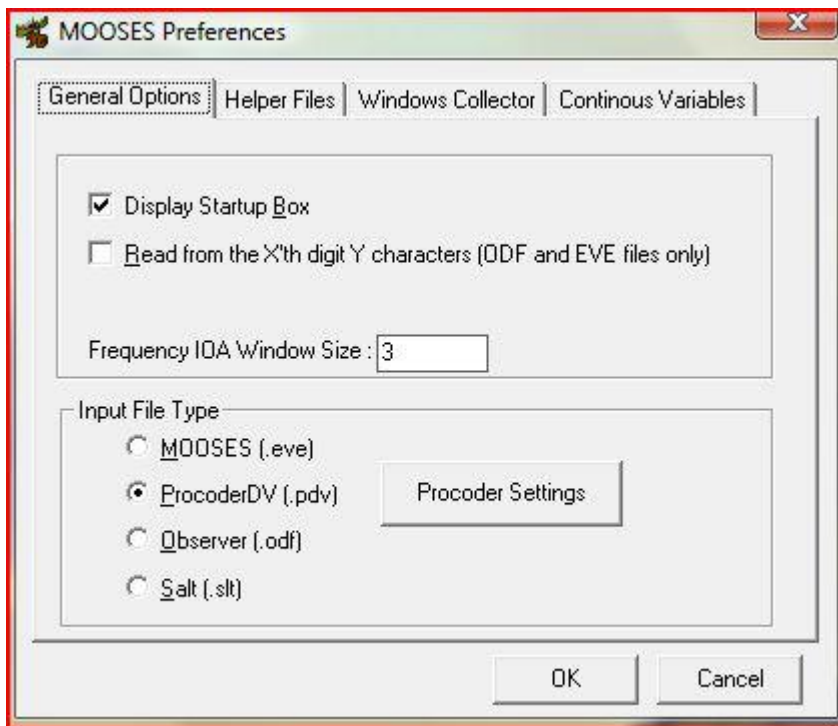
To exit ProcoderDV. Go to the toolbar, select, “file”, “save and close”.

Count the number of instances of each code using MOOSES

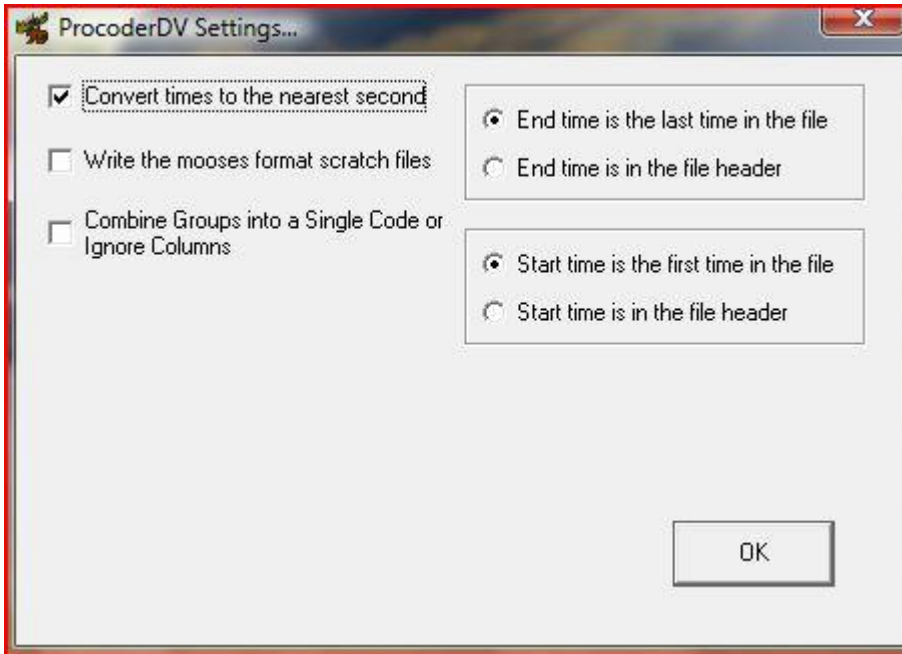
1. Boot MOOSES.



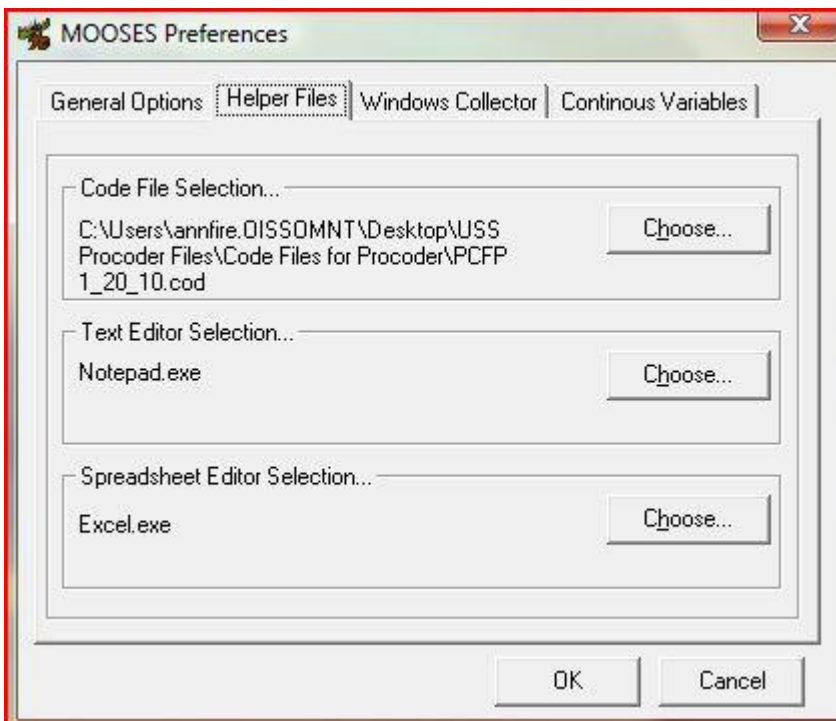
1. Select Preferences on the MOOSES toolbar, and MOOSES Options. Under the General Options tab, check boxes to set as follows:



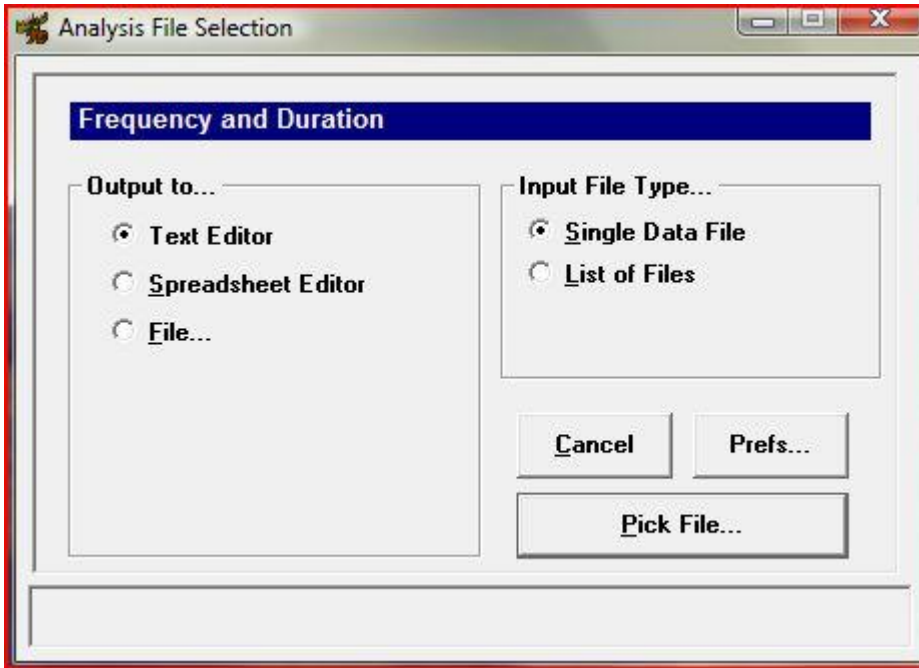
Select procoder settings and make sure like look like below:



Press ok. Under the Helper Files tab, navigate to where the cod file is for the PCFP and press ok.



2. From the main Mooses Menu, Select **Analysis**, then select **Frequency and Duration**. Make sure the files are set up as follows:



3. Select Pick File, and navigate to where the observation file is that you created through procoder. Select the appropriate pdv observation file to create a pdv.txt document.

4. Save this text file on the harddrive under **USS Procoder Files/PCFP Coded Files/Analysis Files**
The data will be summarized for two different purposes.
 - a. For the USS project, enter into the spreadsheet the “frequency” for “c” (codable intervals), "l" (look leads), "t" (touch leads), "pp (physically plays), "fu" (follow-in utterances) or “b” (both physical play & follow-in utterances).

Appendix

Proportion of children reported understanding or producing words

Word	Wordgroup	M10	M13	M16
mommy	People	94	96.1	94.4
daddy	People	91	96.1	95.8
bye	Games and Routines	91	98.7	98.6
peekaboo	Games and Routines	82.1	93.4	95.8
no	Games and Routines	80.6	94.7	93.1
hi	Games and Routines	71.6	84.2	88.9
bath	Games and Routines	70.1	86.8	95.8
bottle	Small Household Items	68.7	88.2	88.9
all gone	Descriptive Words	68.7	85.5	93.1
dog	Animals (Real or Toy)	65.7	81.6	87.5
uh oh	Sound Effects and Animal Sounds	64.2	80.3	84.7
ball	Toys	59.7	92.1	93.1
night night	Games and Routines	59.7	80.3	86.1
diaper	Clothing	58.2	80.3	91.7
patty cake	Games and Routines	58.2	75	66.7
kiss	Action Words	55.2	77.6	91.7
yum yum	Sound Effects and Animal Sounds	50.7	65.8	65.3
book	Toys	50.7	80.3	90.3
grandma	People	50.7	82.9	79.2
don't	Games and Routines	50.7	68.4	73.6
baby	People	47.8	68.4	84.7
eat	Action Words	47.8	72.4	84.7
car	Vehicles (Real or Toy)	46.3	72.4	93.1
banana	Food and Drink	46.3	56.6	80.6
baa baa	Sound Effects and Animal Sounds	44.8	53.9	65.3
cat	Animals (Real or Toy)	44.8	63.2	76.4
cheerios	Food and Drink	43.3	61.8	69.4
cookie	Food and Drink	43.3	65.8	83.3
drink(action)	Action Words	43.3	69.7	81.9
hug	Action Words	43.3	67.1	86.1
cup	Small Household Items	41.8	65.8	86.1
outside	Outside Things and Places to Go	41.8	78.9	90.3
water (food)	Food and Drink	40.3	44.7	66.7

shoe	Clothing	40.3	77.6	93.1
keys	Small Household Items	40.3	67.1	83.3
grandpa	People	40.3	73.7	63.9
hello	Games and Routines	40.3	52.6	62.5
bite	Action Words	40.3	63.2	70.8
woof..	Sound Effects and Animal Sounds	38.8	56.6	70.8
kitty	Animals (Real or Toy)	38.8	68.4	77.8
juice	Food and Drink	38.8	71.1	88.9
milk	Food and Drink	38.8	64.5	83.3
breakfast	Games and Routines	38.8	51.3	76.4
meow	Sound Effects and Animal Sounds	37.3	55.3	70.8
ouch	Sound Effects and Animal Sounds	37.3	51.3	58.3
drink (food)	Food and Drink	37.3	53.9	75
blanket	Small Household Items	37.3	48.7	72.2
nap	Games and Routines	37.3	61.8	76.4
stroller	Vehicles (Real or Toy)	35.8	52.6	65.3
balloon	Toys	35.8	61.8	81.9
foot	Body Parts	35.8	50	81.9
telephone	Small Household Items	35.8	67.1	83.3
dinner	Games and Routines	35.8	39.5	61.1
tickle	Action Words	35.8	40.8	65.3
bird	Animals (Real or Toy)	34.3	59.2	79.2
cracker	Food and Drink	34.3	59.2	84.7
bathtub	Furniture and Rooms	34.3	65.8	80.6
water (item)	Outside Things and Places To Go	34.3	52.6	65.3
look	Action Words	34.3	56.6	70.8
bear	Animals (Real or Toy)	32.8	38.2	50
teddy bear	Animals (Real or Toy)	32.8	52.6	63.9
sock	Clothing	32.8	59.2	84.7
nose	Body Parts	32.8	61.8	86.1
crib	Furniture and Rooms	32.8	50	65.3
shh	Games and Routines	32.8	55.3	56.9
more	Quantifiers	32.8	47.4	66.7
gr	Sound Effects and Animal Sounds	31.3	43.4	51.4
mouth	Body Parts	31.3	53.9	81.9
bed	Furniture and Rooms	31.3	52.6	68.1

sister	People	31.3	32.9	22.2
lunch	Games and Routines	31.3	38.2	63.9
good	Descriptive Words	31.3	52.6	70.8
spoon	Small Household Items	29.9	55.3	75
high chair	Furniture and Rooms	29.9	48.7	72.2
yes	Games and Routines	29.9	71.1	75
love	Action Words	29.9	35.5	52.8
quack..	Sound Effects and Animal Sounds	28.4	43.4	72.2
toy	Toys	28.4	50	68.1
eye	Body Parts	28.4	56.6	81.9
hair	Body Parts	28.4	53.9	76.4
dance	Action Words	28.4	63.2	87.5
sleepy	Descriptive Words	28.4	39.5	44.4
bunny	Animals (Real or Toy)	26.9	35.5	61.1
bib	Clothing	26.9	36.8	51.4
door	Furniture and Rooms	26.9	50	79.2
hungry	Descriptive Words	26.9	46.1	61.1
brother	People	25.4	27.6	23.6
cry	Action Words	25.4	43.4	63.9
sleep	Action Words	25.4	39.5	61.1
smile	Action Words	25.4	36.8	37.5
walk	Action Words	25.4	55.3	65.3
bad	Descriptive Words	25.4	34.2	48.6
hot	Descriptive Words	25.4	53.9	80.6
vroom	Sound Effects and Animal Sounds	23.9	36.8	61.1
duck	Animals (Real or Toy)	23.9	43.4	79.2
apple	Food and Drink	23.9	34.2	73.6
ice cream	Food and Drink	23.9	34.2	47.2
careful	Descriptive Words	23.9	46.1	58.3
puppy	Animals (Real or Toy)	22.4	39.5	61.1
cereal	Food and Drink	22.4	43.4	58.3
pajamas	Clothing	22.4	42.1	59.7
give	Action Words	22.4	57.9	77.8
nice	Descriptive Words	22.4	32.9	38.9
carrots	Food and Drink	20.9	17.1	27.8
food	Food and Drink	20.9	34.2	47.2

hat	Clothing	20.9	43.4	61.1
hand	Body Parts	20.9	39.5	63.9
tooth	Body Parts	20.9	26.3	62.5
toe	Body Parts	20.9	28.9	68.1
TV	Furniture and Rooms	20.9	56.6	76.4
home	Outside Things and Places to Go	20.9	38.2	55.6
thank you	Games and Routines	20.9	59.2	68.1
see	Action Words	20.9	42.1	62.5
splash	Action Words	20.9	47.4	68.1
yucky	Descriptive Words	20.9	52.6	55.6
moo	Sound Effects and Animal Sounds	19.4	32.9	58.3
doll	Toys	19.4	43.4	55.6
cheese	Food and Drink	19.4	51.3	69.4
finger	Body Parts	19.4	38.2	58.3
tummy	Body Parts	19.4	53.9	72.2
brush	Small Household Items	19.4	55.3	72.2
pool	Outside Things and Places to Go	19.4	30.3	56.9
go	Action Words	19.4	56.6	75
stop	Action Words	19.4	48.7	62.5
dirty	Descriptive Words	19.4	34.2	69.4
truck	Vehicles (Real or Toy)	17.9	44.7	66.7
block	Toys	17.9	38.2	69.4
owie	Body Parts	17.9	38.2	59.7
paper	Small Household Items	17.9	19.7	44.4
toothbrush	Small Household Items	17.9	50	72.2
chair	Furniture and Rooms	17.9	38.2	63.9
swing (item)	Outside Things and Places to Go	17.9	43.4	52.8
throw	Action Words	17.9	46.1	77.8
cute	Descriptive Words	17.9	13.2	20.8
thirsty	Descriptive Words	17.9	21.1	47.2
cow	Animals (Real or Toy)	16.4	28.9	52.8
fish (animal)	Animals (Real or Toy)	16.4	31.6	51.4
bread	Food and Drink	16.4	39.5	48.6
pants	Clothing	16.4	27.6	50
ear	Body Parts	16.4	43.4	72.2
light	Small Household Items	16.4	36.8	68.1

vacuum	Small Household Items	16.4	34.2	63.9
play pen	Furniture and Rooms	16.4	23.7	29.2
refrigerator	Furniture and Rooms	16.4	36.8	48.6
play	Action Words	16.4	32.9	55.6
sing	Action Words	16.4	31.6	45.8
touch	Action Words	16.4	23.7	52.8
wash	Action Words	16.4	34.2	58.3
where	Question Words	16.4	30.3	45.8
shirt	Clothing	14.9	36.8	52.8
comb	Small Household Items	14.9	36.8	52.8
picture	Small Household Items	14.9	22.4	47.2
sitter's name	People	14.9	28.9	47.2
hit	Action Words	14.9	36.8	58.3
swing(action)	Action Words	14.9	36.8	48.6
wanna	Games and Routines	14.9	32.9	43.1
choo choo	Sound Effects and Animal Sounds	13.4	23.7	45.8
leg	Body Parts	13.4	14.5	43.1
glass	Small Household Items	13.4	18.4	27.8
glasses	Small Household Items	13.4	43.4	58.3
pillow	Small Household Items	13.4	35.5	54.2
bathroom	Furniture and Rooms	13.4	39.5	65.3
bedroom	Furniture and Rooms	13.4	32.9	58.3
kitchen	Furniture and Rooms	13.4	34.2	56.9
flower	Outside Things and Places to Go	13.4	40.8	68.1
aunt	People	13.4	27.6	26.4
fall	Action Words	13.4	34.2	50
open	Action Words	13.4	42.1	61.1
pretty	Descriptive Words	13.4	25	44.4
pig	Animals (Real or Toy)	11.9	14.5	45.8
airplane	Vehicles (Real or Toy)	11.9	44.7	66.7
bubbles	Toys	11.9	38.2	61.1
tongue	Body Parts	11.9	23.7	47.2
clock	Small Household Items	11.9	18.4	40.3
medicine	Small Household Items	11.9	27.6	43.1
radio	Small Household Items	11.9	13.2	30.6
couch	Furniture and Rooms	11.9	25	43.1

table	Furniture and Rooms	11.9	28.9	59.7
sky	Outside Things and Places to Go	11.9	14.5	25
blow	Action Words	11.9	38.2	58.3
get	Action Words	11.9	47.4	76.4
read	Action Words	11.9	32.9	56.9
ride	Action Words	11.9	27.6	52.8
tired	Descriptive Words	11.9	26.3	43.1
wet	Descriptive Words	11.9	27.6	50
that	Pronouns	11.9	26.3	43.1
horse	Animals (Real or Toy)	10.4	26.3	59.7
bicycle	Vehicles (Real or Toy)	10.4	26.3	47.2
button	Clothing	10.4	13.2	51.4
jacket	Clothing	10.4	19.7	44.4
arm	Body Parts	10.4	18.4	50
belly button	Body Parts	10.4	51.3	69.4
head	Body Parts	10.4	25	61.1
plant	Small Household Items	10.4	18.4	38.9
soap	Small Household Items	10.4	22.4	48.6
trash	Small Household Items	10.4	25	41.7
watch (item)	Small Household Items	10.4	21.1	43.1
house	Outside Things and Places to Go	10.4	17.1	44.4
store	Outside Things and Places to Go	10.4	18.4	44.4
girl	People	10.4	7.9	34.7
bring	Action Words	10.4	44.7	62.5
close	Action Words	10.4	40.8	58.3
feed	Action Words	10.4	9.2	37.5
asleep	Descriptive Words	10.4	19.7	38.9
cold	Descriptive Words	10.4	23.7	51.4
night	Words about Time	10.4	10.5	33.3
this	Pronouns	10.4	21.1	33.3
you	Pronouns	10.4	21.1	43.1
what	Question Words	10.4	22.4	51.4
animal	Animals (Real or Toy)	9	14.5	29.2
chicken(anml)	Animals (Real or Toy)	9	13.2	31.9
elephant	Animals (Real or Toy)	9	15.8	30.6
lamb	Animals (Real or Toy)	9	13.2	23.6

tiger	Animals (Real or Toy)	9	7.9	20.8
pen	Toys	9	14.5	43.1
peas	Food and Drink	9	11.8	43.1
face	Body Parts	9	26.3	38.9
box	Small Household Items	9	15.8	44.4
bowl	Small Household Items	9	23.7	50
dish	Small Household Items	9	15.8	47.2
window	Furniture and Rooms	9	31.6	56.9
backyard	Outside Things and Places to Go	9	26.3	41.7
rain	Outside Things and Places to Go	9	18.4	31.9
tree	Outside Things and Places to Go	9	22.4	54.2
boy	People	9	7.9	31.9
lady	People	9	10.5	19.4
uncle	People	9	14.5	25
clean(action)	Action Words	9	15.8	44.4
push	Action Words	9	22.4	44.4
put	Action Words	9	25	50
watch(action)	Action Words	9	13.2	47.2
empty	Descriptive Words	9	15.8	38.9
gentle	Descriptive Words	9	22.4	45.8
naughty	Descriptive Words	9	13.2	13.9
mine	Pronouns	9	25	55.6
cockadoodledo	Sound Effects and Animal Sounds	7.5	14.5	33.3
goose	Animals (Real or Toy)	7.5	3.9	19.4
lion	Animals (Real or Toy)	7.5	9.2	23.6
sheep	Animals (Real or Toy)	7.5	10.5	23.6
turtle	Animals (Real or Toy)	7.5	6.6	20.8
train	Vehicles (Real or Toy)	7.5	18.4	38.9
cake	Food and Drink	7.5	9.2	26.4
chicken(food)	Food and Drink	7.5	21.1	29.2
toast	Food and Drink	7.5	31.6	54.2
coat	Clothing	7.5	21.1	38.9
sweater	Clothing	7.5	13.2	27.8
broom	Small Household Items	7.5	27.6	48.6
fork	Small Household Items	7.5	15.8	50
towel	Small Household Items	7.5	17.1	52.8

living room	Furniture and Rooms	7.5	13.2	34.7
stairs	Furniture and Rooms	7.5	38.2	65.3
stove	Furniture and Rooms	7.5	15.8	23.6
school	Outside Things and Places to Go	7.5	11.8	19.4
work (place)	Outside Things and Places to Go	7.5	11.8	31.9
people	People	7.5	9.2	26.4
bump	Action Words	7.5	18.4	36.1
pull	Action Words	7.5	21.1	33.3
say	Action Words	7.5	25	51.4
wait	Games and Routines	7.5	23.7	43.1
wipe	Action Words	7.5	30.3	59.7
happy	Descriptive Words	7.5	18.4	33.3
soft	Descriptive Words	7.5	10.5	30.6
me	Pronouns	7.5	18.4	48.6
bee	Animals (Real or Toy)	6	9.2	30.6
bug	Animals (Real or Toy)	6	21.1	30.6
frog	Animals (Real or Toy)	6	9.2	23.6
pony	Animals (Real or Toy)	6	13.2	16.7
bus	Vehicles (Real or Toy)	6	14.5	27.8
fish (food)	Food and Drink	6	3.9	26.4
noodles	Food and Drink	6	11.8	34.7
spaghetti	Food and Drink	6	18.4	27.8
shorts	Clothing	6	9.2	25
lamp	Small Household Items	6	6.6	30.6
plate	Small Household Items	6	13.2	33.3
potty	Furniture and Rooms	6	14.5	34.7
rocking chair	Furniture and Rooms	6	18.4	40.3
moon	Outside Things and Places to Go	6	10.5	34.7
rock	Outside Things and Places to Go	6	19.7	50
sun	Outside Things and Places to Go	6	10.5	22.2
babysitter	People	6	11.8	19.4
child	People	6	0	11.1
man	People	6	6.6	18.1
please	Games and Routines	6	30.3	52.8
drive	Action Words	6	18.4	36.1
show	Action Words	6	31.6	54.2

big	Descriptive Words	6	18.4	33.3
clean (desc)	Descriptive Words	6	11.8	36.1
it	Pronouns	6	9.2	31.9
who	Question Words	6	11.8	34.7
donkey	Animals (Real or Toy)	4.5	1.3	13.9
monkey	Animals (Real or Toy)	4.5	13.2	34.7
mouse	Animals (Real or Toy)	4.5	14.5	31.9
owl	Animals (Real or Toy)	4.5	10.5	18.1
firetruck	Vehicles (Real or Toy)	4.5	11.8	25
candy	Food and Drink	4.5	9.2	31.9
egg	Food and Drink	4.5	18.4	37.5
meat	Food and Drink	4.5	10.5	26.4
beads	Clothing	4.5	3.9	22.2
dress	Clothing	4.5	14.5	27.8
necklace	Clothing	4.5	13.2	33.3
cheek	Body Parts	4.5	7.9	25
knee	Body Parts	4.5	5.3	29.2
oven	Furniture and Rooms	4.5	11.8	29.2
person	People	4.5	1.3	15.3
take	Action Words	4.5	21.1	37.5
hurt	Descriptive Words	4.5	9.2	34.7
now	Words about Time	4.5	5.3	29.2
your	Pronouns	4.5	14.5	31.9
another	Quantifiers	4.5	11.8	27.8
none	Quantifiers	4.5	3.9	19.4
butterfly	Animals (Real or Toy)	3	6.6	25
deer	Animals (Real or Toy)	3	3.9	11.1
giraffe	Animals (Real or Toy)	3	7.9	18.1
penguin	Animals (Real or Toy)	3	3.9	6.9
squirrel	Animals (Real or Toy)	3	13.2	19.4
zipper	Clothing	3	3.9	33.3
money	Small Household Items	3	7.9	22.2
purse	Small Household Items	3	28.9	47.2
drawer	Furniture and Rooms	3	15.8	37.5
sink	Furniture and Rooms	3	7.9	29.2
garden	Outside Things and Places to Go	3	7.9	18.1

church	Outside Things and Places to Go	3	10.5	16.7
help	Action Words	3	15.8	43.1
jump	Action Words	3	7.9	43.1
swim	Action Words	3	21.1	33.3
dry (desc)	Descriptive Words	3	3.9	25
sick	Descriptive Words	3	6.6	12.5
day	Words about Time	3	6.6	13.9
morning	Words about Time	3	9.2	19.4
tonight	Words about Time	3	3.9	8.3
I	Pronouns	3	9.2	22.2
my	Pronouns	3	9.2	33.3
all	Quantifiers	3	3.9	22.2
not	Quantifiers	3	6.6	18.1
turkey	Animals (Real or Toy)	1.5	5.3	13.9
motorcycle	Vehicles (Real or Toy)	1.5	5.3	26.4
butter	Food and Drink	1.5	7.9	18.1
coffee	Food and Drink	1.5	3.9	26.4
orange (food)	Food and Drink	1.5	14.5	38.9
pizza	Food and Drink	1.5	15.8	33.3
boots	Clothing	1.5	3.9	20.8
shovel	Outside Things and Places to Go	1.5	2.6	30.6
slide	Outside Things and Places to Go	1.5	19.7	48.6
beach	Outside Things and Places to Go	1.5	9.2	23.6
park	Outside Things and Places to Go	1.5	13.2	25
zoo	Outside Things and Places to Go	1.5	3.9	12.5
draw	Action Words	1.5	9.2	26.4
hurry	Action Words	1.5	11.8	26.4
kick	Action Words	1.5	13.2	37.5
run	Action Words	1.5	14.5	50
write	Action Words	1.5	10.5	22.2
broken	Descriptive Words	1.5	13.2	25
dark	Descriptive Words	1.5	7.9	18.1
hard	Descriptive Words	1.5	1.3	13.9
little	Descriptive Words	1.5	3.9	25
scared	Descriptive Words	1.5	1.3	15.3
how	Question Words	1.5	5.3	13.9

other	Quantifiers	1.5	6.6	15.3
same	Quantifiers	1.5	1.3	11.1
some	Quantifiers	1.5	15.8	20.8
raisin	Food and Drink	0	14.5	37.5
jeans	Clothing	0	1.3	13.9
hammer	Small Household Items	0	10.5	27.8
penny	Small Household Items	0	1.3	16.7
scissors	Small Household Items	0	3.9	20.8
garage	Furniture and Rooms	0	10.5	27.8
snow	Outside Things and Places to Go	0	3.9	13.9
star	Outside Things and Places to Go	0	6.6	15.3
party	Outside Things and Places to Go	0	2.6	11.1
teacher	People	0	2.6	6.9
break	Action Words	0	6.6	29.2
finish	Action Words	0	10.5	25
blue	Descriptive Words	0	0	11.1
fast	Descriptive Words	0	2.6	16.7
fine	Descriptive Words	0	1.3	5.6
old	Descriptive Words	0	1.3	8.3
red	Descriptive Words	0	2.6	6.9
later	Words about Time	0	3.9	23.6
today	Words about Time	0	2.6	8.3
tomorrow	Words about Time	0	0	6.9
her	Pronouns	0	7.9	13.9
his	Pronouns	0	5.3	13.9
when	Question Words	0	1.3	11.1
why	Question Words	0	0	18.1

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