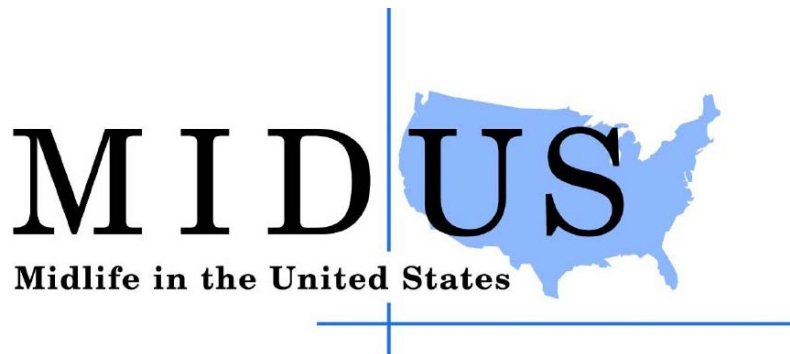

**MIDUS 2 PROJECT 3:
Variable Naming Cognitive Test Battery**

**Brief Test of Adult Cognition by Telephone (BTACT)
and Stop & Go Switch Task (SGST)**

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A. Coding conventions for data

- a) YES = 1, NO = 2
- b) INCORRECT: 95 (for Stop & Go Switch Task only)
- c) DON'T KNOW (7's): 7, 97, 997, 9997
- d) REFUSED OR MISSING (8's): 8, 98, 998, 9998
- e) INAPP/INVALID (9's): 9, 99, 999, 9999

B. Naming conventions for BTACT variables

- a) 1st letter – “B,” to indicate MIDUS 2
- b) 2nd letter – indicates project number 3
- c) 3rd letter – indicates type of test: T= BTACT cognitive tests
- d) 4th, 5th, 6th, 7th, 8th letters – indicates either:
 - i. The individual test:
 - WLI: Word List Recall – Immediate (Note: Columns 7 & 8 indicate response number; 1-26 possible responses)
 - BD: Backward Digit Span
 - CTFL: Category Fluency (also CTF)
 - NS: Number Series (Note: Column 6 indicates trial number 1-5)
 - BK: Backward Counting
 - WLD: Word List Recall – Delayed (Note: Columns 7 & 8 indicate response number; 1-26 possible responses)
 - ii. A composite measure:
 - WLF: Word List: Proportion Forgotten Between Immediate and Delayed
 - COMP: BTACT Composite Score
 - iii. A flag variable: Variables with “FP” as their 7th and 8th characters serve as flag variables for potentially problematic cases. This variable indicates, by test, which cases were identified at Brandeis by our data cleaning as being problematic due to test disruption, interview equipment failures, or other problems. We recommend users exclude these tests for these specific cases.

Note: **Bold** variable names below indicate composite or total scale scores.

VARIABLE NAME	VARIABLE LABEL	VALUES
Word List Recall: Immediate		
B3TWLIFP	Word List Immediate flagged problematic?	1=YES 2=NO 8=REFUSED OR MISSING
B3TWLI1 ... B3TWLI26	Word List Immediate: Recalled #1 ... #26 (allows for max 15 correct responses + up to 11 intrusions/repetitions)	1=Word 1 2= Word 2 3= Word 3 4= Word 4 5= Word 5 6= Word 6 7= Word 7 8= Word 8 9= Word 9 10= Word 10 11= Word 11 12= Word 12 13= Word 13 14= Word 14 15= Word 15 90=NON-LIST INTRUSION 98=REFUSED OR MISSING
B3TWLITU	Word List Immediate: Tot Unique Items	Range: 0 to 15; Sum of all correct, unique responses from B3TWLI1 to B3TWLI26 98=REFUSED OR MISSING
B3TWLITR	Word List Immediate: Tot # Repetitions	Sum of all repeated responses from B3TWLI1 to B3TWLI26 98=REFUSED OR MISSING
B3TWLITI	Word List Immediate: Tot # Intrusions	Sum of all non-list intrusions from B3TWLI1 to B3TWLI26 98=REFUSED OR MISSING
Digits Backward		
B3TDBFP	Digits Backward flagged problematic?	1=YES 2=NO 8=REFUSED OR MISSING
B3TDBS	Digits Backward: highest # digits recall	0, 2 to 8 98=REFUSED OR MISSING

Category Fluency		
B3TCTFFP	Category Fluency flagged problematic?	1=YES 2=NO 8=REFUSED OR MISSING
B3TCTFLU	Category Fluency: Tot Unique Items	Sum of all in-category, unique items named 98=REFUSED OR MISSING
B3TCTFLR	Category Fluency: Tot # Repetitions	Sum of repeated items named in-category 98=REFUSED OR MISSING
B3TCTFLI	Category Fluency: Tot # Intrusions	Sum of all non-category intrusions 98=REFUSED OR MISSING
Number Series		
B3TNSFP	Number Series flagged problematic?	1=YES 2=NO 8=REFUSED OR MISSING
B3TNS1 ... B3TNS5	Number Series: #1...#5 (number reported)	997=DON'T KNOW 998=REFUSED OR MISSING
B3TNS1C... B3TNS5C	Number Series #1...#5: correct?	1=YES, CORRECT 2=NO, INCORRECT 8=REFUSED OR MISSING
B3TNSTOT	Number Series: Tot Correct	Range: 0 to 5; 8=REFUSED OR MISSING
Backward Counting		
B3TBKFP	Backward Counting flagged problematic?	1=YES 2=NO 8=REFUSED OR MISSING
B3TBKCT	Backward Counting: last # reached	998=REFUSED OR MISSING
B3TBKERR	Backward Counting: # of errors	998=REFUSED OR MISSING
B3TBKTOT	BK: (100-(B3TBKCT + B3TBKERR))	Total correct #s produced 998=REFUSED OR MISSING
Word List Recall-Delayed		
B3TWLDFP	Word List Delayed flagged problematic?	1=YES 2=NO 8=REFUSED OR MISSING
B3TWLD1... B3TWLD26	Word List Delayed: Recalled #1...#26 (allows for max 15 correct responses + up to 11 intrusions/repetitions)	1= Word 1 2= Word 2 3= Word 3 4= Word 4 5= Word 5 6= Word 6 7= Word 7 8= Word 8 9= Word 9 10= Word 10 11= Word 11 12= Word 12 13= Word 13 14= Word 14 15= Word 15 90=NON-LIST INTRUSION 98=REFUSED OR MISSING

B3TWLDTU	Word List Delayed: Tot Unique Items	Range: 0 to 15; Sum of all correct, unique responses from B3TWLD1 to B3TWLD26 98=REFUSED OR MISSING
B3TWLDTR	Word List Delayed: Tot # Repetitions	Sum of all repeated responses from B3TWLD1 to B3TWLD26 98=REFUSED OR MISSING
B3TWLDTI	Word List Delayed: Tot # Intrusions	Sum of all non-list intrusions from B3TWLD1 to B3TWLD26 98=REFUSED OR MISSING
Composite Measures		
B3TWLF	Word List: Proportion Forgotten Between Immediate and Delayed	$(B3TWLITU - B3TWLDTU) / B3TWLITU$ 8=REFUSED OR MISSING
B3TCOMP	BTACT Composite Score	Mean of z-scores* for all tests except SGST: Word Lists (sum of Immediate and Delayed: B3TWLITU + B3TWLDTU), Digits Backward (B3TDBS), Category Fluency (B3TCTFLU), Number Series (B3TNSTOT), and Backward Counting (B3TBKTOT) 8=REFUSED OR MISSING
B3TEM	BTACT Episodic Memory Factor	Mean of z-scores* for Word List Immediate (B3TWLITU) and Word List Delayed (B3TWLDTU) 8=REFUSED OR MISSING
B3TEF	BTACT Executive Functioning Factor	Mean of z-scores* for Digits Backward (B3TDBS), Category Fluency (B3TCTFLU), Number Series (B3TNSTOT), Backward Counting (B3TBKTOT), and mean of switch and nonswitch trials (B3TSMXBB multiplied by -1) in the Stop & Go Switch Task (SGST)† 8=REFUSED OR MISSING

* The z-scores were computed using the means and standard deviations obtained on the main national MIDUS 2 sample (N = 4206) to allow for longitudinal comparisons

† See description of SGST variables below. Also note the recommendation to use the B3TSFC filter described at the end of this document when working with SGST variables. The SGST scores were corrected based on the metronome values.

C. Naming conventions for Stop and Go Switch Task (SGST) variables

a) **Naming convention for individual trials (raw scores)**

- i. 1st, 2nd, and 3rd character: by default is the **B3T** code that indicates MIDUS 2, Project 3, BTACT Cognitive Battery
B = MIDUS 2
3 = Project 3
T = BTACT Cognitive Battery
- ii. 4th character indicates the **Stop & Go Switch Task**
- iii. 5th character: W = **RaW** scores
- iv. 6th character indicates the subtest
N = **N**ormal single-task
R = **R**everse single-task
X = **miX**ed-task
- v. 7th and 8th character indicate trial number (**1-20** for single-task, **1-32** for mixed-task)

b) **Naming convention for Normal and Reverse single-tasks composite scores**

- i. 1st, 2nd, and 3rd character, by default, is the **B3T** code that indicates MIDUS 2, Project 3, BTACT Cognitive Battery
B = MIDUS 2
3 = Project 3
T = BTACT Cognitive Battery
- ii. 4th character indicates the **Stop & Go Switch Task**
- iii. 5th character indicates measure
 1. For accuracy scores
T = **T**otal correct
V = **i**nvalid
P = **P**ercent correct
 2. For latency scores
M = **M**edian (or mean of medians)
- iv. 6th character indicates the subtest
N = **N**ormal single-task
R = **R**everse single-task
X = **miX**ed-task
- v. **For mixed-task composites only*:**
 1. 7th character indicates the condition
N = **N**ormal
R = **R**everse
B = **comB**ined
 2. 8th character indicates the trial type
S = **S**witch
O = **nO**nswitch

B = comBined

*The last two characters apply only to the mixed-task subtest, and are omitted for the normal and reverse single-tasks. Thus, normal and reverse single-task composite measures will use only six characters rather than the full eight characters.

c) **Composite scores: variable names**

i. Accuracy

1. **B3TSPN**: normal single-task % correct
2. **B3TSPR**: reverse single-task % correct
3. **B3TSPXNO**: mixed-task normal nonswitch % correct
4. **B3TSPXRO**: mixed-task reverse nonswitch % correct
5. **B3TSPXBO**: mixed-task nonswitch % correct
6. **B3TSPXNS**: mixed-task normal switch % correct
7. **B3TSPXRS**: mixed-task reverse switch % correct
8. **B3TSPXBS**: mixed-task switch % correct
9. **B3TSPXBB**: all mixed-task trials % correct

ii. Latencies

1. **B3TSMN**: normal single-task median RT (reaction time)
2. **B3TSMR**: reverse single-task median RT (reaction time)
3. **B3TSMB**: mean(B3TSMN, B3TSMR) (normal and reverse)
4. **B3TSMXNO**: mixed-task normal nonswitch median RT
5. **B3TSMXRO**: mixed-task reverse nonswitch median RT
6. **B3TSMXBO**: median RT of all mixed-task nonswitch
7. **B3TSMXNS**: mixed-task normal switch median RT
8. **B3TSMXRS**: mixed-task reverse switch median RT
9. **B3TSMXBS**: median RT of all mixed-task switch
10. **B3TSMXBB**: mean(B3TSMXBO, B3TSMXBS) (nonswitch and switch trials)

d) **Naming convention for cost variables**

- i. 1st, 2nd, 3rd, 4th characters: as above: **B3TS**, for MIDUS 2, Project 3 BTACT Cognitive Battery, Stop & Go Switch Task
- ii. 5th character: C=Cost
- iii. 6th character: indicates G=General, L=Local
- iv. 7th character indicates the condition
N = Normal
R = Reverse
B = comBined
- v. 8th character: A = Absolute cost, R = Relative cost

e) **Switch Costs: variable names**

- i. General switch costs compare latencies on mixed-task trials to single-task trials (mean of normal single-task and reverse single-task).

Although there are several ways of calculating general switch costs, we selected this version as the most basic. We give both *absolute* and *relative* general switch costs. *Absolute costs* represent a simple difference score between the easier and more difficult condition (e.g. $A - B$). *Relative costs* give the proportion decline in performance from the easier to the harder condition, and thus control for differences in baseline performance (e.g. $(A-B)/A$.)

1. **B3TSCGNA**: General Switch Cost (normal), absolute
[mean(B3TSMXNO, B3TSMXNS) – B3TSMN]
2. **B3TSCGNR**: General Switch Cost (normal), relative
(B3TSCGNA/B3TSMN)
3. **B3TSCGRA**: General Switch Cost (reverse), absolute
[mean(B3TSMXRO, B3TSMXRS) – B3TSMR]
4. **B3TSCGRR**: General Switch Cost (reverse), relative
(B3TSCGRA/B3TSMR)
5. **B3TSCGBA**: General Switch Cost (combined), absolute
(B3TSMXBB-B3TSMB)
6. **B3TSCGBR**: General Switch Cost (combined), relative
(B3TSCGBA/B3TSMB)

ii. Local switch costs compare mixed-task switch trials to mixed-task nonswitch trials. We give both *absolute* local switch costs and *relative* local switch costs.

1. **B3TSCLNA**: Local Switch Cost (normal), absolute (B3TSMXNS – B3TSMXNO)
2. **B3TSCLNR**: Local Switch Cost (normal), relative
(B3TSCLNA/B3TSMXNO)
3. **B3TSCLRA**: Local Switch Cost (reverse), absolute (B3TSMXRS – B3TSMXRO)
4. **B3TSCLRR**: Local Switch Cost (reverse), relative
(B3TSCLRA/B3TSMXRO)
5. **B3TSCLBA**: Local Switch Cost (combined), absolute
(B3TSMXBS- B3TSMXBO)
6. **B3TSCLBR**: Local Switch Cost (combined), relative
(B3TSCLBA/B3TSMXBO)

f) Filters: We provide two levels of filters. Researchers who wish to use all valid files can choose to select the Valid filter (B3TSFV below). In our analyses we have used a criterion of 75% accuracy to ensure that participants were performing the task correctly; researchers who wish to use this approach can select cases based on the Clean filter (B3TSFC below).

- i. B3TSFV (**Valid**): filters cases that were invalid due to missing sound files, technical problems, or failure to carry out the task as instructed.

- ii. B3TSFC (Clean): To further insure that participants were performing the task as directed, we required a valid file with accuracy of at least 75% on all conditions (normal single-task, reverse single-task, mixed-task switch and nonswitch). In addition, to eliminate extreme latencies (i.e., outliers), we required median values of <2 sec for single-task and <4 sec for mixed-task trials.

Note: **Bold** variable names below indicate composite or total scale scores.

VARIABLE NAME	VARIABLE LABEL	VALUES
Individual Trials: Raw Scores		
B3TSWN1... B3TSWN20	SGST: normal single-task trial #1...#20	Latencies (s) 95=INCORRECT 98=REFUSED OR MISSING 99=INVALID
B3TSWR1... B3TSWR20	SGST: reverse single-task trial #1...#20	Latencies (s) 95=INCORRECT 98=REFUSED OR MISSING 99=INVALID
B3TSWX1... B3TSWX32	SGST: mixed-task trial #1 "normal...green"...trial #32 "green"	Latencies (s) 95=INCORRECT 98=REFUSED OR MISSING 99=INVALID
Normal Single-task Trials: Composite Scores		
Composite Accuracy Scores		
B3TSTN	SGST: normal single-task #correct	0-20 98=REFUSED OR MISSING
B3TSVN	SGST: normal single-task #invalid	0-20 98=REFUSED OR MISSING
B3TSPN	SGST: normal single-task %correct (ratio form)	0-1.00 8=REFUSED OR MISSING
Composite Latency Score		
B3TSMN	SGST: normal single-task median RT (reaction time)	Latency (s) 98=REFUSED OR MISSING
Reverse Single-task Trials: Composite Scores		
Composite Accuracy Scores		
B3TSTR	SGST: reverse single-task #correct	0-20 98=REFUSED OR MISSING
B3TSVR	SGST: reverse single-task #invalid	0-20 98=REFUSED OR MISSING
B3TSPR	SGST: reverse single-task %correct (ratio form)	0-1.00 8=REFUSED OR MISSING
Composite Latency Score		
B3TSMR	SGST: reverse single-task median RT (reaction time)	Latency (s) 98=REFUSED OR MISSING
Composite of Normal and Reverse Single-task		
B3TSMB	SGST: mean(B3TSMN, B3TSMR)	Latency (s) 98=REFUSED OR MISSING

Mixed-task Trials: Composite Accuracy Scores		
Accuracy composite across normal nonswitch trials		
B3TSTXNO	SGST: mixed-task normal nonswitch trials #correct	0-12 98=REFUSED OR MISSING
B3TSVXNO	SGST: mixed-task normal nonswitch trials #invalid	0-12 98=REFUSED OR MISSING
B3TSPXNO	SGST: mixed-task normal nonswitch trials %correct (ratio form)	0-1.00 8=REFUSED OR MISSING
Accuracy composite across reverse nonswitch trials		
B3TSTXRO	SGST: mixed-task reverse nonswitch trials #correct	0-11 98=REFUSED OR MISSING
B3TSVXRO	SGST: mixed-task reverse nonswitch trials #invalid	0-11 98=REFUSED OR MISSING
B3TSPXRO	SGST: mixed-task reverse nonswitch trials %correct (ratio form)	0-1.00 8=REFUSED OR MISSING
Accuracy composites across all nonswitch trials		
B3TSTXBO	SGST: mixed-task nonswitch trials #correct	0-23 98=REFUSED OR MISSING
B3TSVXBO	SGST: mixed-task nonswitch trials #invalid	0-23 98=REFUSED OR MISSING
B3TSPXBO	SGST: mixed-task nonswitch trials %correct (ratio form)	0-1.00 8=REFUSED OR MISSING
Accuracy composite across normal switch trials		
B3TSTXNS	SGST: mixed-task normal switch trials #correct	0-3 8=REFUSED OR MISSING
B3TSVXNS	SGST: mixed-task normal switch trials #invalid	0-3 8=REFUSED OR MISSING
B3TSPXNS	SGST: mixed-task normal switch trials %correct (ratio form)	0-1.00 8=REFUSED OR MISSING
Accuracy composite across reverse switch trials		
B3TSTXRS	SGST: mixed-task reverse switch trials #correct	0-3 8=REFUSED OR MISSING
B3TSVXRS	SGST: mixed-task reverse switch trials #invalid	0-3 8=REFUSED OR MISSING
B3TSPXRS	SGST: mixed-task reverse switch trials %correct (ratio form)	0-1.00 8=REFUSED OR MISSING
Accuracy composite across all switch trials		
B3TSTXBS	SGST: mixed-task switch trials #correct	0-6 8=REFUSED OR MISSING
B3TSVXBS	SGST: mixed-task switch trials #invalid	0-6 8=REFUSED OR MISSING
B3TSPXBS	SGST: mixed-task switch trials %correct (ratio form)	0-1.00 8=REFUSED OR MISSING
Accuracy composites across all mixed-task trials		
B3TSTXBB	SGST: all mixed-task #correct	0-29 98=REFUSED OR MISSING
B3TSVXBB	SGST: all mixed-task #invalid	0-29 98=REFUSED OR MISSING
B3TSPXBB	SGST: all mixed-task %correct (ratio form)	0-1.00 98=REFUSED OR MISSING

Mixed-task Trials: Composite Latency Scores		
Latency composite across normal nonswitch trials		
B3TSMXNO	SGST: mixed-task normal nonswitch median RT	Latency (s) 98=REFUSED OR MISSING
Latency composite across reverse nonswitch trials		
B3TSMXRO	SGST: mixed-task reverse nonswitch median RT	Latency (s) 98=REFUSED OR MISSING
Latency composite across all nonswitch trials		
B3TSMXBO	SGST: mixed-task nonswitch trials median RT	Latency (s) 98=REFUSED OR MISSING
Latency composite across normal switch trials		
B3TSMXNS	SGST: mixed-task normal switch median RT	Latency (s) 98=REFUSED OR MISSING
Latency composite across reverse switch trials		
B3TSMXRS	SGST: mixed-task reverse switch median RT	Latency (s) 98=REFUSED OR MISSING
Latency composite across all switch trials		
B3TSMXBS	SGST: mixed-task switch trials median RT	Latency (s) 98=REFUSED OR MISSING
Latency composite across all mixed-task trials		
B3TSMXBB	SGST: mean(B3TSMXBO, B3TSMXBS)	Latency (s) 98=REFUSED OR MISSING

Mixed-Task Trials: Switch Cost Scores		
B3TSCGBA	SGST: General Switch Cost, absolute (B3TSMXBB-B3TSMB)	Latency (s) 98=REFUSED OR MISSING
B3TSCGBR	SGST: General Switch Cost, relative (B3TSCGBA/B3TSMB)	Latency (s) 98=REFUSED OR MISSING
B3TSCGNA	SGST: General Switch Cost (normal), absolute [mean(B3TSMXNO, B3TSMXNS) – B3TSMN]	Latency (s) 98=REFUSED OR MISSING
B3TSCGNR	SGST: General Switch Cost (normal), relative (B3TSCGNA/B3TSMN)	Latency (s) 98=REFUSED OR MISSING
B3TSCGRA	SGST: General Switch Cost (reverse), absolute [mean(B3TSMXRO, B3TSMXRS) – B3TSMR]	Latency (s) 98=REFUSED OR MISSING
B3TSCGRR	SGST: General Switch Cost (reverse), relative (B3TSCGRA/ B3TSMR)	Latency (s) 98=REFUSED OR MISSING
B3TSCLBA	SGST: Local Switch Cost, absolute (B3TSMXBS-B3TSMXBO)	Latency (s) 98=REFUSED OR MISSING
B3TSCLBR	SGST: Local Switch Cost, relative (B3TSCLBA/B3TSMXBO)	Latency (s) 98=REFUSED OR MISSING
B3TSCLNA	SGST: Local Switch Cost (normal), absolute (B3TSMXNS-B3TSMXNO)	Latency (s) 98=REFUSED OR MISSING
B3TSCLNR	SGST: Local Switch Cost, (normal), relative (B3TSCLNA/B3TSMXNO)	Latency (s) 98=REFUSED OR MISSING
B3TSCLRA	SGST: Local Switch Cost (reverse), absolute (B3TSMXRS-B3TSMXRO)	Latency (s) 98=REFUSED OR MISSING
B3TSCLRR	SGST: Local Switch Cost,(reverse), relative (B3TSCLRA/B3TSMXRO)	Latency (s) 98=REFUSED OR MISSING

Filters		
B3TSFV	SGST: Filter invalid cases (VALID)	0=NOT SELECTED 1=SELECTED
B3TSFC	SGST: Filter cases with low accuracy or extreme latencies (CLEAN)	0=NOT SELECTED 1=SELECTED