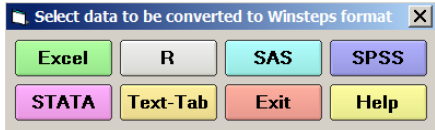


Winsteps Changes 3.69.0 - December 2009

Program Functioning Improvements

<p>Bigger capacity:</p>	<p>Was: 9,999,999 persons by 40,000 items Now: 9,999,999 persons by 64,000 items</p>
<p>Faster speed for large analyses: Only specify DISTRACTORS=Yes and SUBSETS=Yes when needed</p>	<p>Test analysis: 489,000 persons by 17,000 items Revised: Was: 8 days = 192 hours Now: 8 hours (95%+ less time)</p>
<p>Alternative input data format. Useful for sparse data.</p> <p>EDFILE= allows entry of additional persons and can operate without any rectangular data</p> <p>Recommendation: Sort the EDFILE= lines into person-entry-number order ascending.</p>	<p>Was: rectangular input dataset Now: rectangular (DATA=) and/or list (EDFILE=) in the format: person number, item-number, observation</p> <pre> CODES = ABCD EDFILE= * 1 1 A 1 5 B 2 3 A 2 10 C * &END END LABELS . ; one dummy data record </pre>
<p>Input numbers can be entered in scientific notation</p>	<p style="text-align: center;">USCALE = 4E2 (= 400)</p>
<p>Control variable values can be expressions - but no internal spaces</p>	<p style="text-align: center;">USCALE=2*10 (=20)</p>
<p>Easy data file conversion from Excel, R, SAS, SPSS, STATA and Text files (with Tabs)</p>	
<p>Allow multiple item and person deletion files: <i>idfile=idfile2.txt+idfile211.txt</i></p>	<p>Processing ITEM Deletions from: idfile2.txt</p> <p>Processing ITEM Deletions from: idfile211.txt</p>
<p>EXCAT=0.25 adjustment to extreme category during estimation</p>	<p style="text-align: center;">Analyze 0,1 data as 0.25, 0.75 data. And 1,2,3,4 data as 1.25,2,3,3.75 data.</p>
<p>IPRFILE= Input/change/edit input observations for blocks of persons and items</p>	<pre> NI = 16 ; 16 item test CODES = ABCDM ; the data are multiple-choice responses IPRFILE = * ; start of rectangular recode #ITEMS ; list of items to select 3 7-10 #PERSONS ; list of persons to select 4 13-22 ; CODES = ABCDM ; this comment is a reminder of the CODES= #RECODE = M999M ; A,B,C, D will all be converted to invalid code * TREFER = CBADBACDDCCABDBA ; same as scoring key (for convenience) ; CODES = ABCDM ; comment: another reminder IVALUEA = 1000M ; A scored 1. M scored "M", non-numeric, "missing, not administered" IVALUEB = 0100M ; B scored 1 IVALUEC = 0010M ; C scored 1 IVALUED = 0001M ; D scored 1 MISSING-SCORED = 0 ; all responses not in CODES= scored 0 </pre>

PVALUE=Yes
includes p-value (or observed average rating) in the PFILE= and IFILE=

```
DISCRM PVALU G M NAME
1.52 1.45 1 R WATCH :
1.26 1.55 1 R READ B
1.72 1.17 1 R READ B
1.05 1.00 1 R WATCH :
```

RMSR=
report the root-mean-square on measure tables

```
-----
TCH|
IP% RMSR ITEM
-----
1.9 .855 A. EATING
1.4 1.023 B. GROOMING
1.8 .802 C. BATHING
```

SUBSET=
check for disconnected subsets in the data which make the estimated measures incomparable

```

1 7 1 3 10
PROBING DATA CONNECTION
>=====<
|Control: \Mike\Desktop\table1.txt
| MI F MOY SCORE MOY LOCTT |
```

```
-----
TCH| PERSON|
-----
0.1 Ivan SUBSET 5
0.1 Jack SUBSET 5
5.7 George SUBSET 4
5.7 Henry SUBSET 4
8.7 David SUBSET 2
8.7 Edward SUBSET 2
6.4 Ben SUBSET 1
6.4 Carl SUBSET 1
2.0 Frank SUBSET 3
```

Output Files

Computation of Singular-Value Decomposition (SVD) of residuals
SVDFACTORS= singular-value decomposition factors
SVDFILE= singular-value decomposition file
SVDMIN= singular-value decomposition minimum improvement per epoch
SVDTYPE= R (residuals) or S (standardized residual): singular-value decomposition residual type

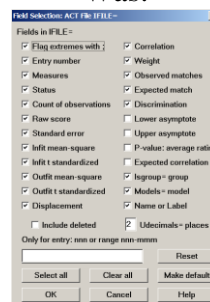
Singular-value decomposition (factor analysis) of the residuals

```
; SVD FILE FOR LIKING FOR SCIENCE (Wright)
; RMSR .5422 .4793 .4595
; RMSS 1.0404 .8715 .8133
; KID MEASURE 1 2
1 .6099 -.0607 .2212
2 6.0751 0 0
3 1.0973 .0243 -.1957
4 .2611 .0999 .1702
```

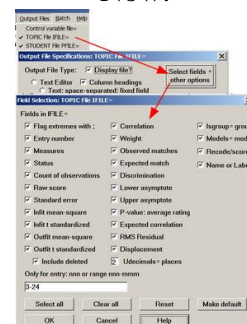
Person measure file and Item measure file
PFILE= and IFILE= Output

More output field-selection options:
RMS residual
Recoding/rescoring indicator

Was:



Now:



XFILE=, IPMATRIX= compute expected-values, etc. correspond to missing data

```
; RESIDUAL FILE FOR An MCQ Test: administration
STUDEN TOPIC OBS EXPECT VARIAN ZSCORE RESIDI
1 1 -1 .887 .100 .000 .000
1 25 1 .627 .234 .771 .373
```

Output Tables

All Tables:
No automatic plural "S" - to avoid language problems

was: KIDS - MAP - TAPS
now: KID - MAP - TAP

All Tables:
Numbers reported with scientific notation "E" when they would overflow

```
-----
75 -4884E4 25448E3 | .55
75 -8741E4 26808E3 | .93
75 25448E3 25448E3 | 75
```

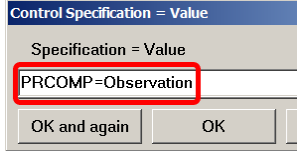
<p>Tables 1, 12, 16 Force exact number of items or persons indicated by “#” using T1P#, T1I#</p>	<pre> ##### XXX ##### XXX ##### X (Class) PERSON +- ITEM ----- EACH "# IN THE PERSON COLUMN IS 13 PERSON: EACH ", " IS 1 TO 12 </pre>
<p>Table 3.1 “ADJ. S.D.” now shown as “TRUE S.D.” to accord with standard terminology</p>	<pre> was: ADJ.SD 1.86. now: TRUE SD 1.88 MIN. .0 14.0 -6. REAL RMSE 1.21 TRUE SD 1.86 MODEL RMSE 1.05 TRUE SD 1.96 S.E. OF KID MEAN -.38 </pre>
<p>Table 3.1 USCALE= with 4-decimal display</p>	<pre> was: UMEAN=.000 USCALE=1.000 617 now: UMEAN=.0000 USCALE=1.0000 617 </pre>
<p>Table 3.1 global root-mean-square residual</p>	<p>GLOBAL ROOT-MEAN-SQUARE RESIDUAL (EXCLUDING EXTREME SCORES): .2667</p>
<p>Table 3.2 Observed count includes observations in extreme scores</p>	<pre> +-----+ CATEGORY OBSVD SAMPLE INFIT OUTFIT STRUCTURE CATEGORY LABEL SCORE COUNT % AVRGE EXPECT MNSQ MNSQ CALIBRATN MEASURE +-----+ 0 0 378 20 -.67 -.73 .96 1.16 NONE (-2.01) 1 1 620 34 -.11 -.06 .81 .57 -.89 -.23 2 2 0 0 .00 .00 NULL .63 3 3 857 46 1.34 1.33 1.00 1.64 .89 (1.49) 4 20 1 NULL +-----+ </pre>
<p>Table 3.2 Root-mean-square residual (RMSR) indicating an average difference between the observation and its expectation for each rating-scale-category</p>	<pre> ----- COHERENCE ESTIM M->C C->M RMSR DISCR ----- 73% 68% .4419 71% 75% .4201 1.01 ----- </pre>
<p>Table 3.2 Residuals as % of observed</p>	<pre> ----- CATEGORY OBSERVED OBSERVED-EXPECTED LABEL SCORE COUNT % RESIDUAL DIFFERENCE ----- 0 0 378 20 -206.3% -146.5 1 1 620 34 20.3% 33.9 2 2 0 0 79.3% 112.6 ----- </pre>
<p>Table 7.1 occasional display problem. Missing data shown as 192, not “M”</p>	<pre> Was: RESPONSE: 21: 2 2 192 Z-RESIDUAL: 2 2 X Now: RESPONSE: 21: 2 2 M Z-RESIDUAL: 2 2 </pre>
<p>Table 12.5, 12.6 - item map with categories. Shows category numbers on continuation lines</p>	<pre> 3 X + T X WATCH BUGS .2 WATCH GRASS CHANGE .2 LOOK IN SIDEWALK CRACKS .2 </pre>
<p>Table 23. PRCOMP= selectable from the Specification pull-down menu, to change options before Tables 23 and 24 (PCA).</p>	
<p>Table 23. & 24. Show PCA eigenvalues observations when PRCOMP=Observations</p>	<pre> Table of OBSERVATION variance (in Eigenvalue units) -- Empirical -- Raw unexplained variance (total) = 25.0 100.0% Variance explained by 1st component = 8.7 34.9% Variance explained by 2nd component = 3.0 11.8% Variance explained by 3rd component = 1.9 7.7% Variance explained by 4th component = 1.3 5.3% Variance explained by 5th component = 1.1 4.4% </pre>

Table 23.3 & 24.3
Cluster number, to assist with using Table for splitting the items into two groups

Cluster number				
CON-	TRAST	LOADING	MEASURE	IN
1	1	.73	-3.84	:
1	1	.58	4.82	
1	1	.58	4.82	
1	1	.52	-3.39	:

Table 33:
Orient *t*-test with DGF Contrast

Was:

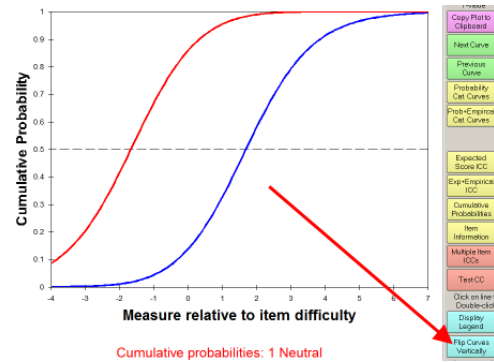
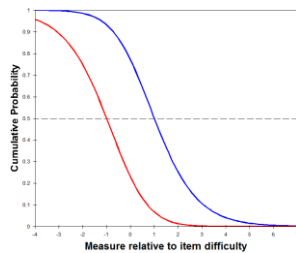
KID CLASS	DGF SIZE	DGF S.E.	KID CLASS	DGF SIZE	DGF S.E.	DGF CONTRAST	JOINT S.E.	t	Welch d.f.	Prob.	TAP CLASS
A	.00	.69	B	-.14	.44	.14	1.31	-.16	84	.8696	1
A	.00	.69	C	.08	1.11	-.08	1.31	-.08	28	.9490	1
A	.00	.69	D	.21	.65	-.21	.95	-.22	75	.8256	1
A	.00	.69	F	.00	1.00	.00	1.21	.00	29	1.0000	1

Now:

KID CLASS	DGF SIZE	DGF S.E.	KID CLASS	DGF SIZE	DGF S.E.	DGF CONTRAST	JOINT S.E.	t	Welch d.f.	Prob.	TAP CLASS
A	.00	.69	B	-.14	.44	.14	1.31	.16	84	.8696	1
A	.00	.69	C	.08	1.11	-.08	1.31	-.08	28	.9490	1
A	.00	.69	D	.21	.65	-.21	.95	-.22	75	.8256	1
A	.00	.69	E	.00	1.00	.00	1.21	.00	29	1.0000	1

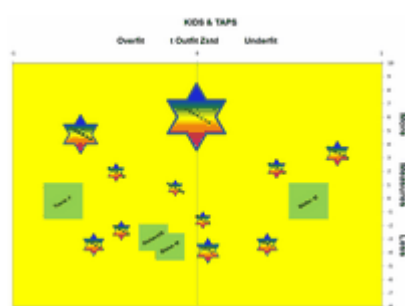
Graphing

Graphs: flipping of cumulative probability curves



Plots

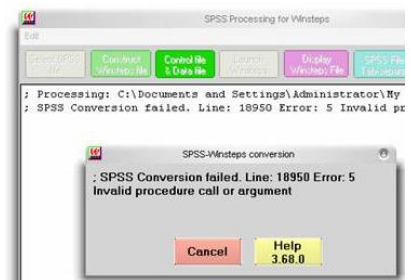
Pathway bubble-charts:
Can be edited to use Excel Autoshapes
Instructions in Winsteps Help

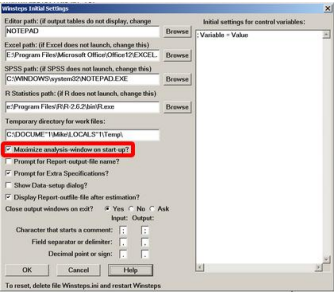
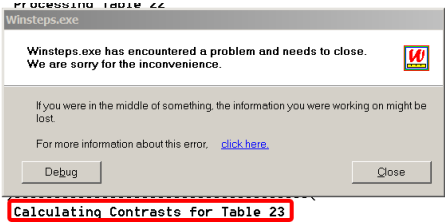
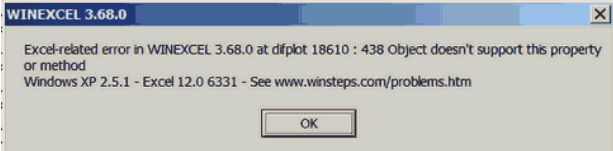


Bug repairs

SPSS file conversion failures.

Repaired.



<p>Windows analysis screen resizing. Now opened in “normal” size. Option to open “maximized” in “Edit Initial Settings”</p>	
<p>Estimation fails with TARGET=Y repaired</p>	<pre> Control: \examples\example0.txt JMLE MAX SCORE MAX LOGIT LI ITERATION RESIDUAL* CHANGE KID >=====< 1 -49.06 .0000 >=====< 2 -49.06 .0000 >=====< Calculating Fit Statistics >=====< </pre> <p>The values -49.06 and .0000 for iteration 1 are highlighted with a red box.</p>
<p>Winsteps may crash when performing large DIF or Dimensionality analyses. Repaired</p>	
<p>Excel interface failure with Excel 2007 Repaired</p>	
<p>Graphing failure when scrolling the screen Repaired</p>	