

# SPSS Syntax

For Academics

# What is Syntax?

- Instructions to SPSS
- Just a text file
- GUI is creating and running syntax

# Why use Syntax

- Faster
  - Faster to type than to click
  - Faster to run
- Easier
  - Easy to do the same thing with different variables
  - Easier to find errors
- Better
  - Features not available on the menus
  - Ensures Replicability

# Pew Social Trends



- Click the Workshop Files Icon
- Choose **SPSS Workshop Files**
- Choose **Pew Social Trends-Family Bonds**
- Open **“PST 11-05c.sav”**
  - **Double-Click** or **File | Open...** (if SPSS is open)

# Structure

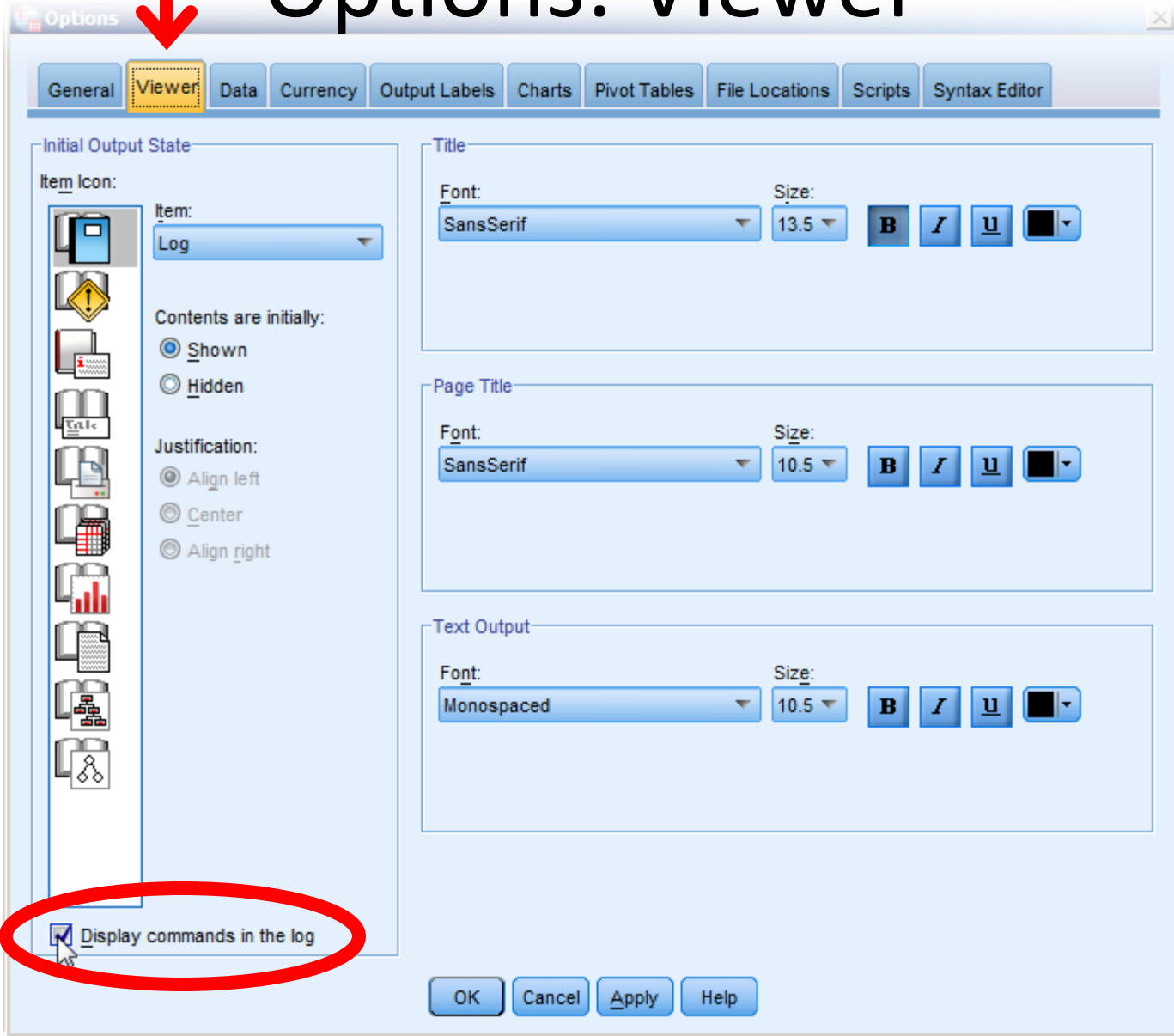
**COMMAND**

**/SUBCOMMAND = KEYWORD**

•

- Look at the Syntax for the Get File
- How many commands?
- Copy it to a new syntax file

# Options: Viewer



# Obtaining Syntax

**File | New | Syntax**

**From Viewer**

**Double-Click syntax area**

**Select, Copy, and Paste**



# Windows

Data  
.sav

Output  
.spv

Syntax  
.sps

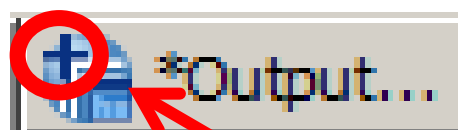
Variable	Type	Scale	Measure	Display	Width	Decimals	Format	Align	Justify	Labels	Values	Missing	Display
1. pch	Numeric	1	0	Q	8	0							
2. weight	Numeric	1	0	Q	8	0							
3. weight	Numeric	2	2.73	100%	English	384	Florida	SOUTH	42300	10123	10123		
4. wt_dv	Numeric	2	2.66	101%	Spanish	770	Georgia	SOUTH	12900	13867	13867		
5. lang	Numeric	2	2.35	101%	Spanish	718	New York	NORTHEA	39650	38887	38887		
6. area	Numeric	2	2.63	100%	English	205	Flaorahava	NORTHEA	37900	42101	42101		
7. state	Numeric	1	2.13	101%	Spanish	706	Florida	SOUTH	37150	10966	10966		
8. cregion	Numeric	1	1.79	100%	English	306	North Car.	SOUTH	49100	37901	37901		
9. msa	Numeric	1	2.35	101%	Spanish	718	New York	NORTHEA	0	38810	38810		
10. fpo	Numeric	1	1.57	100%	English	754	North Car.	SOUTH	10740	37119	37119		
11. wst	Numeric	1	1.97	101%	Spanish	873	New Jersey	NORTHEA	30020	28071	28071		
12. wst1	Numeric	1	1.97	101%	Spanish	873	New Jersey	NORTHEA	20180	27803	27803		
13. wst	Numeric	1	1.97	101%	Spanish	873	New Jersey	NORTHEA	45270	10073	10073		
14. m2	Numeric	1	0	Q	8	0							
15. sex	Numeric	1	0	Q	8	0							
16. o2	Numeric	1	0	Q	8	0							
17. o3a	Numeric	1	0	Q	8	0							
18. o3b	Numeric	1	0	Q	8	0							
19. o3c	Numeric	1	0	Q	8	0							
20. o3d	Numeric	1	0	Q	8	0							
21. o3e	Numeric	1	0	Q	8	0							
22. o3f	Numeric	1	0	Q	8	0							
23. o3h	Numeric	1	0	Q	8	0							
24. o3i	Numeric	1	0	Q	8	0							
25. o3j	Numeric	1	0	Q	8	0							
26. o4	Numeric	1	0	Q	8	0							
27. o5	Numeric	1	0	Q	8	0							
28. o5	Numeric	1	0	Q	8	0							
29. o7	Numeric	1	0	Q	8	0							
30. o8	Numeric	4	0	Q	8	0							
31. m1	Numeric	1	0	Q	8	0							
32. m2	Numeric	1	0	Q	8	0							
33. m3	Numeric	1	0	Q	8	0							
34. m4	Numeric	1	0	Q	8	0							
35. o16	Numeric	2	0	Q	8	0							
36. o19_1	Numeric	2	0	Q	8	0							
37. o19_2	Numeric	2	0	Q	8	0							
38. o19_3	Numeric	2	0	Q	8	0							
39. o21	Numeric	1	0	Q	8	0							

c.Asian		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	00	20054	99.8	99.8	99.8
Missing	.	100	.0	.0	100.0
Total		20054	100.0	100.0	

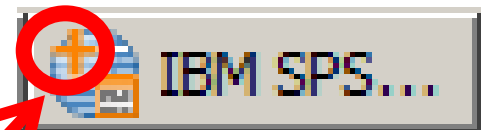
```
SPSS DATA DEFINITION STATEMENTS FOR SPSS 2000  
PART 1: NUMERIC DATA  
FIRST SPSS EDITION  
JAN 2000  
This SPSS setup file contains the following statements:  
DATA LIST:  
VALUE LABELS:  
FORMATS:  
MISSING VALUES:  
VALUE LABELS:  
DELETE:  
VARIABLE LABELS:  
VALUE LABELS:  
FORMATS:  
MISSING VALUES:  
NOTE:  
INCLUDE:  
SPSS DATA LIST:  
FILE HANDLE DATA FRAME="file-specification" LRECL=4756  
DATA LIST FILE=DATA /  
V1-4 V2-5 V3-6  
V7-12 V5-19 V6-20  
V17-22 V8-23-24 V9-25-26  
V10-27-28 V11-29-30 V12-31-32  
V13-33-34 V14-35-37 V15-38-39  
V16-40-41 V17-42-42 V18-43-44
```



Unsavaed



Active



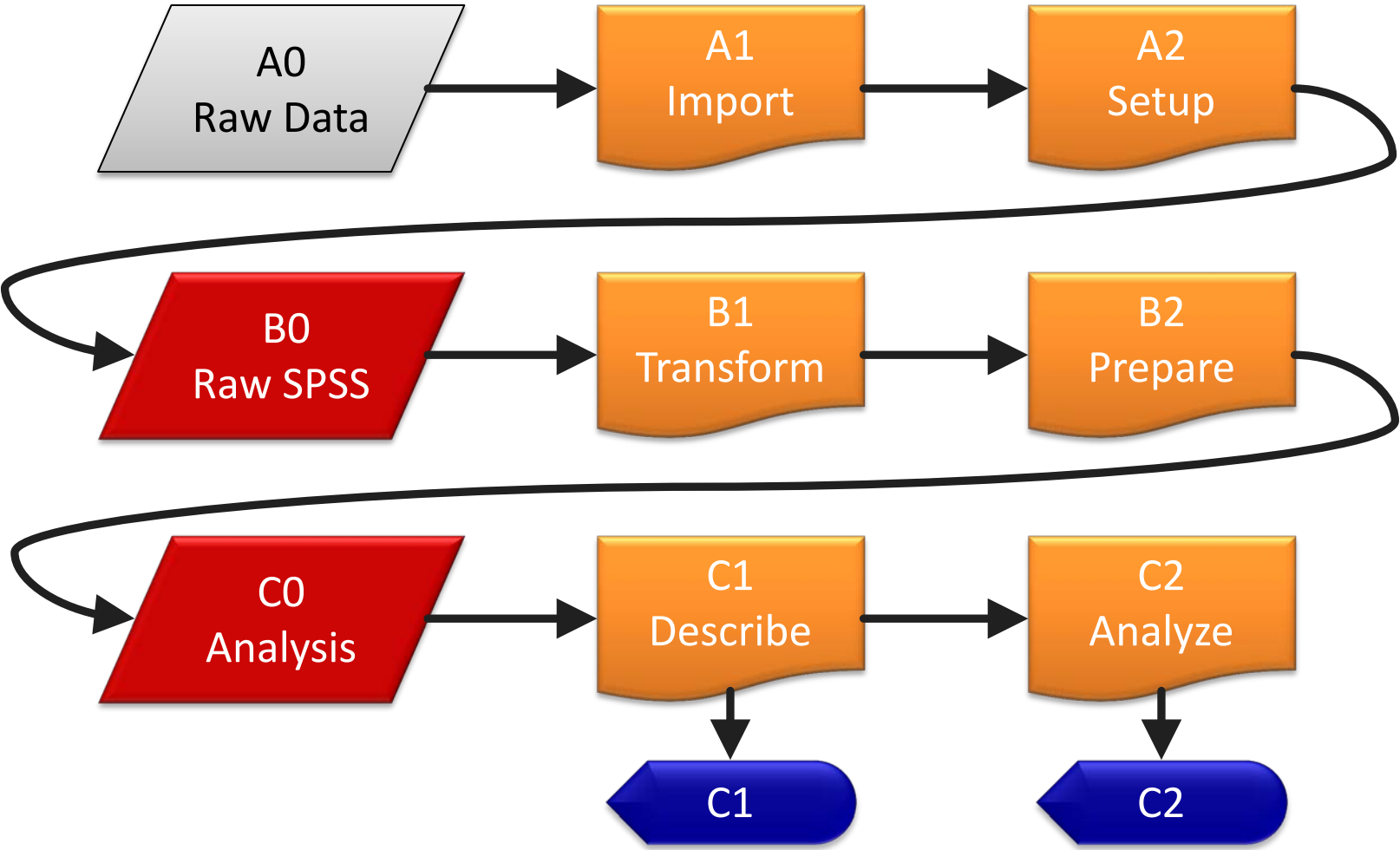
Inactive

# DATASET

- **DATASET NAME**
- **DATASET ACTIVATE**
- Temporary names
- Important if multiple datasets are open, irrelevant otherwise

# Good Practices

# Files



# Style

- SPSS words are CAPS
- Variables are lower case
- Use parentheses
- Put command on multiple lines
- Indent

# COMMENT

**COMMENT** The following is for SPSS with Syntax.

OR

\* The following Is for SPSS with Syntax.

\*\*\*\*\*  
.

\*\*\* Leave a Comment \*\*\*  
.

# Specific Skills

# Variables & Labels

**RENAME VARIABLES** (sex = gender) .

**VARIABLE LABELS** gender "Respondent's Gender".

**MISSING VALUES** q2 (9).

**MISSING VALUES** q3a TO q3j (7,9).



# Frequencies

**FREQUENCIES VARIABLES=q2**

**/ORDER=ANALYSIS.**

**FREQUENCIES q2.**

**FREQUENCIES q2 q75.**

# Compute

**COMPUTE** has\_pet = (q75 = 1).

COMPUTE = **FUNCTION**(stuff).

**AND** &      Operations

**OR** |      **NOT** ~      **GT** >      **LT** <

**EQ** =      **NE** ~ =      **GE** >=      **LE** <=

# Recode

**RECODE** q2 (1 = 1) (2 = 1) (3 = 0) **INTO** is\_happy.

**RECODE** q2 (1 **THRU** 2 = 1) (3 = 0) **INTO** is\_happy.

**RECODE** q2 (1 2 = 1) (3 = 0) **INTO** is\_happy.

**RECODE** q2 (1, 2 = 1) (3 = 0) **INTO** is\_happy.

# Keywords for Recoding

THRU	list of values or cases
LO / LOWEST	lowest value
HI / HIGHEST	highest value
ELSE	all other values
MISSING	user or system missing value
SYSMIS	system missing value
COPY	outputs the same value
INTO	precedes name of new variable

# Syntax can be written different #2

**RENAME VARIABLES** (var1 = one) (var2 = two) .

**RENAME VARIABLES** (var 1 var2 = one two) .

**RENAME VARIABLES**

var1 = one

var2 = two

.

# EXECUTE

- Can be abbreviated: **EXE.**
- Many executes slow it down.
- Typically needed once per file.
- Can be run at any time

IBM SPSS Statistics Processor is ready

Transformations pending

# Combining Commands

## **VARIABLE LABELS**

has\_pet "Has a Pet?"

/ is\_happy "Happy?"

.

## **OR**

**VARIABLE LABELS** has\_pet "Has a Pet?" .

**VARIABLE LABELS** is\_happy "Happy?" .

# Value Labels

## **VALUE LABELS** has\_pet

0 No Pet

1 Has a Pet

•

## **VALUE LABELS** is\_happy

1 Happy

•

## **ADD VALUE LABELS** is\_happy

0 Not Happy

▪



# Syntax can be written different #1

```
val labels has_pet 0 "No Pet" 1 "Has a Pet" .
```

```
value lab has_pet 1 'Has a Pet' 0 'No Pet'.
```

```
VALUE LABELS has_pet
```

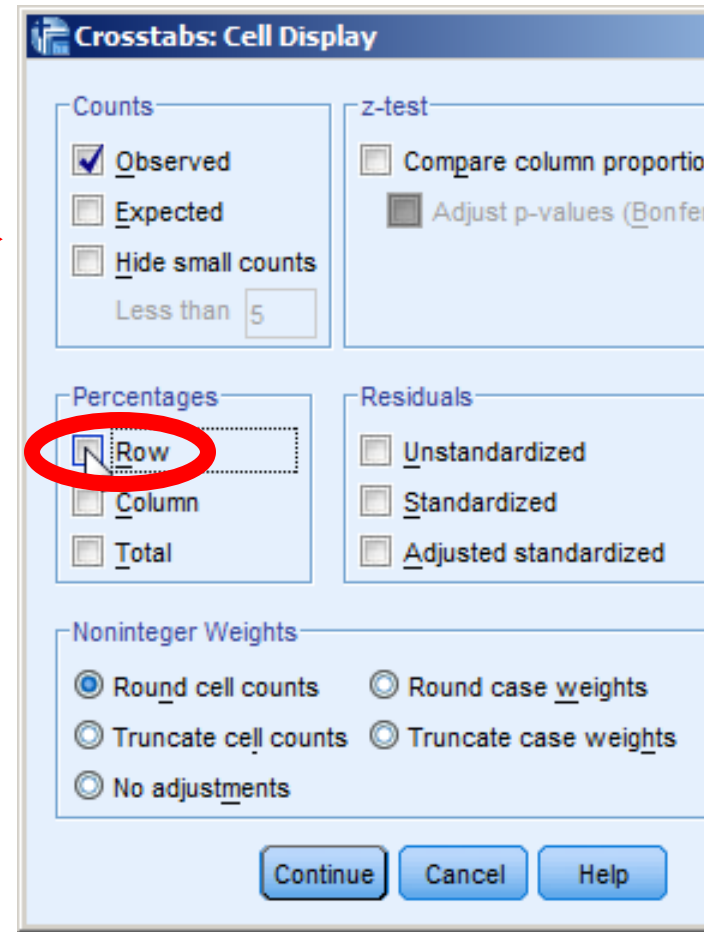
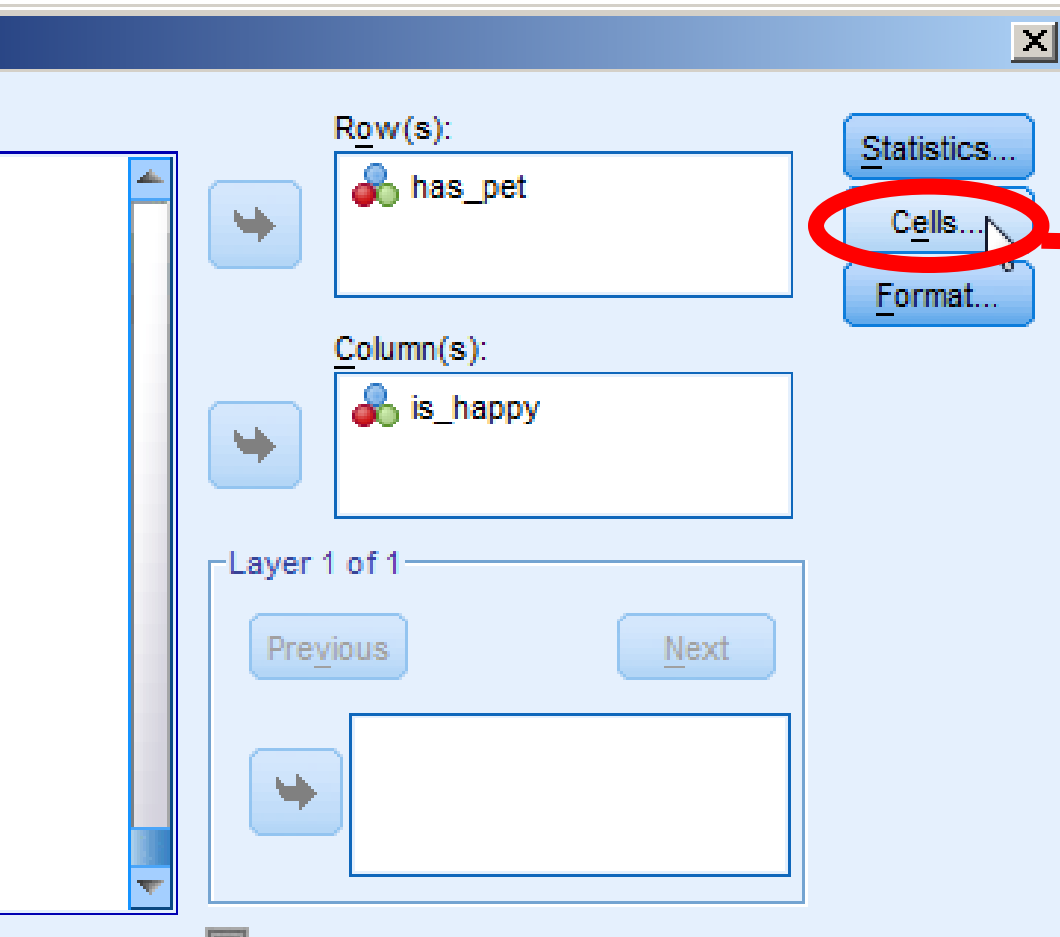
```
0 No Pet
```

```
1 Has a Pet
```

```
.
```

# Crosstabs

Analyze | Descriptive Statistics | Crosstabs...



# General Keywords

## Variables

**BY** for factors

**WITH** for covariates

**ALL** all variables

**TO** variable list

# Subcommand Efficiency

- Subcommands only needed to change defaults

Compare to pasted syntax

- **FREQUENCIES** gender.
- **CROSSTABS** q76dog by is\_happy.

```
CROSSTABS q76dog by is_happy /CELL=COL ROW  
/STA= CHISQ .
```

# Combining Commands

## **CROSSTABS**

/TABLES=has\_pet is\_happy BY married gender

/TABLES=has\_pet BY gender

/TABLES=is\_happy BY married

/FORMAT=DVALUE TABLES

/CELLS=COUNT EXPECTED COLUMN.

# Handling Errors

**COMPUTE** timezone = UPPER(tz)

**FREQUENCIES** timezone

# Don't Panic

## **Fix the First**

Ignore the number of errors and focus on the first one

- SPSS doesn't stop for errors
- Fixing the 1<sup>st</sup> may fix others

## **Read the message**

Error messages are long but often informative

- Identifies location of problem
- Gives suggestions



# Look for Common Errors

## Check for EXECUTE

Changes to the data require an execute

- Look for “Transformations Pending” in the Status Bar
- Type “EXECUTE.” and run it
- Needed after COMPUTE, RECODE, IF, and others

## Check for periods

The most common error is missing or extra periods

- Each command ends with a period
- Each period must end a command
- Blank lines are treated a periods

# Troubleshooting

## Run all Frequencies

Copy your variables from each command and run frequencies

- Confirm names are correct
- Confirm expected values

## Run each Command

Starting at the top, run each command alone, step by step

- Highlight the syntax you want to run

# Correct Code

**STRING** timezone (A3).

**COMPUTE** timezone = **UPCASE**(tz).

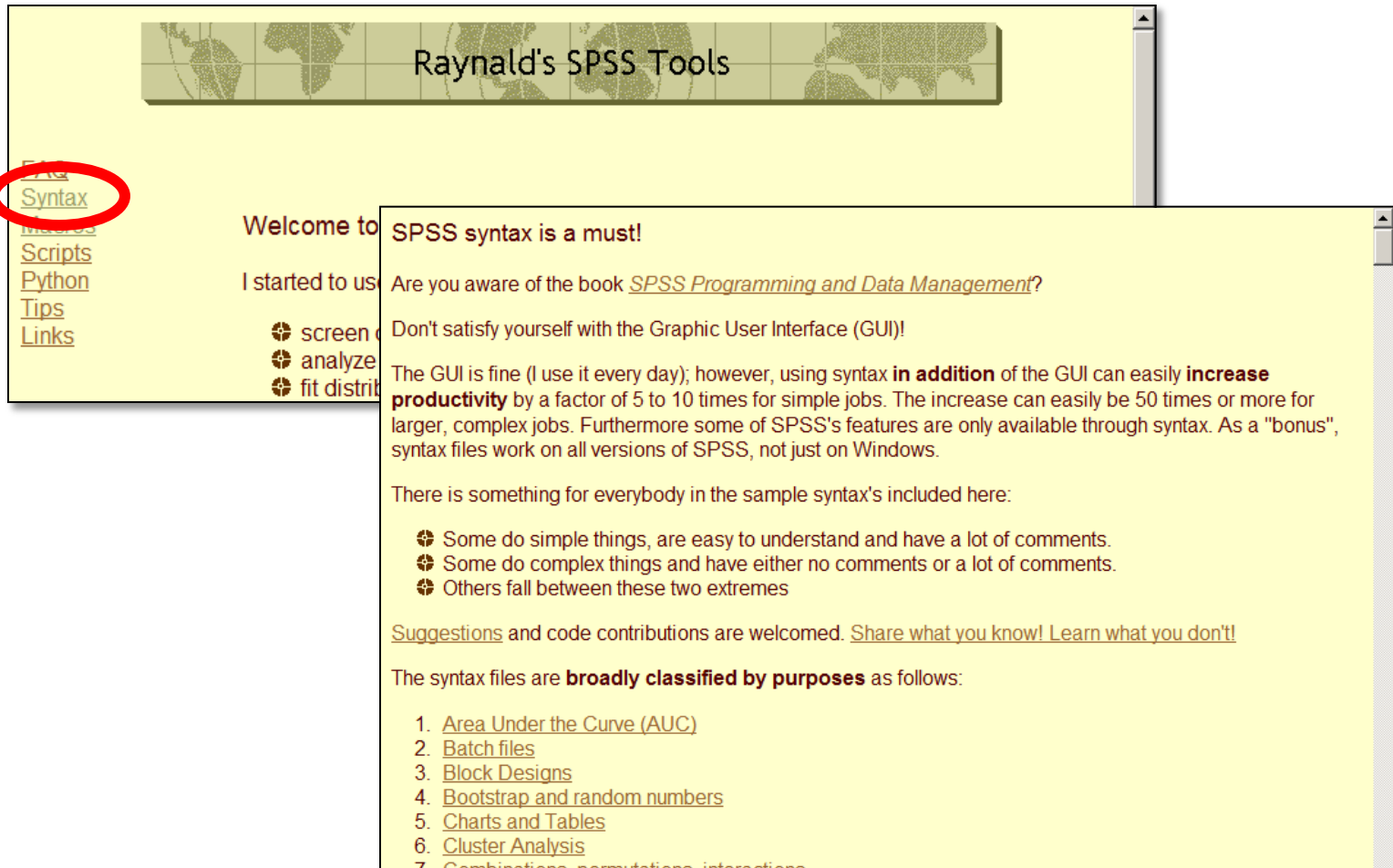
Tips

# Creating Syntax in Excel

- Use Excel “Fill Down” for Repetative Commands
- See [SPSS\\_Syntax.xlsx](#)

# Advanced Topics

- <http://spsstools.net/>



Raynald's SPSS Tools

Home  
**Syntax**  
Manuals  
Scripts  
Python  
Tips  
Links

Welcome to  
I started to use

SPSS syntax is a must!  
Are you aware of the book *SPSS Programming and Data Management*?  
Don't satisfy yourself with the Graphic User Interface (GUI)!  
The GUI is fine (I use it every day); however, using syntax **in addition** of the GUI can easily **increase productivity** by a factor of 5 to 10 times for simple jobs. The increase can easily be 50 times or more for larger, complex jobs. Furthermore some of SPSS's features are only available through syntax. As a "bonus", syntax files work on all versions of SPSS, not just on Windows.  
There is something for everybody in the sample syntax's included here:  

- Some do simple things, are easy to understand and have a lot of comments.
- Some do complex things and have either no comments or a lot of comments.
- Others fall between these two extremes

  
Suggestions and code contributions are welcomed. Share what you know! Learn what you don't!  
The syntax files are **broadly classified by purposes** as follows:  

1. Area Under the Curve (AUC)
2. Batch files
3. Block Designs
4. Bootstrap and random numbers
5. Charts and Tables
6. Cluster Analysis
7. Combinations, permutations, interactions