Block 3: Analysing two variables (and sometimes three)

3.3 Multiple response [New page: 20 Feb 2018]

3.3.3.4 Analysing multiple response 4 - Dichotomous mode

Sets of questions with only two response categories (Yes, No) can be analysed as a block by treating them as multiple response questions. Indeed, any variable can be dichotomised and thus treated. The example asks whether the respondent has ever done any of a list actions involving a trade union or staff association (each item 1 = "Yes" or 2 = "No") and the exercise demonstrates how to define a dichotomous group variable and then tabulate it.

Previous tutorial: 3.3.3.3   Analysing multiple response exercise 3 - More replies than values

Exemplar: British Social Attitudes survey (1986 wave)

Raw data set: bsa86.txt   (3.4 mb)
Obtained under licence from UKDA as a ***.dat** file in **Times New Roman** proportional font: reformatted to **`Courier New`** fixed-width font to align the columns. This version has been downloaded and saved as a ***.txt** file, then copied to CD for this example and is henceforth referred to as **'e:bsa86.txt'**

SPSS saved file bsa86b.sav (2.0 mb)
Contains data for all 3100 respondents. The original file (generated by Prof John Curtice et al, Strathclyde) used mnemonic variable names, but these have been changed to positional names to make it easier to work from the questionnaire. **VARIABLE LABELS** and **VALUE LABELS** have been left in UPPER CASE (as per originals) but the question number has been moved to the beginning of the variable label to make it easier to navigate the file.

Some, but not all, **VALUE LABELS** and **MISSING VALUES** have been declared, but you should always check your variables before launching into any analyses.

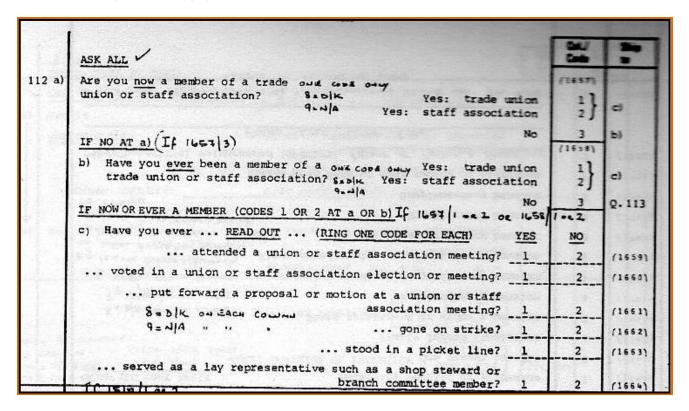The data for a single case are spread over 23 x 80-column records, eg:

```
102050101031072187061          020512       02
1020502210322023112111121321  3122511211221111113442113  05
1020503
1020504                  12  012   2004  3121
1020505                    030113121255111112 21221221   2113501   111111
1020506010205111311111111  2111113102001      010400  1111122      411 2    5
1020507    5   11111833124225  2211121222222     23668656531112221230801030722
1020508222111 2      2          1 2     2        2   6        312
      09
1020510
1020511
1020512
1020513
1020514                             02  2                        2
102051502115212501                              22 011
1020516              9721    063010807327408  001010131 112112           103
102051713601080832340  01981015102021       4    03  11 11310501870300486111
1020518
1020519
1020520333232223431234432122222222332323332111122122212224222441121111121222212212
1020521333333342312322222244133223322121111122322222222221222241422244222
1020522222224244222313222
1020523  00.6666 04 4 1 02 2 4 06 2 07 08 6 5 4 4 4 4 2 1 08 04 3 6 1 1 1 5
```

Binary variables (dichotomous)

Sets of questions with only two response categories (Yes, No) can be analysed as a block by treating them as multiple response questions.   Indeed, any variable can be dichotomised and thus treated. An example in this data set is:

AQ112c/BQ120c Actions as Trade Union/Staff Association member (Yes, No – precoded)

[Extract from (marked up) questionnaire]

The answers to the items listed in (c) are coded 1 = "Yes" or 2 = "No" in cols 59-64 of record 16.

[Extract from raw data: record 16]

```
1019216                    1      999021117998999   99999   933                  07

1020316                           999021117998999   99999   933

1020516                    9721   063010807327408   001010131   112112           103
                                                                ↑↑↑↑↑↑
```
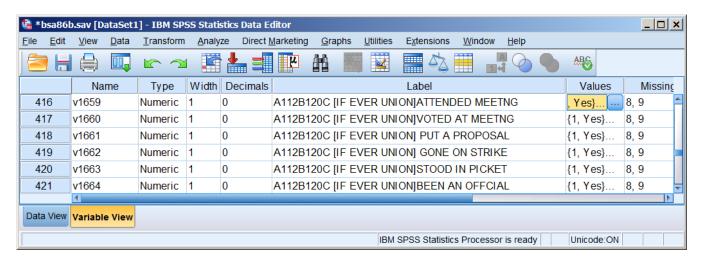
[Extract from file bsa86b.sav]

	Name	Type	Width	Decimals	Label	Values	Missing
416	v1659	Numeric	1	0	A112B120C [IF EVER UNION]ATTENDED MEETNG	None	8, 9
417	v1660	Numeric	1	0	A112B120C [IF EVER UNION]VOTED AT MEETNG	None	8, 9
418	v1661	Numeric	1	0	A112B120C [IF EVER UNION] PUT A PROPOSAL	None	8, 9
419	v1662	Numeric	1	0	A112B120C [IF EVER UNION] GONE ON STRIKE	None	8, 9
420	v1663	Numeric	1	0	A112B120C [IF EVER UNION]STOOD IN PICKET	None	8, 9
421	v1664	Numeric	1	0	A112B120C [IF EVER UNION]BEEN AN OFFCIAL	None	8, 9

No value labels have been assigned, but this can be rectified with:

> **value labels** v1659 to v1664 1 'Yes' 2 'No' 8 'D/K' 9 'N/A'.

*bsa86b.sav [DataSet1] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Extensions Window Help

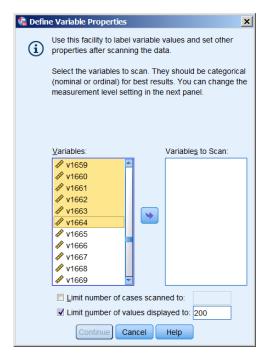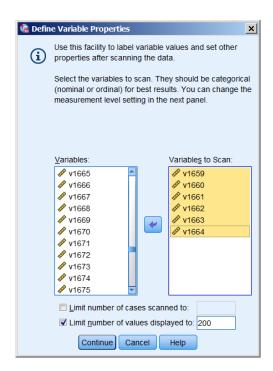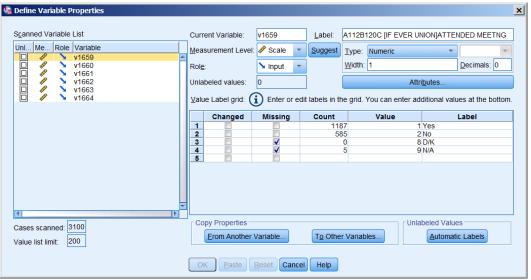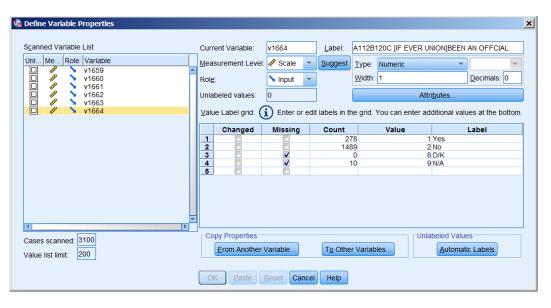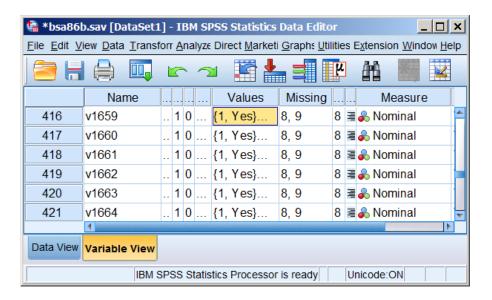|	Name	Type	Width	Decimals	Label	Values	Missing
416	v1659	Numeric	1	0	A112B120C [IF EVER UNION]ATTENDED MEETNG	, Yes}...	8, 9
417	v1660	Numeric	1	0	A112B120C [IF EVER UNION]VOTED AT MEETNG	{1, Yes}...	8, 9
418	v1661	Numeric	1	0	A112B120C [IF EVER UNION] PUT A PROPOSAL	{1, Yes}...	8, 9
419	v1662	Numeric	1	0	A112B120C [IF EVER UNION] GONE ON STRIKE	{1, Yes}...	8, 9
420	v1663	Numeric	1	0	A112B120C [IF EVER UNION]STOOD IN PICKET	{1, Yes}...	8, 9
421	v1664	Numeric	1	0	A112B120C [IF EVER UNION]BEEN AN OFFCIAL	{1, Yes}...	8, 9

Data View **Variable View**

IBM SPSS Statistics Processor is ready   Unicode:ON

Value Labels

Value Labels

Value:
Label:

Spelling...

```
1 = "Yes"
2 = "No"
8 = "D/K"
9 = "N/A"
```

Add
Change
Remove

OK   Cancel   Help

---

*bsa86b.sav [DataSet1] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Extensions Window Help

Define Variable Properties...
Set Measurement Level for Unknown...
Copy Data Properties...
New Custom Attribute...
Define date and time...
Define Multiple Response Sets...
Validation
Identify Duplicate Cases...
Identify Unusual Cases...
Compare Datasets...
Sort Cases...
Sort Variables...

	Nar			Label	Values	Missing
416	v1659			0C [IF EVER UNION]ATTENDED MEETNG	{1, Yes}...	8, 9
417	v1660			0C [IF EVER UNION]VOTED AT MEETNG	{1, Yes}...	8, 9
418	v1661			0C [IF EVER UNION] PUT A PROPOSAL	{1, Yes}...	8, 9
419	v1662			0C [IF EVER UNION] GONE ON STRIKE	{1, Yes}...	8, 9
420	v1663			0C [IF EVER UNION]STOOD IN PICKET	{1, Yes}...	8, 9
421	v1664			0C [IF EVER UNION]BEEN AN OFFCIAL	{1, Yes}...	8, 9

Data View **Variable**

Define Variable Prop   IBM SPSS Statistics Processor is ready   Unicode:ON

3

VARIABLE LEVEL is defined as Scale for all six variables and needs to be changed to Nominal.

variable level v1659 to v1664 (Nominal).

You can produce 6 separate frequency counts with:

frequencies v1659 to v1664.

A112B120C [IF EVER UNION]ATTENDED MEETNG

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1187	38.3	67.0	67.0
	No	585	18.9	33.0	100.0
	Total	1772	57.2	100.0	
Missing	N/A	5	0.2		
	System	1323	42.7		
	Total	1328	42.8		
Total		3100	100.0		

A112B120C [IF EVER UNION]VOTED AT MEETNG

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1094	35.3	61.7	61.7
	No	678	21.9	38.3	100.0
	Total	1772	57.2	100.0	
Missing	N/A	5	0.2		
	System	1323	42.7		
	Total	1328	42.8		
Total		3100	100.0		

A112B120C [IF EVER UNION] PUT A PROPOSAL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	436	14.1	24.6	24.6
	No	1335	43.1	75.4	100.0
	Total	1771	57.1	100.0	
Missing	D/K	1	0.0		
	N/A	5	0.2		
	System	1323	42.7		
	Total	1329	42.9		
Total		3100	100.0		

A112B120C [IF EVER UNION] GONE ON STRIKE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	591	19.1	33.3	33.3
	No	1182	38.1	66.7	100.0
	Total	1773	57.2	100.0	
Missing	N/A	4	0.1		
	System	1323	42.7		
	Total	1327	42.8		
Total		3100	100.0		

A112B120C [IF EVER UNION]STOOD IN PICKET

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	241	7.8	13.6	13.6
	No	1530	49.4	86.4	100.0
	Total	1771	57.1	100.0	
Missing	N/A	6	0.2		
	System	1323	42.7		
	Total	1329	42.9		
Total		3100	100.0		

A112B120C [IF EVER UNION]BEEN AN OFFCIAL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	278	9.0	15.7	15.7
	No	1489	48.0	84.3	100.0
	Total	1767	57.0	100.0	
Missing	N/A	10	0.3		
	System	1323	42.7		
	Total	1333	43.0		
Total		3100	100.0		

You can produce a single table for all the 1 = Yes responses with;

mult response groups actions 'Actions ever taken as union member'
   (v1659 to v1664 (1))
   /frequencies actions /cells column.

actions Frequencies

| | | Responses | | Percent of Cases |
		N	Percent	
Actions ever taken as union member[a]	A112B120C [IF EVER UNION]ATTENDED MEETNG	1187	31.0%	88.7%
	A112B120C [IF EVER UNION]VOTED AT MEETNG	1094	28.6%	81.8%
	A112B120C [IF EVER UNION] PUT A PROPOSAL	436	11.4%	32.6%
	A112B120C [IF EVER UNION] GONE ON STRIKE	591	15.4%	44.2%
	A112B120C [IF EVER UNION]STOOD IN PICKET	241	6.3%	18.0%
	A112B120C [IF EVER UNION]BEEN AN OFFCIAL	278	7.3%	20.8%
Total		3827	100.0%	286.0%

a. Dichotomy group tabulated at value 1.

End of: **3.3.3.4 Analysing multiple response 4 - Dichotomous mode**
Back to: 3.3.3.3 Analysing multiple response exercise 3 - More replies than values
Back to: 3.3 Multiple response