Creating the 'Encouragement from Significant Others to Attend College' variables based upon questions 43, 44, 46 to 48.

This memo discusses two ways to code the encouragement from significant others to attend college measures: 1) creating a binary measure that distinguishes encouragement to attend college from a host of other options which the significant other may encourage the student to do upon the completion of high school (e.g. work full time, join the military, etc) and 2) a trichotomous coding that capture the notion of significant others either steering students towards or away from college. Encouraging college is a coded +1, to indicate that the student is being steered towards college. Not knowing and the question not applying are coded as 0. All other responses (military, job, married, trade school) are coded as a -1, to indicate the student being steered away from college.

Additionally, this memo will describe two different types of indices that one can make out of the encouragement indicators: 1) a singular additive index and 2) an index of familial and an index non-familial encouragement. Note that both the binary and the trichotomous measures can be used to make either index option.

Example of Encouragement Questions:

43) What does your FATHER, or the person who is most like a father to you, think is the most important thing for you to do after high school?

(CIRCLE ONLY ONE)

Go to college 1

Enter a trade school, vocational school or work apprenticeship program 2

Enter military service 3

Get a job 4

Get married 5

I don't know 6

Does not apply (no male parent/guardian) 7

Coding the Specific Encouragement questions:

1) Creating Binary Measures

Below is the code to create the binary measures. The code is pretty straightforward. Encouragement is coded as 1, all other responses are coded as zero, and missing is considered missing.

Please note: The entire syntax is at the end. Parts my not work on their own.

```
***********encouragement measures.
***********enc mother.
compute        encmoth = 999.
if s044 = 1    encmoth =  1.
if s044 = 2    encmoth =  0.
if s044 = 3    encmoth =  0.
if s044 = 4    encmoth =  0.
if s044 = 5    encmoth =  0.
if s044 = 6    encmoth =  0.
if s044 = 7    encmoth =  0.
missing values encmoth (999).
Variable label encmoth 'mother encouraged college attendance, 1 is yes'.
*****************************.

***********enc father.
compute      encfath = 999.
```

```
if s043 = 1  encfath =  1.
if s043 = 2  encfath =  0.
if s043 = 3  encfath =  0.
if s043 = 4  encfath =  0.
if s043 = 5  encfath =  0.
if s043 = 6  encfath =  0.
if s043 = 7  encfath =  0.
missing values encfath (999).
Variable label encfath 'father encouraged college attendance, 1 is yes'.
*****************************.

**********encourage friend.
compute      encfrnd = 999.
if s046 = 1  encfrnd =  1.
if s046 = 2  encfrnd =  0.
if s046 = 3  encfrnd =  0.
if s046 = 4  encfrnd =  0.
if s046 = 5  encfrnd =  0.
if s046 = 6  encfrnd =  0.
missing values encfrnd (999).
Variable label encfrnd 'friend encouraged college attendance, 1 is yes'.
*****************************.

***********mentor encourage.
compute      encmntr = 999.
if s047 = 1  encmntr =  1.
if s047 = 2  encmntr =  0.
if s047 = 3  encmntr =  0.
if s047 = 4  encmntr =  0.
if s047 = 5  encmntr =  0.
if s047 = 6  encmntr =  0.
missing values encmntr (999).
Variable label encmntr 'mentor encouraged college attendance, 1 is yes'.
*****************************.

***************teacher encourage.
compute        enctchr = 999.
if s048 = 1    enctchr =  1.
if s048 = 2    enctchr =  0.
if s048 = 3    enctchr =  0.
if s048 = 4    enctchr =  0.
if s048 = 5    enctchr =  0.
if s048 = 6    enctchr =  0.
missing values enctchr (999).
Variable label enctchr 'teacher encouraged college attendance, 1 is yes'.
execute.
```

2) Creating the trichotomous measures:

Below is the code to create the trichotomous measures. The code is pretty straightforward. Encouragement is coded as 1, doesn't know and not applicable are coded as zero, missing is considered missing, and entering a trade/ vocational/apprenticeship program, entering military service, getting a job and getting married are coded as -1.

Please note: The entire syntax is at the end. Parts my not work on their own.

```
************encouragement measures.
***********enc mother.
compute        mothencrg = 999.
if s044 = 1    mothencrg =  1.
if s044 = 2    mothencrg = -1.
if s044 = 3    mothencrg = -1.
if s044 = 4    mothencrg = -1.
if s044 = 5    mothencrg = -1.
if s044 = 6    mothencrg =  0.
if s044 = 7    mothencrg =  0.
missing values mothencrg (999).
Variable label mothencrg ‘mother encouraged college attendance’.
Value labels   mothencrg 1 ‘enc college’ 0 ‘DK--not applicable’ -1 ‘enc
other activity’.
****************************.

***********enc father.
compute      fathencrg = 999.
if s043 = 1  fathencrg =  1.
if s043 = 2  fathencrg = -1.
if s043 = 3  fathencrg = -1.
if s043 = 4  fathencrg = -1.
if s043 = 5  fathencrg = -1.
if s043 = 6  fathencrg =  0.
if s043 = 7  fathencrg =  0.
missing values fathencrg (999).
Variable label fathencrg ‘father encouraged college attendance’.
Value labels   fathencrg 1 ‘enc college’ 0 ‘DK--not applicable’ -1 ‘enc
other activity’.
****************************.

**********encourage friend.
compute      frndencrg = 999.
if s046 = 1  frndencrg =  1.
if s046 = 2  frndencrg = -1.
if s046 = 3  frndencrg = -1.
if s046 = 4  frndencrg = -1.
if s046 = 5  frndencrg = -1.
if s046 = 6  frndencrg =  0.
missing values frndencrg (999).
Variable label frndencrg ‘Friend encouraged college attendance’.
Value labels   frndencrg 1 ‘enc college’ 0 ‘DK--not applicable’ -1 ‘enc
other activity’.
****************************.

***********mentor encourage.
compute      mntrencrg = 999.
if s047 = 1  mntrencrg =  1.
if s047 = 2  mntrencrg = -1.
if s047 = 3  mntrencrg = -1.
if s047 = 4  mntrencrg = -1.
if s047 = 5  mntrencrg = -1.
if s047 = 6  mntrencrg =  0.
missing values mntrencrg (999).
```

```
Variable label mntrencrg 'mentor encouraged college attendance'.
Value labels   mntrencrg 1 'enc college' 0 'DK--not applicable' -1 'enc
other activity'.
*****************************.
***************teacher encourage.
compute        tchrencrg = 999.
if s048 = 1    tchrencrg =  1.
if s048 = 2    tchrencrg = -1.
if s048 = 3    tchrencrg = -1.
if s048 = 4    tchrencrg = -1.
if s048 = 5    tchrencrg = -1.
if s048 = 6    tchrencrg =  0.
missing values tchrencrg (999).
Variable label tchrencrg 'teacher encouraged college attendance'.
Value labels   tchrencrg 1 'enc college' 0 'DK--not applicable' -1 'enc
other activity'.
execute.
*****************************.
```

Should one use the binary or trichotomous measures?
On a conceptual level, there is no singular correct answer—one can make an argument for either the binary or trichotomous approach.

However, empirically, it is possible to examine which measures best fit the data. As an empirical test, for both of the coding schemas, I included each of the five measures in a regression on a host of outcome measures and examined which set of measures best fit the data and had the smallest amount of error in the estimates. The table below shows the results. **The trichotomous measure best fits the data.**

Table 1

Results from logistic regressions on a host commonly used outcome measures

	BIC Scores		Smaller Std Errors	
	Binary	**Trichotomous**	**Binary**	**Trichotomous**
Aspire to BA	-69,681	**-69,795**		**X**
Expect to get a BA	-68,460	**-68,568**		**X**
Took SAT/ACT	-71,254	**-71,321**		**X**
College Plans	**-76,824**	-76,775		**X**
Four yr College Plans	-73,329	**-73,383**		**X**
Attended College	-68,938	**-68,981**		**X**
Attended 4yr College	-67,696	**-67,806**		**X**
Completed BA--4 yrs	-56,359	**-56,388**		**X**
Completed BA--5 yrs	-35,334	**-35,377**		**X**
Completed BA--6 yrs	-15,321	**-15,347**		**X**

Creating Indices
Regardless of which coding schema one opts to use (binary or trichotomous) they may want to create an index or two out of the encouragement questions, as there are quite a few of them. This section of the memo will detail how to make a singular additive index of encouragement from all significant others and two indices of encouragement that tap different sources of encouragement—familial (parental) and non-familial members.

As the trichotomous measure best fits the data I will uses these specific indicators. However, one can easily use binary measures—they just need to replace the trichotomous variables in the code below with the binary variables.

Singular additive index:
This index is advantageous in that it only uses one degree of freedom.

```
*******additive encouragement index*******.
```
Please note: The entire syntax is at the end. Parts my not work on their own.

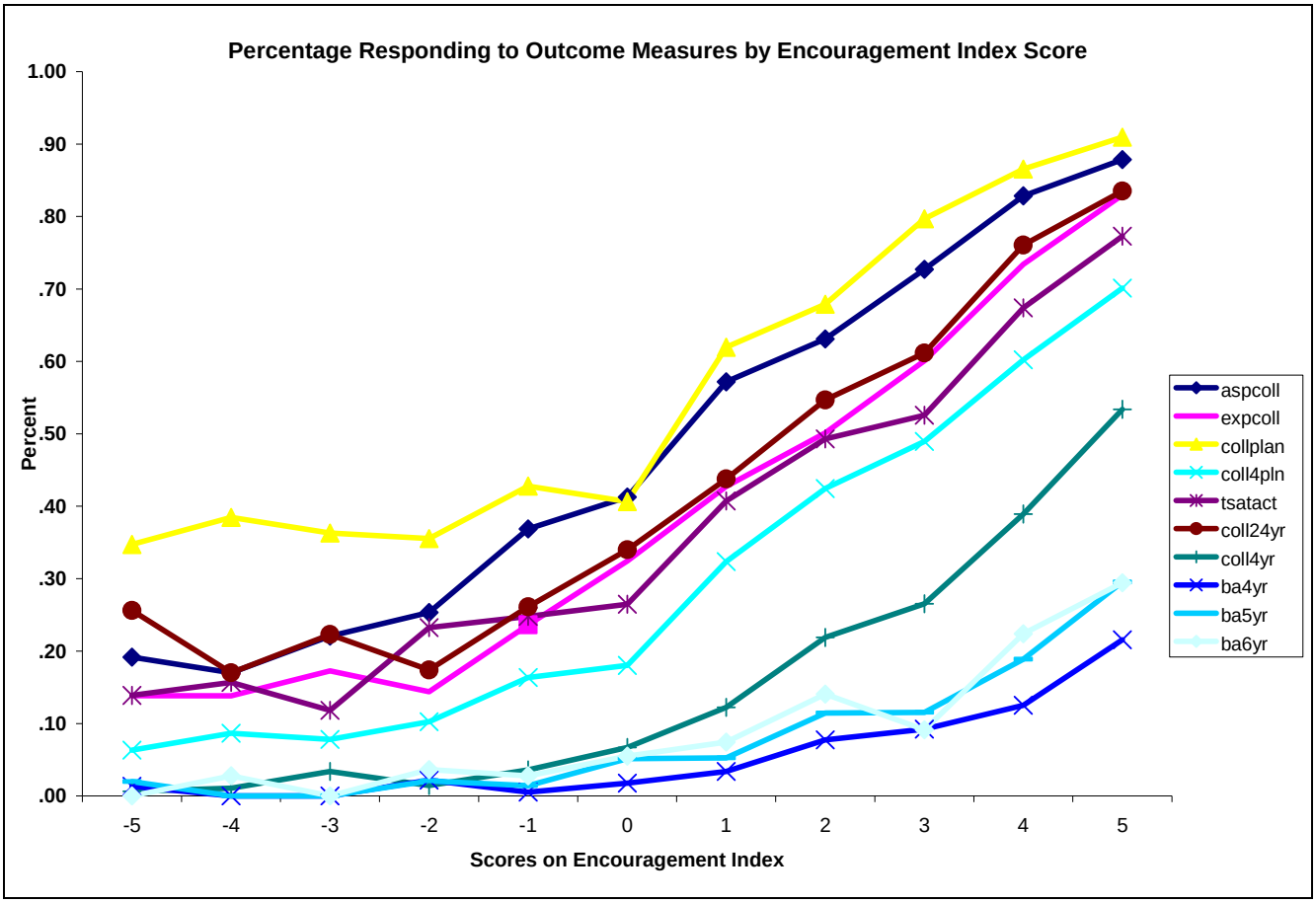
```
compute encrgindex = sum(mothencrg, fathencrg, frndencrg, mntrencrg,
tchrencrg).

Variable label encrgindex 'additive encouragement to attend college index,
qs, 43, 44, 46 to 48'.
```

Frequency:

		Frequency	Percent	Valid Percent	Cumulative
Valid	-5.00	193	2.0	2.0	2.0
	-4.00	110	1.1	1.2	3.2
	-3.00	180	1.9	1.9	5.1
	-2.00	167	1.7	1.8	6.8
	-1.00	263	2.7	2.8	9.6
	.00	289	3.0	3.0	12.6
	1.00	474	4.9	5.0	17.6
	2.00	445	4.6	4.7	22.2
	3.00	1016	10.5	10.6	32.9
	4.00	1306	13.5	13.7	46.6
	5.00	5097	52.8	53.4	100.0
	Total	9540	98.8	100.0	
Missing	System	118	1.2		
Total		9658	100.0		

--As you can see the measure is skewed, with nearly half of the cases reporting a value of 5, everyone encouraged college attendance. On the other end of the scale, only a few respondents respond with values in the negative range. The graph below shows the proportion of students that noted having college aspirations, plans, took preparatory steps, attended and completed college by their scores on the encouragement index. As you can see the respondents that report scores of -5 to -2 have very similar values on all of the outcome variables, so one could argue that the -2 to the -5 categories could be collapsed due to their similarity in regards to the outcome and their relatively small N for each specific group. However, empirical analyses similar to the one displayed in Table 1 conclude that an additive index fits the data better than an index with the -2 to -5 categories collapsed for all outcomes except college completion in four and six years.



Index of Familial (Parental) and Non-familial Encouragement:

This allows for an index of familial and non-familial encouragement. The benefit of this index as it allows one to examine whether encouragement from the family of origin operates differently from non-familial encouragement.

Please note: The entire syntax is at the end. Parts my not work on their own.

```
compute encprnt = sum(mothencrg, fathencrg).
variable label encprnt 'parental encourage summed with pos and neg'.
compute encprnt2 = encprnt.
if encprnt = -2 encprnt2 = -1.
variable label encprnt2 'parental encourage with short tail at -1'.
*short tail variable was constructed due to the smaller sample size of the -1 and
-2 populations and the fact that these two groups fit pretty similar profiles.
compute encnonfam = sum(frndencrg, mntrencrg, tchrencrg).
variable label encnonfam 'non-family encourage summed with pos and neg'.
```

***** Entire code for encouragement measures.**
***** Use this instead of the explanatory bits above.**

```
************encouragement measures .
missing values
 s043 s044 s045 s046 s047 s048 (-99797 thru -999) .
execute .

***********enc father.
compute      encfath = -999.
if s043 = 1  encfath =  1.
if s043 = 2  encfath =  0.
if s043 = 3  encfath =  0.
if s043 = 4  encfath =  0.
if s043 = 5  encfath =  0.
if s043 = 6  encfath =  0.
if s043 = 7  encfath =  0.
missing values encfath (-999).
Variable label encfath 'father encouraged college attendance, 1 is yes'.
*****************************.
***********enc mother.
compute        encmoth = -999.
if s044 = 1    encmoth =  1.
if s044 = 2    encmoth =  0.
if s044 = 3    encmoth =  0.
if s044 = 4    encmoth =  0.
if s044 = 5    encmoth =  0.
if s044 = 6    encmoth =  0.
if s044 = 7    encmoth =  0.
missing values encmoth (-999).
Variable label encmoth 'mother encouraged college attendance, 1 is yes'.
*****************************.
***********enc sibling.
compute        encsib = -999.
if s045 = 1    encsib =  1.
if s045 = 2    encsib =  0.
if s045 = 3    encsib =  0.
if s045 = 4    encsib =  0.
if s045 = 5    encsib =  0.
if s045 = 6    encsib =  0.
if s045 = 7    encsib =  0.
missing values encsib (-999).
Variable label encsib 'sibling encouraged college attendance, 1 is yes'.
*****************************.

**********encourage friend.
compute      encfrnd = -999.
if s046 = 1  encfrnd =  1.
if s046 = 2  encfrnd =  0.
if s046 = 3  encfrnd =  0.
if s046 = 4  encfrnd =  0.
if s046 = 5  encfrnd =  0.
if s046 = 6  encfrnd =  0.
```

```
missing values encfrnd (-999).
Variable label encfrnd 'friend encouraged college attendance, 1 is yes'.
*****************************.

***********mentor encourage.
compute      encmntr = -999.
if s047 = 1  encmntr =  1.
if s047 = 2  encmntr =  0.
if s047 = 3  encmntr =  0.
if s047 = 4  encmntr =  0.
if s047 = 5  encmntr =  0.
if s047 = 6  encmntr =  0.
missing values encmntr (-999).
Variable label encmntr 'mentor encouraged college attendance, 1 is yes'.
*****************************.

**************teacher encourage.
compute        enctchr = -999.
if s048 = 1    enctchr =  1.
if s048 = 2    enctchr =  0.
if s048 = 3    enctchr =  0.
if s048 = 4    enctchr =  0.
if s048 = 5    enctchr =  0.
if s048 = 6    enctchr =  0.
missing values enctchr (-999).
Variable label enctchr 'teacher encouraged college attendance, 1 is yes'.
execute.

* 2) Creating the trichotomous measures: .
* Below is the code to create the trichotomous measures.
* The code is pretty straightforward. Encouragement is coded as 1, *
doesn't know and not applicable are coded as zero,
* missing is considered missing, and entering a trade/ *
vocational/apprenticeship program,
* entering military service, getting a job and getting
* married are coded as -1.

************encouragement measures.
***********enc father.
compute      fathencrg = -999.
if s043 = 1  fathencrg =  1.
if s043 = 2  fathencrg = -1.
if s043 = 3  fathencrg = -1.
if s043 = 4  fathencrg = -1.
if s043 = 5  fathencrg = -1.
if s043 = 6  fathencrg =  0.
if s043 = 7  fathencrg =  0.
missing values fathencrg (-999).
Variable label fathencrg 'father encouraged college attendance'.
Value labels   fathencrg 1 'enc college' 0 'DK--not applicable' -1 'enc
other activity'.
*****************************.

***********enc mother.
```

```
compute        mothencrg = -999.
if s044 = 1    mothencrg =  1.
if s044 = 2    mothencrg = -1.
if s044 = 3    mothencrg = -1.
if s044 = 4    mothencrg = -1.
if s044 = 5    mothencrg = -1.
if s044 = 6    mothencrg =  0.
if s044 = 7    mothencrg =  0.
missing values mothencrg (-999).
Variable label mothencrg 'mother encouraged college attendance'.
Value labels   mothencrg 1 'enc college' 0 'DK--not applicable' -1 'enc
other activity'.
*****************************.

***********enc sibling .
compute        sibencrg = -999.
if  s045 = 1    sibencrg =  1.
if  s045 = 2    sibencrg = -1.
if  s045 = 3    sibencrg = -1.
if  s045 = 4    sibencrg = -1.
if  s045 = 5    sibencrg = -1.
if  s045 = 6    sibencrg =  0.
if  s045 = 7    sibencrg =  0.
missing values sibencrg (-999).
Variable label sibencrg 'Sibling encouraged college attendance'.
Value labels   sibencrg 1 'enc college' 0 'DK--not applicable' -1 'enc
other activity'.

**********encourage friend.
compute      frndencrg = -999.
if s046 = 1  frndencrg =  1.
if s046 = 2  frndencrg = -1.
if s046 = 3  frndencrg = -1.
if s046 = 4  frndencrg = -1.
if s046 = 5  frndencrg = -1.
if s046 = 6  frndencrg =  0.
missing values frndencrg (-999).
Variable label frndencrg 'Friend encouraged college attendance'.
Value labels   frndencrg 1 'enc college' 0 'DK--not applicable' -1 'enc
other activity'.
*****************************.

***********mentor encourage.
compute      mntrencrg = -999.
if s047 = 1  mntrencrg =  1.
if s047 = 2  mntrencrg = -1.
if s047 = 3  mntrencrg = -1.
if s047 = 4  mntrencrg = -1.
if s047 = 5  mntrencrg = -1.
if s047 = 6  mntrencrg =  0.
missing values mntrencrg (-999).
Variable label mntrencrg 'mentor encouraged college attendance'.
Value labels   mntrencrg 1 'enc college' 0 'DK--not applicable' -1 'enc
other activity'.
```

```
*****************************.
***************teacher encourage.
compute        tchrencrg = -999.
if s048 = 1    tchrencrg =  1.
if s048 = 2    tchrencrg = -1.
if s048 = 3    tchrencrg = -1.
if s048 = 4    tchrencrg = -1.
if s048 = 5    tchrencrg = -1.
if s048 = 6    tchrencrg =  0.
missing values tchrencrg (-999).
Variable label tchrencrg 'teacher encouraged college attendance'.
Value labels   tchrencrg 1 'enc college' 0 'DK--not applicable' -1 'enc
other activity'.

* s043 encfath fathencrg .
* s044 encmoth mothencrg .
* s045 encsib sibencrg   .
* s046 encfrnd frndencrg .
* s047 encmntr mntrencrg .
* s048 enctchr tchrencrg .

missing values s043 s044 s045 s046 s047 s048    () .

do repeat
a = s043      s044      s045     s046      s047      s048    /
b = encfath   encmoth   encsib   encfrnd   encmntr   enctchr /
c = fathencrg mothencrg sibencrg frndencrg mntrencrg tchrencrg .
if a = -99797 b = -99797 .
if a = -99797 c = -99797 .
if missing(b) b = -999 .
if missing(c) c = -999 .
end repeat .

missing values
 s043      s044      s045     s046      s047      s048
 encfath   encmoth   encsib   encfrnd   encmntr   enctchr
 fathencrg mothencrg sibencrg frndencrg mntrencrg tchrencrg (-99797 thru -
999) .
compute encrgindex =
 sum(mothencrg, fathencrg, frndencrg, mntrencrg, tchrencrg).
Variable label encrgindex
 'additive encouragement to attend college index, qs, 43, 44, 46 to 48'.

*****************************.

compute encprnt = sum(mothencrg, fathencrg).
variable label encprnt 'parental encourage summed with pos and neg'.
compute encprnt2 = encprnt.
if encprnt = -2 encprnt2 = -1.
variable label encprnt2 'parental encourage with short tail at -1'.
*short tail variable was constructed due to the smaller sample size
* of the -1 and -2 populations and the fact that these two groups fit
pretty similar profiles.
compute encnonfam = sum(frndencrg, mntrencrg, tchrencrg).
```

```
variable label encnonfam 'non-family encourage summed with pos and neg'.
execute .


missing values
 encprnt encprnt2 encnonfam encrgindex
 s043      s044      s045     s046      s047      s048
 encfath   encmoth   encsib   encfrnd   encmntr   enctchr
 fathencrg mothencrg sibencrg frndencrg mntrencrg tchrencrg () .
execute .

if missing(encnonfam ) encnonfam = -999 .
if missing(encprnt   ) encprnt   = -999 .
if missing(encprnt2  ) encprnt2  = -999 .
if S043 = -99797 encnonfam  = -99797 .
if S043 = -99797 encprnt    = -99797 .
if S043 = -99797 encprnt2   = -99797 .
if S043 = -99797 encrgindex = -99797 .

add value labels
 encprnt encprnt2 encnonfam
 encfath   encmoth   encsib   encfrnd   encmntr   enctchr
 fathencrg mothencrg sibencrg frndencrg mntrencrg tchrencrg
 -999  'Missing for some other reason (DK/Refused/Skipped Question)'
 -99797 'No more valid answers (possibly incomplete student survey)' .
```