```
Crosstabs tables= dependent by independent by control
        /cells = column count
        /statistics = phi btau chisq
```

```
Crosstabs tables= dependent by independent
        /dependent by independent by control
        /cells = column count
        /statistics = phi btau chisq
```

Attitude toward Recreational Marijuana by Ideology

		liberal		
		conserv	middle	liberal
Support Rec MJ	low	57.3%	31.3%	19.3%
	medium	20.6%	32.3%	32.4%
	high	22.1%	36.5%	48.3%
Total		335	288	358

Taub = .282; Chi-square = 116.3; 4df, p =.000.

Elaboration Paradigm
(things that can happen in control tables)

Common Terms

1. replication
2. specification

3a explanation
3b interpretation

4. suppression
5. distortion

Elaboration Paradigm
(things that can happen in control tables)

Elaboration Terms	Psych Terms	Common Terms
1. replication		
2. specification	moderation	
3a explanation		spurious
3b interpretation	mediation	intervening
4 suppression		
5. distortion		

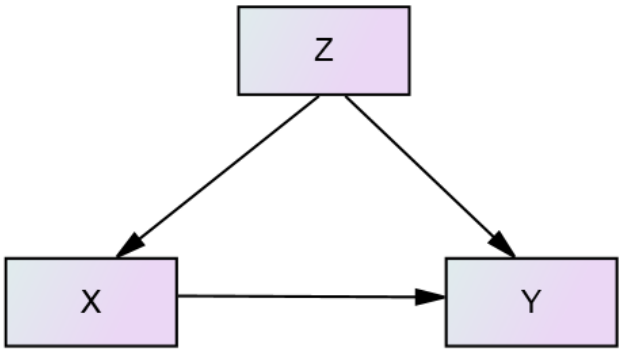
Elaboration Paradigm
(things that can happen in control tables)

Elaboration Terms	**What we see**
1. replication	same results as original crosstab
2. specification	one or more sub-table is stronger than the other(s)
3a explanation	sub-tables are weaker than the original crosstab
3b interpretation	sub-tables are weaker than the original crosstab
4. suppression	sub-tables are stronger than the original crosstab
5. distortion	any other result

Alternative terms for things that can happen in control tables

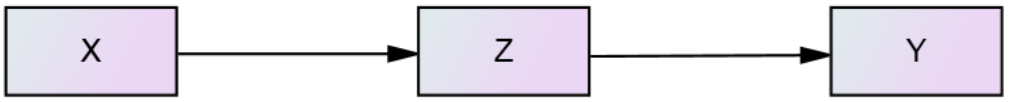
Elaboration Paradigm Terms	Alternative Terms
1. replication	
2. specification	interaction; moderation
3a explanation	spurious; confounding
3b interpretation	intervening; mediation
4. suppression	
5. distortion	

Graphic display of Explanation



.15 (.30)

Graphic display of interpretation



.15(.30)

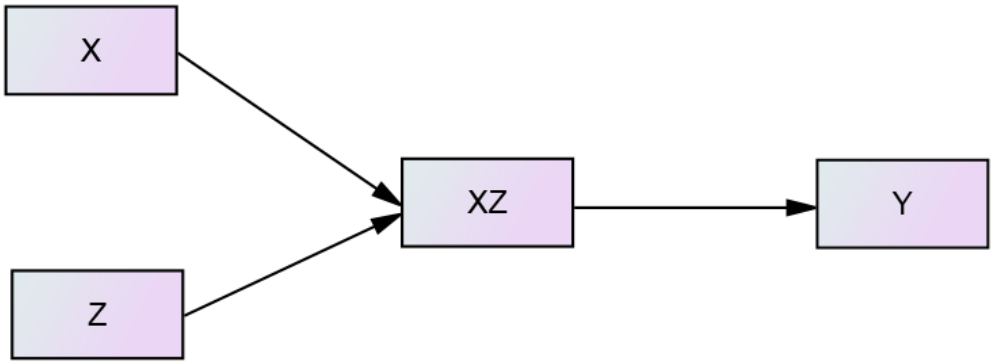
Graphic display of specification

If Z=1

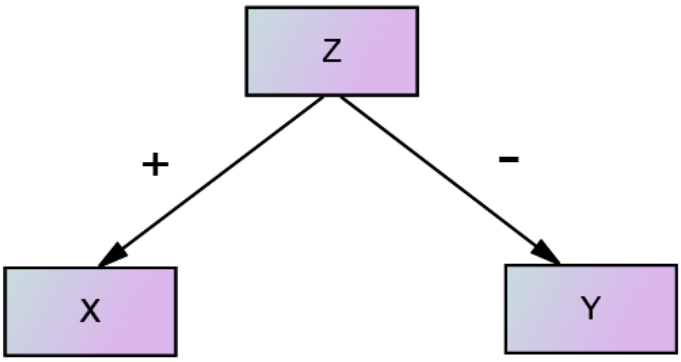
X ←→Y

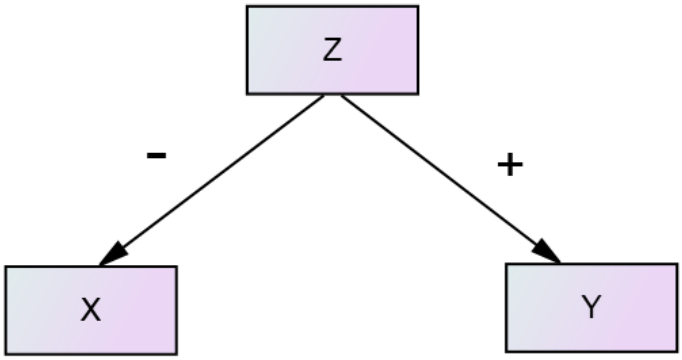
If Z ≠ 1

X ←/→ Y

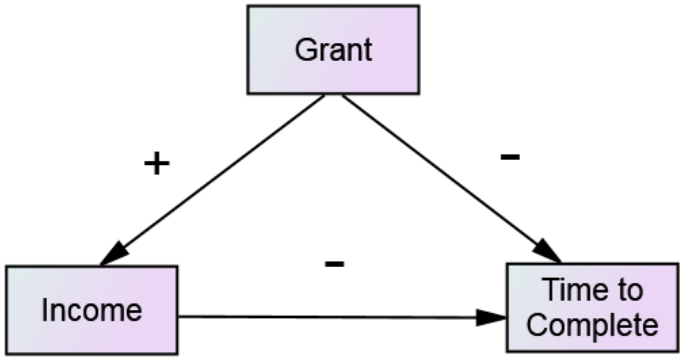

X
Z
XZ
Y

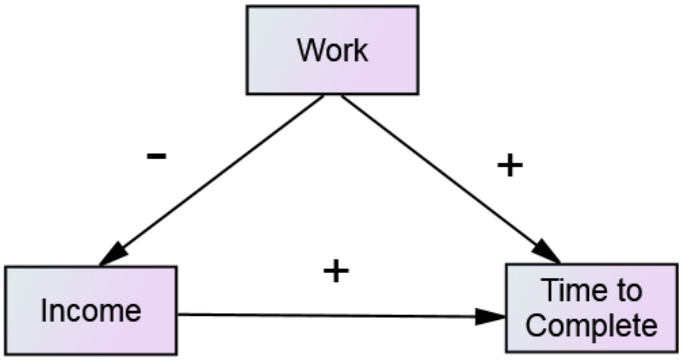
Graphic display of Supression



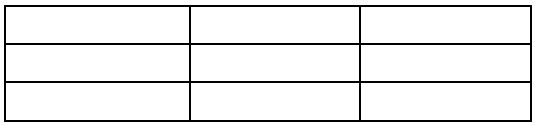


Example of Supression
Time to Ph.d Completion Study



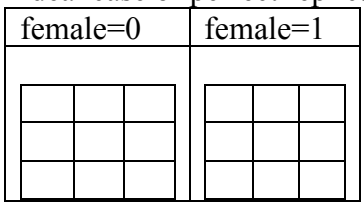


Replication



tau_b = .28

Ideal case of perfect replication



tau_b = .28 tau_b = .28

Replication (actual results)

tau_b = .28

female=0	female=1

tau_b = .253 tau_b = .322

Do the subgroups differ?
Here are the results:
Toral tau_b
Male tau_b = .253; p= .000
Female tau_b = .322; p =. 000

Three approaches to deciding

1.
Significance criterion

Relationship remains significant in both subgroups
Male: tau_b = .253 (.039) p= .000
Female; tau_b = .322 (.038) p =. 000

Therefore not different

2.
Rule of Thirds criterion

In this case, 1/3 of .284 = .095.

.284 - .095 = .189 lower than male tau_b of .253
.284 + .095 = .379 higher than female tau_b of .322

Therefore not different

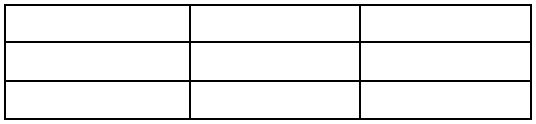
3.
Confidence Interval criterion

Male .253 + 1.96(.039) = .323. Therefore Confidence interval up to .323
Female .322 - 1.96 (.038) = .248 Therefore confidence interval down to .253

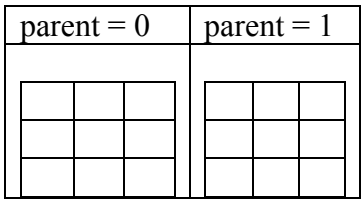
Observed values	Confidence Values
Male . 252	.248
Female .322	.323

Therefore very nearly but not quite significantly different

Specification (complete)



taub = .28

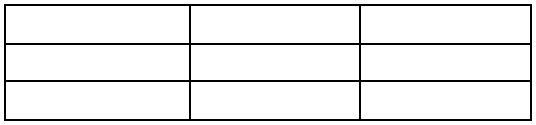


tau_b = .45 tau_b = .00 fictitious MOAs

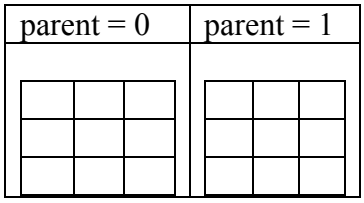
Specification (partial)

MJ by Ideology

Conserv Center Liberal



tau_b = .28



tau_b = .351 tau_b = .182 PPIC Oct 2016

non parents taub = .351 (.032) p =.000.
parents taub = .182 (048) p =.000.

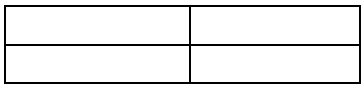
Calculating if difference is significant
Minimum non parent taub : 351 – 1.96(.032) = .288
Maximum parent taub: ..182 + 1.96(.048) = .276

They do not overlap, therefore significantly different.

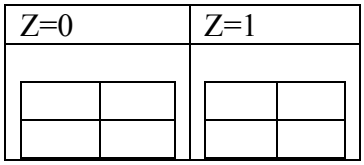
My results with statistical control.

	N	Tau_b	std err	p
Ideology ←→Mj3				
	981	.284	(.027)	.000
Control for Female				
Female	487	.322	(.038)	.000
Male	495	.253	(.039)	.000
Control for Parent				
Non-parent	630	.351	(.032)	.000
parent	336	.182	(.048)	.000
Control for Hispanic				
Non-Hispanic	772	.302	(.030)	.000
Hispanic	209	.192	(.063)	.002
Control for Partisanship				
Repub	228	.084	(.060)	.161
Indep	366	.227	(.044)	.000
Democ	364	.278	(.047)	.000

Explanation/Interpretation

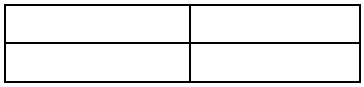


Φ = .3

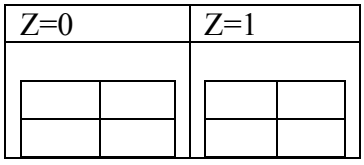


Φ = .00 Φ = .00

Partial Explanation/Interpretation



Φ = .3



Φ = .15 Φ = .15

Race and Crime example

Race→Social Class→Crime

Crime	White	Other
Low	XX	
High		XX

Phi =.4

Control for Social Class

Low Social Class

Crime	White	Other
Low		
High	XX	XX

Phi =.0

High Social Class

Crime	White	Other
Low	XX	XX
High		

Phi =.0

Analytic Conclusion

Race → Class → Crime

Photo → Emotion → Attitude toward the Mission

Coffins → sad/proud → Support for Mission.

Aboriginal Deaths in Custody

Aborig→ Die in Custody

Result	Aborig	Non
Die	XX	
OK		XX

Phi =.4

Control for Whether in Custody

Custody

Result	Aborig	Non
Die	XX	XX
OK		

Phi =.0

Not-Custody

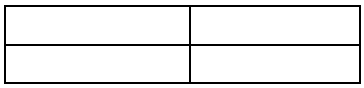
Result	Aborig	Non
Die		
OK	XX	XX

Phi =.0

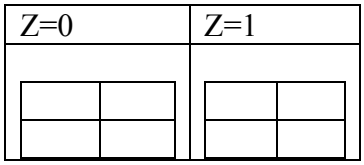
Analytic Conclusion

Aborig → Custody → Die

Supression

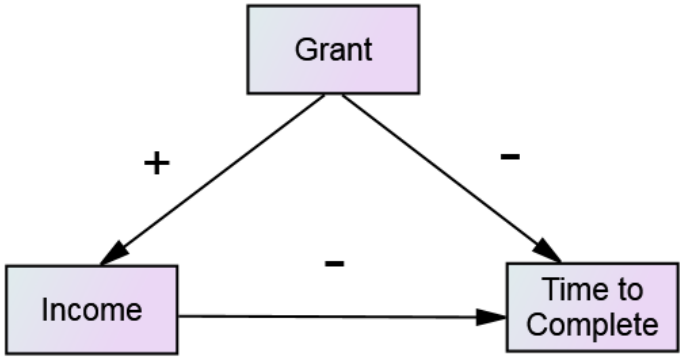


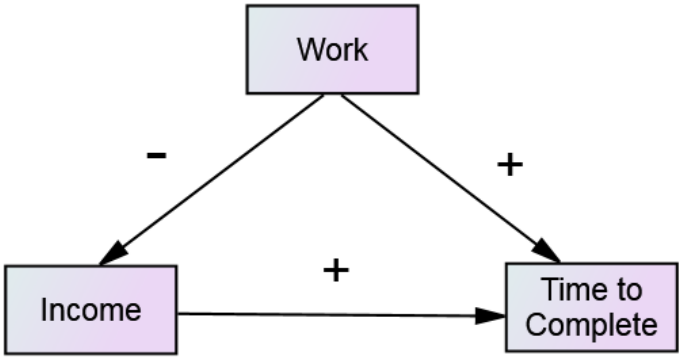
Φ = .0



Φ = .22 Φ = .23

Example of Supression
Time to Ph.d Completion Study





Summary Notes on Statistical Elaboration
J. Fletcher

Name of Effect	**Crosstab Results**	**Symbolic Representation**	**Regression Results**
Replication	Same results in control tables as in original table without controls	Irrespective of Z X←→Y	X predicts Y with and without Z being in equation
Specification (moderation)	Only one (or some) of control tables show relationship from original table	If Z = 1 X←→Y If Z ≠ 1 X←/→Y Or, preferably X ↘ Z → XZ→Y	An interaction term of the form X*Z predicts Y
Interpretation (mediation)	All control tables show weaker relationship than original table	X→Z→Y	Entering Z into equation reduces or eliminates X's influence on Y
Explanation	All control tables show weaker relationship than original table	Z ↙ ↘ X← /→Y	Entering Z into equation reduces or eliminates X's influence on Y
Suppression	Control tables reveal a relationship that was not evident in original table without controls	Without control for Z: X←/→Y With control for Z X←→Y	Entering Z into equation allows X to predict Y
Distortion	Control tables show complex pattern of results		Entering Z into equation produces complex pattern