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This article raises some questions about the usefulness of meta-analysis as a means of reviewing quantitative research in the social sciences. When a meta-analytic model for SAT coaching is used to predict results from future studies, the amount of prediction error is quite large. Interpretations of meta-analytic regressions and quantifications of program and study characteristics are shown to be equivocal. The match between the assumptions of the meta-analytic model and the data from SAT coaching studies is not good, making statistical inferences problematic. Researcher subjectivity is no less problematic in the context of a meta-analysis than in a narrative review.

Keywords: *meta-analysis; literature review; SAT coaching; statistical inference*

[illegible] *Meta-Analysis in Social Research* ([illegible] 1981) [illegible] *Statistical Methods for Meta-Analysis* ([illegible] 1985) [illegible] 1980 [illegible] A [illegible] *meta-analysis* [illegible] C [illegible] (C) [illegible] 1980 [illegible] 2003 [illegible] 1,000 [illegible] *Experimental and Quasi-Experimental Design for Generalized Causal Inference,* [illegible]

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20 ... (... C ...
C ... 2002, 446).

... (... 1986; ... 1988; B ... 2004; B ... 2003).
... (... 1990; ... 1988). A ...

... A ... ( ) ... ( ) ... B ...
... A ... (B ... 2001, 2002, 2004, 2004), ...
... A ...
... A ...

... A ...
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1990. ... B ...

TABLE 1: Observed and Predicted Effects From New Coaching Studies

Re	S d	C ac Effec	P ed c ed C ac Effec F Bec e (1990)			
			M de A	M de B	M de C	M de D
H e e (1984)	SAT-V	57	30	11.6	12.9	24.5
	SAT-M	37	30	25.5	1.2	35.8
F a e (1987)	SAT-V	16	30	11.6	1.9	0.8
	SAT-M	16	30	25.5	13.6	12.1
Ha e (1988)	SAT-M	21	30	25.5	14.5	8.1
W a (1988)	SAT-V	11	30	11.6	2.7	0.5
	SAT-M	16	30	25.5	14.4	11.8
S edec (1989)	SAT-V	0	30	11.6	2.7	0.2

TABLE 2: Average Prediction Error From Becker's (1990) Meta-Analytic Models

[illegible] (C[illegible] [illegible]), [illegible] (C[illegible]), [illegible] (A[illegible] C[illegible]).[7] [illegible]

[illegible] D, [illegible] 21(3.43([illegible])- D8([illegible] 1)-250 [illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

TABLE 4: Estimated Coaching Effects in Randomized Studies

Re a d S d	*SAT-M*	*SAT-V*
A de a a d P e (1980)		
Sc A		22
Sc B		9
Sc C		14
Sc D		14
Sc E		1
Sc F		14
Sc G		18
Sc H		1
E a a d P e (1973)		
G A	12	
G B	25	
G C	11	
La c e e (1985)	8	0
R be a d O e e (1966)		
Sc A		17
Sc B	12	
Z a (1988)	51	14
Med a effec e a e	12	14

TABLE 5:

[illegible]

[illegible] A. G[illegible] G[illegible] A[illegible] 10-[illegible] 4 [illegible] A. [illegible] A. [illegible] A. G[illegible] B. [illegible] 24 [illegible] G[illegible] G[illegible] C[illegible] C[illegible]

[illegible] C. [illegible]

[illegible] C. B[illegible] (1978). A[illegible] A[illegible] A[illegible] G[illegible] A[illegible] 55 [illegible] 40 [illegible] C[illegible] G[illegible]

[illegible] C. B[illegible] C[illegible] (1979). [illegible]

[illegible] B[illegible] (1982). G[illegible]

17

556 1,566

(C A).

(B 1990, 397). B

1982). A

Calculating effect sizes for meta-analytic regressions.

[illegible] 72 -63( )-63( )5(8( )-1.670.5(23 333

[illegible]

[illegible] (h),

[illegible]

[illegible] X [illegible] Y [illegible]

$$X^{C}_{hij} \sim N\left(\mu^{C}_{hi}, \sigma^{2}_{hi}\right) \text{ and } Y^{C}_{hij} \sim N\left(\nu^{C}_{hi}, \sigma^{2}_{hi}\right), \quad (4)$$

[illegible]

$$X^{U}_{hij} \sim N\left(\mu^{U}_{hi}, \sigma^{2}_{hi}\right) \text{ and } Y^{U}_{hij} \sim N\left(\nu^{U}_{hi}, \sigma^{2}_{hi}\right). \quad (5)$$

[illegible] σ^{2}_{hi} [illegible] $\mu^{C}_{hi}, \nu^{C}_{hi}, \mu^{U}_{hi}, \nu^{U}_{hi}$, [illegible] σ^{2}_{hi} [illegible] *population* [illegible]

[illegible] B [illegible]

[illegible] ? C[illegible]

A[illegible]: A[illegible]

[illegible] (D[illegible] 1953; [illegible] 1955; D[illegible] 1958; [illegible] 1979; B[illegible] 1986;

[illegible] (A[illegible] 1980) [illegible] 1980 [illegible] ([illegible] 1961; [illegible] 1965; [illegible] 1973; [illegible] C B[illegible] 1978; [illegible] 1980; [illegible] 1980).

C[illegible] B[illegible]

[illegible] B [illegible] (2003) [illegible]
[illegible] 50% [illegible]

[illegible] B [illegible]

C[illegible] [illegible] (1978), [illegible] (1980), [illegible] (1981), C[illegible] (1982), [illegible] B[illegible] (1989). [illegible] C[illegible] [illegible] -251.93 [illegible]

TABLE 6: Studies by Coaching Mode and Design

C ac T e	*Me d ca De*		
	Ra d ed C	*Ob e a a C*	*N C*
Sc -ba ed	R be a d O e e (1966)	D e (1953)	Pa e (1961)
	E a a d P e (1973)	F e c (1955)	Ma (1965)
	A de a a d P e (1980)	Dea (1958)	J (A a a, Ne
	S a (1992)	Keefa e (1976)	Y e) (1984)[a]
		K c (1979)	
		J (Sa F a c c e) (1984)[a]	
		B e (1986)	
		Re d a d Obe a (1987)	
		Ha e (1988)	
		W , C d , a d Ma e (1989)	
		Sc ede (1992)	
		W e (1996)	

C e c a -ba ed		F a e (1960)	Ka a (2002)
		W a (1962)	
		Fede a T ade C d a d ea a e	
		B Re a Off ce (1978)	
		B ea f C e P ec (1979)	
		R c (1980)	
		S d (1980)	
		Se , Be a d , a d K a (1982)	
		F a e (1987)	
		W a (1988)	
		Z a (1988)[a]	
		S edec (1989)	
		S (1989)	
		S (1990)	
		P e a d R c (1999)	
		B (2001)	
C e -ba ed	H e e (1984)		
	La c e e (1985)		

- [illegible]
- [illegible]
- [illegible]

[illegible] (2000) [illegible]

[illegible] A. C[illegible] (1982, 108) [illegible]

, 1 -2001

	Sa e S e[a] (C ac ed/T a)		
	G ade	Yea ( )	SES fb.9998 -7.9998 1.7004 79484019916 269.

Z a (-SES a e) (1988)	21/55	21/55	11	M e b c (ba)	NY	1985-1986	H
S (1989)	200/438	200/438	12	8 a e (b ba)	MD, D.C.	1987-1988	H
S edec (1989)	264/535	264/535	12	10 b c a d a e	PA	1988-1989	H
S (1990)	631/1,132	631/1,132	12	14 a e (b ba)	MD, NJ	1989	H
P e a d R c (1999)	427/2,086	427/2,086	11 , 12	M e b c a d a e	USA	1995-1996	M ed
B (2001)	503/3,144	503/3,144	11 , 12	M e b c a d a e	USA	1991-1992	M ed
Ra d ed d e Sc -ba ed c ac							
R be a d O e e (1966)	154/265	188/310	12	18 b c (a B ac , ba , a d a)	TN	1965	L
E a a d P e (1973)	NA	288/417	11	12 b c (ba a d b ba)	NJ, OH, PA	1970-1971	M ed
A de a a d P e (1980)	239/559	NA	11	8 b c a d a e	7 Ne E a d a e	1977-1978	M ed
J (Sa F a c c e) (1984)	23/35	23/35	11	M e b c (a B ac , ba)	CA	1983-1994	L
S a (1992)	61/122	61/122	12	3 b c (b ba)	CA	1988	M ed
C e c a c ac							
Z a (-SES a e) (1988)	16/33	16/33	11	M e b c (ba)	NY	1985-1986	L

(c ed)

C e -ba ed c ac							
H e e (1984)	42/71	61/93	9 , 10 , 11	1 b c (b ba)	FL	NR	M ed
La c e e (1985)	13/27	13/27	11	1 a e (b ba Ca c)	NY	NR	M ed

S d	G a d Mea	SAT-M	C G	D	VI	MI	AI	IP	TP	TS	OA	HW	CI	WC	AC
H ee	1	1	1	3.5	1	1	1	1	0	1	0	0	1	0	0
F a e	1	1	1	**15**	1	1	0	1	1	1	0	0	0	0	0
Ha e	1	1	1	4	0	1	1	1	0	1	0	0	0	0	1
W a	1	1	1	**15**	1	1	1	1	1	1	0	0	0	0	0
S edec	1	1	1	**15**	1	1	1	1	1	1	0	0	0	0	0
W , C d , a d Ma e	1	1	1	**15**	1	1	1	1	1	1	1	0	0	0	0
S	1	1	1	**15**	1	1	1	1	1	1	0	0	0	0	0
S a	1	1	1	4	1	1	0	0	0	1	0	0	0	0	0
Sc ede	1	1	1	16	0	1	2	1	1	1	1	0	0	0	0
H e a d Keffe	1	0	1	8	1	0	1	0	0	0	0	0	1	0	0
W e	1	0	1	68	1	0	2	1	1	1	0	0	0	0	0
P e a d R c	1	1	1	**15**	1	1	1	1	1	1	0	0	0	0	0
B	1	1	1	**15**	1	1	1	1	1	1	0	0	0	0	0
Ka a Yea 1	1	1	0	30	0	1	2	1	1	1	1	1	0	0	0
Ka a Yea 2	1	1	0	30	0	1	2	1	1	1	1	1	0	0	0

NOTE: D = d a f c ac (b d a e a e bee ed a Bec e ' [1990] e e), VI = e ba c , MI = a c- , AI = a a c , IP = e ac ce, TP = e ac ce, TS = e - a , OA = e ac e , WC = a - c , AC = a e a- e c .

S d	Yea	P b	Ma c	Ra d	ETS	Se	V
H ee	82	0	0	1	0	1	2
F a e	87	0	0	0	0	2	2
Ha e	88	0	0	0	0	1	2
W a	88	1	0	0	0	2	2
S edec	89	1	0	0	0	2	2
W , C d , a d Ma e	89	0	0	0	0	2	2
S	90	1	0	0	0	2	2
S a	92	0	0	1	0	1	2
Sc ede	92	0	0	0	0	2	2
H e a d Keffe	95	1	0	1	0	2	2
W e	96	0	1	0	0	2	2
P e a d R c	99	1	0	0	1	1	2
B	101	1	0	0	0	1	2
Ka a Yea 1	101	1	0	0	0	2	2
Ka a Yea 2	101	1	0	0	0	2	2

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2. A. [illegible] 1994, [illegible]

3. [illegible] g_{hi}^{C} [illegible] g_{hi}^{U} [illegible] B[illegible] 1988). [illegible]

4. [illegible] (1999) [illegible] (1989) [illegible] 1990 [illegible]

5. B[illegible] 2.

6. D[illegible] B[illegible] (1989) [illegible]

7. [illegible] C[illegible] D.

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