Lecture 28: Extras and Wrap-up

Monday, December 4, 2023

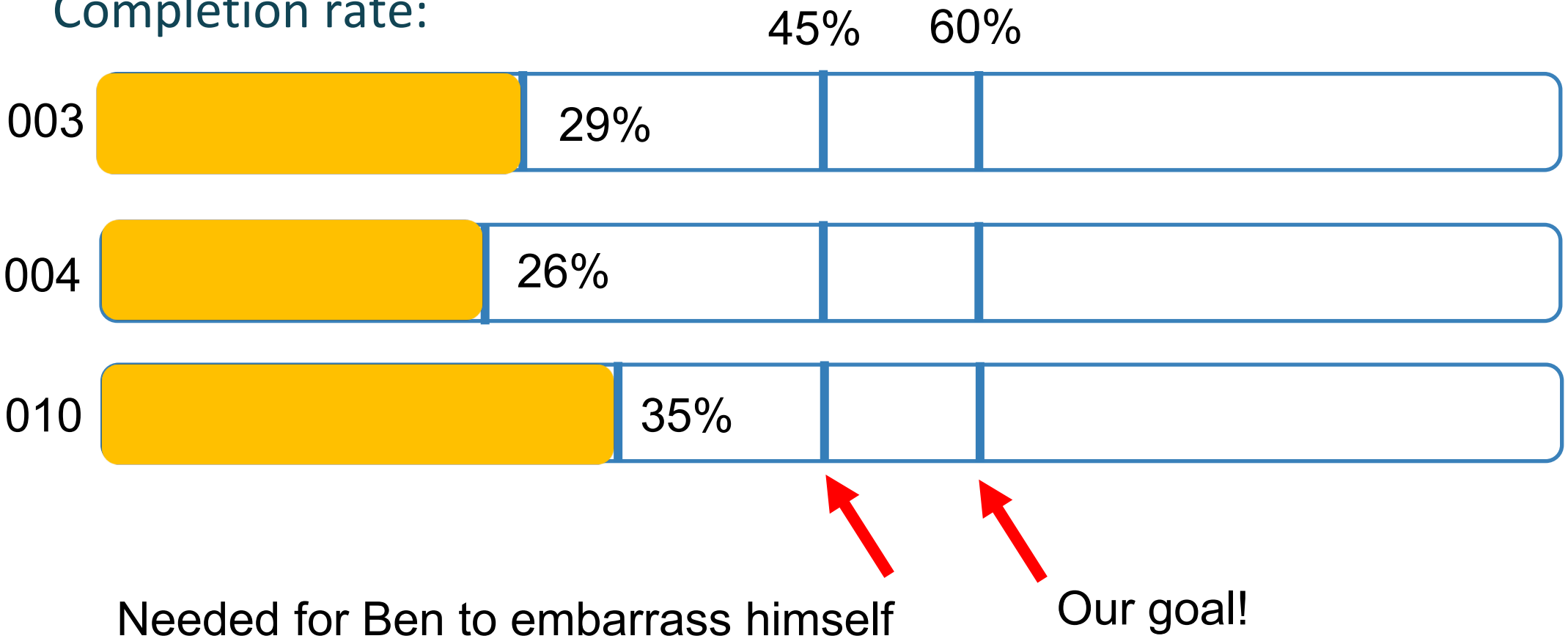
Your Teaching Fellows:

003/004:	Zahra Abolghasem	Bronwen Grocott
	Vasileia Karasavva	Ni An
010:	Thalia Lang	Malina Lemmons
	Ruoning Li	Irene Wen

Lectures: MWF 12:00 PM – 1:00 PM (003); 1:00 PM – 2:00 PM (004); 2:00 PM – 3:00 PM (010)
Office hours: Tuesdays 2:00 PM – 4:00 PM

Reminders

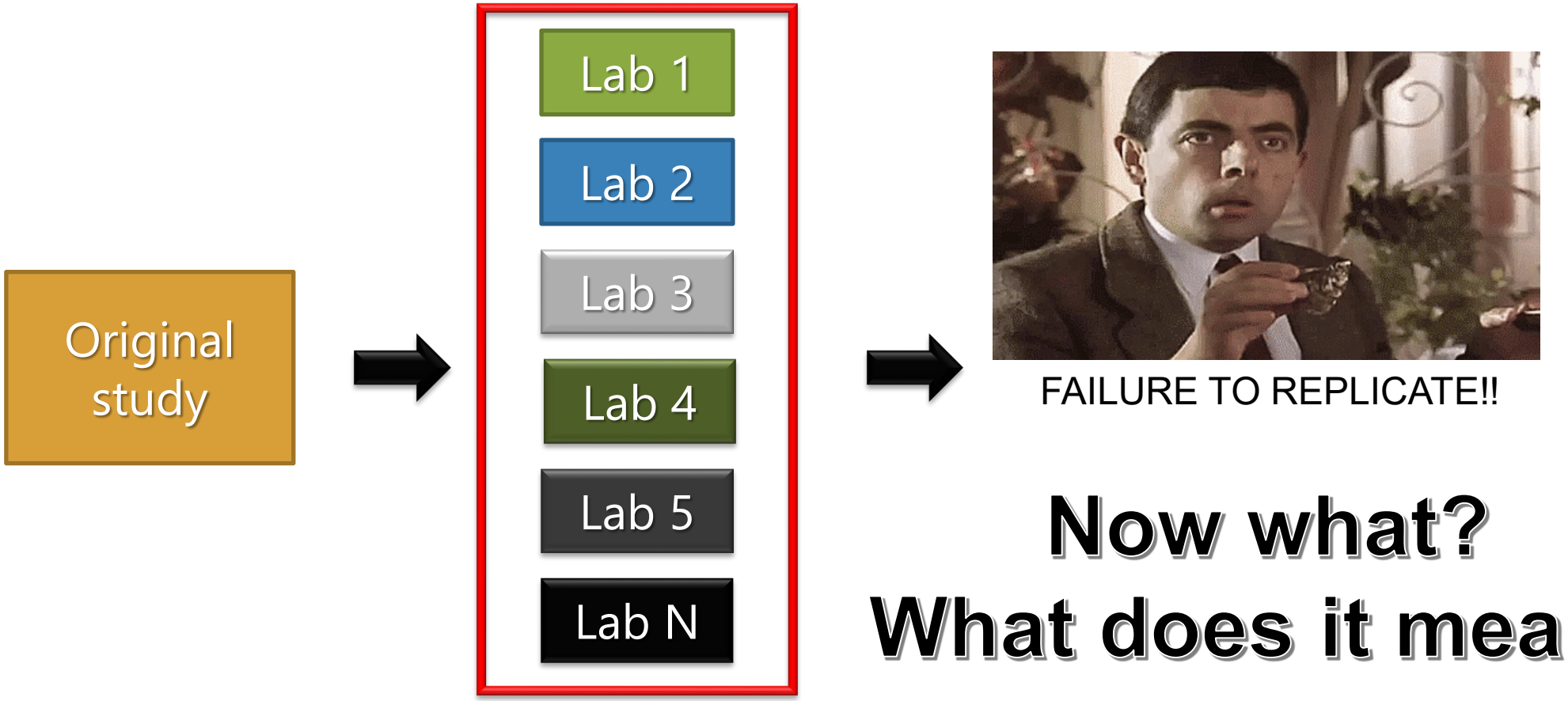
- Completion rate:



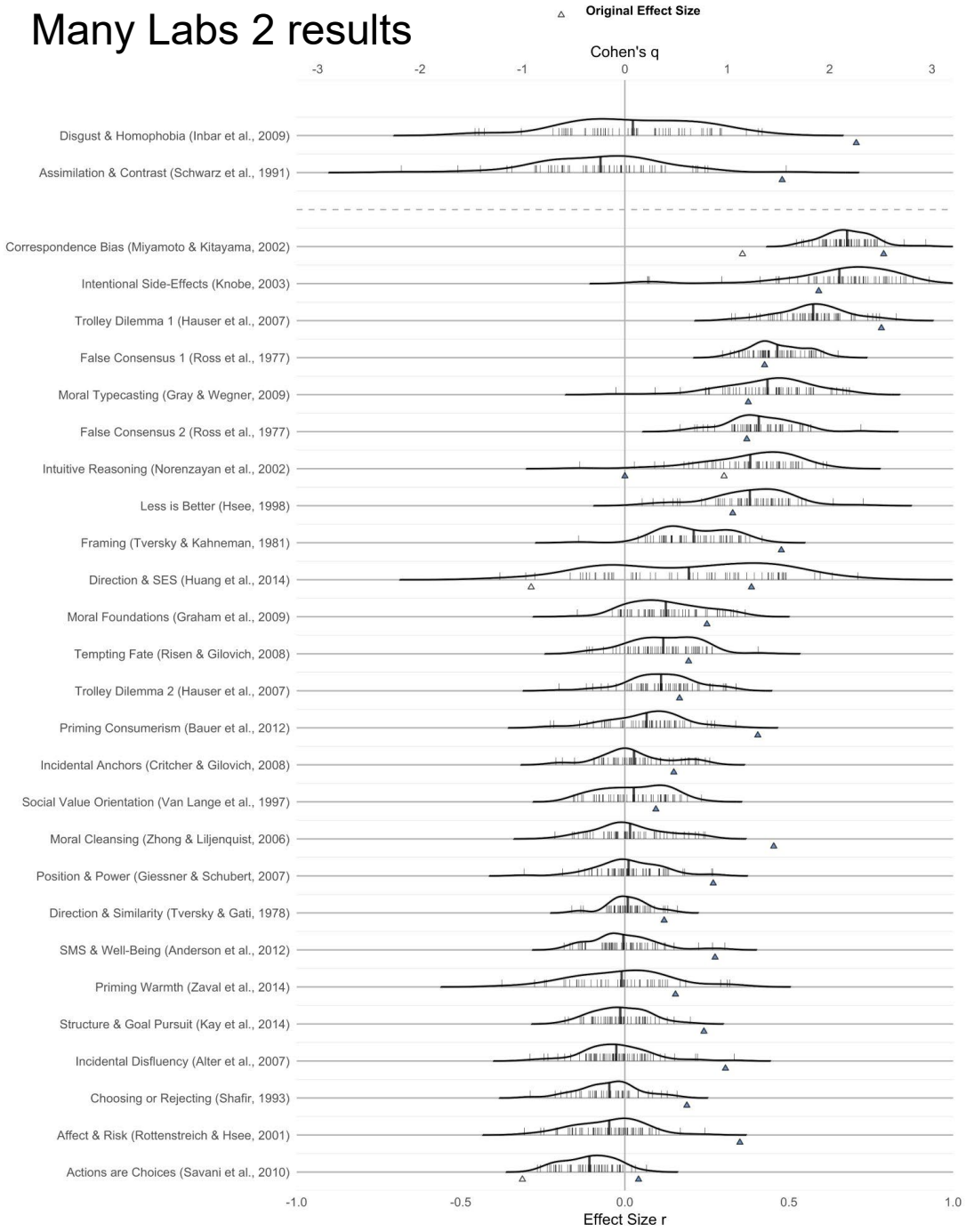
- Get your 4 HSP credits by tomorrow!

New Directions

- Human consequences of replication efforts?



Many Labs 2 results



28 findings re-tested

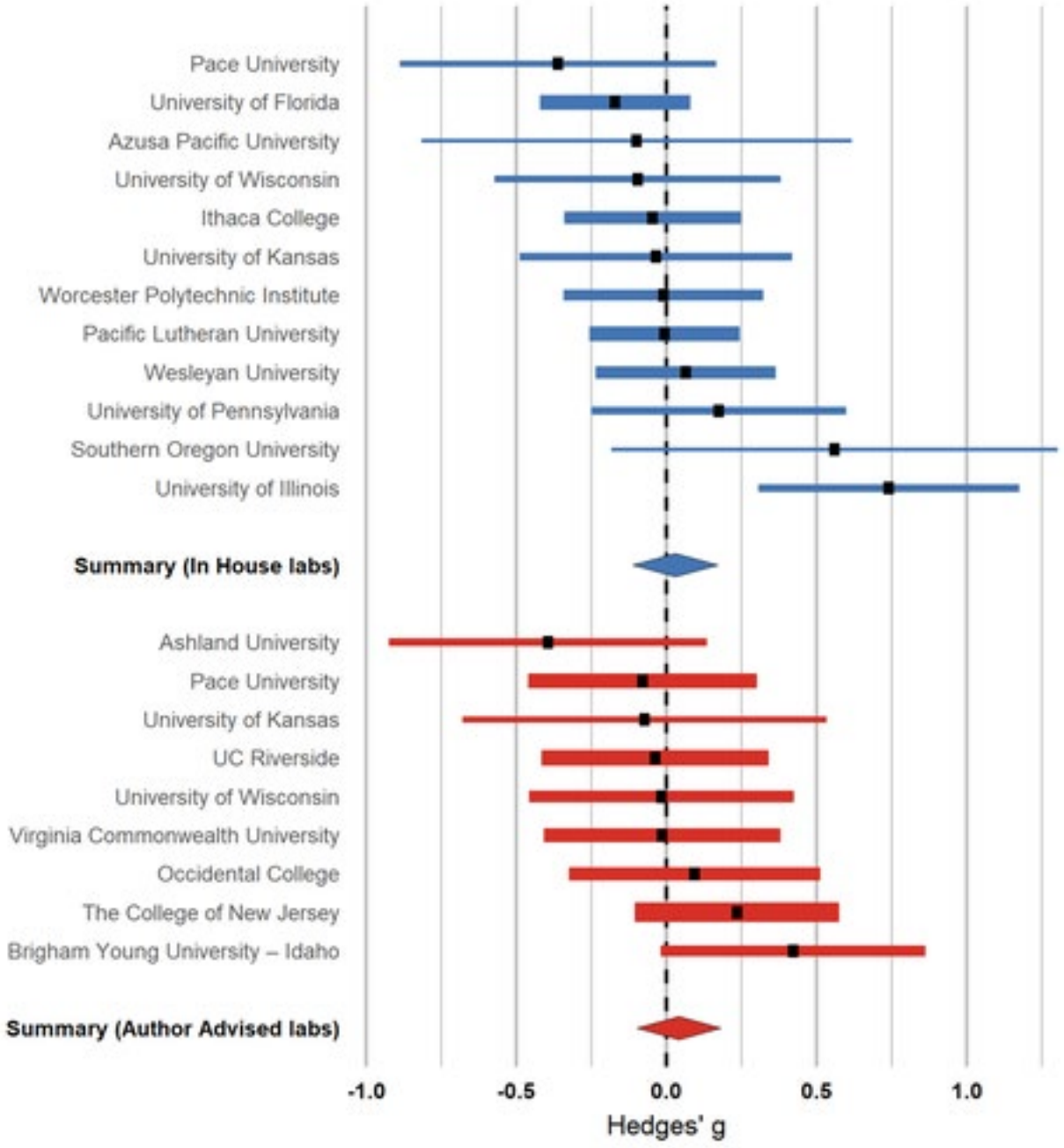
> 60 samples

~7000 participants

186 authors

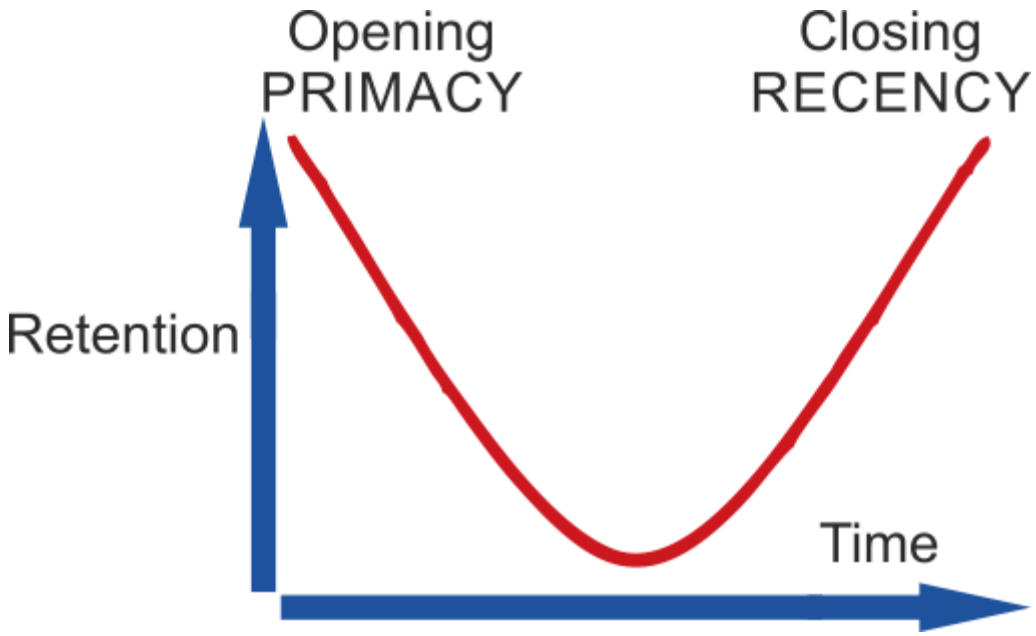
36 nations

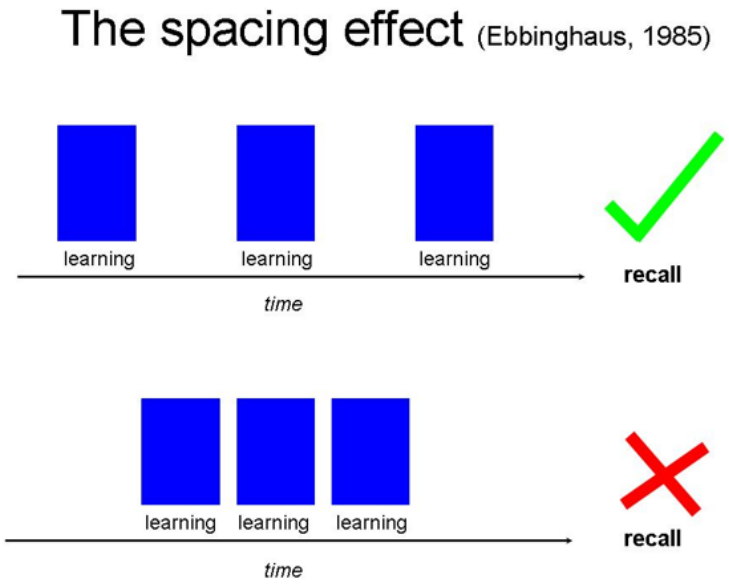
Replication rate: 50%


Pace University
University of Florida
Azusa Pacific University
University of Wisconsin
Ithaca College
University of Kansas
Worcester Polytechnic Institute
Pacific Lutheran University
Wesleyan University
University of Pennsylvania
Southern Oregon University
University of Illinois
Summary (In House labs)
Ashland University
Pace University
University of Kansas
UC Riverside
University of Wisconsin
Virginia Commonwealth University
Occidental College
The College of New Jersey
Brigham Young University – Idaho
Summary (Author Advised labs)
-1.0
-0.5
0.0
0.5
1.0
Hedges' g

New Directions

- Research that has replicated well:

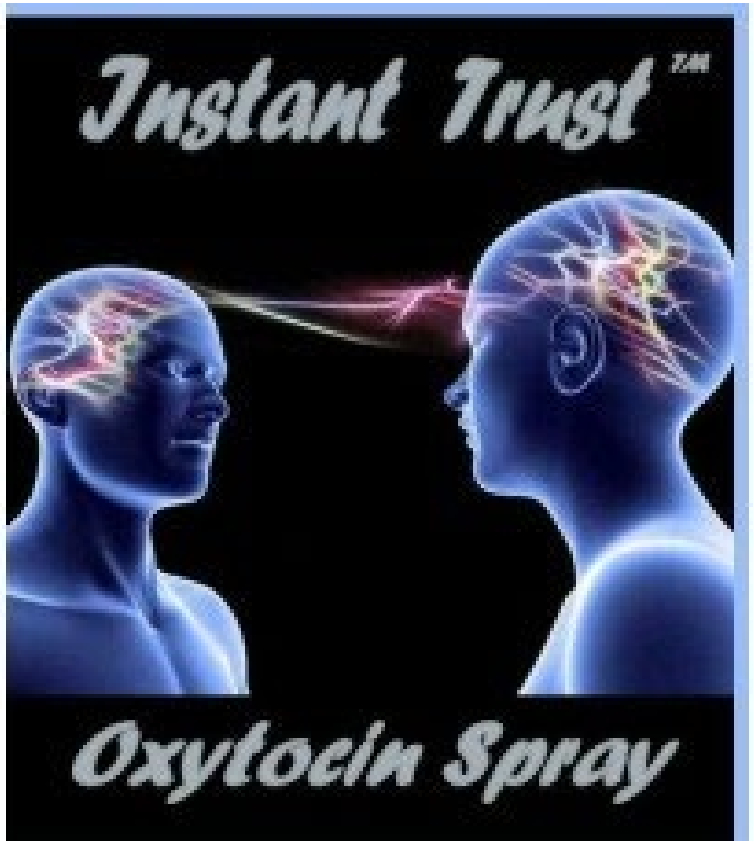


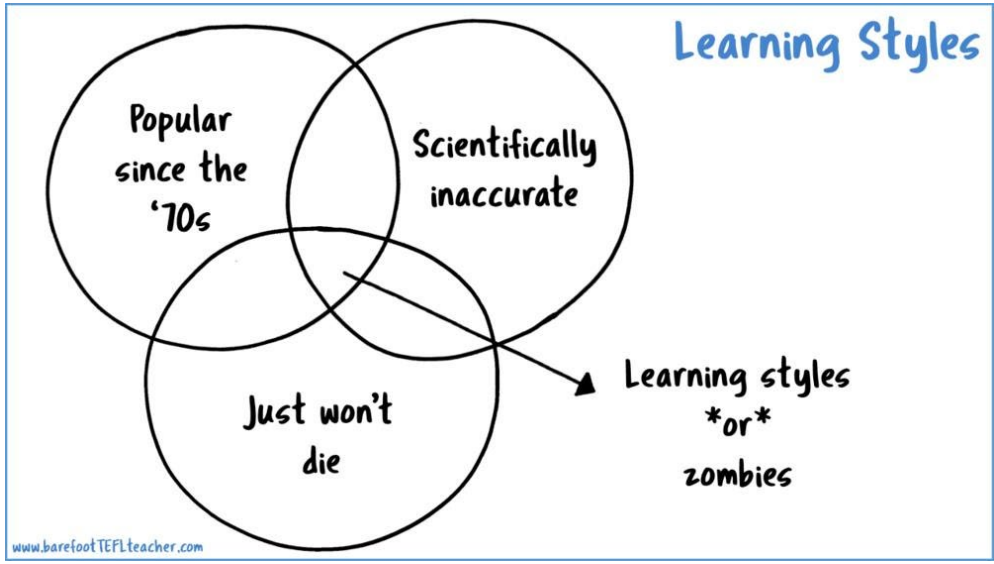


New Directions

- Research that has not replicated well:

https://faculty.haas.berkeley.edu/dana_carney/pdf_my%20position%20on%20power%20poses.pdf



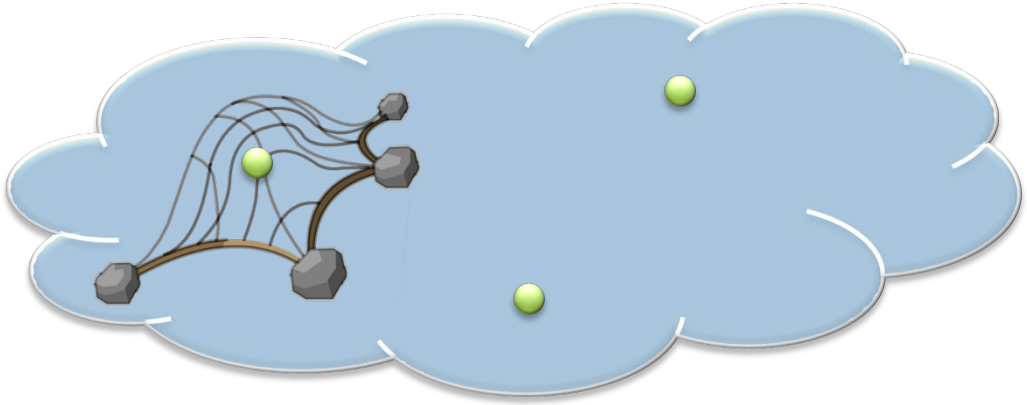


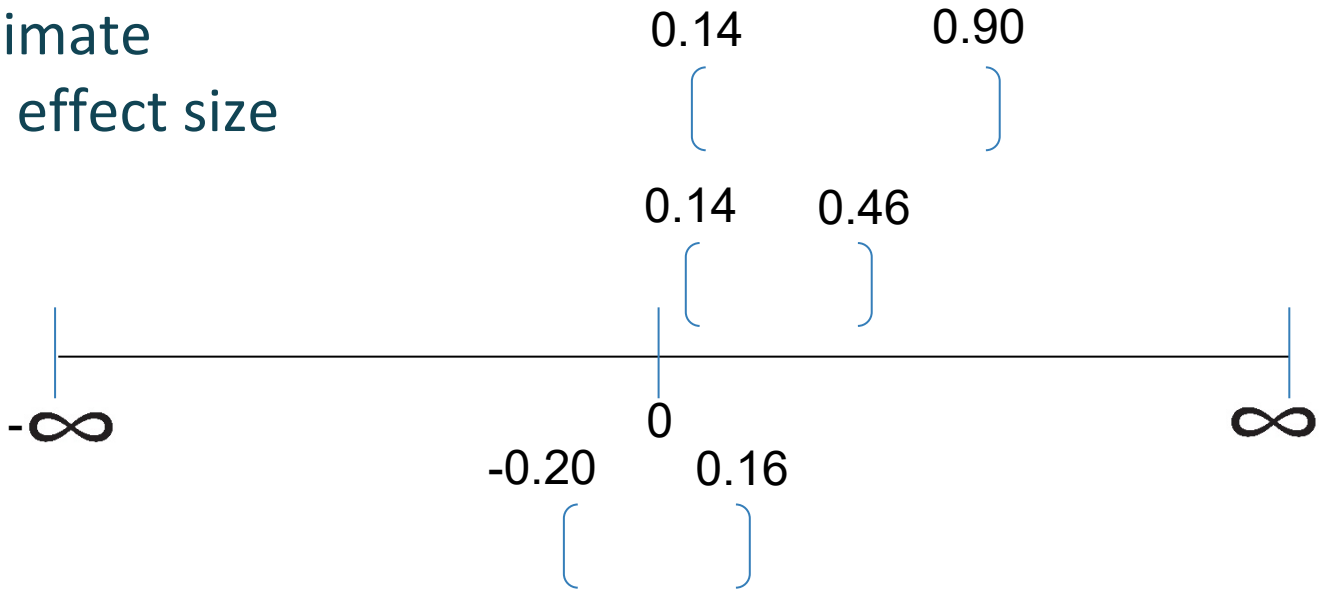
(Also MBTI please stop using it istg)

New Directions

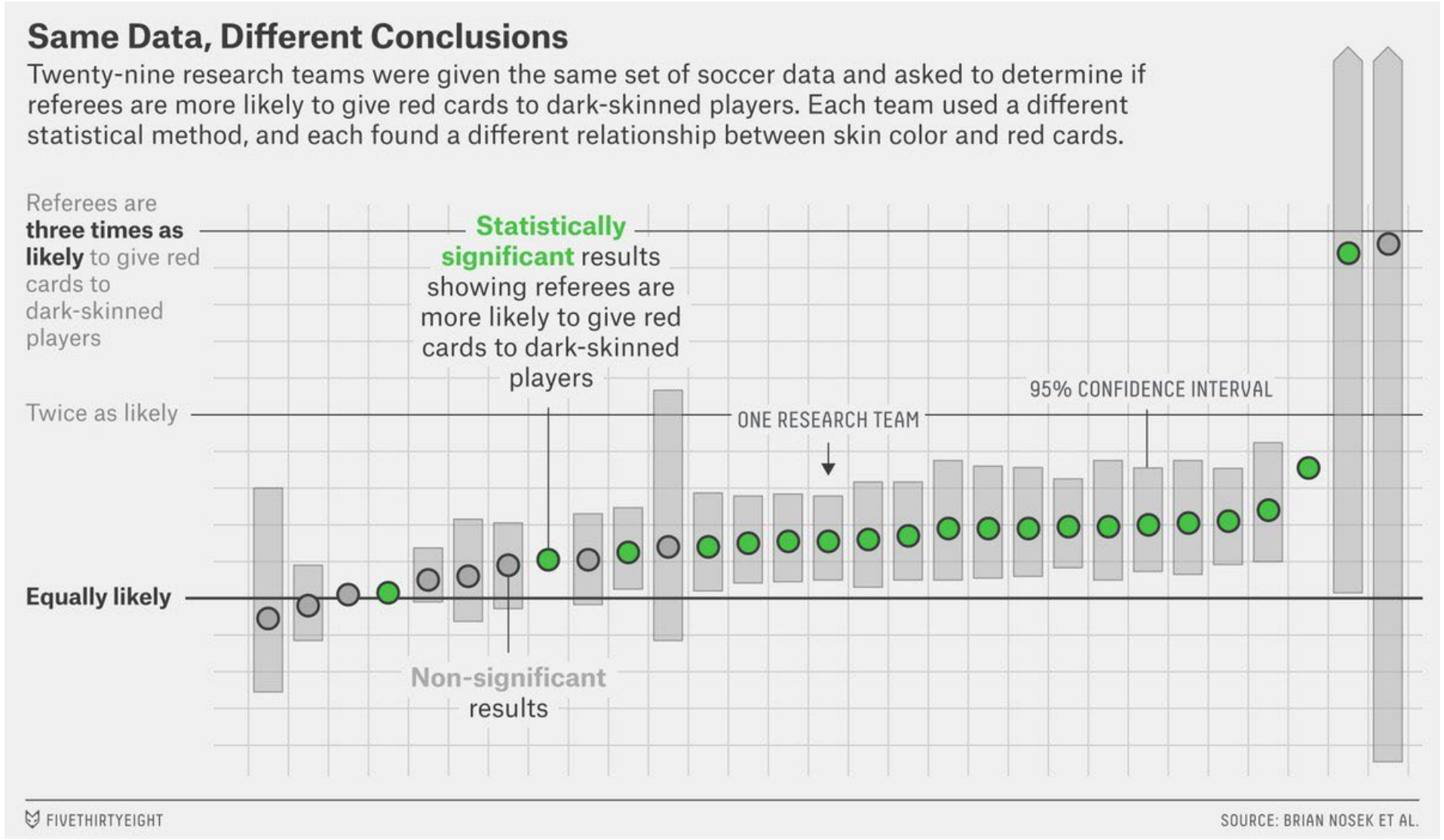
- Effect size
  - Point estimate of how large the effect is based on sample
  - Focuses on the size of the difference between groups, not on *p* values

- Confidence intervals (e.g. 95% confidence intervals)
  - Range of values (reported as 95% CI [0.14, 0.46])
  - Indexes precision of effect size estimate
  - Chance that interval captures true effect size



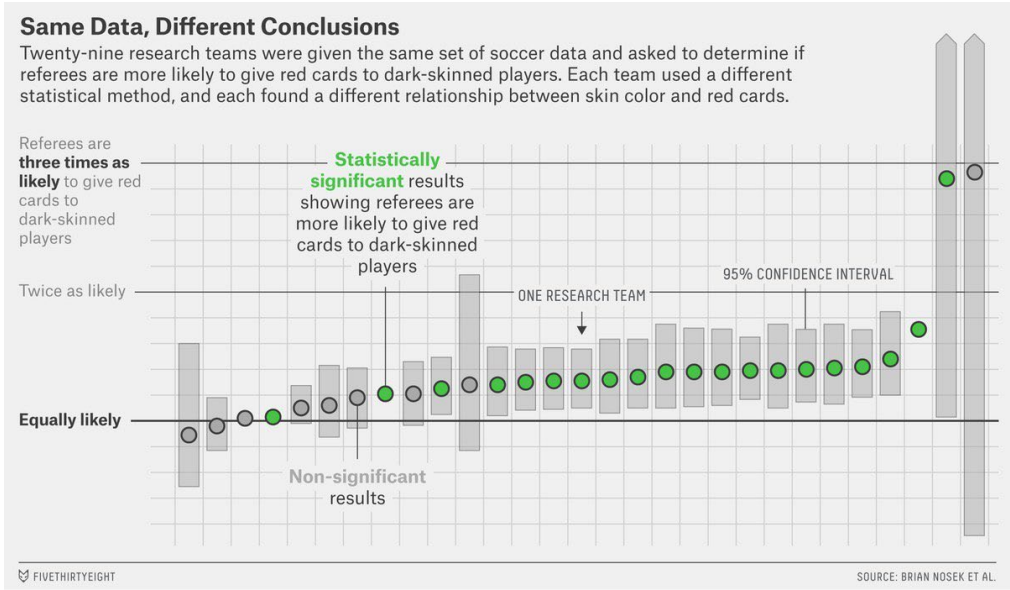


Still more problems...



Still more problems…

- Statistical analyses *not* purely objective
- Impact of human element



- Researcher degrees of freedom: (decisions made *after* data collection)
  - What to control for?
  - Collect more people?
  - Multiple models?

Inflates Type 1 Error

Still more problems…

Need large Ns!

- One proposed solution

Split-half analysis

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	probeset	ITCC0600	ITCC0601	ITCC0602	ITCC0604	ITCC0607	ITCC0608	ITCC0609	ITCC0611	itcc0001	itcc0002	itcc0003	itcc0008	itcc0009	itcc0010	itcc0013
2	1007_s_at	430.8	226.1	130.6	75	54.9	195.5	124.8	221.5	82.1	57.5	67.1	174	55.8	143.6	110.2
3	1053_at	79.5	95.7	178.8	185.8	144.7	113.1	150.2	157.5	138.4	140.7	198.1	123.7	254.8	130.4	161.5
4	117_at	65.9	14.9	1.8	28.7	4.7	35.2	3	25.5	39.3	17.3	23.7	39.7	4.1	29.8	64.1
5	121_at	203.3	79.4	74.1	60.3	79.7	54.5	60.1	113.3	95.6	85.8	80.1	81.9	72.7	91.9	112.1
6	1255_g_at	5	129.8	177.8	291.1	192.4	20	255.4	5.6	54.9	56.6	63.8	61.2	300	41.1	40.9
7	1294_at	114.6	57.1	40.1	37.1	44.2	50.9	40.4	28.3	56.3	51.6	38.6	127.8	44	79.4	83.8
8	1316_at	113	92.7	115.1	106.5	63.5	103.6	121.6	97.8	26.1	33.2	27	33.5	24	17.3	52.9
9	1320_at	12.1	17.9	1.7	1	2.2	11.2	17.2	16.1	33.2	58.1	27.4	14.3	46.6	37.9	40.4
10	1405_i_at	313.8	135.4	26.1	89.8	164.4	223.2	81	15.7	64.1	29	13	406.7	28.9	149.7	233.3
11	1431_at	18.8	13.7	16.2	8.6	8.2	66	10.3	15.1	33	14.2	79.8	12.5	15.1	7.4	20.9
12	1438_at	2.4	51.9	5.2	9.4	22	6.2	8.3	38.6	69.7	193.6	31.5	107.6	59.1	100.6	120.6
13	1487_at	94	88.9	96	52.1	98.3	67.8	92	91.4	63	99.1	160.7	106.4	54.8	84.4	101.6
14	1494_f_at	30	18.8	33	49	34	33.5	44.9	35.3	26.1	22.9	19.8	18.7	19.8	17	29.1
15	1552256_a_at	33.4	55.5	57.9	53.1	52	60.2	63.7	117	182.2	79.1	185.9	187.1	137.1	143.8	251.8
16	1552257_a_at	109.2	78.6	70	83.8	62.7	97.1	73.4	245.7	126.6	113.4	151.9	117.9	112.2	175.1	159.7
17	1552258_at	31.2	8.3	5.3	20.3	7	20.7	35	22.7	22.6	12.2	11.5	24.9	27.3	18.7	16.5

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	probeset	ITCC0600	ITCC0601	ITCC0602	ITCC0604	ITCC0607	ITCC0608	ITCC0609	ITCC0611	itcc0001	itcc0002	itcc0003	itcc0008	itcc0009	itcc0010	itcc0013
2	1007_s_at	430.8	226.1	130.6	75	54.9	195.5	124.8	221.5	82.1	57.5	67.1	174	55.8	143.6	110.2
3	1053_at	79.5	95.7	178.8	185.8	144.7	113.1	150.2	157.5	138.4	140.7	198.1	123.7	254.8	130.4	161.5
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Exploratory vs. confirmatory

Q & A

Skeptical Dog
is skeptical.

Final thoughts