

[What, why, and which experiments?],
[Moving beyond simple experiments], [Making it happen],
[Zero variable cost data and MusicLab], [3 Rs]

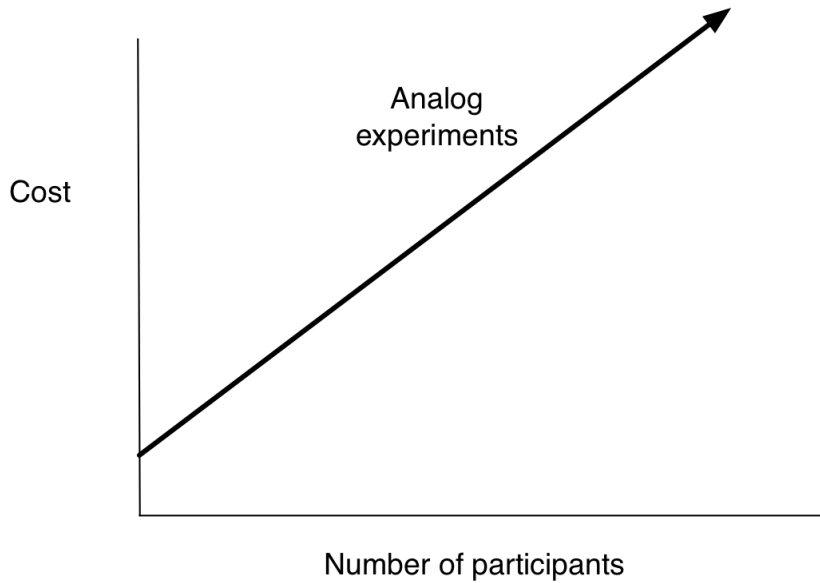
Matthew J. Salganik
Department of Sociology
Princeton University

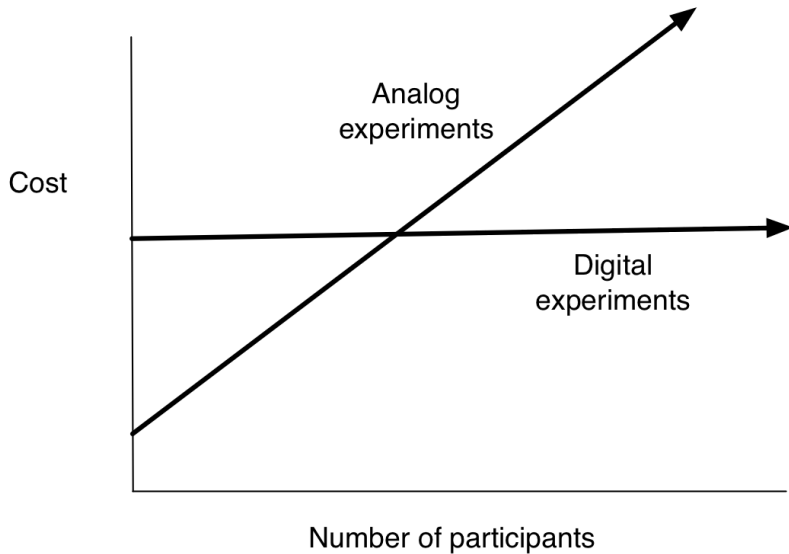




- 1) Introduction
- 2) Observing behavior
- 3) Asking questions
- 4) Running experiments
- 5) Mass collaboration
- 6) Ethics
- 7) The future

Experiments at scale





Main sources of variable costs:

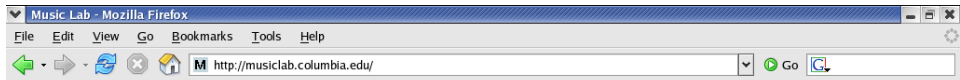
- ▶ staff time
- ▶ participant payment

Main sources of variable costs:

- ▶ staff time
- ▶ participant payment

Solutions:

- ▶ Automation (your experiments should run while you sleep)
- ▶ Design enjoyable experiments



Music Lab – Song Selection - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

← → ↺ ⓧ 🏠 M http://www.musiclab.columbia.edu/me/songs

	# of down loads	[Help]	[Log off]	# of down loads	# of down loads
HARTSFIELD: "enough is enough"	20	GO MOREDCAI: "it does what its told"	12	UNDO: "while the world passes"	24
DEEP ENOUGH TO DIE: "for the sky"	17	PARKER THEORY: "she said"	47	UP FOR NOTHING: "in sight of"	13
THE THRIFT SYNDICATE: "2003 a tragedy"	20	MISS OCTOBER: "pink aggression"	27	SILVERFOX: "gnaw"	17
THE BROKEN PROMISE: "the end in friend"	19	POST BREAK TRAGEDY: "florence"	14	STRANGER: "one drop"	10
THIS NEW DAWN: "the belief above the answer"	12	FORTHFADING: "fear"	24	FAR FROM KNOWN: "route 9"	18
NOONER AT NINE: "walk away"	6	THE CALEFACTION: "trapped in an orange peel"	20	STUNT MONKEY: "inside out"	46
MORAL HAZARD: "waste of my life"	8	52METRO: "lockdown"	17	DANTE: "lifes mystery"	14
NOT FOR SCHOLARS: "as seasons change"	27	SIMPLY WAITING: "went with the count"	16	FADING THROUGH: "wish me luck"	10
SECRETARY: "keep your eyes on the ballistics"	5	STAR CLIMBER: "tell me"	38	UNKNOWN CITIZENS: "falling over"	34
ART OF KANLY: "seductive intro, melodic breakdown"	10	THE FASTLANE: "til death do us part (i dont)"	31	BY NOVEMBER: "if i could take you"	20
HYDRAULIC SANDWICH: "separation anxiety"	20	A BLINDING SILENCE: "miseries and miracles"	17	DRAWN IN THE SKY: "tap the ride"	12
EMBER SKY: "this upcoming winter"	25	SUM RANA: "the bolshevik boogie"	15	SELSIUS: "stars of the city"	22
SALUTE THE DAWN: "i am error"	13	CAPE RENEWAL: "baseball warlock v1"	12	SIBRIAN: "eye patch"	14
RYAN ESSMAKER: "detour_(be still)"	14	UP FALLS DOWN: "a brighter burning star"	11	EVAN GOLD: "robert downey jr"	10
BEERBONG: "father to son"	12	SUMMERSWASTED: "a plan behind destruction"	17	BENEFIT OF A DOUBT: "run away"	38
HALL OF FAME: "best mistakes"	19	SILENT FILM: "all i have to say"	61	SHIPWRECK UNION: "out of the woods"	16

00:21 shipwreck union - out of the woods

volume

|| ▶

Please rate this song.
You don't need to wait until it's finished

☐ ★ ★ ★ ★ ★ i love it

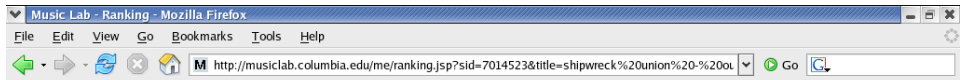
☐ ★ ★ ★ ★ i like it

☐ ★ ★ ★ it's OK

☐ ★ ★ i don't like it

☐ ★ i hate it

Rate It!



00:53 shipwreck union - out of the woods

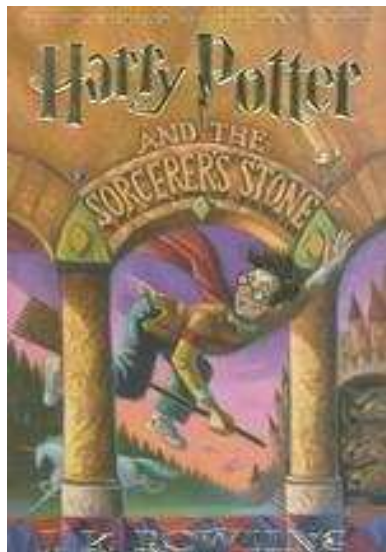
volume

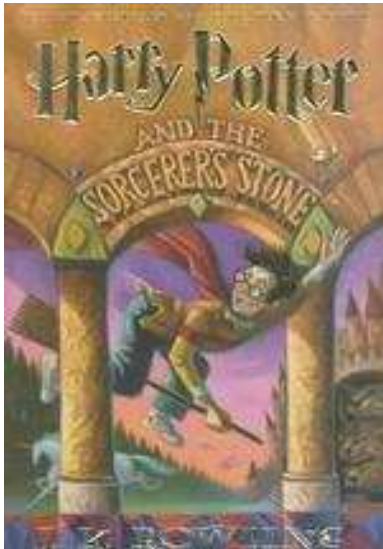
|| ▶

Would you like to download this song?

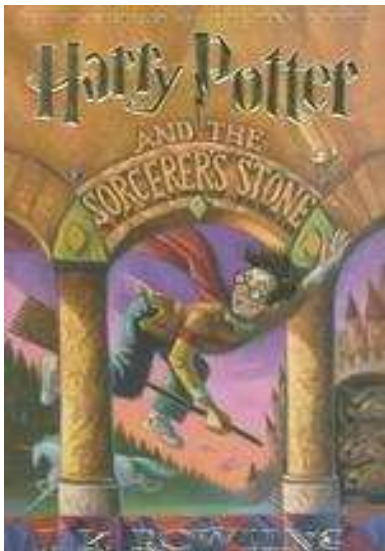
Yes, download

No, Thanks





- ▶ Wild success



- ▶ Wild success
- ▶ Rejected by eight publishers



- ▶ Set box office records, won 6 Oscars, and launched a multi-billion dollar franchise
- ▶ Rejected by United Artists and Universal before being made by Fox



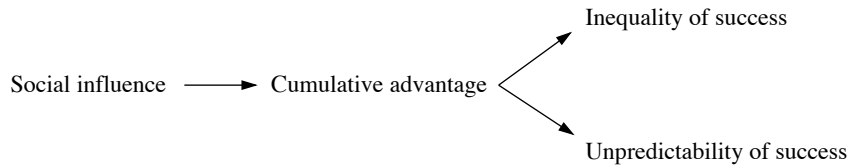
- ▶ One of the most popular shows of the decade
- ▶ Rejected by ABC, CBS, and NBC before being picked up by Fox

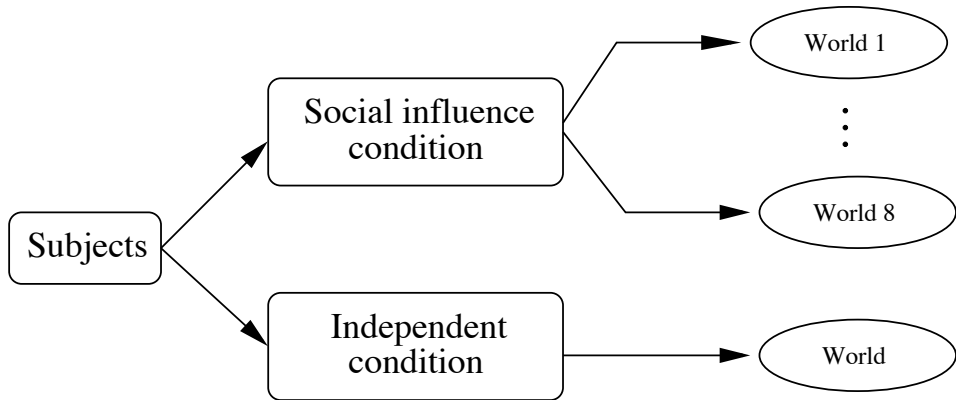
Puzzling nature of success for cultural objects (books, movies, piece of art, music, TV shows)

- ▶ extreme inequality in success

Puzzling nature of success for cultural objects (books, movies, piece of art, music, TV shows)

- ▶ extreme inequality in success
- ▶ unpredictability of success





Music Lab - Song Selection - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.musiclab.columbia.edu/me/songs

	# of own songs	[Help] [Log off]	# of own songs	# of own songs	
HARTSFIELD "Enough is enough"	20	GO MORDOCA "I don't want to talk"	12	UNDO: "While the world passes"	24
DEEP INVOHIN TO ONE: "for the city"	17	PARKER THEORY: "the last"	47	UP FOR NOTHING: "in sight of"	13
THE THIRTY SYNDICATE: "2001 is magical"	20	MISS OCTOBER: "pink aggression"	27	SILVERFOX: "love"	17
THE BROKEN PROMISE: "the end is here"	19	ROST BREAK TRAGEDY: "Nobles"	14	STRANGER: "tune down"	10
THIS NEW DAWN: "the best above the answer"	12	PORTHAWING: "tea"	24	FAR FROM KNOWN: "fade it"	18
NOONER AT NINE: "with away"	0	THE CLEFATION: "I signed in an orange pen"	20	STUNT MONKEY: "a tale of"	46
MORAL HAZARD: "waste of my life"	8	LOWESTRO: "lockdown"	17	DANTE: "the mystery"	14
NOT FOR SCHOLARS: "in various change"	27	SIMPLY WAITING: "hand with the count"	16	PACING THROUGH: "each me be it"	10
SECRETARY: "keep your eyes on the ballroom"	5	STAR CLIMBER: "tell me"	36	UNKNOWN CITIZENS: "telling over"	34
ART OF KAILY: "reflexes into, robotic breakdown"	30	THE PASTLAME: "I could take you"	31	BY NOVEMBER: "I could take you"	20
HYDRAULIC SANDWICH: "in passion anxiety"	20	A BLINDING SILENCE: "memories and mistakes"	17	DRAWN BY THE SKY: "top the sky"	12
EMBER SKY: "the opening wires"	25	SEIRANA: "the blackrock image"	15	SELSUS: "rain of the city"	22
SALUTE THE DAWN: "Lamers"	13	CAPS BERNARD: "baseball notebook v1"	12	GRABAN: "eye patch"	14
RYAN'S BARBARIC: "leave, the old"	14	IF PALLS DOWN: "O brighten during war"	11	RYAN GOLD: "where down you"	10
RECKONING: "before to war"	12	CLIMBERWASTED: "a plan for the deviants"	17	BENEFIT OF A DOUBT: "run away"	36
HALL OF FAME: "best mistakes"	29	SILENT FILM: "all have to say"	61	SHIPWRECK UNDO: "best of the woods"	16

(a) Less social influence

Music Lab - Song Selection - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

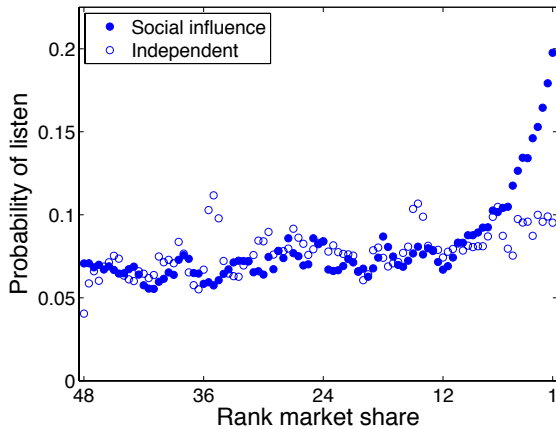
http://www.musiclab.columbia.edu/me/control

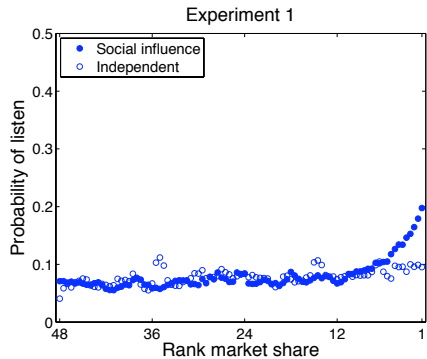
	[Help] [Log off]	# of own songs
PARKER THEORY: "the last"		159
THE PASTLAME: "I'd death do as part (I don't)"		103
SELSUS: "rain of the city"		62
STUNT MONKEY: "inside out"		56
BY NOVEMBER: "I could take you"		55
FORTHWARD: "tea"		49
HYDRAULIC SANDWICH: "passion anxiety"		43
SILENT FILM: "all have to say"		40
UNDO: "While the world passes"		36
BENEFIT OF A DOUBT: "run away"		32
A BLINDING SILENCE: "memories and mistakes"		27
MISS OCTOBER: "pink aggression"		26
STAR CLIMBER: "tell me"		24
FAR FROM KNOWN: "fade it"		22
HALL OF FAME: "best mistakes"		21
EMBER DAY: "the opening wires"		19

Date

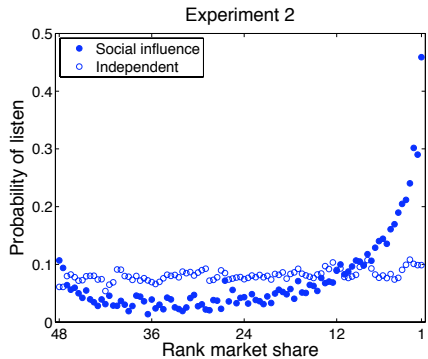
(b) More social influence

Experiment 1

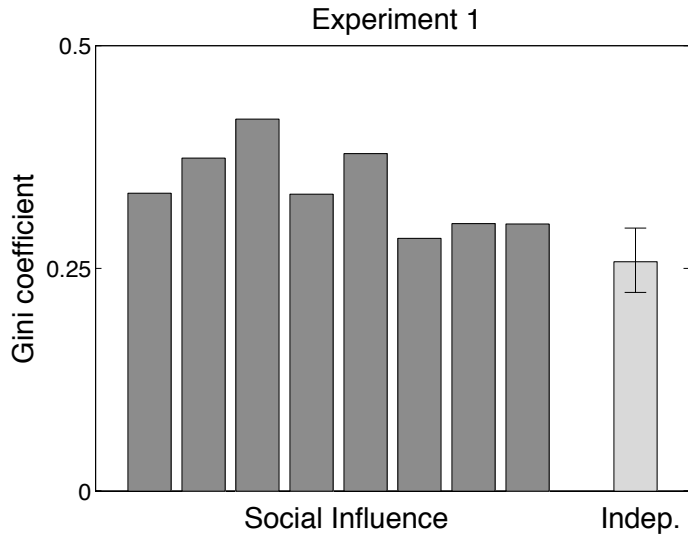


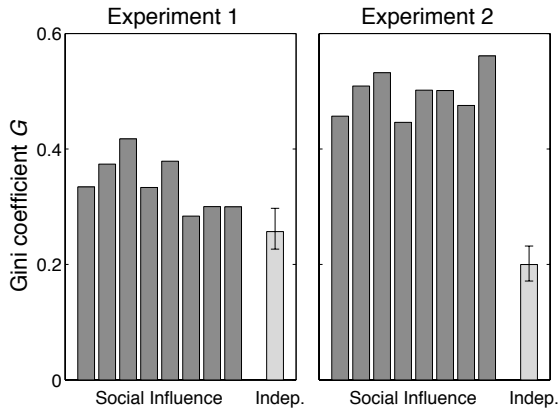


(a) Experiment 1, weaker signal



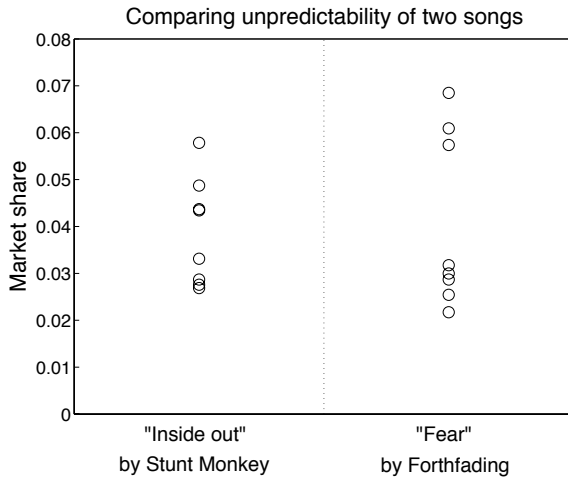
(b) Experiment 2, stronger signal



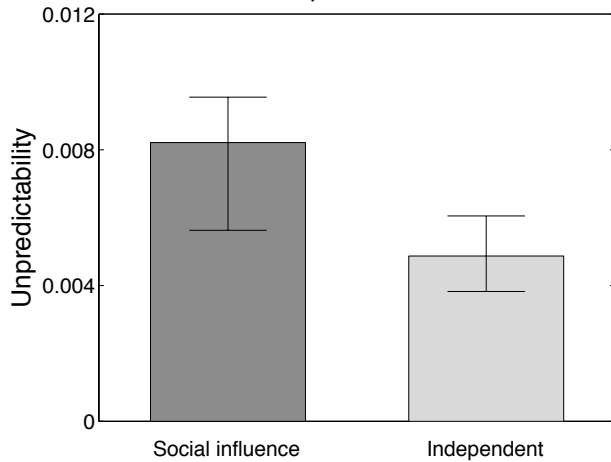


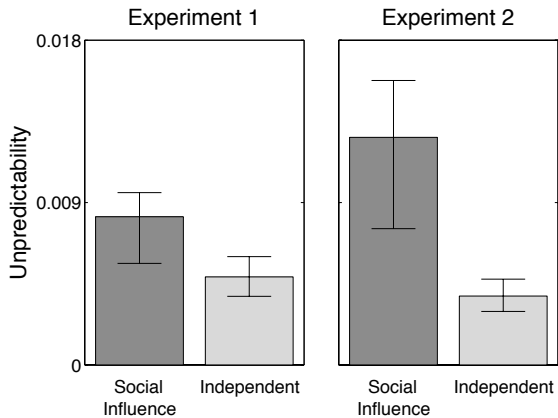
Median Gini coefficient increases from 0.34 (France) to 0.50 (Nigeria)

U = mean difference in market share across all pairs of realizations



Experiment 1





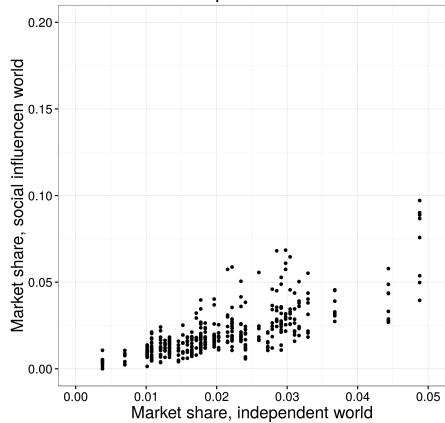
Unpredictability increases by about 50%

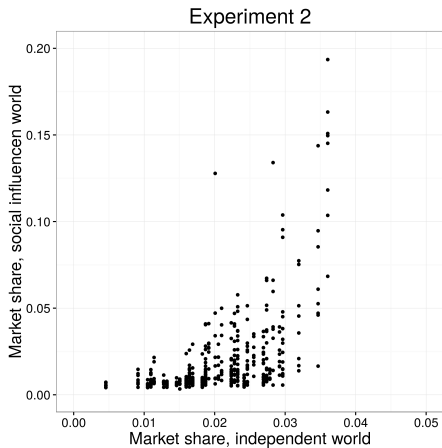
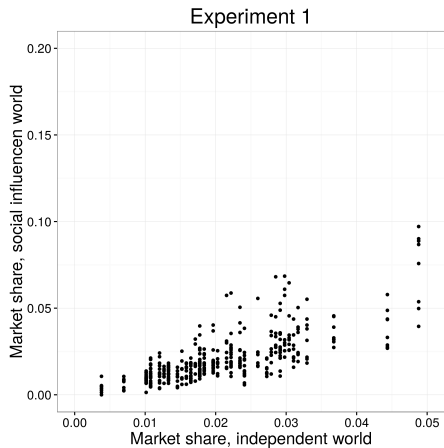
Experiments 1 and 2 show a dose-response relationship. Increasing the strength of social influence leads to

- ▶ increased inequality of success
- ▶ increased unpredictability of success

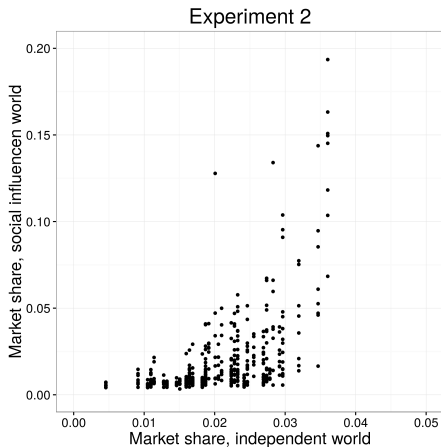
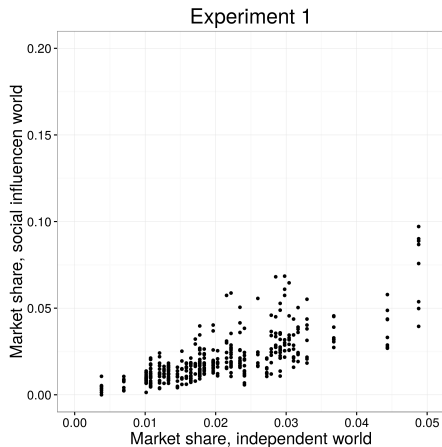
What is the relationship between “quality” and success?

Experiment 1



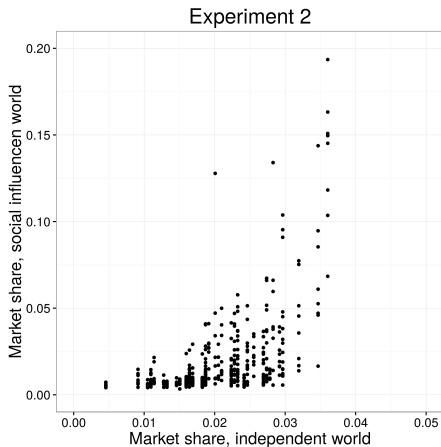
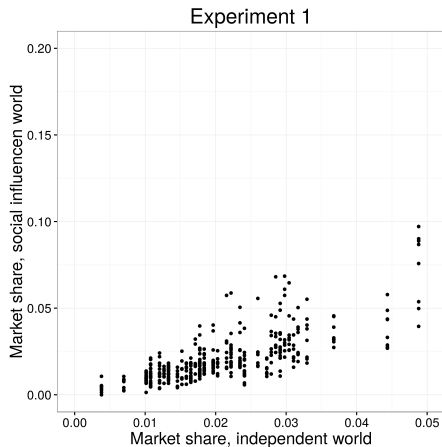


Results:



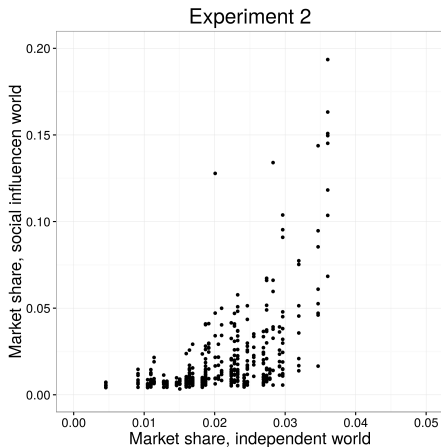
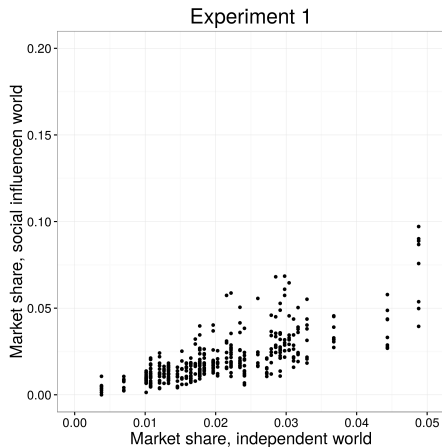
Results:

- More social influence leads to more unpredictability



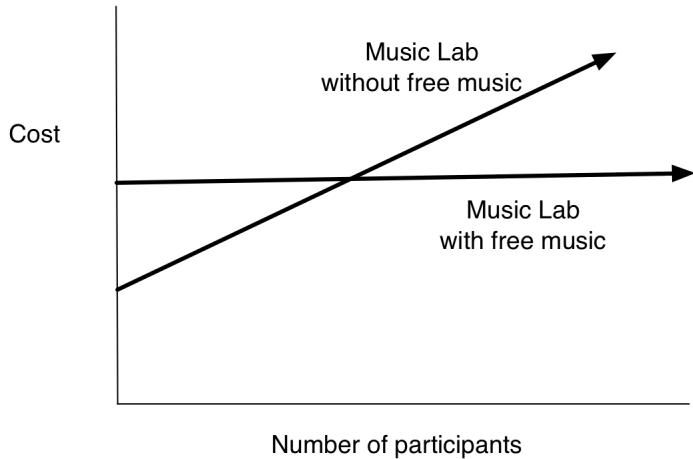
Results:

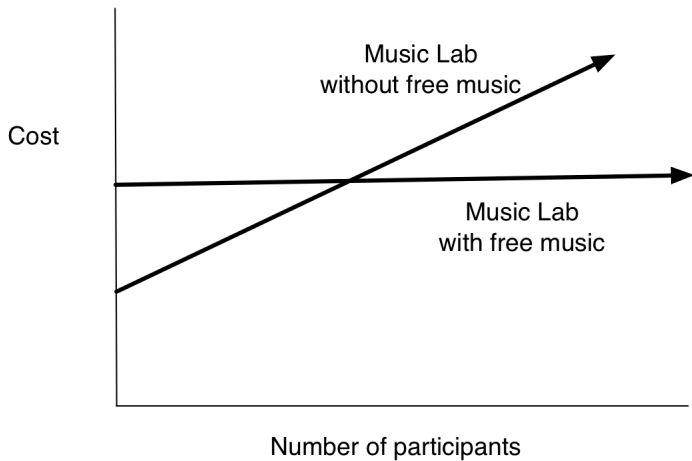
- ▶ More social influence leads to more unpredictability
- ▶ You can predict failure but you can't predict success



Results:

- ▶ More social influence leads to more unpredictability
- ▶ You can predict failure but you can't predict success
- ▶ Salganik, Dodds, and Watts (2006)





Zero variable cost is a means not an end.

Temporal Distance and Discrimination: An Audit Study in Academia

Katherine L. Milkman¹, Modupe Akinola², and Dolly Chugh³

¹The Wharton School, University of Pennsylvania; ²Columbia Business School, Columbia University; and

³Stern School of Business, New York University

<http://dx.doi.org/10.1177/0956797611434539>

Dear Professor Salganik,

I am writing you because I am a prospective Ph.D. student with considerable interest in your research. My plan is to apply to Ph.D. programs this coming fall, and I am eager to learn as much as I can about research opportunities in the meantime.

I will be on campus today, and although I know it is short notice, I was wondering if you might have 10 minutes when you would be willing to meet with me to briefly talk about your work and any possible opportunities for me to get involved in your research. Any time that would be convenient for you would be fine with me, as meeting with you is my first priority during this campus visit.

Thank you in advance for your consideration.

Sincerely,

Carlos Lopez

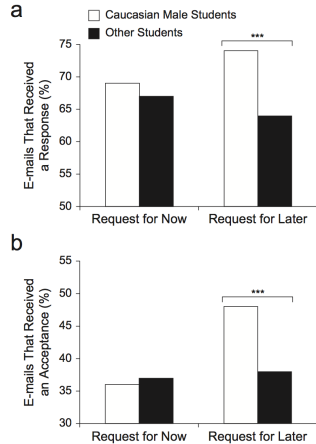
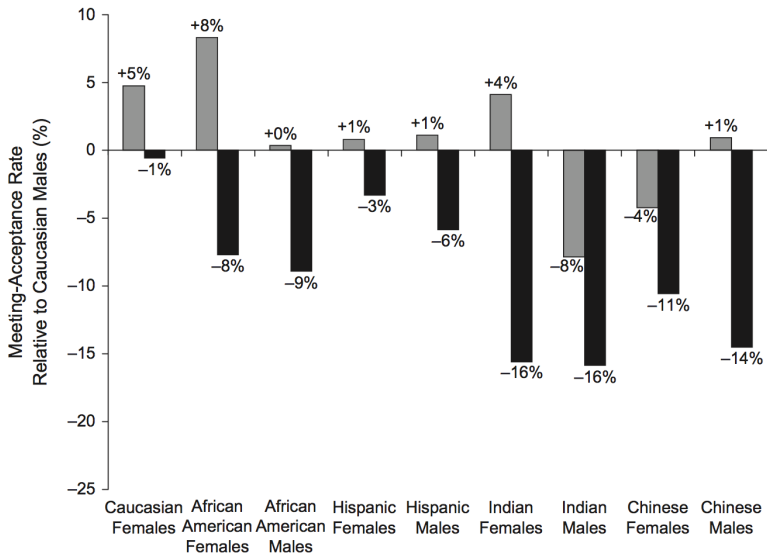


Fig. 1. Percentage of faculty members who (a) responded to and (b) agreed to meet with Caucasian male students and other (i.e., female and minority) students as a function of condition (now vs. later). All percentages are sample weighted. Asterisks indicate significant differences between the two groups of students ($***p < .001$).

b



What are the fixed and variable costs for this experiment?

Important difference between:
zero variable cost and zero variable cost to you

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