

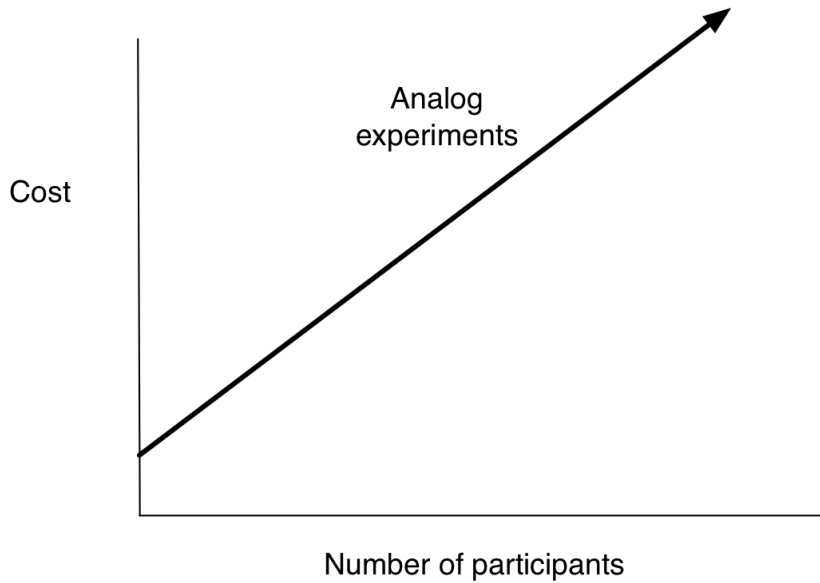
Zero variable cost experiments and MusicLab

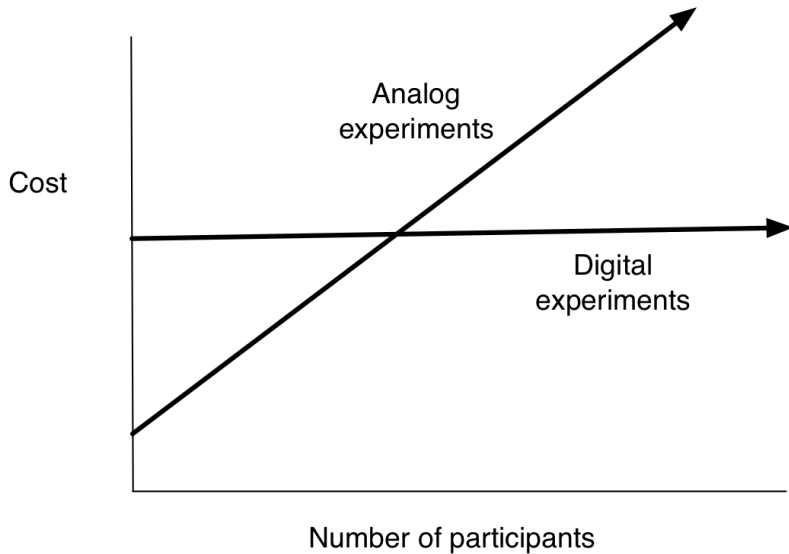
Matthew J. Salganik
Department of Sociology
Princeton University

Summer Institute in Computational Social Science
June 24, 2017



Experiments at scale





Main sources of variable costs:

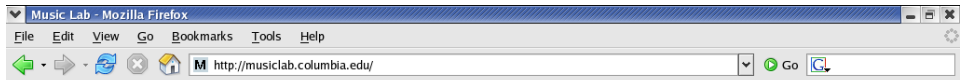
- ▶ staff time
- ▶ participant payment

Main sources of variable costs:

- ▶ staff time
- ▶ participant payment

Solutions:

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



 **MUSIC LAB**

 **COLUMBIA
UNIVERSITY**



FREE MUSIC DOWNLOADS

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← → ↺ ⓧ 🏠 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 agression"	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

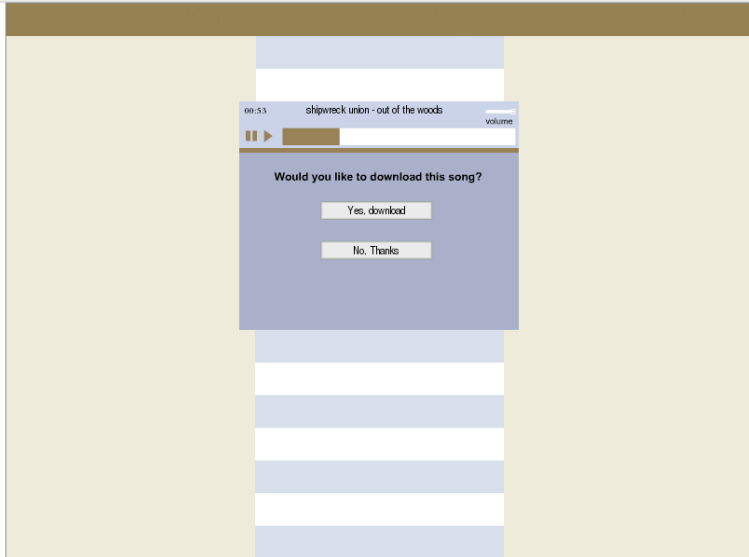
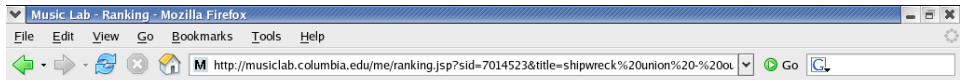
☐ ★ ★ ★ ★ i like it

☐ ★ ★ ★ it's OK

☐ ★ ★ i don't like it

☐ ★ i hate it

Rate It!

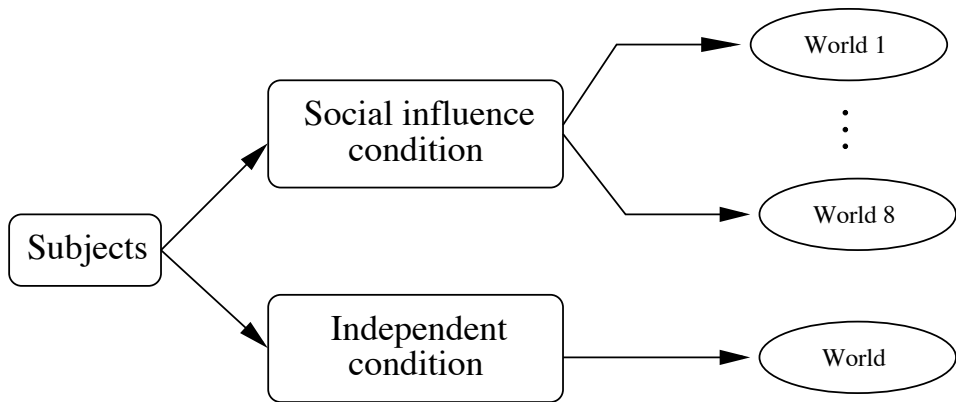


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http://www.musiclab.columbia.edu/me/songs

	# 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 ENOUGH TO DIE: "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: "I want"	17
THE BROKEN PROMISE: "the end is here"	19	ROST BREAK TRAGEDY: "Nevada"	14	STRANGER: "tune down"	10
THIS NEW DAWN: "the best above the answer"	12	PORTHAWING: "the"	24	FAIR FROM KNOWN: "tune it"	18
NOONER AT NINE: "with me"	0	THE CLEFATION: "I signed in an orange pen"	20	STUNT MONKEY: "tune it"	46
MORAL HAZARD: "waste of my life"	8	LOWEST: "lockdown"	17	DANTE: "the mystery"	14
HOT FOR SCHOLARS: "in mission change"	27	SHIRLY WAITING: "tune with the sound"	16	PACING THROUGH: "tune me in"	10
SECRETARY: "keep your eyes on the ballroom"	5	STAR CLIMBER: "tune me"	36	UNKNOWN CITIZENS: "tune me"	34
ART OF KAILY: "in the line into, melody breakdown"	30	THE PASTLAME: "I could take you"	31	BY NOVEMBER: "I could take you"	20
HYDRAULIC SANDWICH: "in passion arena"	20	A BLINDING SILENCE: "tunes and music"	17	DRAWN BY THE SKY: "top the sky"	12
EMER SKY: "in opening arena"	25	SEIRANA: "the blackrock image"	15	SELSUS: "tune of the city"	22
SALUTE THE DAWN: "tune me"	13	CAPS BERNARD: "baseball music v1"	12	GRABAN: "eye patch"	14
RYAN'S BARBARIC: "tune, the old"	14	IF FALLS DOWN: "in lightening storm"	11	RYAN GOLD: "tune down you"	10
REDEERING: "before to see"	12	CLIMBERWASTED: "a plan to build devices"	17	BENEFIT OF A DOUBT: "tune me"	36
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(a) Less social influence

Music Lab - Song Selection - Mozilla Firefox

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

	[Help] [Log off]	# of own songs
PARKER THEORY: "the last"		159
THE PASTLAME: "I don't do it just (I don't)"		103
SELSUS: "tune of the city"		62
STUNT MONKEY: "tune out"		56
BY NOVEMBER: "I could take you"		55
FORTHWARD: "tune"		49
HYDRAULIC SANDWICH: "tune me in"		43
SILENT FILM: "all have to say"		40
UNDO: "While the world passes"		36
BENEFIT OF A DOUBT: "tune me"		32
A BLINDING SILENCE: "tunes and music"		27
MISS OCTOBER: "pink aggression"		26
STAR CLIMBER: "tune me"		24
FAIR FROM KNOWN: "tune it"		22
HALL OF FAME: "best mistakes"		21
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Date

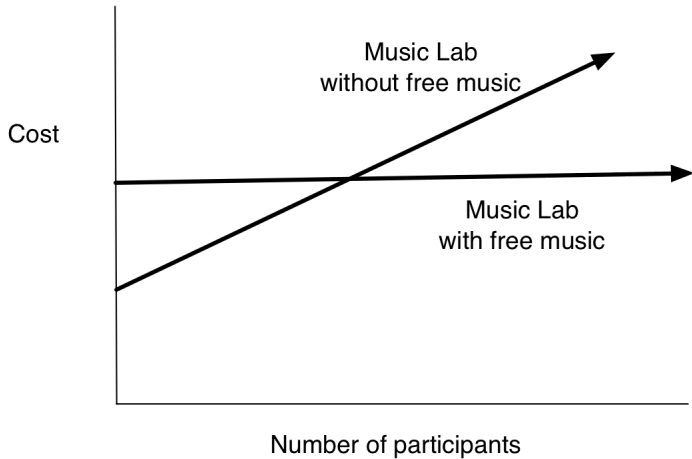
(b) More social influence

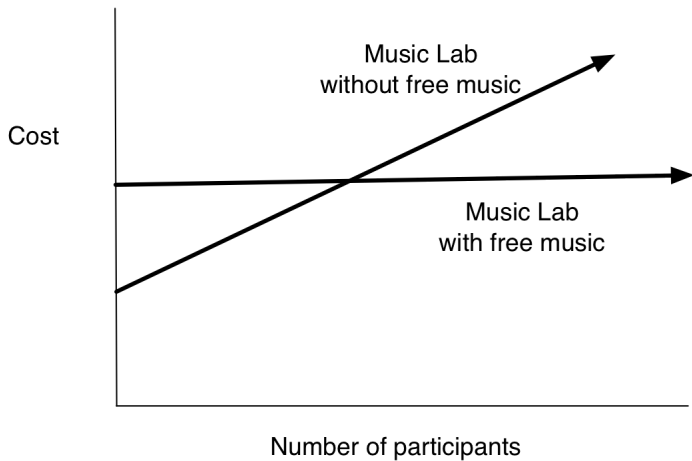
Results:

- ▶ 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





Zero variable cost is a means not an end.

Behind the MusicLab?

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

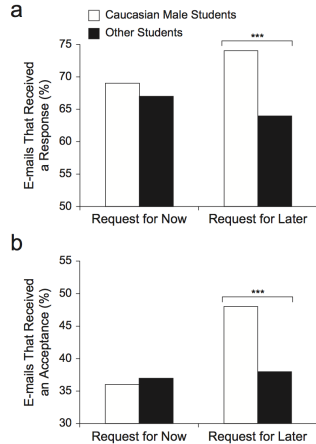
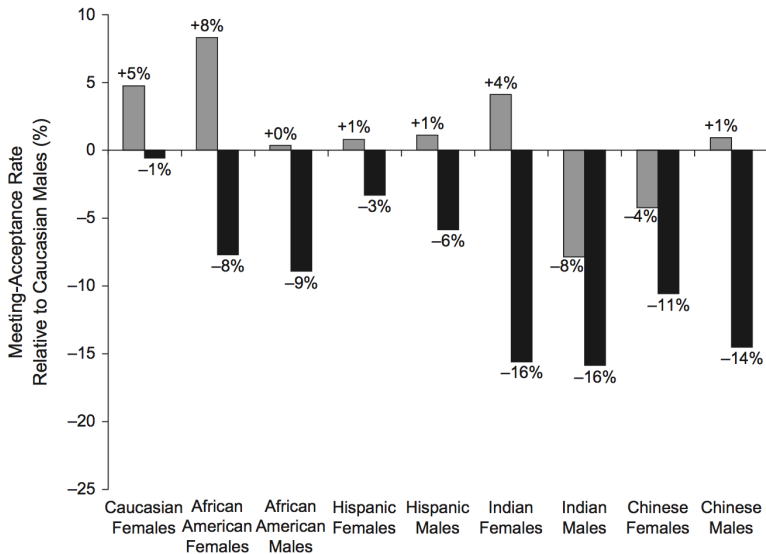


Fig. 1. Percentage of faculty members who (a) responded to and (b) agreed to meet with Caucasian male students and other (i.e., female and minority) students as a function of condition (now vs. later). All percentages are sample weighted. Asterisks indicate significant differences between the two groups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

Questions? Comments?