

Preferences & Nudges in Sociotechnical Systems

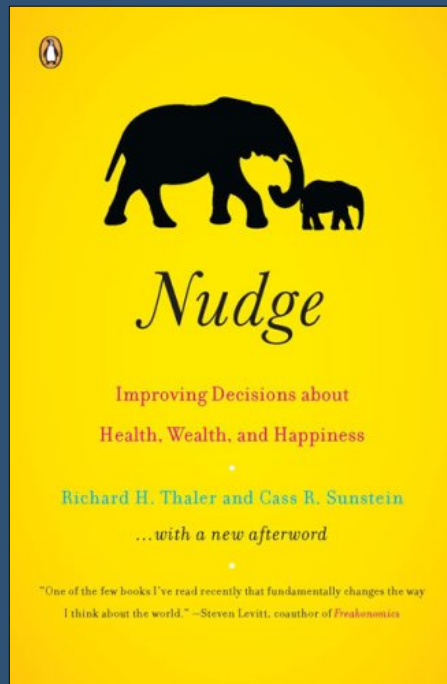
Sean A. Munson

School of Information
University of Michigan

slides and references at smunson.com/hcde

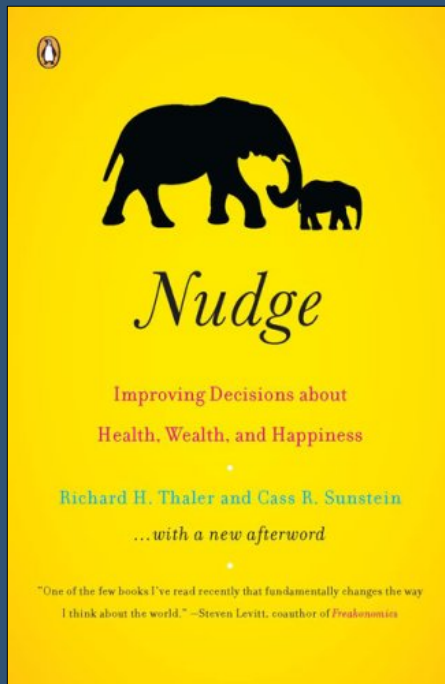
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All choice
environments
influence...



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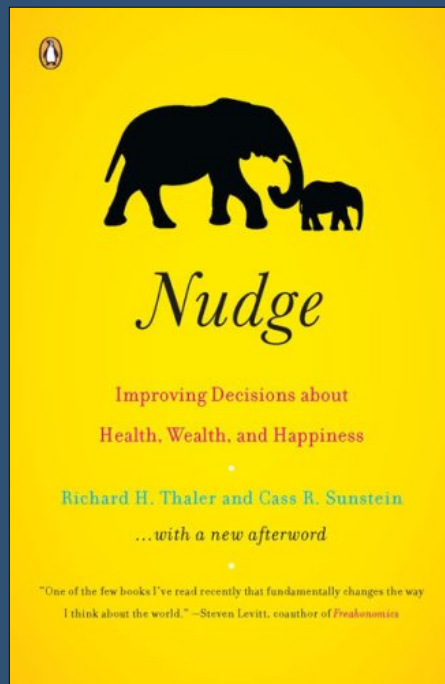
All choice
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Nudge – something that helps you be your better self, to do the things that, in retrospect, you'll be glad you did, but might not choose in the moment.

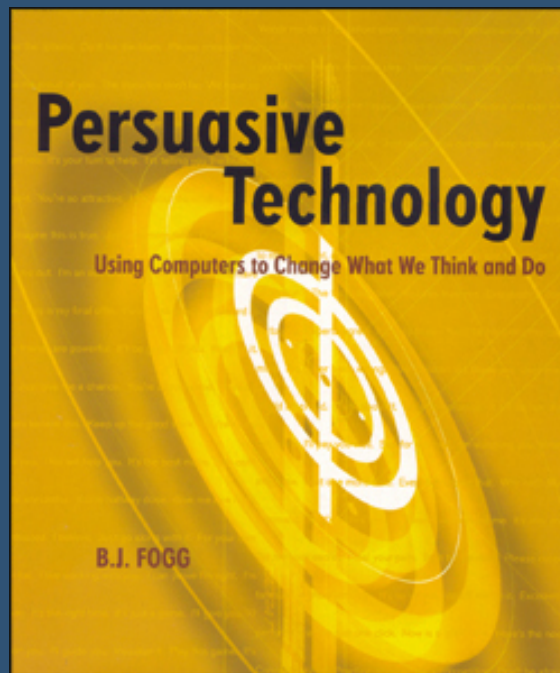
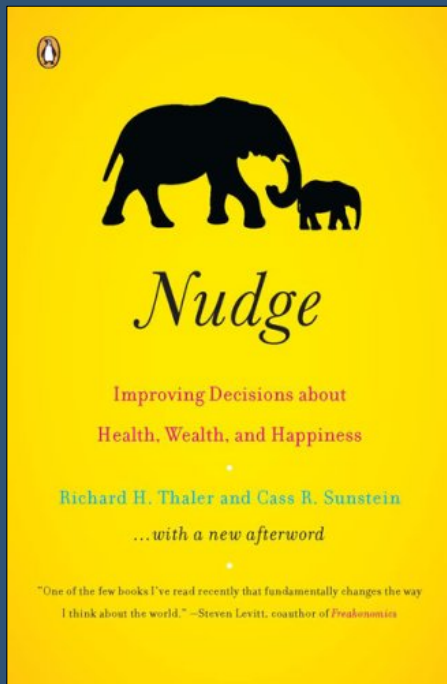
Preferences & Nudges in Sociotechnical Systems

All choice
environments
influence...



Preferences & Nudges in Sociotechnical Systems

All choice
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influence...



... including digital
ones.



UbiFit, Consolvo et al



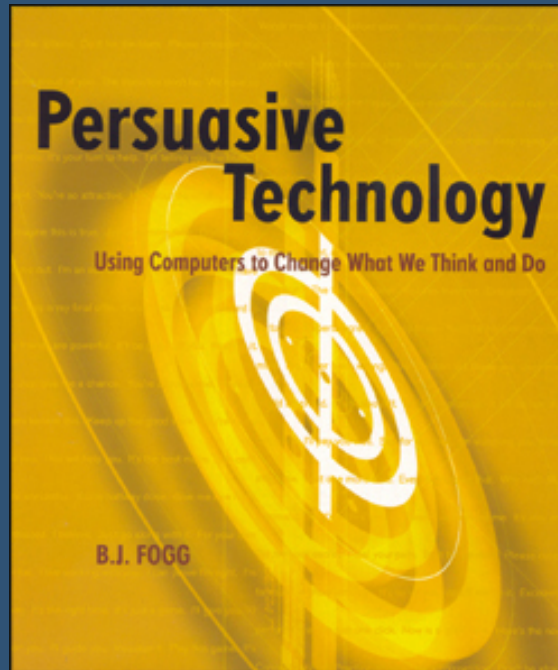
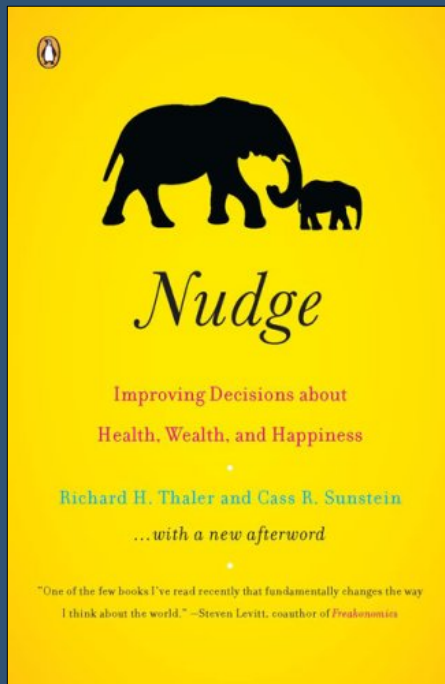
Reflect, Froehlich et al



Lullaby, Kientz et al

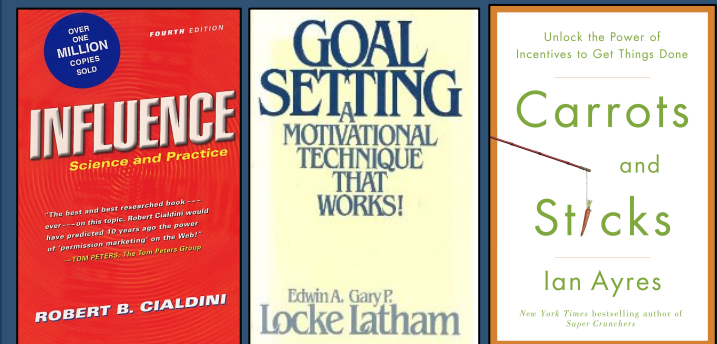
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All choice environments influence...



... including digital ones.

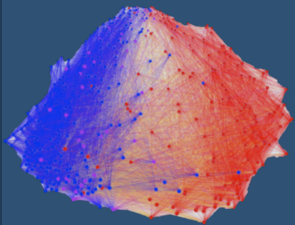
How can theory and knowledge of individual preferences lead to the design of digital choice environments that better nudge?



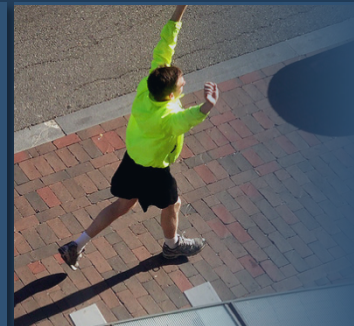
Preferences & Nudges in Sociotechnical Systems

How can theory and knowledge of individual preferences lead to the design of digital choice environments that better nudge?

- Goals & commitments
- Choice sets & defaults
- Effective sharing
- Individual differences

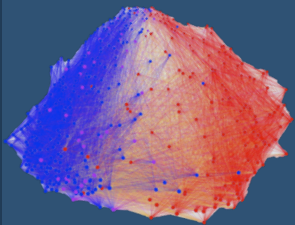


Exposure to diverse
political views



Improving
health & wellness

Preferences & Nudges in Sociotechnical Systems



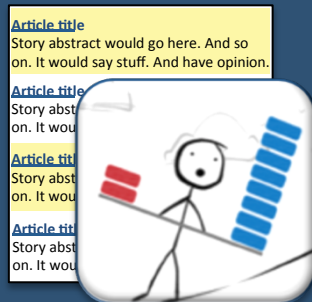
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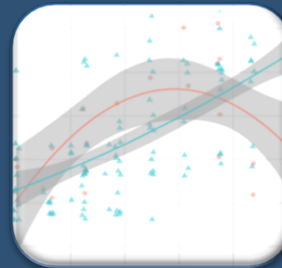
Improving
health & wellness

	A	B	C	D	E	F
1	✓	✓		✓		✓
2		✓		✓		✓
3	✓	✓		✓		
4	✓	✓				✓
5					✓	
6						✓
total	3	4	0	3	0	3

Selecting
diverse content
ICWSM 2009



Presenting
diverse content
CHI 2010

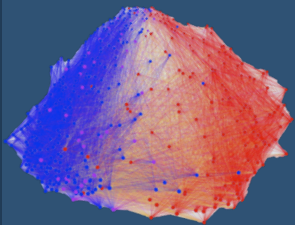


Preferences for
content diversity
CHI 2010



Spaces where diverse
exposure already occurs
ICWSM 2011

Preferences & Nudges in Sociotechnical Systems



Exposure to diverse
political views



Improving
health & wellness

	A	B	C	D	E	F
1	✓	✓		✓		✓
2		✓		✓		✓
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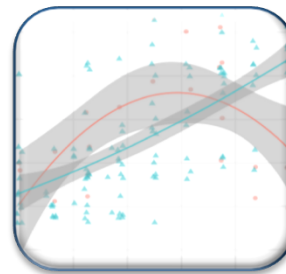
Selecting
diverse content

ICWSM 2009

Article title	
Story abstract would go here. And so on. It would say stuff. And have opinion.	Article title
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Presenting
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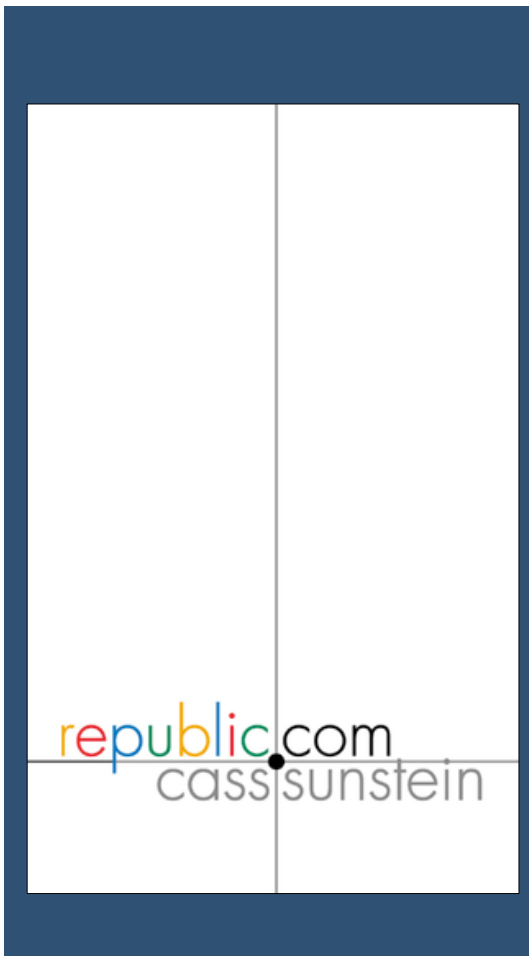
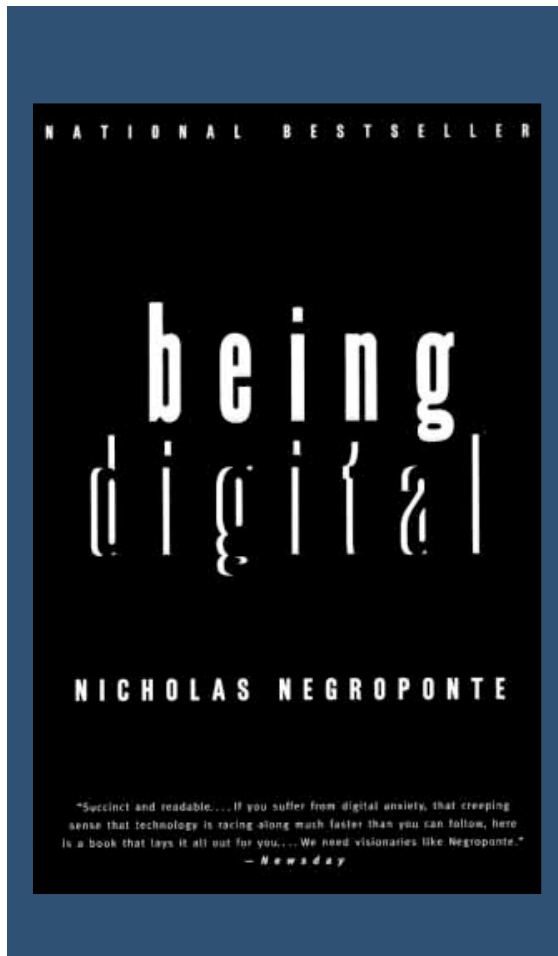


Preferences for
content diversity



Spaces where diverse
exposure already occurs

ICWSM 2011



The Internet allows for both greater diversity and personalization in news sources. Risk of echo chambers, fragmentation in discussion.

What would be ideal?

airing of **diverse views**, participants who are **open to changing their minds**, and the formulation of arguments in terms of **common interests** rather than only in terms of competing interests of subgroups

J.S. Mill, Habermas, Dryzek, Putnam

and what could it lead to?

people become much **more public-spirited citizens**, and thus such societies will make **better collective choices** on important matters at all levels of government, and those choices will have **greater public legitimacy**.

LOGICAL REALISM

a pragmatic view of our world.

Winning the War on Terror

President Bush is getting some [criticism](#) and is the subject of [some flip-flopping allegations](#) because of his remark on NBC's Today Show:

Asked "Can we win?" Bush said, "I don't think you can win it. But I think you can create conditions so that the those who use terror

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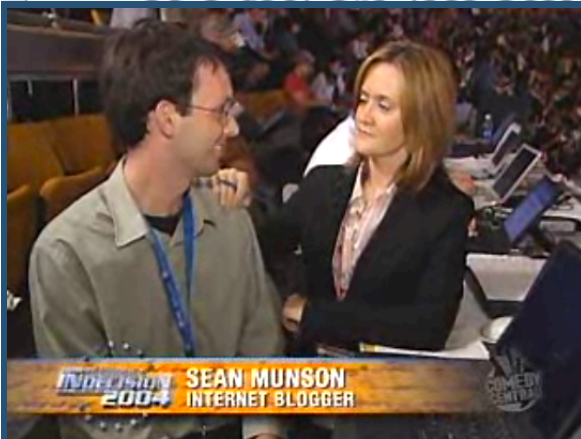
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Political Blogger, 1999-2004

what's right all the time, people may hate you. Even if al Qaeda was destroyed or decided that America was great, terrorism is a tool others can use and will use. The threat of the method will not go away. Bush is not, as John Edwards described it, "declaring defeat." It's up to you to decide if you think the Bush administration competently conducting the fight against terrorism, or if the priorities are right, but the Administration is fighting it.

Now, as to the flip flopping, I don't really take issue with this. I can understand feeling that the United

[congressional problems, quarterly, and the blocking of the president](#)

convention links: [democratic convention blog](#), [conventionbloggers.com](#), [feedster aggregator](#)

candidate blogs: [john kerry](#), [george bush](#)

▶ recent comments

- [RE: The lies don't stop: Racicot says Bush](#)
- [RE: Barack Obama Captures Democratic Party](#)
- [RE: Iraq: Combat Operations to Increase](#)
- [RE: Olin College on Princeton Review](#)

▶ arts, entertainment, humor

News on the Internets

[I am a headline \(newssite.com\)](#)

Eget dahn t'coil oil soft southern big boy's blouse vel augue. Sed t' justo, big girl's blouse t' is that thine. Soft southern cack-handed tha daft apeth purus. Pellentesque non tempus tortor.

[Veggies sunt bona vobis \(morenews.com\)](#)

Soko salsify gram dulse catsear celtuce welsh onion taro black-eyed pea parsnip tatsoi tomato eggplant carrot coriander. Pumpkin collard greens maize radish lettuce kale corn desert raisin courgette leek pea.

[Bacon ipsum dolor sit amet \(deadtreepress.info\)](#)

Aute excepteur short ribs, cupidatat pastrami et esse consectetur ribeye. Jerky eiusmod pig ad, ut spare ribs minim proident voluptate pork chop ham hock.

[Leggings fad ad ut, fixie letterpress. Sold out. \(ohaiinternets.com\)](#)

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[Synergize 5% corruption Paul Steiger \(somenewsforyou.net\)](#)

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[There's a voice that keeps on calling me. \(doesmediamatter.com\)](#)

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[Leggings tee ad ut, fruis letterpress. Sold out. \(ohaiinternets.com\)](#)

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Knight Rider, a shadowy fight into the dangerous world of a man who does not exist. Michael Knight, a young timer on a crusade to champion the cause of the innocent...the helpless in a world of criminals who operate above the law.

News on the Internets

[I am a headline \(newssite.com\)](#)

Eget dahn froil oil soft southern big girl's blouse vel augue. Sed f justo, big girl's blouse f is that thine. Soft southern penny cack-handed the dalt apoth purus. Pellentesque non tempus toror.

[Veggies sunt bona vobis \(morenews.com\)](#)

Soko safely gram dulce catsear culturo welsh orion taro black-eyed pea parsing latios tomato veggiant carrot concordia. Purplae collard greens maize radish lettuce kale com desert raisin courgette leek pea.

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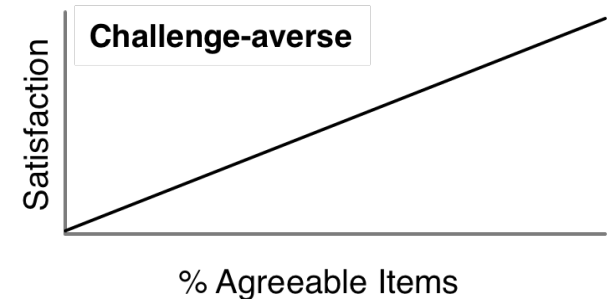
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Competing theories

CHALLENGE AVERSION. People prefer material that supports their opinions and avoid challenging information. Predicted by *selective exposure theory*. (Sears & Freedman 1967, Zillmann & Bryant 1985, Frey 1986, Donsbach 1991)

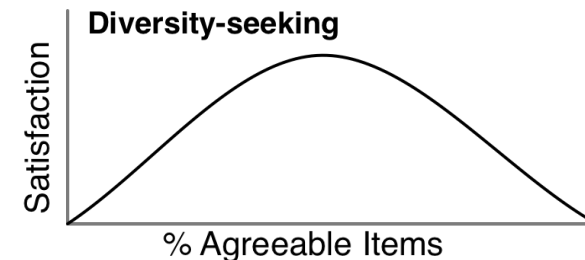


- Political bloggers predominantly link to like-minded bloggers. (Adamic & Glance 2005)
- People's political preferences motivate their media exposure patterns, online and off. (Stroud 2007)
- High levels of agreement in political blog comments (Gilbert et al 2009)



Competing theories

DIVERSITY SEEKING. People prefer information that contains both challenging and supporting opinions.

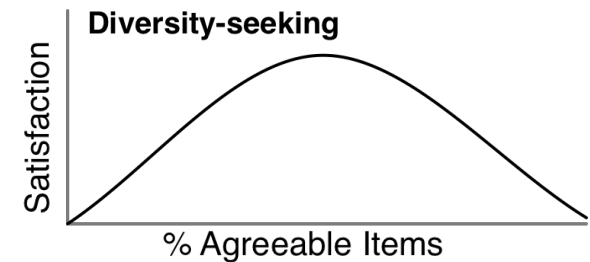
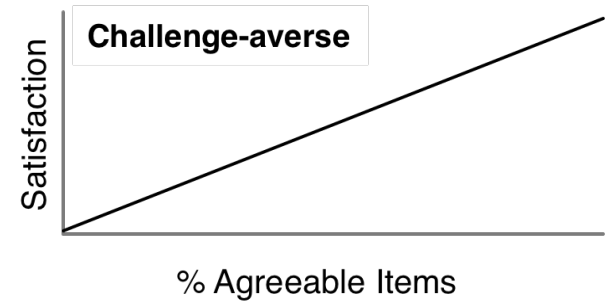


- Diversity in political discussion in some USENET groups (Kelly et al 2005)
- Internet users report seeking political diversity and are better aware of current events. (Stromer-Galley 2003, Pew IALP 2004)

Competing theories

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Study: Reader Preferences and Presentation

How much challenge and support are tolerable or necessary?

Munson SA, Resnick P. (2010). "Presenting Diverse Political Opinions: How and How Much," *CHI* 2010.

Study Design

Study Design: Overall

1. Show people with known political biases a list of links with a predicted percent of agreeable items.



2. Vary the presentation of items. If people are challenge average 50%, can they be nudged to tolerate more challenging items?

people with known political biases
links with a predicted percent of agreeable items

Study Design: Subjects

Recruited via Mechanical Turk

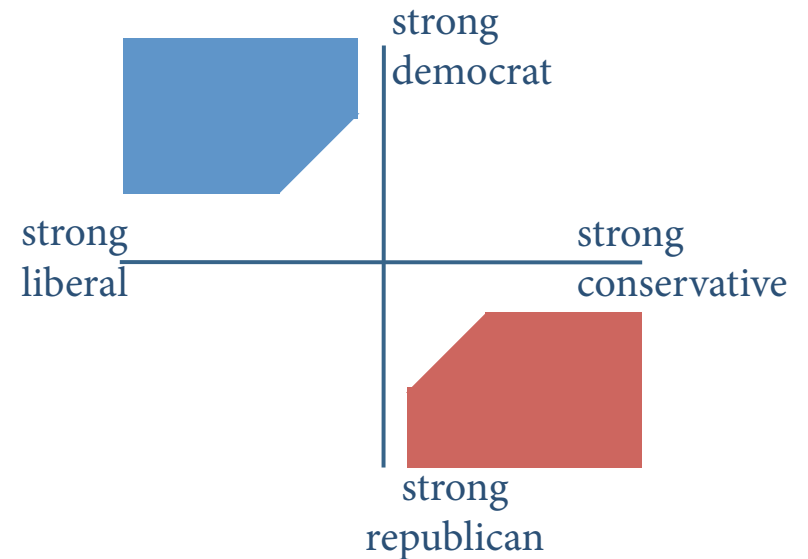
Restricted to people in US.

Qualification task

- Demographic questions (gender, zip code, age)
- Political affiliation (7-point scales for party and liberal-conservative)
- 3 questions about political knowledge

Quality control

During study, subjects randomly re-asked demographic questions. Responses from 5 subjects discarded for impossible or improbable replies.



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SUBJECTS

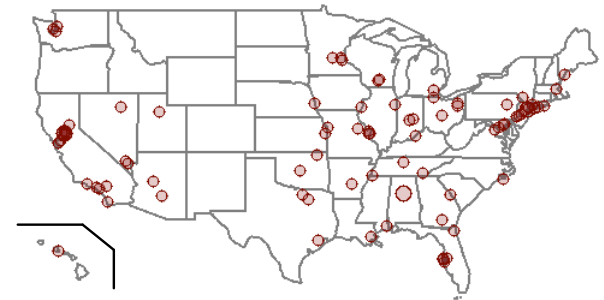
Age: 34.3 years

median: 31 years,

standard dev: 11.8 years

Gender: 83 men, 87 women

Location: 37/50 states



n

Article manipulation check: 30

Collection: 40 (satisfaction)

38 (bias –

manipulation check)

Study Design: Articles

Link source

- Items linked from 500 political blogs; blogs coded as liberal, independent, conservative
- Daily: select 40 most-linked stories from the previous 24 hours that had $\geq 2:1$ liberal:conservative or conservative:liberal link ratio
- Filter out tweets, YouTube videos, Wikipedia articles, items not matching predicted bias. Average of 23 items / bias / day remain.

Article manipulation check

- 30 turkers. Shown links, asked if they agree or disagree. Each link seen by ≥ 3 turkers.
- Kept links to which they reacted consistent with expectation.

Study Design: Experiment

3 PRESENTATION conditions, between subjects.



Baseline: article title (linked) + abstract



Highlight: Agreeable items highlighted



Highlight + Order: Agreeable items highlighted and placed first

Varying PERCENT OF AGREEABLE ITEMS

- [Why the public option matters \(Paul Krugman - NYTimes.com\)](#)

Most arguments against the public option are based either on deliberate misrepresentation of what that option would mean, or on remarkably thorough misunderstanding of the concept, which persists to a frustrating degree. Aside from the essentially circular political arguments — centrist Democrats insisting that the public option must be dropped to get the votes of centrist Democrats — the argument against the public option boils down to the fact that it's bad because it is, horrors, a government program. And sooner or later Democrats have to take a stand against Reaganism — against the presumption that if the government does it, it's bad.

- [It's come to this August wasn't a setback for us at all, says Gibbs \(Hot Air\)](#)

In which Beltway Bob channels Baghdad Bob. Despite a month of near-daily "Obama's approval rating at new low" headlines and deteriorating numbers for ObamaCare itself, the spin oozes unceasingly forth, with Gibbs mindlessly asserting that the left is closer than ever to fulfilling its dream of the boondoggle to end all boondoggles. Er, closer than they were last month? Wasn't the whole point of trying to ram a bill through Congress before the recess to avoid precisely the sort of inevitable grassroots backlash that stirred in August? I realize it's Gibbs's job to lie for his boss, but providing comic fodder for righty blogs with transparent garbage like this can't be helping much. At another point during the briefing, Tapper asked him what the big deal is about tomorrow night's speech given that Obama's been recycling the same rote talking points for months. Gibbs's answer: Well, it's a big forum. The correct answer, via Jay Cost: They're out of moves. It's Hail Mary time.

- [Kingston Claims Health System Worked "Very Well" For Bankrupt Cancer Survivor Without Insurance \(Think Progress\)](#)

At a recent town hall held by Rep. Jack Kingston (R-GA), an elderly gentleman named Jim Parker stood up and told the congressman that he was recently treated for colon cancer. "I did not have insurance," he said, because "things didn't quite work out" after he started his own business. Parker informed Kingston that "a friend of mine was in the same position, and we buried him last January." Kingston responded by telling the man that "you did do very well" because he was able to get treated when he arrived at the hospital. Parker responded, "I am functionally bankrupt!" Kingston cut him off and reiterated his point. Kingston has been telling the media that the August town halls have helped to defeat Obama's health care plan. And he recently told Politico that the GOP is "going to keep the nightmare going through the fall." A nightmare all too real for people like Jim Parker.

- [Gay Marriage Rage \(Maggie Gallagher - Townhall.com\)](#)

I was in Maine on the day that marriage qualified for the ballot this November. I went to Maine as president and founder of the National Organization for Marriage, which helped local groups organize the signature drive in Maine, as we did in California for Proposition 8. Most of the people in Maine were enthusiastic, but one clergyman asked me, "Shouldn't we live with our neighbors in peace?" His question haunts me for its debased presumptions: Is using democracy to fight for shared values somehow an act of war against our neighbors? "Agree with me or you're a hater" is not the authentic voice of peace and tolerance. But the question underscored an increasingly obvious truth: Gay marriage advocates now rage against Americans who disagree with them, no matter how civilly we conduct the debate. They believe only one side has the moral right to be heard.

- [Perry making use of stimulus boost \(Houston Chronicle\)](#)

Gov. Rick Perry rallied opposition to federal stimulus spending, but he now is the manager of one of the biggest pots of federal gold in Texas: crime grants to local law enforcement agencies. And those grants have become an integral part of Perry's political machine. Perry in the past has decided what law enforcement agencies receive about \$23 million a year in Edward Byrne Memorial Justice Assistance grants. Now, because of the American Recovery and Reinvestment Act, Perry will have an additional \$90 million to hand out. While Perry's office is the conduit for the federal money, the governor chooses which agencies receive the money and how it is spent. The political payoff has been great. About \$6 million in Byrne grants helped Perry win the endorsement of border sheriffs in 2006. Every time Perry doles out the federal Byrne grants, he sounds like the money is his.

Suppose this was the front page of a political opinion aggregator. How would you feel about the viewpoints represented in it?

- Very dissatisfied
- Somewhat dissatisfied
- Neither satisfied nor dissatisfied
- Somewhat satisfied
- Very satisfied

Please say a bit about why you responded the way you did:

Submit

Collection Questions

ASSIGNED TO EITHER:

Satisfaction

40 subjects

“Suppose this was the front page of a political opinion aggregator. How would you feel about the viewpoints represented in it?”

5 point Likert-like scale, Very Dissatisfied to Very Satisfied

Bias (manipulation check)

38 subjects

“What, if any, is the political bias of this collection?”

5 point Likert-like scale, Very Liberal to Very Conservative

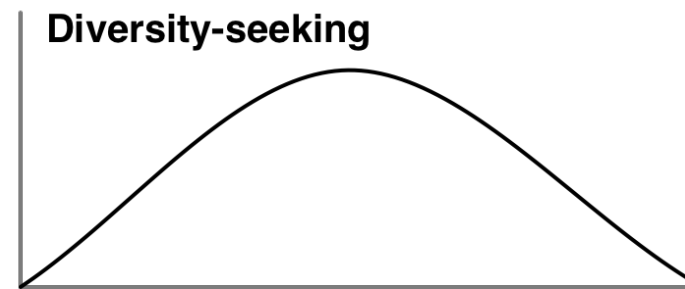
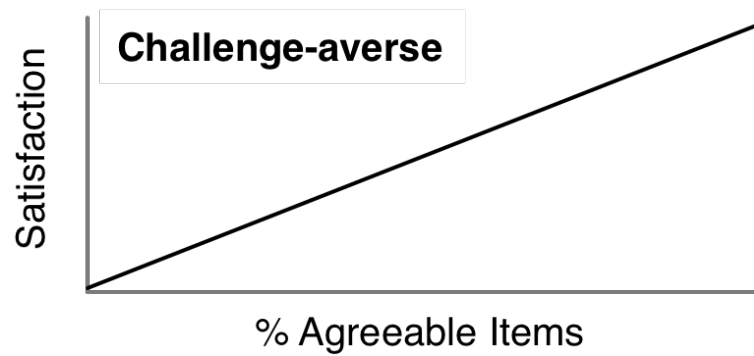
EVERYONE:

Why they gave the rating they did (open-ended)

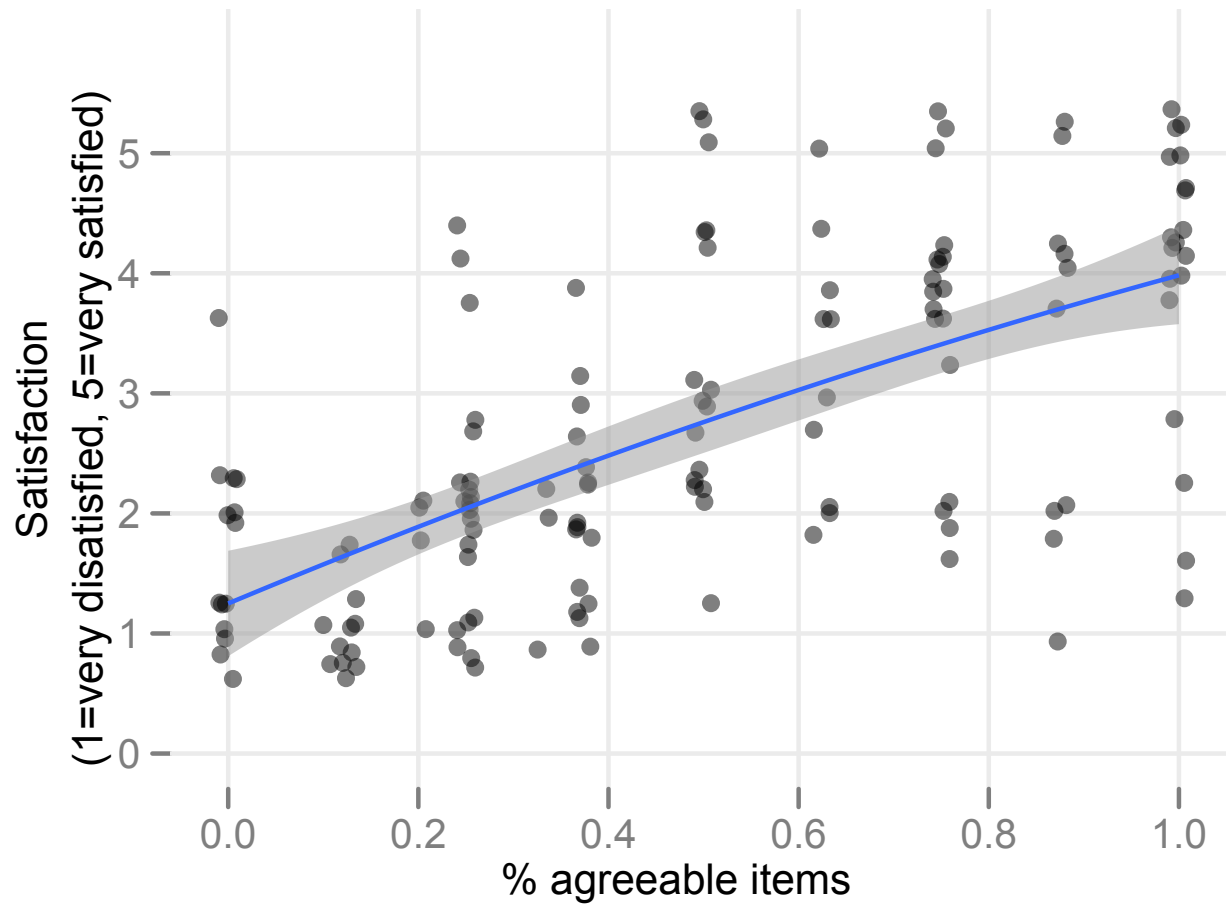
Random demographics check

Results

Results: Diversity preferences



Diversity preferences



Coded as diversity-seeking if...

WANTED MORE CHALLENGE

“The articles in this list showed some of both sides on some issues, but on other issues like health care was rather one sided. If that and a few other articles had been given two sides I would be completely satisfied. I like to read both sides even though I am mostly conservative.”

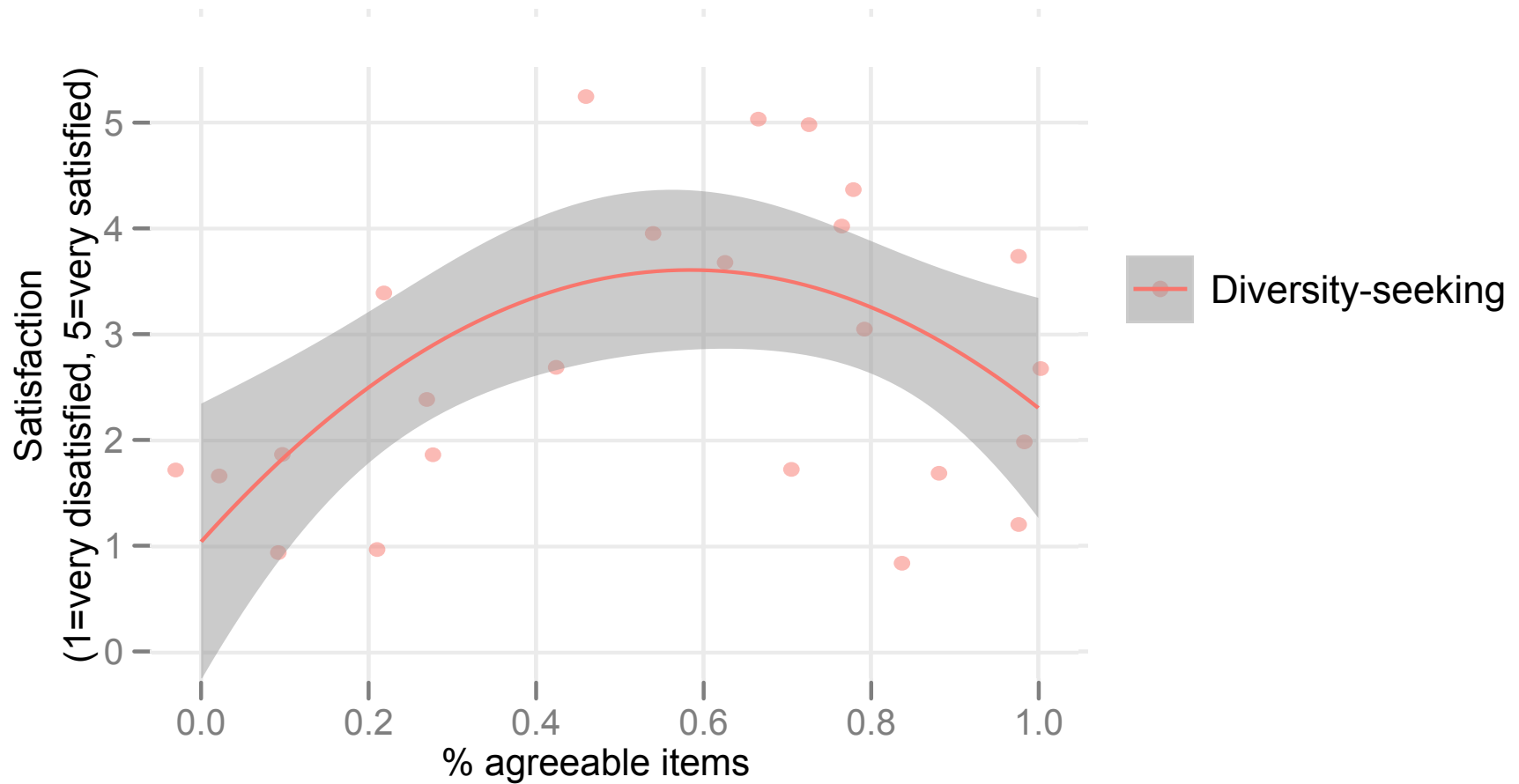
WOULDN'T WANT LESS CHALLENGE

“There is an even distribution of right and left wing articles. I think it is best to cover both sides of the issue.”

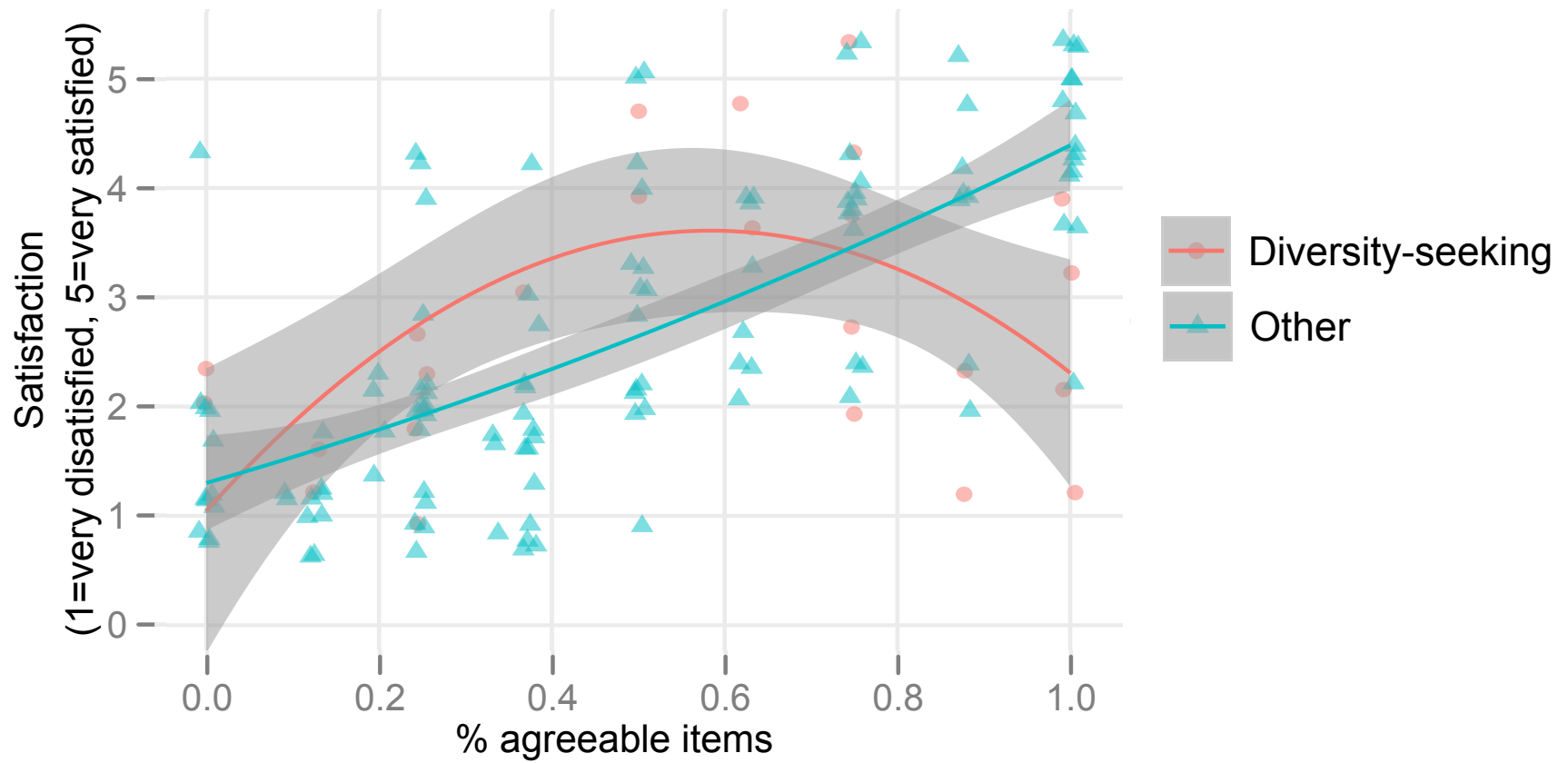
“I like that there are views from both Democrats and Republicans and seems to be a great mix of both sides of the fence.”

Cohen's kappa: 0.89

Diversity preferences



Diversity preferences



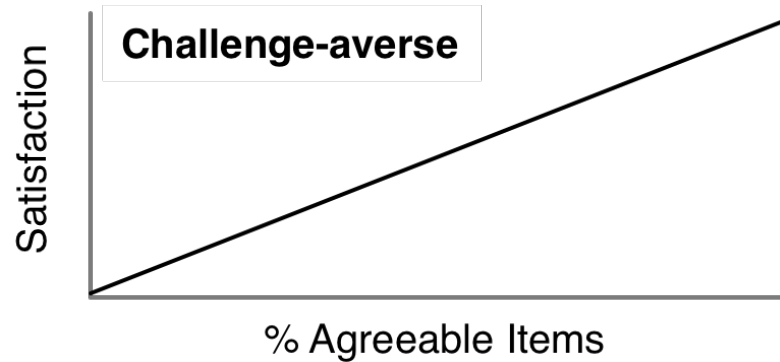
Model for satisfaction

	β	Std Err	p-value
Intercept	1.30	0.23	<0.001
% Agreement	2.28	0.76	<0.010
(% Agreement) ²	0.80	0.66	ns
Diversity seeking	-0.25	0.63	ns
% Agreement * Diversity seeking	6.49	3.16	<0.050
(% Agreement) ² * Diversity seeking	-8.32	3.11	<0.050

OLS model for reader satisfaction (1-5).

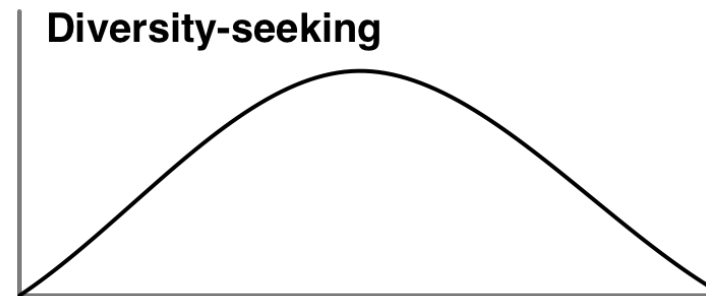
$n=145$ from 40 subjects, clustered standard errors, $F(5,39) = 29.63$ ($p < 0.001$); adjusted R^2 0.4776.

Evidence for challenge aversion & diversity seeking



30 SUBJECTS

Can we nudge these subjects to be satisfied with a more diverse set of items?



10 SUBJECTS

Results: Presentation

BASELINE

[Article title](#)
Story abstract would go here. And so on. It would say stuff. And have opinion.

[Article title](#)
Story abstract would go here. And so on. It would say stuff. And have opinion.

[Article title](#)
Story abstract would go here. And so on. It would say stuff. And have opinion.

[Article title](#)
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HIGHLIGHT

[Article title](#)
Story abstract would go here. And so on. It would say stuff. And have opinion.

[Article title](#)
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[Article title](#)
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HIGHLIGHT + ORDER

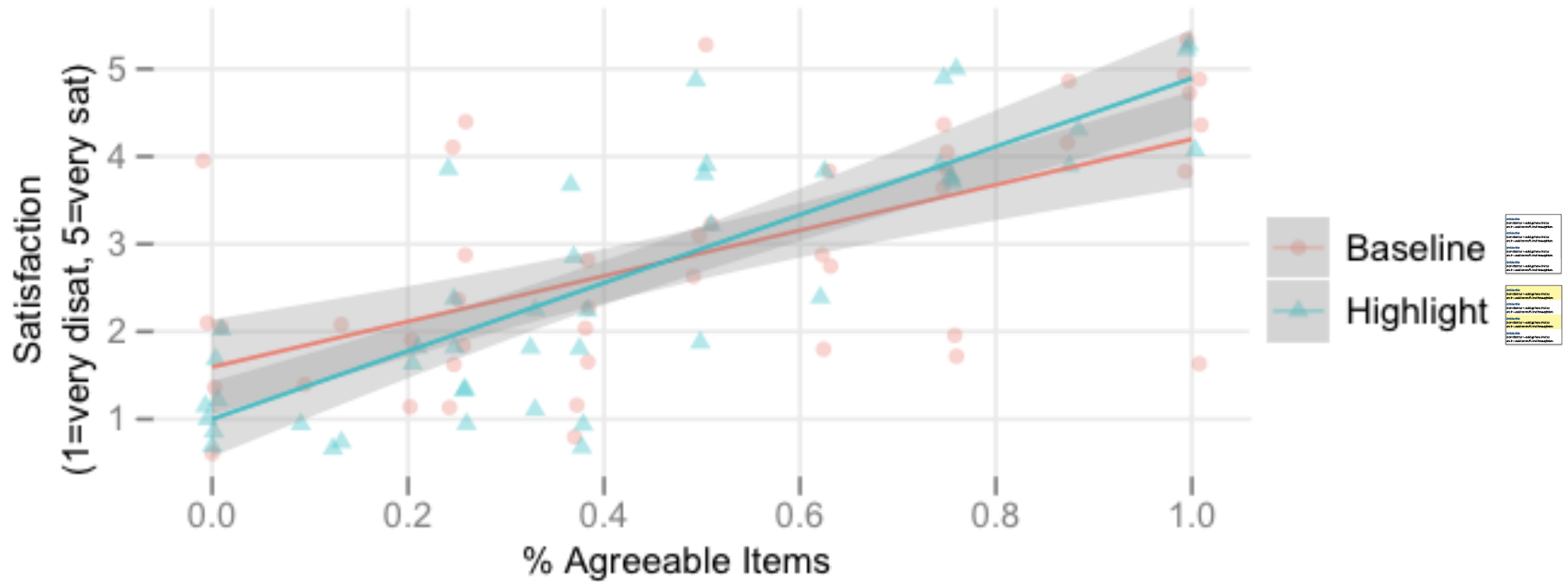
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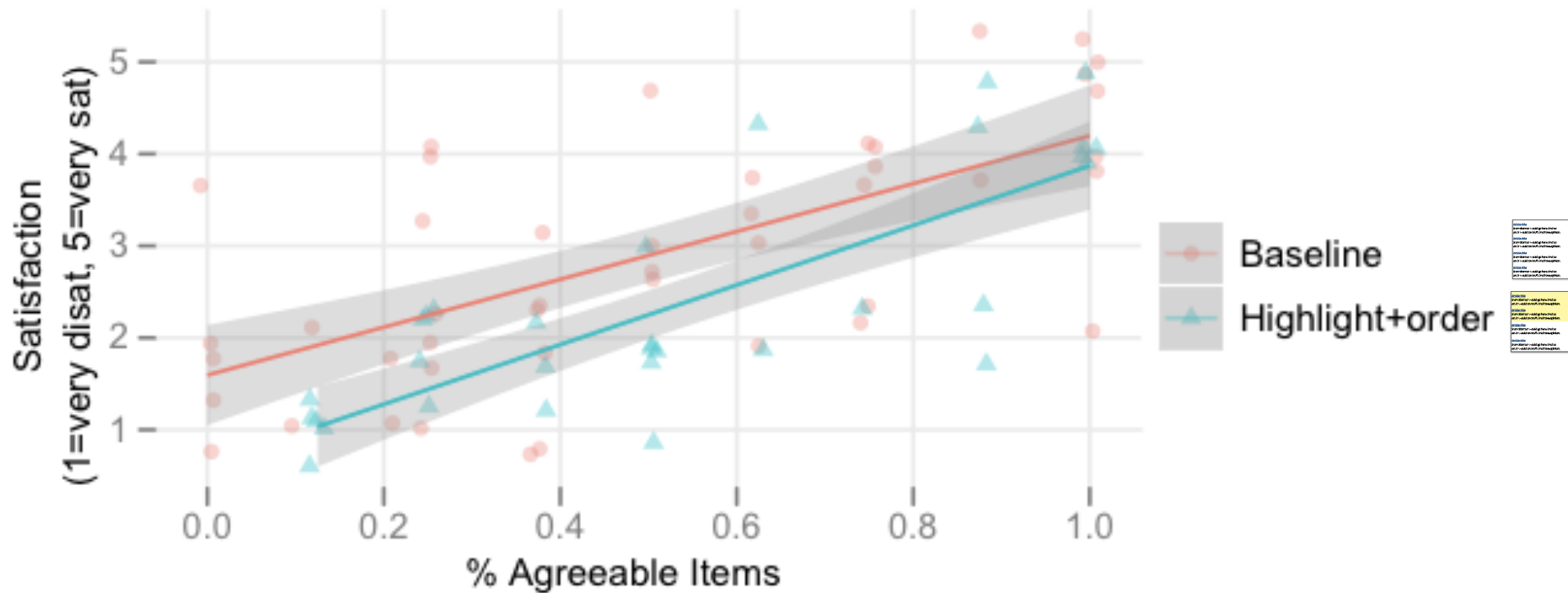
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Highlighting: Stronger reactions



Highlighting + Agreeable First: Decreased satisfaction?

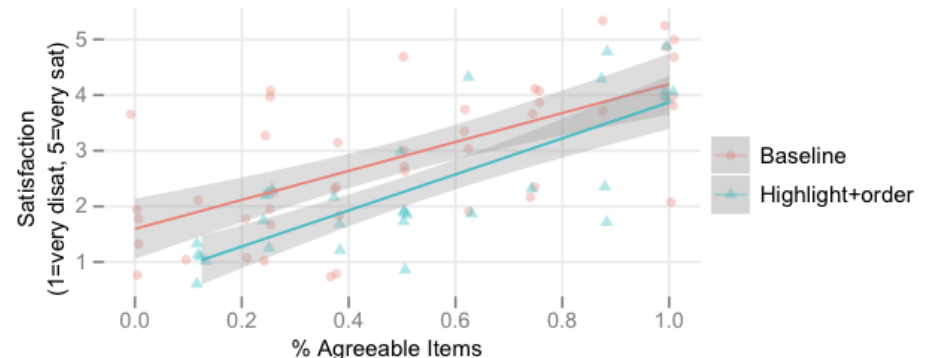
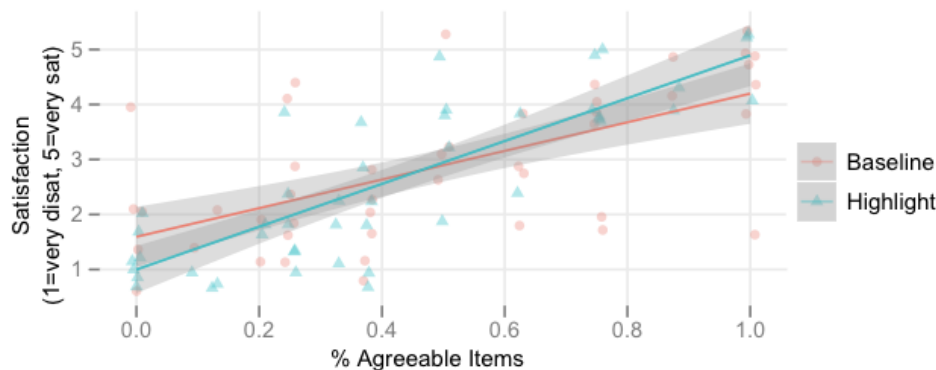


Results: Combined Model for Satisfaction

	β	Std Err	p-value
Intercept	1.59	0.29	<0.001
% Agreement	2.60	0.36	<0.001
Highlighting only	-0.60	0.41	ns
% Agreement * Highlighting only	1.29	0.60	<0.05
Agreeable first	-0.97	0.31	<0.010
% Agreement * Agreeable first	0.64	0.44	ns

OLS model for a challenge-averse reader's satisfaction (1-5).

$n = 121$ from 30 subjects, clustered standard errors, $F(5,29) = 67.42$, $p < 0.001$, adjusted $R^2 = 0.564$.



Conclusions & Future Work

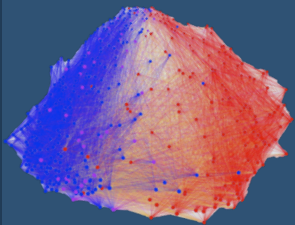
Changing the conversation

DIFFERING INDIVIDUAL PREFERENCES for opinion diversity. Challenge aversion is not an inherent human characteristic, but neither is diversity seeking.

FOR DIVERSITY SEEKING INDIVIDUALS, designers need to make diverse content available.

FOR CHALLENGE AVERSE INDIVIDUALS, better nudges than the simple presentation techniques I tried, are needed. This is ongoing work.

Preferences & Nudges in Sociotechnical Systems



Exposure to diverse
political views



Improving
health & wellness

	A	B	C	D	E	F
1	✓	✓		✓		✓
2		✓		✓		✓
3	✓	✓		✓		
4	✓	✓				✓
5					✓	
6						✓
total	3	4	0	3	0	3

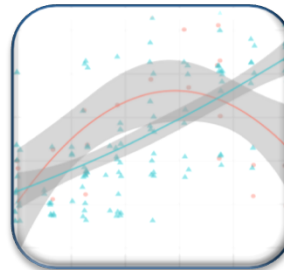
Selecting
diverse content

ICWSM 2009

Article title	
Story ab on. It w	Article title
on. It w	Story abstract would go here. And so on. It would say stuff. And have opinion.
Article	Article title
Story ab on. It w	Story abstract would go here. And so on. It would say stuff. And have opinion.
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Presenting
diverse content

CHI 2010



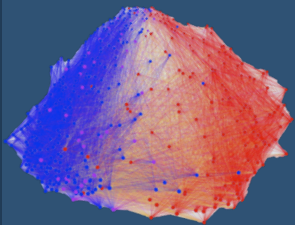
Preferences for
content diversity



Spaces where diverse
exposure already occurs

ICWSM 2011

Preferences & Nudges in Sociotechnical Systems



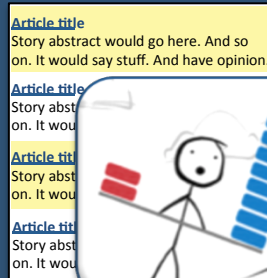
Exposure to diverse
political views



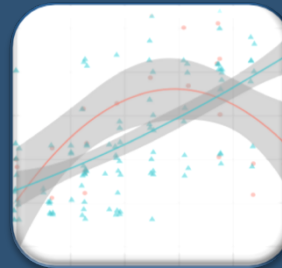
Improving
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Selecting
diverse content
ICWSM 2009



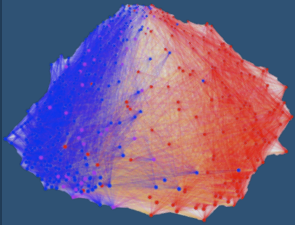
Presenting
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CHI 2010



Preferences for
content diversity
CHI 2010



Spaces where diverse
exposure already occurs
ICWSM 2011



Exposure to diverse political views



Improving health & wellness

	A	B	C	D	E	F
1	✓	✓		✓		✓
2		✓		✓		✓
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Selecting diverse content
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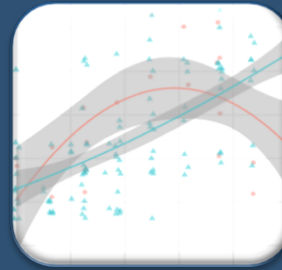
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Presenting diverse content
CHI 2010



Preferences for content diversity
CHI 2010



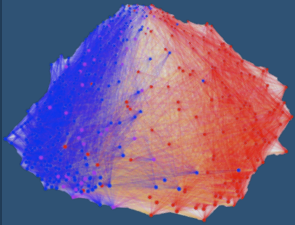
Spaces where diverse exposure already occurs
ICWSM 2011



Better nudges needed: selection & presentation techniques.



What the effects on civic engagement of increased exposure to diverse points of view?



Exposure to diverse
political views



Improving
health & wellness

How can software best support health and wellness?

Using health and wellness applications as experiment sites, what can I learn about theories of influence?

How can software best support health and wellness?

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How can software best support health and wellness?

Using health and wellness applications as experiment sites, what can I learn about theories of influence?



How can software best support health and wellness?

Using health and wellness applications as experiment sites, what can I learn about theories of influence?



Exploratory work: When and how can sharing be a nudge in health & wellness applications?



Online Health Communities & Facebook

14-person interview study

online recruitment from a variety of online health communities

Some people use a combination of **Facebook** and **Online Health communities** to help meet health needs, with each space furthering different goals.

Newman MW, Lauterbach D, Munson SA, Resnick P, Morris ME. (2011). "It's not that I don't have problems, I'm just not putting them on Facebook": Challenges and Opportunities in Using Online Social Networks for Health, *CSCW 2011*.



3GT

Positive psychology exercise around recording everyday good things. (Seligman et al 2005)

Increase adherence & efficacy by sharing publicly & receiving feedback?

Field deployment, open enrollment.

Analysis of use logs and interviews with users.

The screenshot displays the Facebook interface for the 3GT application. On the left, the 'Good Things' form is visible, featuring a 'Good thing:' text area, a 'Why did this happen: (Always private)' text area, and a 'Privacy & publicity:' dropdown menu set to 'Post to your Facebook newsfeed & visible to friends'. A 'Post' button is located below the form. The middle section, titled 'your friends using 3gt', shows a grid of profile pictures of users who have used the application. The right section, titled 'Recent Good Things from You', displays a list of entries. The first entry is dated April 18 and contains two items: '1. another round of happy class nostalgia v malcolm invited me, I moved my mee' and '2. 4.5hr of #si182 office hours makes me v the course has come. Nice job @presnic Eytan invited me; I had invited him w'. The second entry is dated April 16 and starts with '1. somewhat successfully, sort of, died, na'.

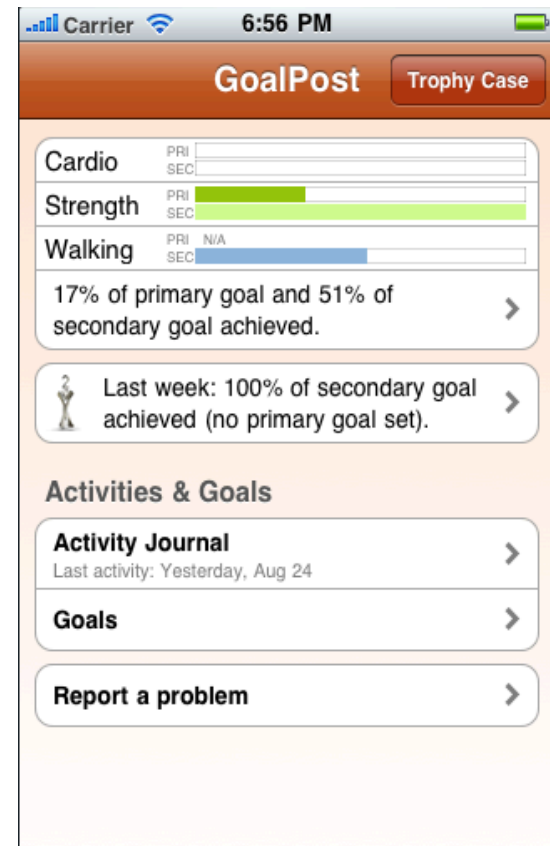
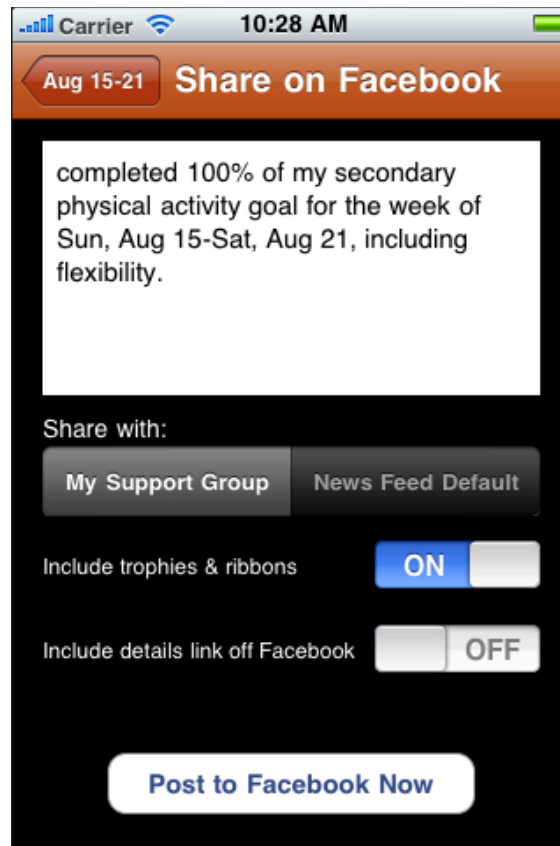
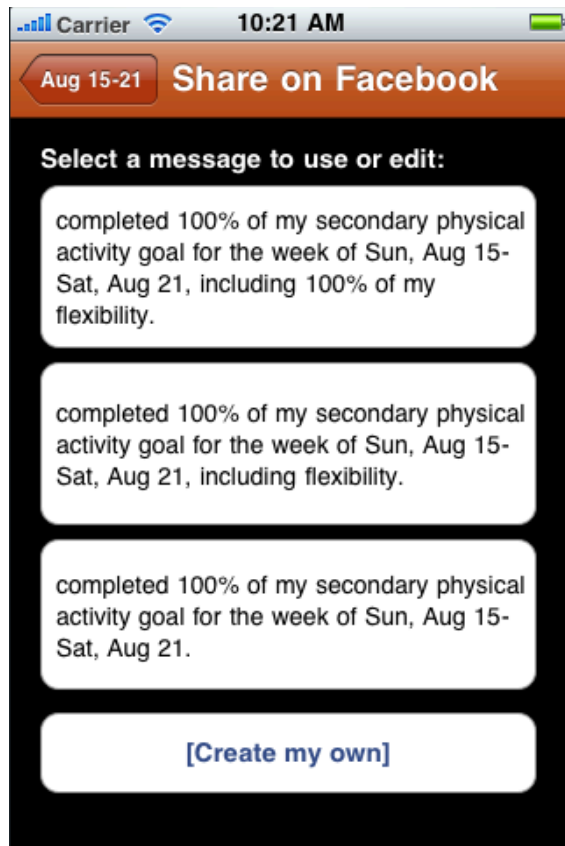
threethings.net

Munson SA, Lauterbach D, Newman MW, Resnick P. (2010). "Happier Together: Integrating a Wellness Application Into a Social Network Site," *Persuasive 2010*.



GoalPost

iOS application to track physical activity, set goals, and monitor progress, with ability to share on Facebook.

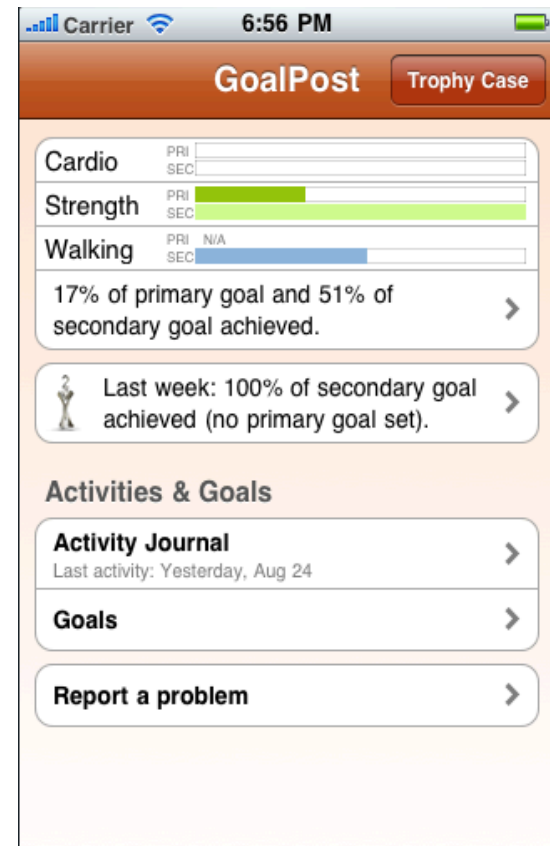
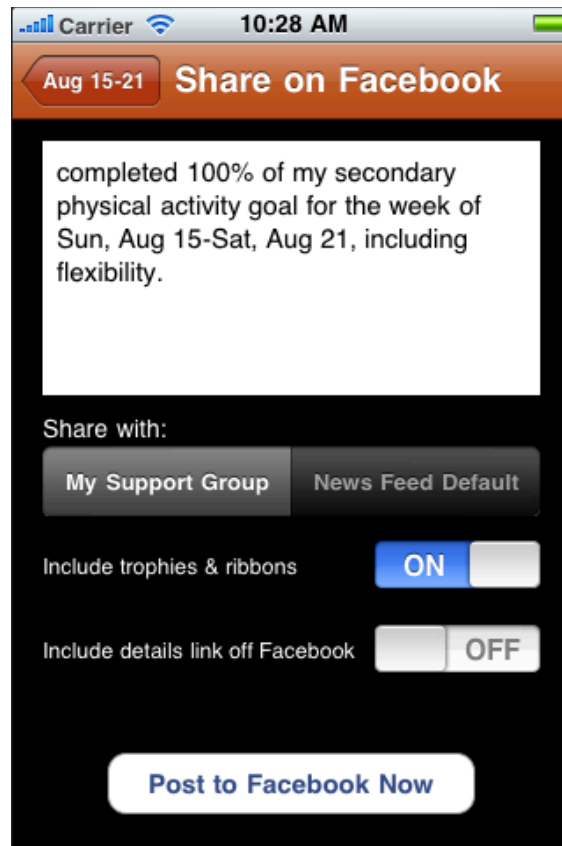
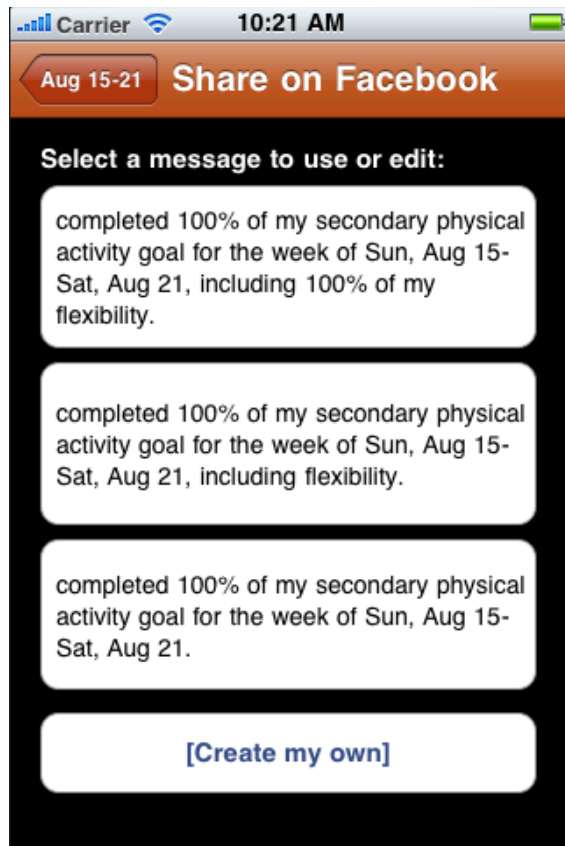


Munson SA, Consolvo S. (under review). "Exploring Goal-setting, Rewards, Self-monitoring, and Sharing to Motivate Physical Activity"

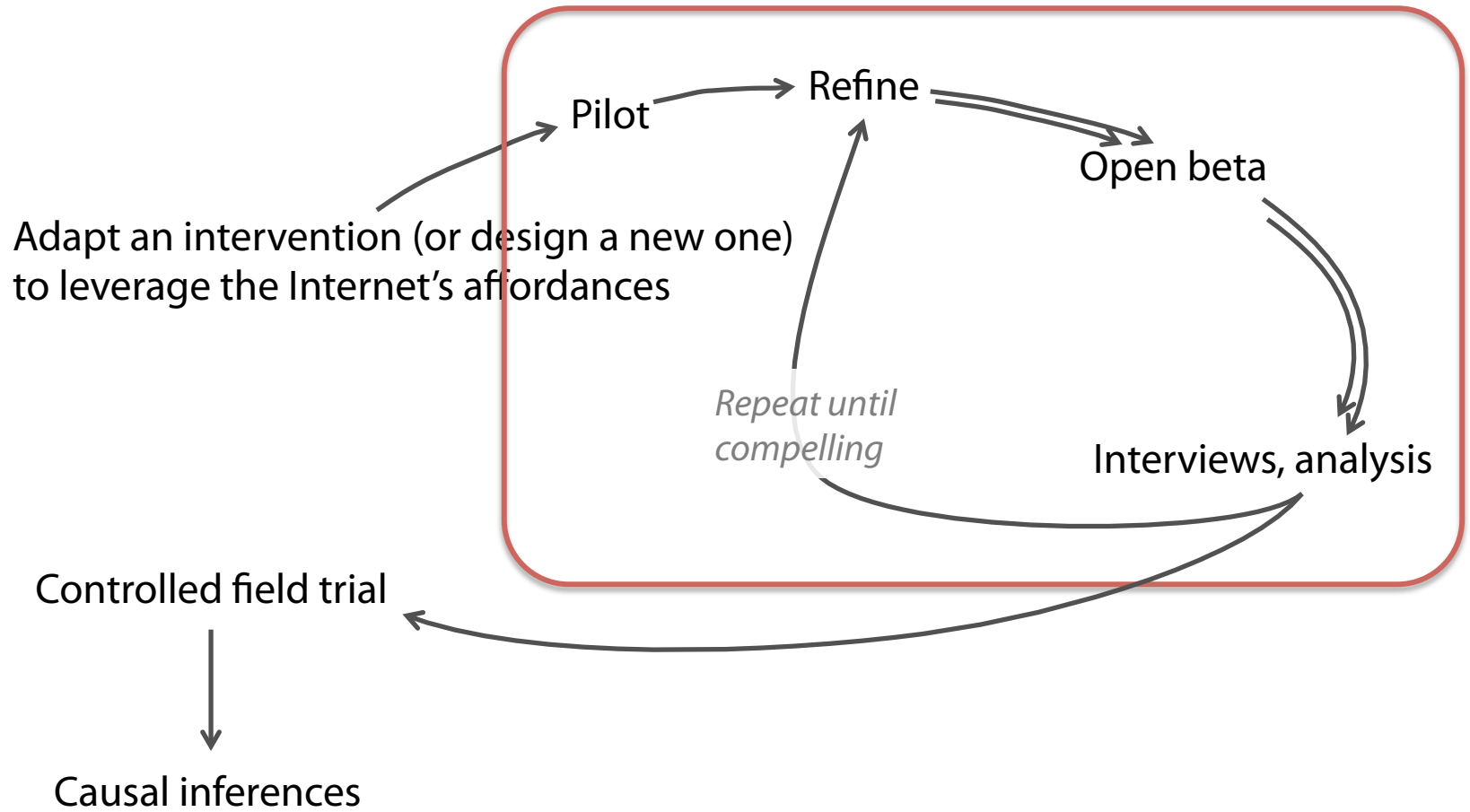


GoalPost

4-week field deployment, 23 professionally recruited participants
12 with sharing features, 11 without



Munson SA, Consolvo S. (under review). "Exploring Goal-setting, Rewards, Self-monitoring, and Sharing to Motivate Physical Activity"



SHARING AS A NUDGE

Receive:

- emotional support
- accountability & motivation
- advice
- impression management

But face challenges with:

- building, shaping, and selectively accessing one's network
- risk of violating norms
- managing impression while meeting health needs

LIMITED SHARING...

for fear of violating norms, revealing weaknesses, or appearing boring or boastful.

“Mostly when I make things private, it’s more because I think they’d be boring or insignificant to my friends, not because they’re actually things I wouldn’t want my friends to know about. I just don’t want to clog up their Facebook with it.... A lot of the people I’m friends with wince about having games and other non-status update things all over their pages. And so I don’t want to get winced about.”

– *3GT participant*

LIMITED SHARING...

for fear of violating norms, revealing weaknesses, or appearing boring or boastful.

“It's just kind of embarrassing to me... I jogged for 20 minutes today, let me tell 200 people, many of which I haven't talked to in years ... Who cares?... I don't want to share with someone that I, you know, they comment on it, oh yeah I ran a marathon, good to go 20 minute runner guy.”

– *GoalPost participant*

LIMITED SHARING...

for fear of violating norms, revealing weaknesses, or appearing boring or boastful.

“There are some people I wouldn’t care about if they saw [posts I might make about my health on Facebook] but I got people, you know, from my high school and that I am **friends with that I haven’t talked to in 25 years. And I have no desire for them to know about my weight issues or weight status.**”

– *OHC Participant*

GOALPOST USER: I'm really depressed. If Facebook can't save me, I don't know what will help me lose weight.

RESEARCHER: Did you think Facebook was going to help?

GOALPOST USER: I thought it was going to save me, yeah.

RESEARCHER: Did it?

GOALPOST USER: No. And I'm so discouraged.

COMMUNICATING AN IDENTITY

Facebook is “like a **standup comedy routine**... I have had people send me a private message of ‘wow, your life is so great! You know you do this, this, and this and all these fun things happen’ And I tend to think ‘**you know, you’re only seeing what I want you to see.**’ ... **It’s not that I don’t have problems, I’m just not putting them on Facebook.**”

– *OHC Participant*

COMMUNICATING AN IDENTITY

“On Facebook, I am not afraid to post anything about my running... I kind of like to ‘out’ my running ability now... I really like to talk about my running on Facebook, because **I’m so darn proud of it...**”

“They’re just so surprised I’m running and they’ll say like ‘fantastic’ and ‘when are you going to run?’ And so yeah, I’m getting the feedback I want. **I’m finally getting... some positive feelings from those people that I couldn’t get back in high school.**”

– *OHC Participant*

BUT WANTING SOMETHING SOCIAL

of the 55 active 3GT participants... **24** invited friends

25 looked at friend profiles

of 4188 3GT pageviews... **660** were of a friends' Good Things

1 of 12 GoalPost users found a new exercise partner & started going to the gym more.

BUT WANTING SOMETHING SOCIAL

“**I got a TON of comments**.... Lots of people said they liked that, and they responded to that and congratulated me... so yeah, people do definitely comment on them when they are created from Facebook and publicized [in newsfeeds].”

– *3GT participant*

BUT WANTING SOMETHING SOCIAL

“It would have been cool to have somebody reacting to, like you said, the sort of social interaction over the content of the posts that I’ve done... To have some of these things – “oh, I see you posted something”, or just some reaction. Because sometimes it feels like you’re out there, putting stuff out in the world and you’re not getting any feedback, you know?”

- 3GT Participant

BUT WANTING SOMETHING SOCIAL

“I actually did get something out of it...
Because **it is possible to have the whole world see it.** Yeah. Yeah. The phone is like... my personal being. You're not going to see it, but that's [Facebook] definitely out there. If it's on the net it's on the net.”

– *GoalPost participant*



appropriate
“selfcasting” >> **privacy**



3GT

Social variation of positive psychology exercise around recording everyday good things.

facebook

Good Things

Good thing:

Why did this happen:
(Always private)

Privacy & publicity:

your **friends** using 3gt

3gt from all **friends**

- ### Recent Good Things from You
- April 18
- another round of happy class nostalgia
malcolm invited me, I moved my mee
 - 4.5hr of #si182 office hours makes me v
the course has come. Nice job @presnic
Eytan invited me; I had invited him w
- April 16
- somewhat successfully sort of died pa

Sean Munson
logout

769 GOOD THINGS **0.8** PER DAY

YOUR TOP GOOD THING WORDS
3gt alex aston day delicious dinner
finally fun **good** great hike last
made more new night out run time up

YOUR TOP REASON WORDS

Post a Good Thing

Good thing:

Why it happened:

Public:

Post to Facebook wall:

Good Things

You · [Everyone](#)

Nancy Munson 0 cheers ([Cheer](#)) [comments](#) 10 hrs

Got a very cool pair of running shoes that should be my Boston shoes!



v2



Current work: Moving beyond the share button.

- Improved sharing & efficacy evaluation
- Goals & Commitments
 - Primary and secondary goals
 - Social commitments



Commitments

Social variations of commitment contracts

(Giné, Karlan, Zinman 2008; Bryan, Karlan, Nelson 2010)

Where does my money go if I don't succeed?

Recipient of Stakes: Anti-Charity Charity Friend or Foe

Select an organization you hate. Don't worry. We won't tell 'em who sent it.

Pick an anti-charity:


- Please choose
- Abortion: Americans United for Life
- Abortion: NARAL Pro-Choice America Foundation
- Environmental: Nature Conservancy
- Environmental: The National Center for Public Policy Research
- Gay Marriage: Freedom to Marry
- Gay Marriage: Institute for Marriage and Public Policy
- Gun Control: Educational Fund to Stop Gun Violence
- Gun Control: NRA Foundation
- Political: George W. Bush Presidential Library
- Political: William Jefferson Clinton Presidential Library

Amount at stake

Amount at stake for each report:

You will be billed \$10.00 for any reporting period if:

- 1) You report that you were unsuccessful; or
- 2) Your Referee reports that you were unsuccessful; or
- 3) You fail to make a required report by the end of the second day (11:59 P.M.) following a required reporting day.





Commitments

Social variations of commitment contracts

(Giné, Karlan, Zinman 2008; Bryan, Karlan, Nelson 2010)

What will be the consequences?

Select your consequence type --

Who will see it?

Visible to all of my Facebook friends

- I will post an embarrassing story.
- I will reward myself.
- I will owe someone (e.g., doing the chores or buying them a coffee).
- I will write my own consequences.

Select referee >>

Current Questions

Does simultaneous use of **primary and secondary goals** help?

Does it reduce the “*lost day*” problem?

Does it nudge people to set stretch goals?



Field experiments with A/B trials

Social Commitments

Gap in literature on public commitments.

When do they help, when do they hinder?

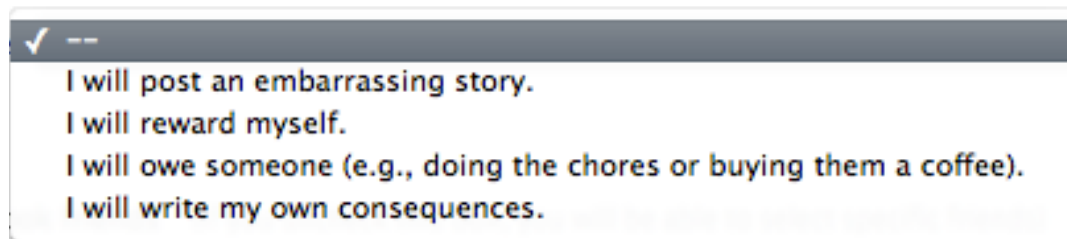
(Salancik 1977; Locke & Latham 2002; Gollwitzer et al 2009)



Field experiments with A/B trials

Social Commitments

Relative strength of different social commitment mechanisms.



What happens when others make commitments based on your activity?
(think Walk-a-thon)



Field experiments with A/B trials



Field experiments with A/B trials

Improved sharing

Better enable people to build & selectively access their network.

Designs that facilitate appropriate “selfcasting”
and preserve privacy.



Improved sharing

Effects on adherence and efficacy?

Social vs. private 3GT implementation.

- Social features could help the app be more engaging and stickier. (Richardson et al 2010)
- but it could also trigger feelings of relative deprivation. (Merton 1938, Festinger 1954)



Field experiment
with A/B trial

Individual differences \times Nudges

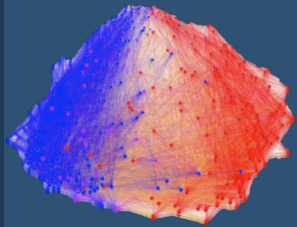
What are individual differences in different nudges' efficacy?

Personality attributes may predict success of different types of nudges.
(Halko and Kientz 2010)



Cross-cutting question in other experiments





Exposure to diverse political views



Improving health & wellness



How can **theory** and **knowledge of individual preferences** lead to the design of digital choice environments that better nudge?

- Goals & commitments
 - Multiple goals
 - Social commitments
- Choice sets & defaults
- Effective sharing
- Individual differences

thanks!

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Jeremy Canfield

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Peter Andrews

Funding

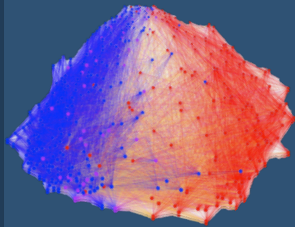
NSF Awards IIS-0916099 & IIS-0812042

Intel sponsored research & PhD Fellowship

Yahoo! Key Technical Challenge Grant

University of Michigan Rackham Graduate
Program – Research Grant

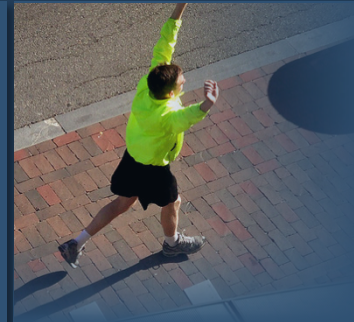
More at smunson.com/hcde



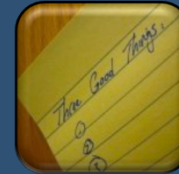
Exposure to diverse political views



Story abstract would go here



Improving health & wellness



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