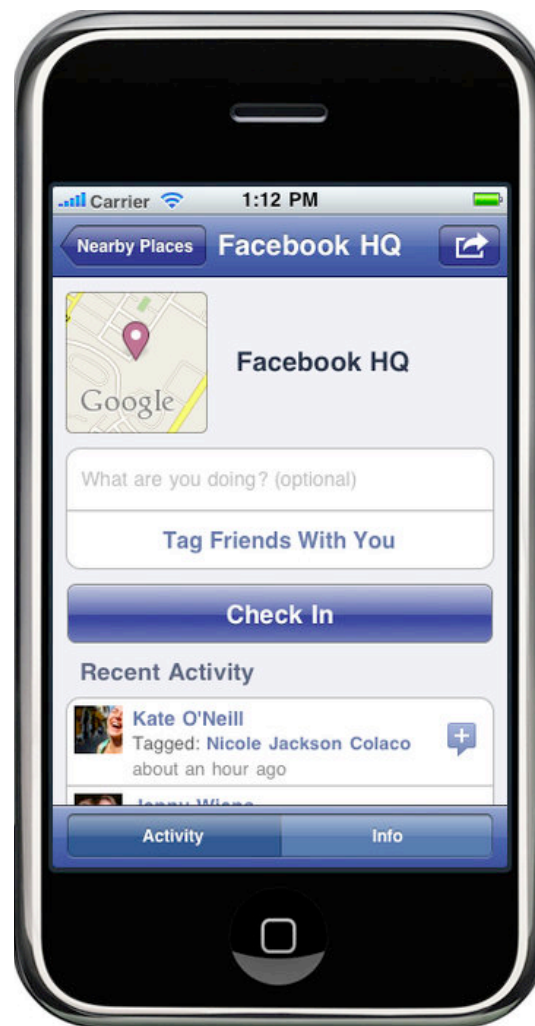
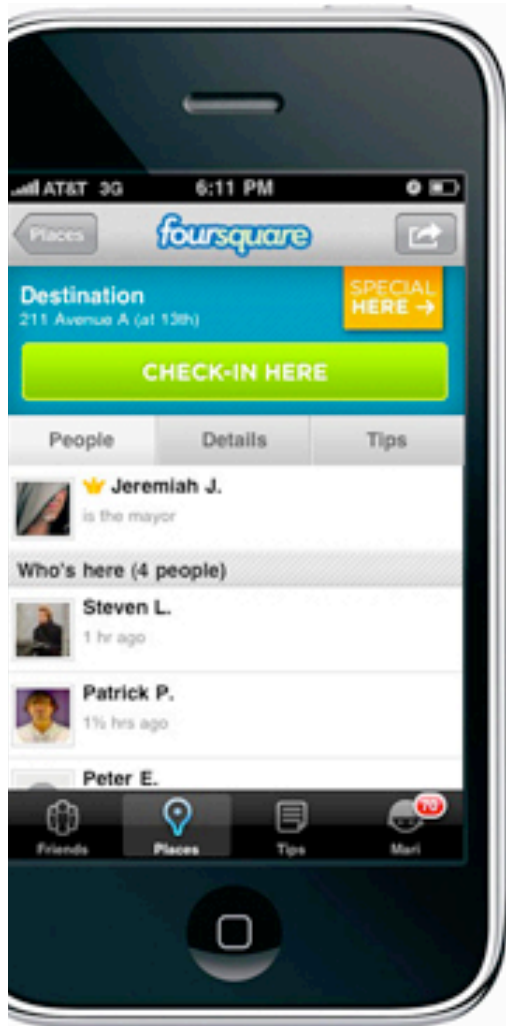




DON'T DISTURB MY CIRCLES!
Boundary Preservation Is at the Center of
Location-Sharing Concerns

Xinru Page, Alfred Kobsa, Bart P. Knijnenburg
University of California, Irvine

Location-Sharing in Social Media



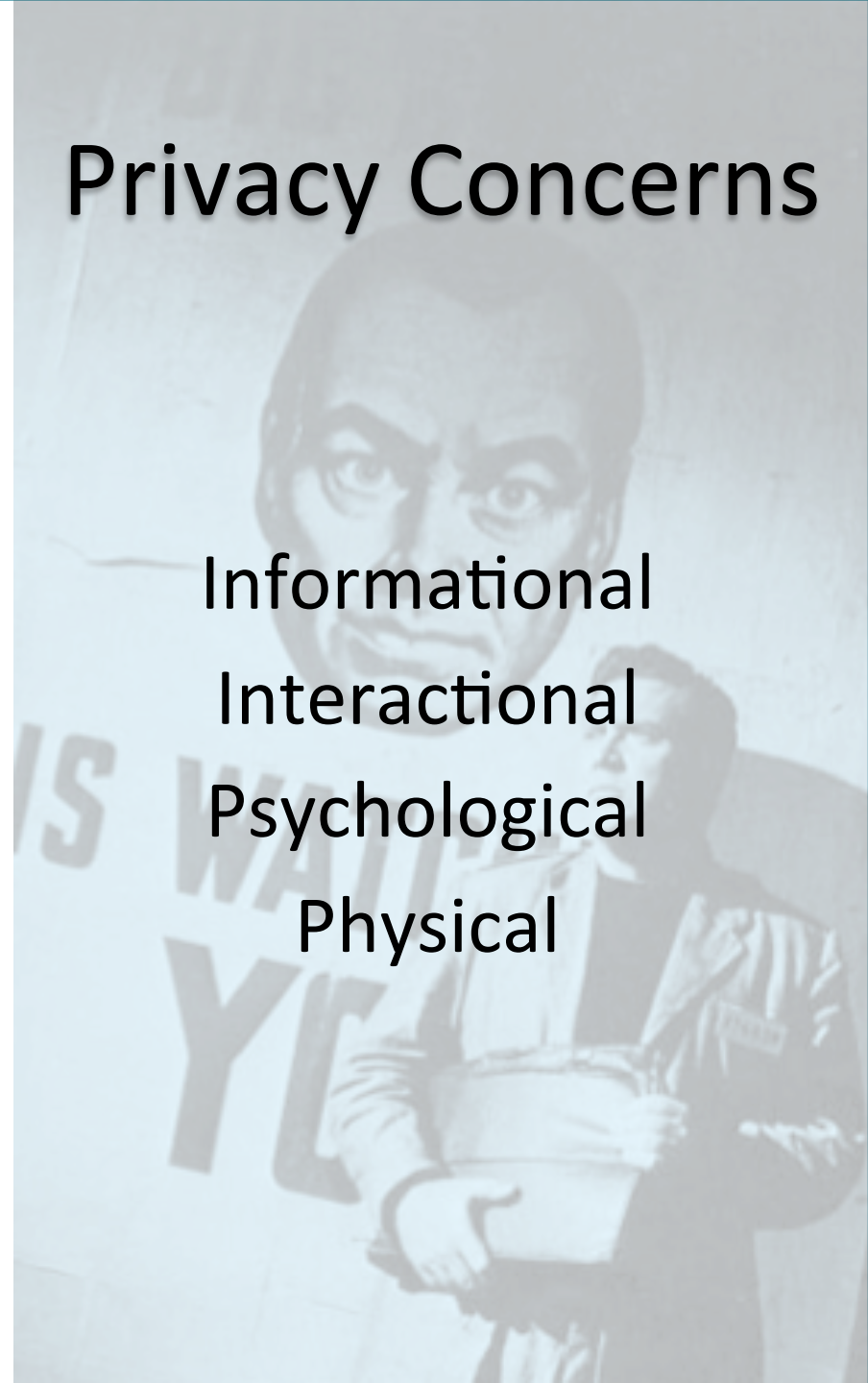
Privacy Concerns

Informational

Interactional

Psychological

Physical



Oversharers

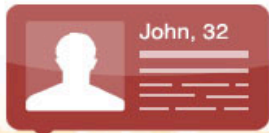
When people feel the need to tell us way too much.

I can feel it, but can you see it? [#booger](#)

Tue Nov 30 20:28:30 via [Twitter for iPhone](#)

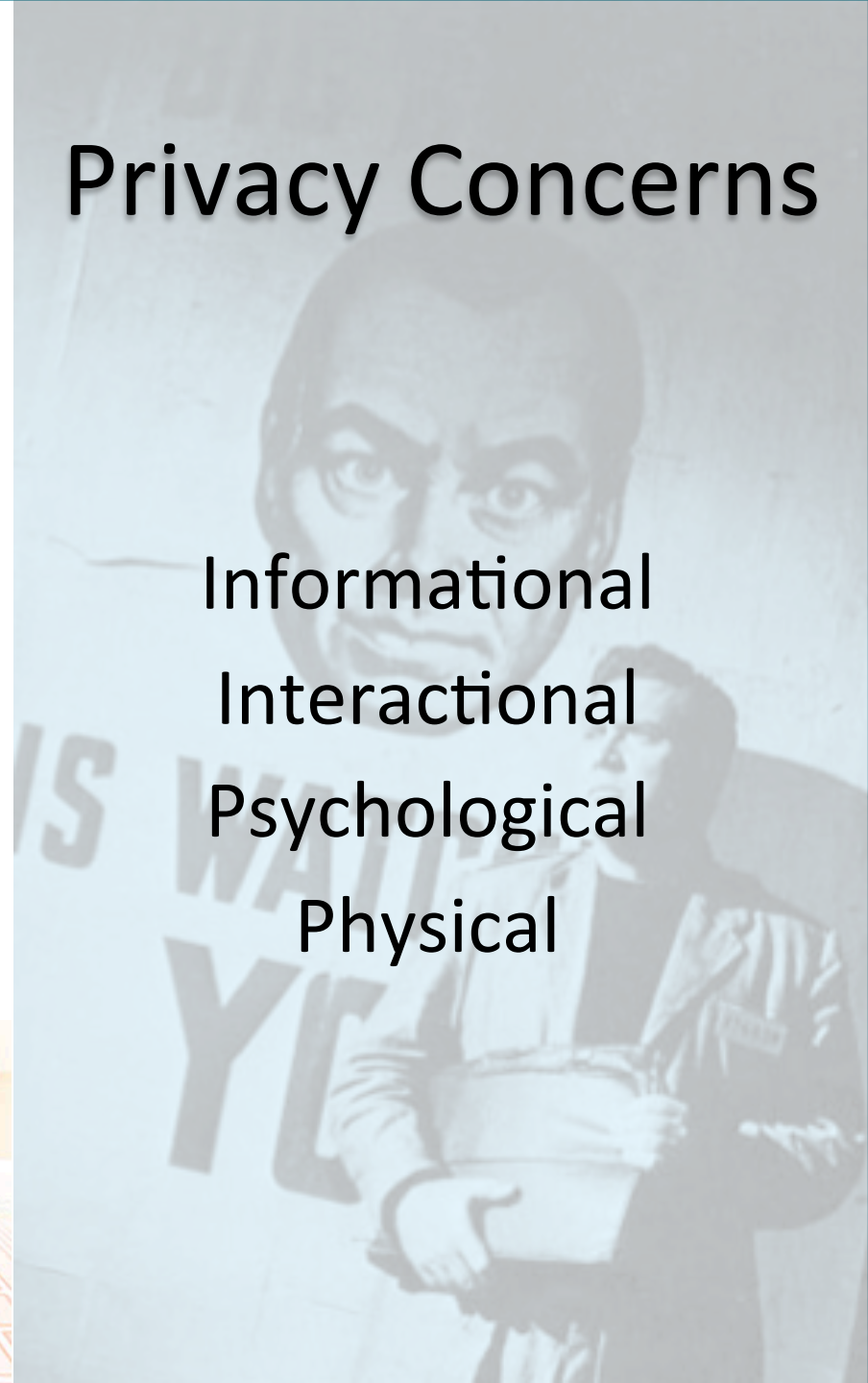


[molly choma](#)
FriendlySkies



Privacy Concerns

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Physical



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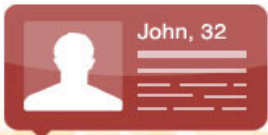
When people feel the need to tell us what you do.

I can feel it, but can you see it? #boog

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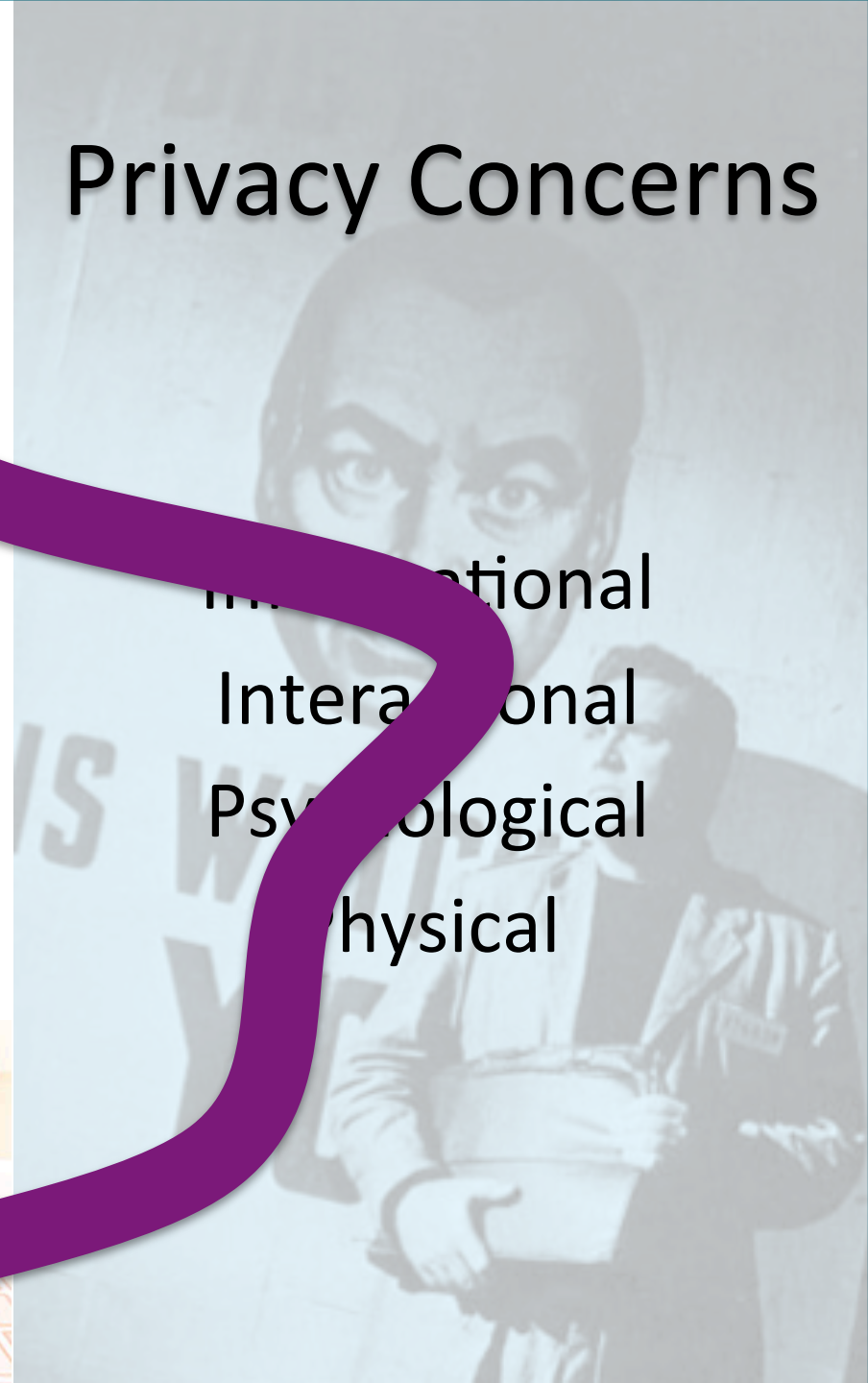


molly choma
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Privacy Concerns

- International
- Interactional
- Psychological
- Physical



Oversharers

When people feel the need to tell us way too much.

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molly choma
FriendlySkies

Privacy Concerns

What is the *Motivation* Behind Boundary Regulation?

Informational

Interfactual

Psychological

Physical



Phase 1: Interviews [Page & Kobsa 2009, 2010]

- 21 Google Latitude *users, non adopters*, those who had *abandoned*
- 1 to 2 hour semi-structured face to face
- 17 males/4 females, age 21-40's (avg 28)
- Grounded Theory, Open Coding

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 Catalog of most salient privacy concerns

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 Catalog of most salient privacy concerns

 New analysis for ***source*** of concerns

Online Boundary Regulation

- People want to **preserve offline** relationship boundaries
- **Online boundary regulation** (being more open or more closed online) is used to preserve existing offline boundaries
- People engage in a specific type of online boundary regulation: **boundary preservation**

Source of Concerns

Boundary Preservation Concern:

IF an online interaction renegotiates
existing relationship boundary,

THEN privacy concerns arise

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Situation

Location allows others to meet up with me

Source of Concerns

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Situation + Relationship

Location
allows
others to
meet up
with me

Friends

Source of Concerns

Boundary Preservation Concern:

IF an online interaction renegotiates existing relationship boundary,
THEN privacy concerns arise

Situation + Relationship =

Reaction

Location allows others to meet up with me

Friends

“If I’m in the neighborhood and enough of them calls me at once, ‘Drop by’, it doesn’t seem nice to say ‘Ok, I can’t’ to everyone.”

Source of Concerns

Boundary Preservation Concern:

IF an online interaction renegotiates existing relationship boundary,
THEN privacy concerns arise

Situation + Relationship = Reaction

Location allows others to meet up with me

Friends

Privacy Concern

Source of Concerns

Boundary Preservation Concern:

IF an online interaction renegotiates existing relationship boundary,
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Situation + Relationship =

Reaction

Location
allows
others to
meet up
with me

Family



Source of Concerns

Boundary Preservation Concern:

IF an online interaction renegotiates existing relationship boundary,
THEN privacy concerns arise

Situation + Relationship =

Reaction

Location allows others to meet up with me

Family

“If it’s on the way and you have some spare time, why not. But if you are kind of busy, you just say, ‘I’ll try, but maybe sometime later’”

Source of Concerns

Boundary Preservation Concern:

IF an online interaction renegotiates existing relationship boundary,
THEN privacy concerns arise

Situation + Relationship =

Reaction

Location
allows
others to
meet up
with me

Family

Not a Concern

Source of Concerns

Boundary Preservation Concern:

IF an online interaction renegotiates existing relationship boundary,
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Situation + Relationship =

Reaction

Location
allows
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Strangers



Source of Concerns

Boundary Preservation Concern:

IF an online interaction renegotiates existing relationship boundary,
THEN privacy concerns arise

Situation + Relationship =

Reaction

Location allows others to meet up with me

Strangers

“I would treat it as anyone not online in real life. You won’t just go and talk to anyone. You’ll say hi, or whatever, but that’s just it, right? It doesn’t mean everyone will come and talk to you”

Source of Concerns

Boundary Preservation Concern:

IF an online interaction renegotiates existing relationship boundary,
THEN privacy concerns arise

Situation + Relationship =

Reaction

Location
allows
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meet up
with me

Strangers

Not a Concern

Who vs. Relationship

How is this different from the finding:

“Who the requester was had the strongest influence on participants’ willingness to disclose.” [Consolvo et al. 2005]

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Situation + Relationship = Reaction

Sharing
daily
status

Bob,
currently
a local
Friend

Location is useful for
coordination,
keeping in touch

Who vs. Relationship

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Situation + Relationship = Reaction

Sharing
daily
status

The same
Bob,
**now a
distant
friend**

I don’t want to be
bothered with too much
information

Who vs. Relationship

How is this different from the finding:

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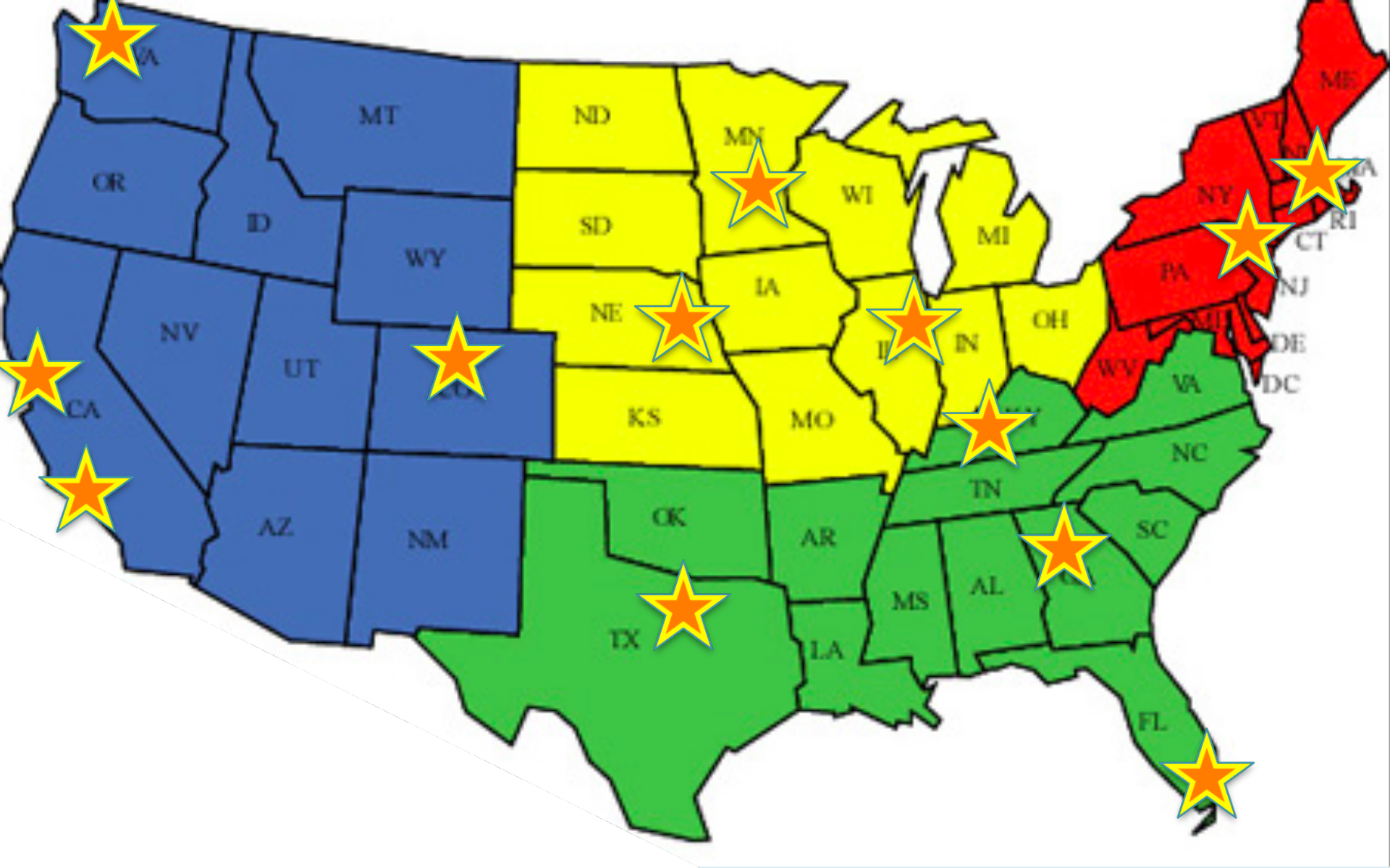
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Bob,
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friend

Privacy Concern

Summary of Phase 1 Results

- Reconfirmed
 - ...Concerns C1-C8 are prevalent in LSS
- Online Boundary Regulation is actually **Boundary Preservation**
 - ...Namely, people are defending boundaries of their offline relationships
- Boundary Preservation Concerns
 - ...lead to privacy concerns C1-C8
- Next step
 - ...convert these concepts into survey items to confirm this is a more general phenomenon



Generalizing Findings

Online Survey (N=1532)

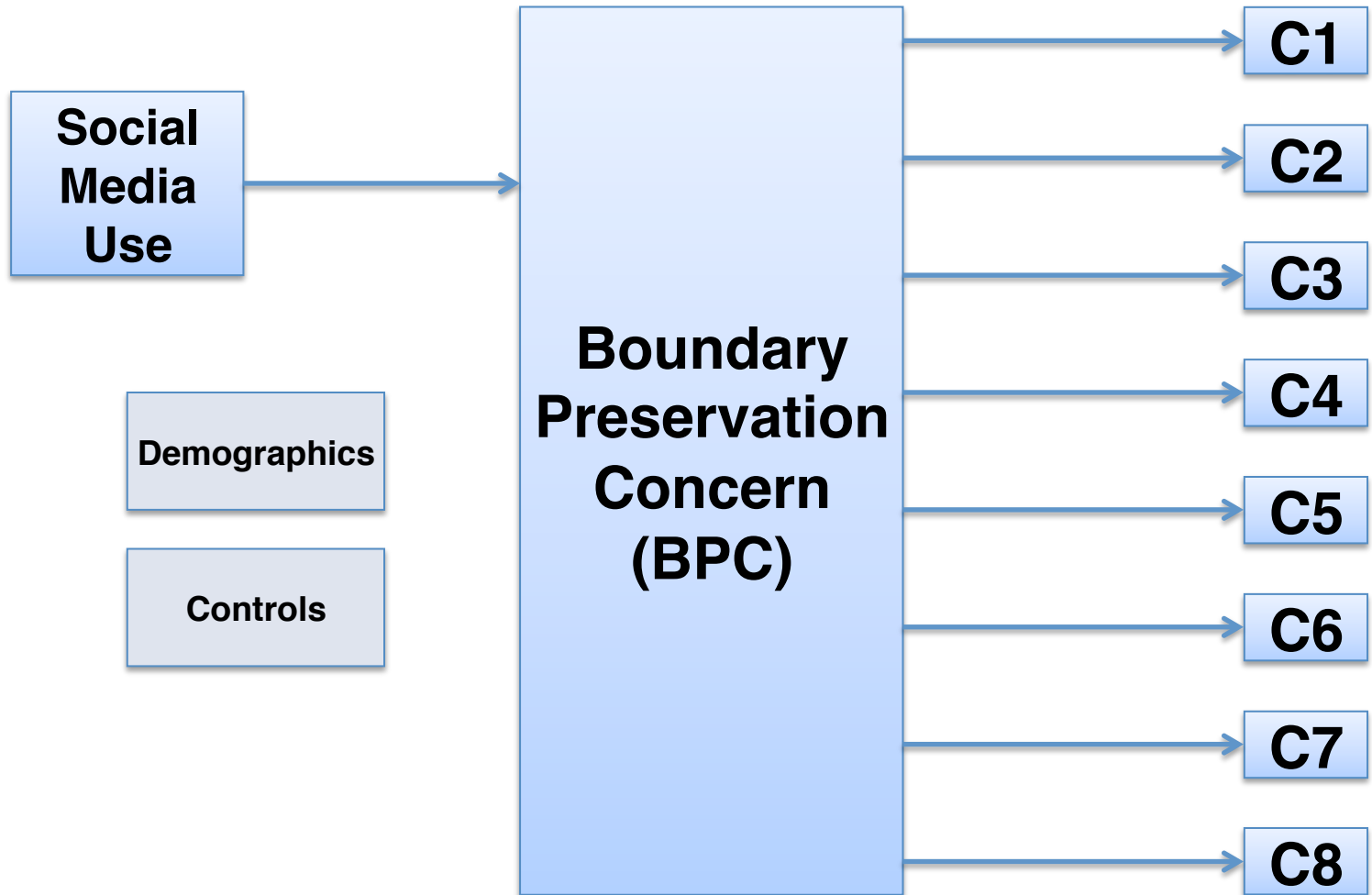
Relevant Survey Items

- Boundary Preservation Concern item
- Privacy Concern items (C1)-(C8)
- Social Media Use
 - Facebook, MySpace, Twitter, Instant Messaging, Social Media Games, Other
- Demographics
 - age, gender, education, geographic region
- Controls
 - smart phone, data plan

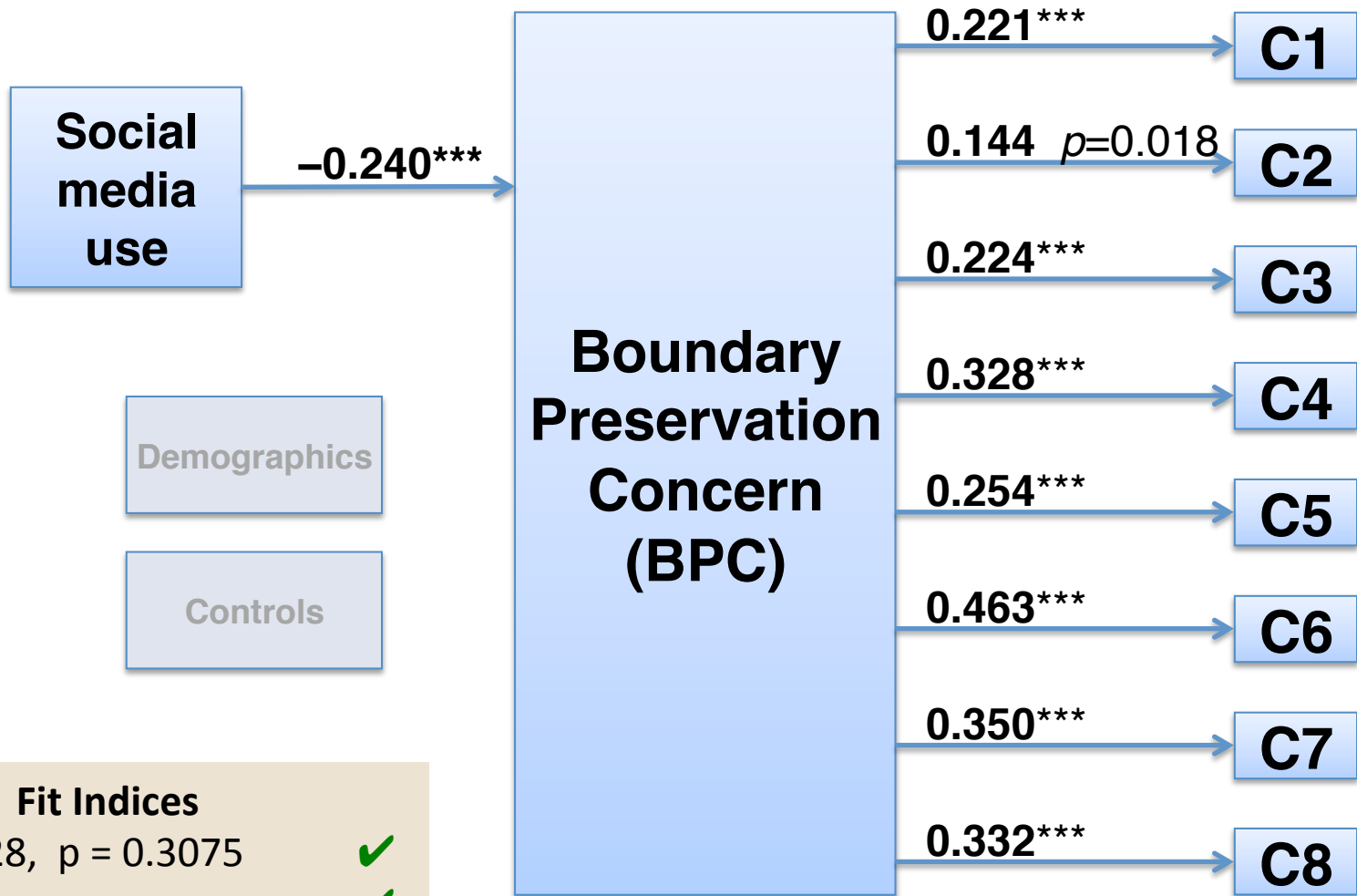
Privacy Concern Items

Label	Item
BPC	I'm worried LSS will change my relationship with others
C1	I am bothered that others share so much information with me
C2	I am concerned that if I share too much information, I would bother others
C3	I worry that I might share information with more people than I intend to
C4	I worry about feeling compelled to interact with others online
C5	I worry that what my friends share will reflect badly on me
C6	I'm worried about knowing the social etiquette of using LSS (e.g. who to friend, what to share, etc.)
C7	I'm concerned about being able to control who sees my location
C8	I'm worried others would join me at an inappropriate time if I share my location

Hypothesized Model



Model Results



Fit Indices

$\chi^2(8) = 9.428, p = 0.3075$ ✓
CFI = 0.999 ✓
RMSEA = 0.019 [0.000, 0.057] ✓
WRMSR = 0.291 ✓

Standardized effect sizes
*** represents $p < 0.001$

Key Finding #1

Privacy concerns are symptoms of Boundary Preservation concern

- Higher BPC leads to higher privacy concerns
- Lower BPC lowers privacy concerns

Example: Google+

- Circles allow you to group people by relationship type
- Next step is providing ways to define and defend those relationship boundaries

Key Finding #2

Increased social media use decreases Boundary Preservation concerns

- BPC mediates effect of social media use on privacy concerns
- Suggests they are better at, or less concerned about preserving boundaries

Example:

- Heavy social media users more likely to dive into new technologies like Google+
- What are boundary preservation techniques of heavy users?

Key Finding #3

High correlation ($r=0.647$) between

- Concern about who can see my location
- Concern someone will join me

Example:

- Google+ allows sharing to specific circle
- Ambiguous how to use this info

Future Work

- **Expand** *Boundary Preservation* concept beyond single-item
- Impact of *Boundary Preservation* on **adoption**
- **Dispositional predictors** of *Boundary Preservation* concern

Future Challenges for Researchers

- Explore *Boundary Preservation* concept in **other social media**

Acknowledgements

- NSF grants IIS-0308277, IIS-0808783 and CNS-0831526
- Disney Research, Glendale, CA
- Bonnie Nardi, Karen Tang, Don Patterson, and our anonymous ICWSM reviewers!



Thanks!

Summary Key Findings

1. Privacy concerns are symptoms of Boundary Preservation concern
 - Higher BPC leads to higher privacy concerns
 - Lower BPC lowers privacy concerns
2. Increased social media use decreases Boundary Preservation concerns
 - BPC mediates effect of social media use on privacy concerns
 - Suggests they are better at, or less concerned about preserving boundaries
3. High correlation ($r=0.647$) between
 - Concern about who can see my location
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