## The Post Anachronism: **The Temporal Dimension** of facebook Privacy

#### Lujo Bauer, Lorrie Faith Cranor, Saranga Komanduri, Michelle L. Mazurek, Michael K. Reiter, Manya Sleeper, **Blase Ur** blase@blaseur.com





# facebook

Blase Ur June 8 🎎

CUPS folks looking sharp at the Privacy Law Scholars Conference dinner



#### [thefacebook]

Welcome to Thefacebook!

quick search go

My Groups My Friends

My Messages My Away Message

My Mobile Info

My Account My Privacy

My Profile [ edit ]

#### [Welcome to Thefacebook]

Thefacebook is an online directory that connects people through social networks at colleges.

We have recently opened up Thefacebook at the following schools:

Alabama • Appalachian State • Cooper Union • CSU Sacramento CUNY Hunter • Denison • Furman • Gonzaga • IUPUI • Kutztown Marymount • Marymount Manhattan • Monmouth • Montclair MS State • Muhlenberg • N. Arizona • North Dakota • Portland Rose-Hulman • Sacred Heart • Sarah Lawrence • Seton Hall St. Johns • St. Lawrence • SUNY New Paltz • SUNY Oswego Texas State • Toronto • Tulsa • University of the Pacific • Utah • Washington State Willamette • Wisconsin Milwaukee • WPI • Xavier

For a complete list of supported schools, click here.

Search

My Profile

My Friends My Photos My Shares My Notes My Groups My Events My Messages My Mobile My Account My Privacy

Your facebook is limited to your own college or university.

You can use Thefacebook to:

Search for people at your school

Find out whether the second sec

Look up you
See a visua



#### Blase Ur's Profile (This is you)



#### home search browse invite help logout

Blase Ur	No Network	
Sex:	Male	
Interested In: Relationship Status		
Looking For: Birthday:	Friendship	
Hometown:	Edison, NJ	
Political Views:		
▼ Mini-Feed		
Displaying 3 stories.		See All
Today		
Interested In,	esidence, Hometown, Interests, Looking For, Activities, Political Views, Music, Movies and Books in d changed his profile picture. 11:58pm	×
Blase has a new address: Leverett House, Harvard University 11:55pm		×

Do preferences about a post's privacy change over time?



Photo Creative Commons license by @robthurman on Flickr

# Should fewer people be able to access content?

	Image: Part of the second se
Like • Comment • Share	2012 2011 2010 2000s
	2009 2008 2007 2006 2005 2004 2003
	Born

# Should content just be harder to find?





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13:3

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Blase Ur shared a link For unclear reasons, 1 th recording this would be appropriate use of an by oncy lour in

Friday Uniamowin Artitut - Uniamowin Albumi Friday www.blassur.com

Gke - Comment Promote \* 37 \* 11

http://img.thefind.com/i mages /bAD}-Trtzj5GaQztW5gY0vLzU-

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Likis - Comment - Share 医生物管

Plote posts tront January 25

Allanah Miller looking at Blass Ur's freshman Matlab notes to help with all my senior classes.

Like Commant Share 13:3

Mire posts from January 16 to 25

Blase Ur 18, 2011 / 2-8-1-5 JETS JETS JETS

Like - Comment - Promote · 17º7 Share

# Should content have an expiration date?

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#### What we did

- Tracked Facebook posts over time
- Participants answered questions about their own Facebook posts (Facebook API)
  - Audience, promotion

#### What we did

- Tracked Facebook posts over time
- Participants answered questions about their own Facebook posts (Facebook API)
  - Audience, promotion
- Two user studies:
  - Longitudinal study of the same Facebook posts over one month
  - Retrospective study of recent Facebook posts and posts from a year ago

## Longitudinal study

- Followed 2 10 Facebook posts from creation
  - Link, photo, status update

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- Final survey to explain changes observed
- Participants recruited from classified-ad sites Craigslist and Backpage
- Participants paid \$30 total

### **Participants**

- 63 participants
- Age 18 to 52, median 29
- 19 states in the U.S.

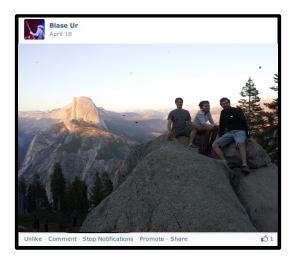
#### **Participants**

- 63 participants
- Age 18 to 52, median 29
- 19 states in the U.S.
- 98% log onto Facebook at least daily
- 88% had used Facebook for 3+ years
  - All at least one year
- Between 24 and 1695 Facebook friends
  - Median 339

Who did participants want to be able to access a post over time?

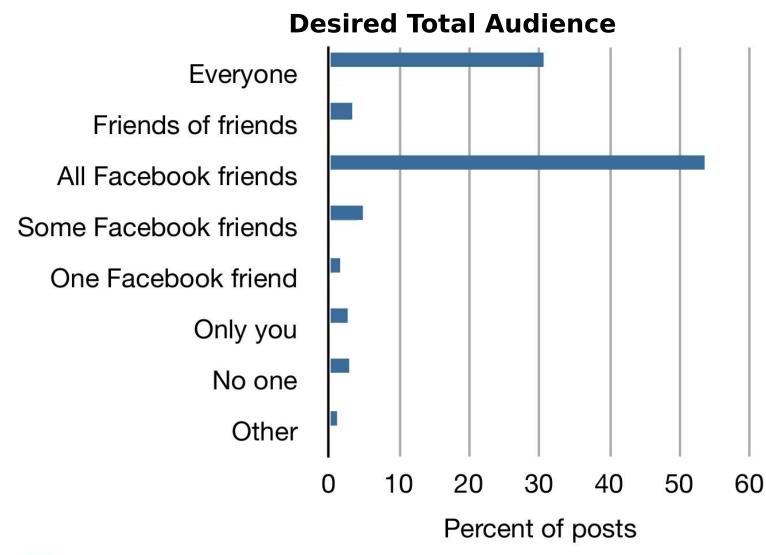


 The total audience you want to be able to see the post



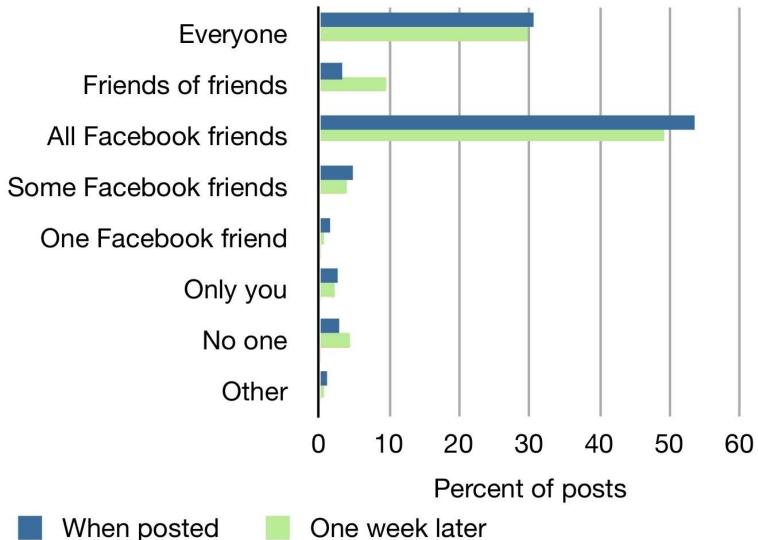
#### [Going forward], who would you like <u>to be able</u> <u>to see this post</u> on Facebook?

[] "everyone/public" [] "friends of friends" [] "all of your Facebook friends" [] "only some of your Facebook friends"
[] "only one of your Facebook friends" [] "only you"
[] "no one; it should disappear"



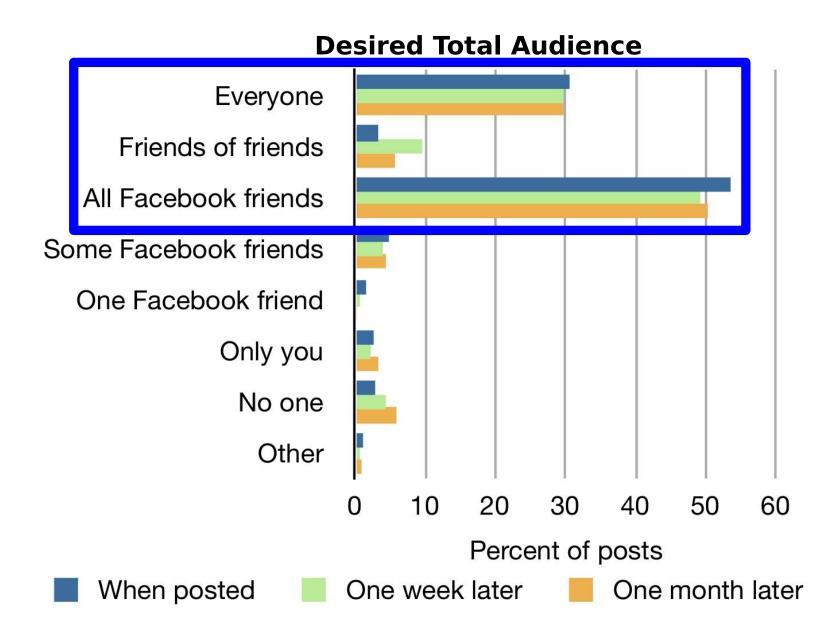
When posted



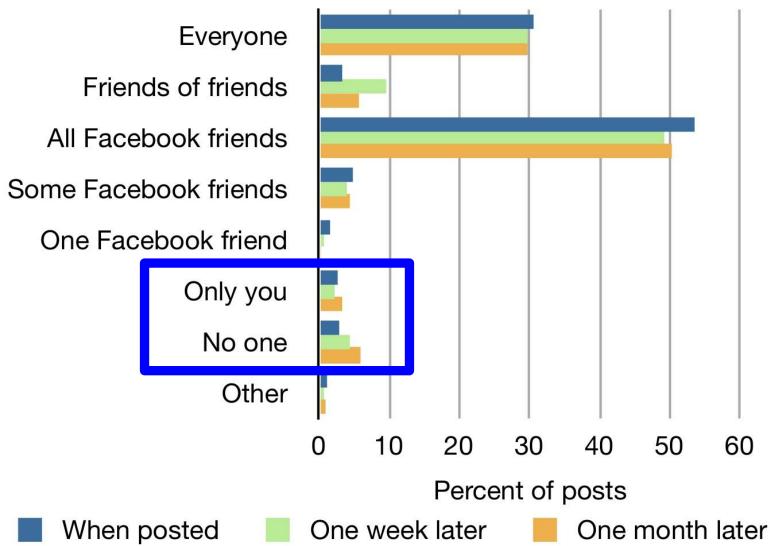


#### **Desired Total Audience**

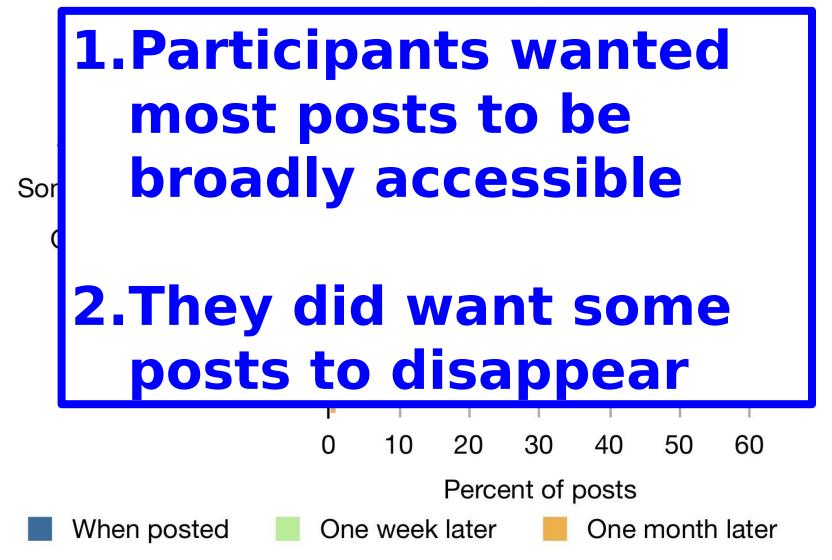
Everyone Friends of friends All Facebook friends Some Facebook friends One Facebook friend Only you No one Other 10 20 30 40 50 0 60 Percent of posts One week later One month later When posted



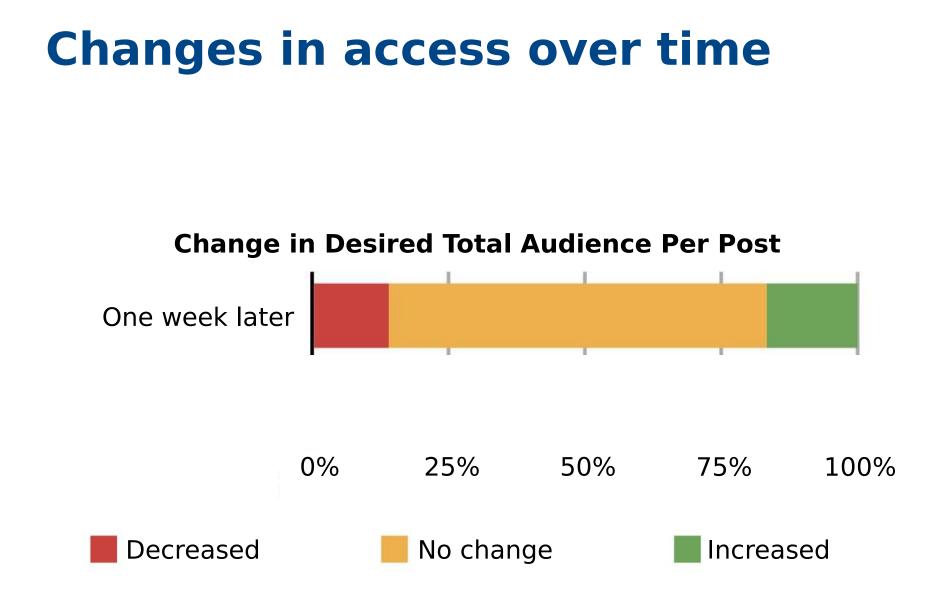
#### **Desired Total Audience**

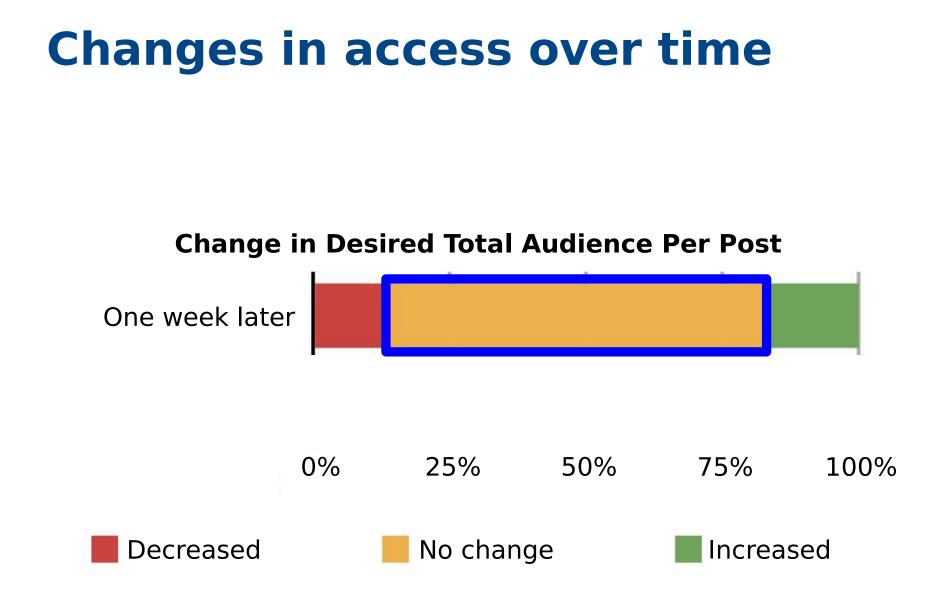


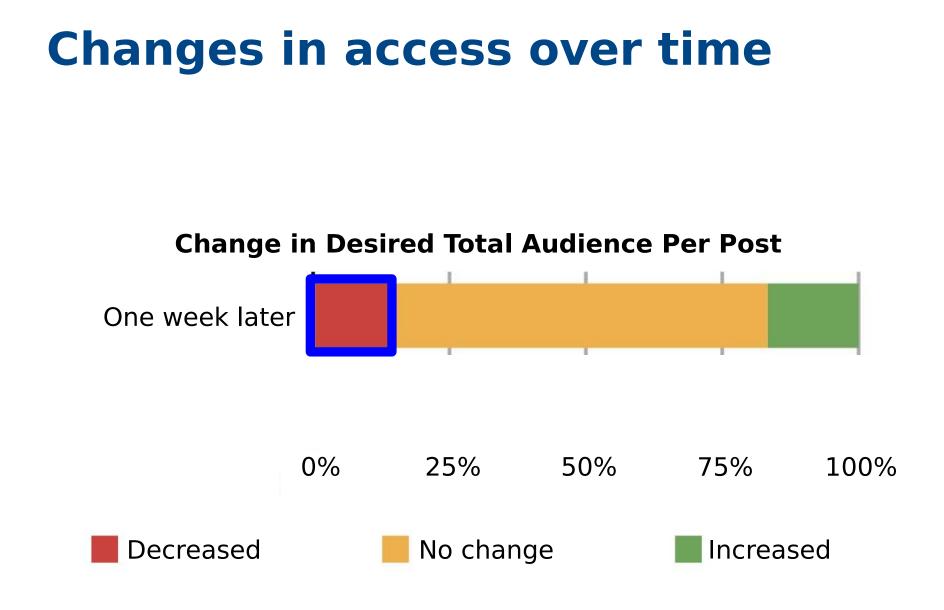
**Desired Total Audience** 

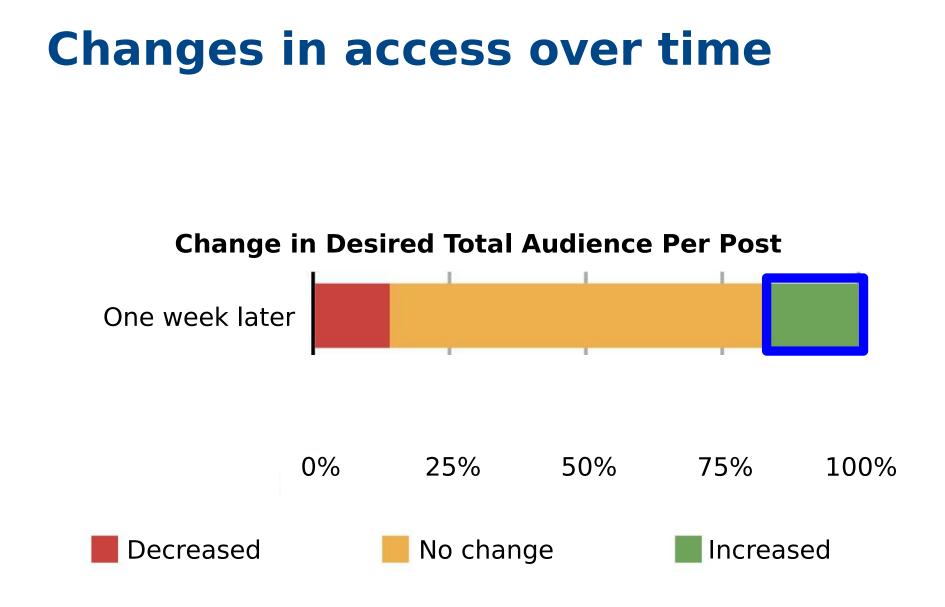


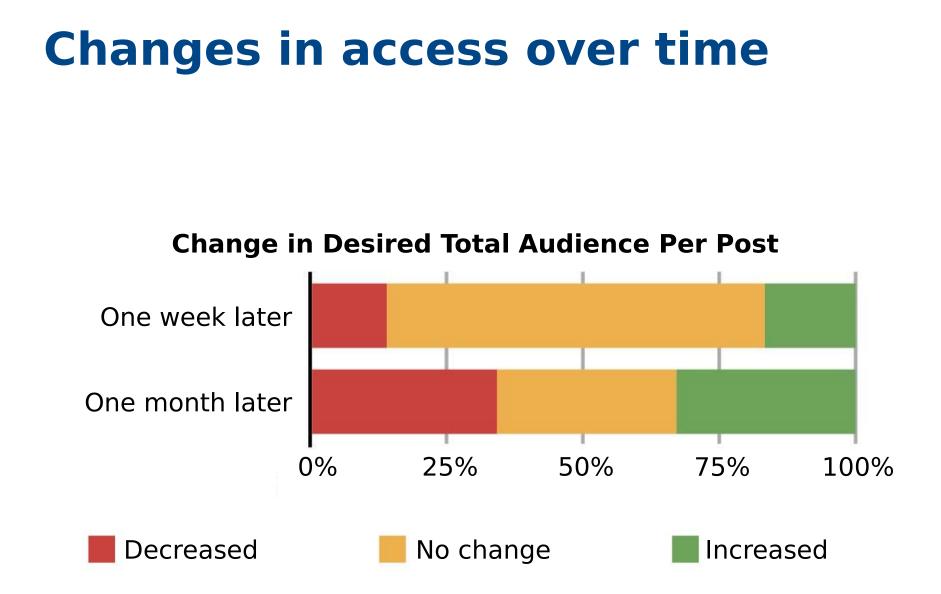
How did preferences about a specific post change over time?











#### **Changes in access over time**

**1.Did not want posts** to fade away wholesale with time **2.Did want both** 100% increases and ed decreases

# Do these changes matter, or are they just noise?

#### **Importance of changes**



We asked you who you wanted to be able to see the post shown above on Facebook at three different times. We noticed that your preferences changed.

Initially, you said... [PEOPLE] One week later, you said... [PEOPLE] Four weeks later, you said... [PEOPLE]

How much does this change in preference matter to you?

() Very much () Somewhat () A little () Not at all
() N/A (I didn't mean to indicate a change in preference) 35

#### **Importance of changes**

- Change matters "very much"
  - 8% of posts where audience shrank
  - 4% of posts where audience grew
- Change matters "somewhat" or "a little"
  - 33% of posts where audience shrank
  - 18% of posts where audience grew

#### **Importance of changes**

- Change matters "very much"
  - 8% of posts where audience shrank
  - 4% of posts where audience grew
- Change matters "somewhat" or "a little"
  - 33% of posts where audience shrank
  - 18% of posts where audience grew
- Participants changed actual Facebook settings for only 5% of these posts

#### **Importance of changes**

- Change matters "very much"
  - 8% of posts where audience shrank

## Participants' desired changes aren't captured by their current actions on Facebook

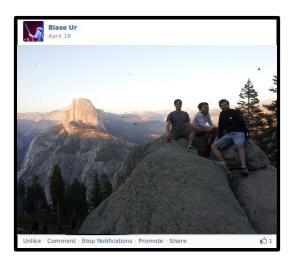
 Participants changed actual Facebook settings for only 5% of these posts USE WITHIN 10 DAYS OF OPENING FOR THE BEST QUALITY
O7 JUL 2009 21:38 F8 BEST WHEN USED BY DATE STAMPED

## Should content have an expiration date?

Photos Creative Commons by @waitscm and @MTSOfan on Flickr



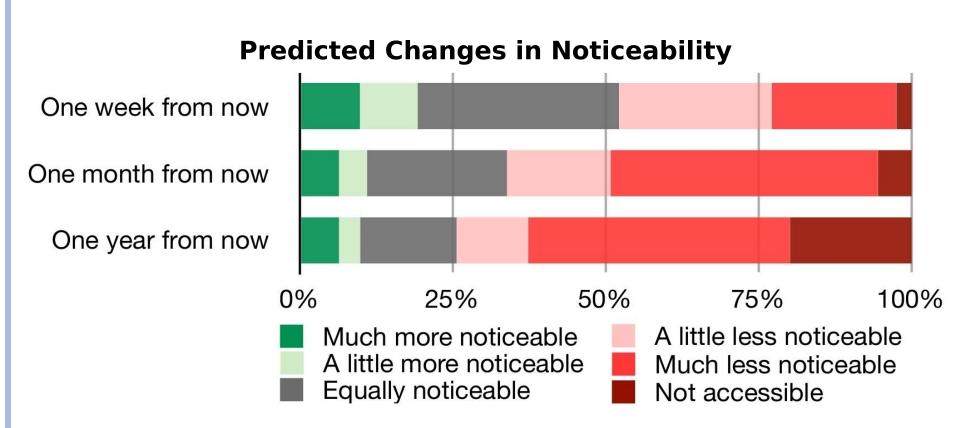
 Predictions about noticeability one week, one month, one year from now

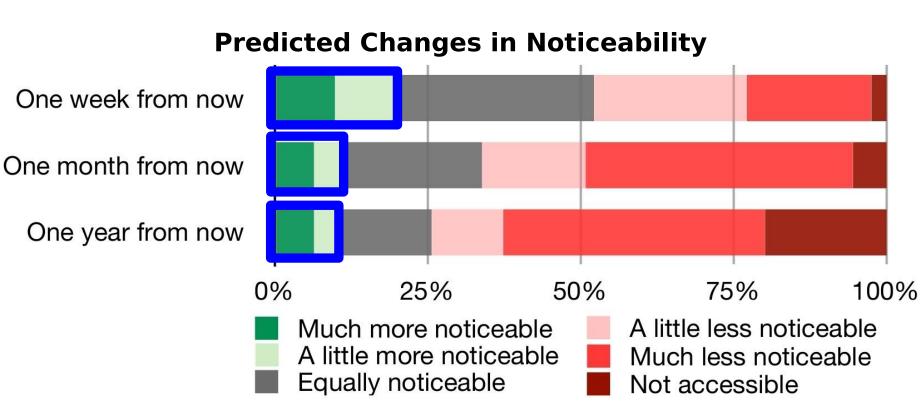


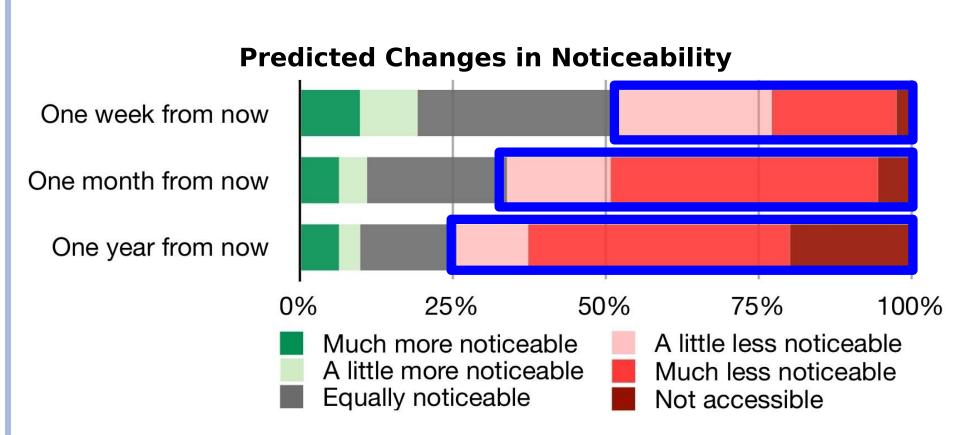
How noticeable, compared to now, do you expect you'll want this post to be to people who can see it on Facebook one week from now?

[] Equally as noticeable [] A little less noticeable [] Much less noticeable

[] Much more noticeable [] A little more noticeable [] Not accessible at all









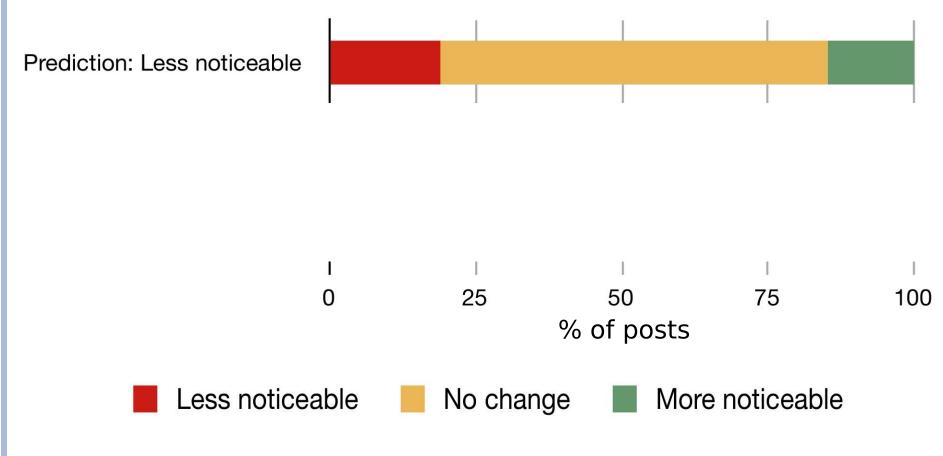
One month

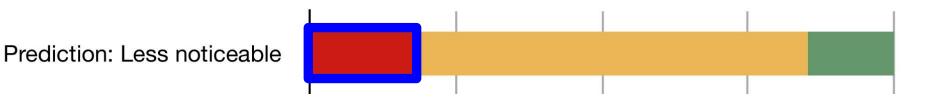
One year

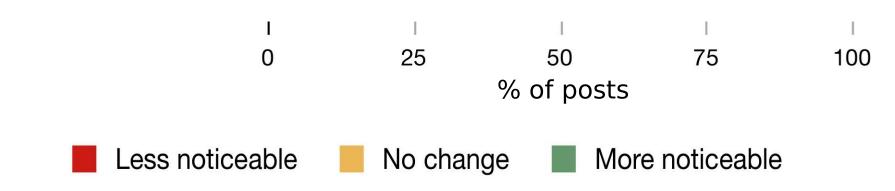
## Per Participants thought they would want most posts to fade away over time

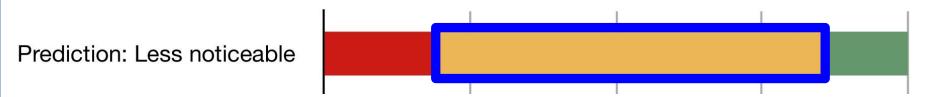
Much more noticeable A little more noticeable Equally noticeable A little less noticeable Much less noticeable Not accessible

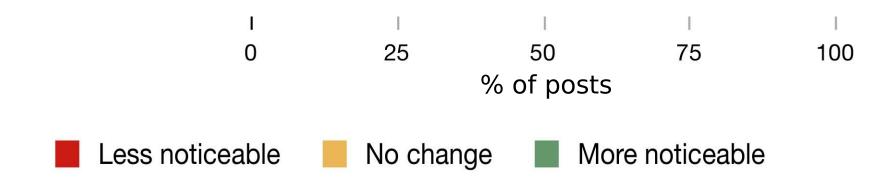
100%

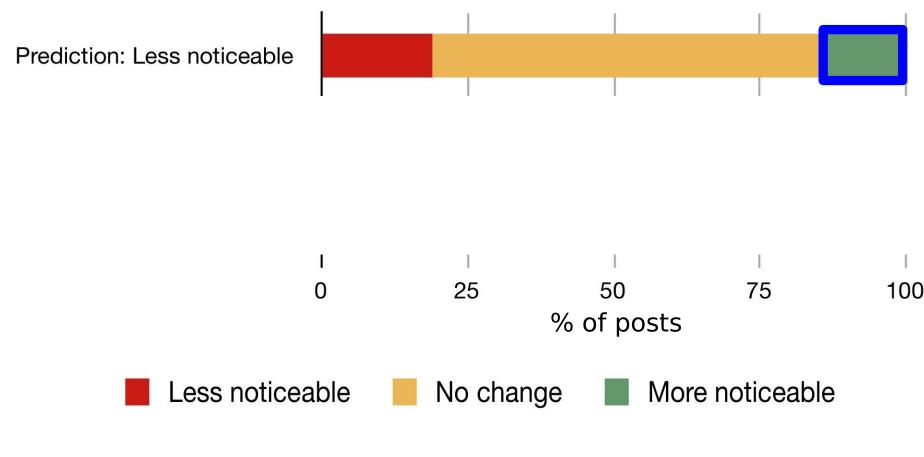


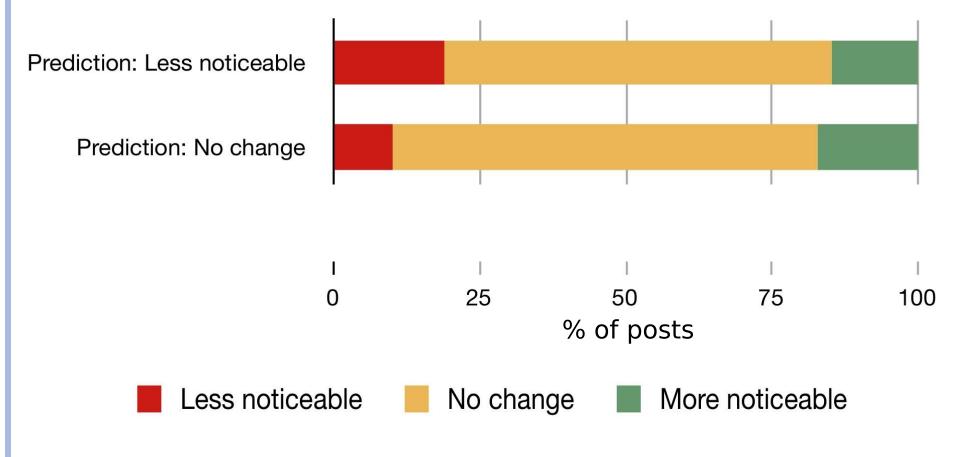


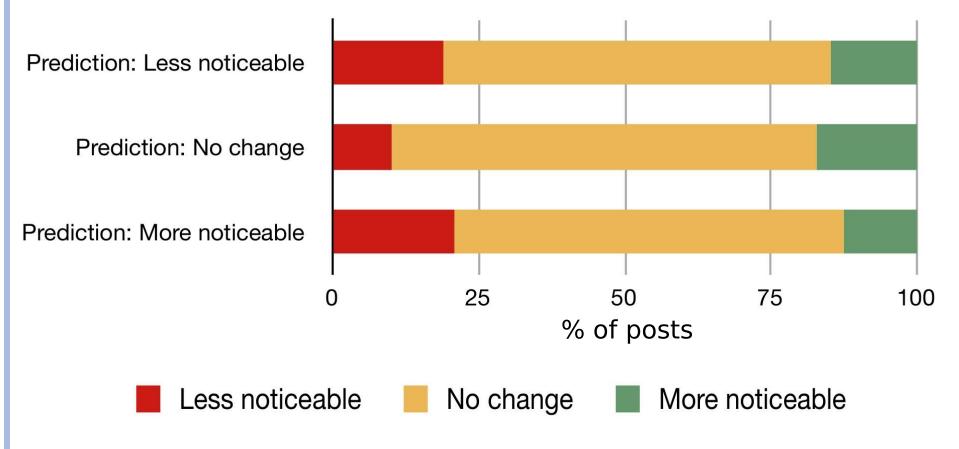


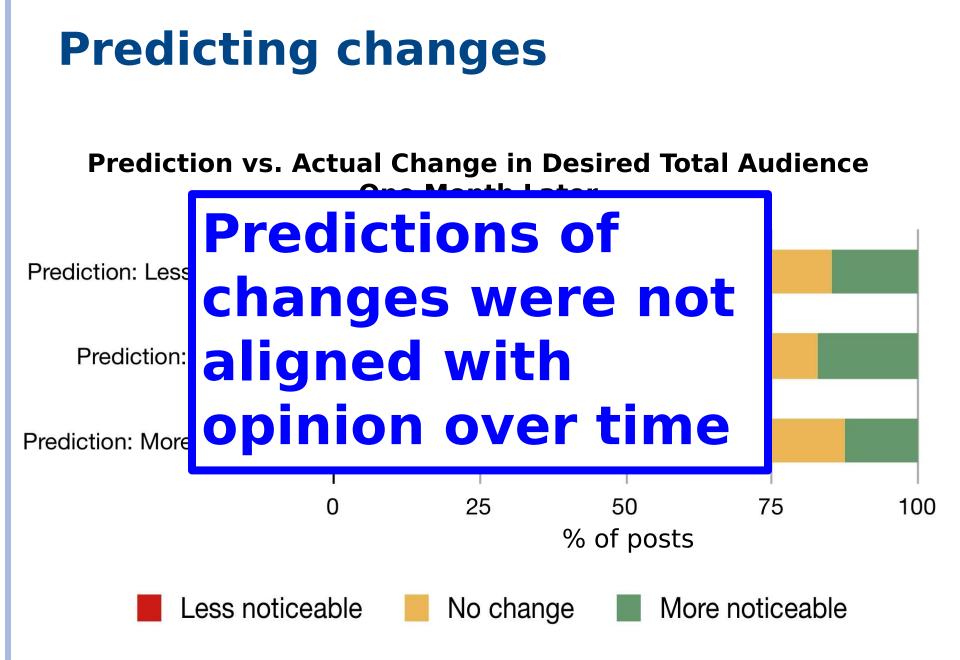








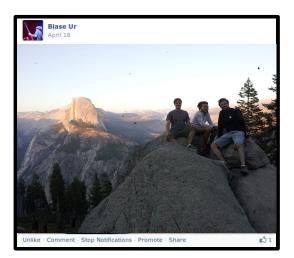




To whom did participants particularly want to promote posts?

### **Self promotion**

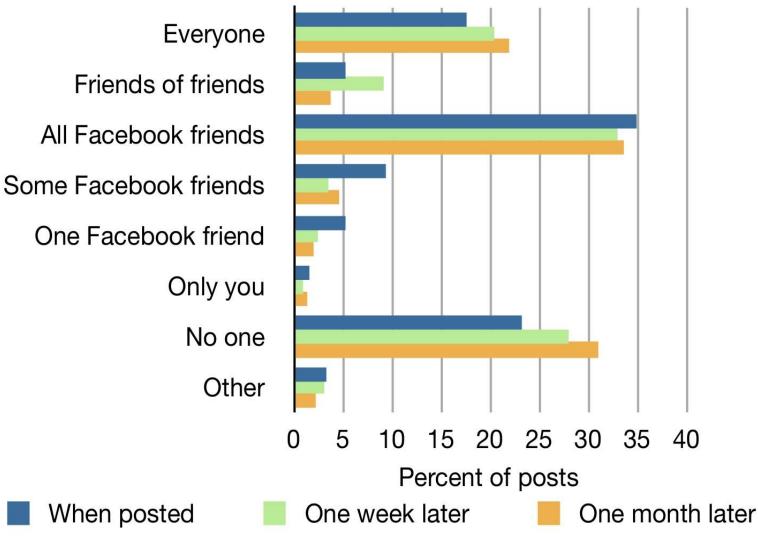
 The targeted audience you particularly hope will look at the post

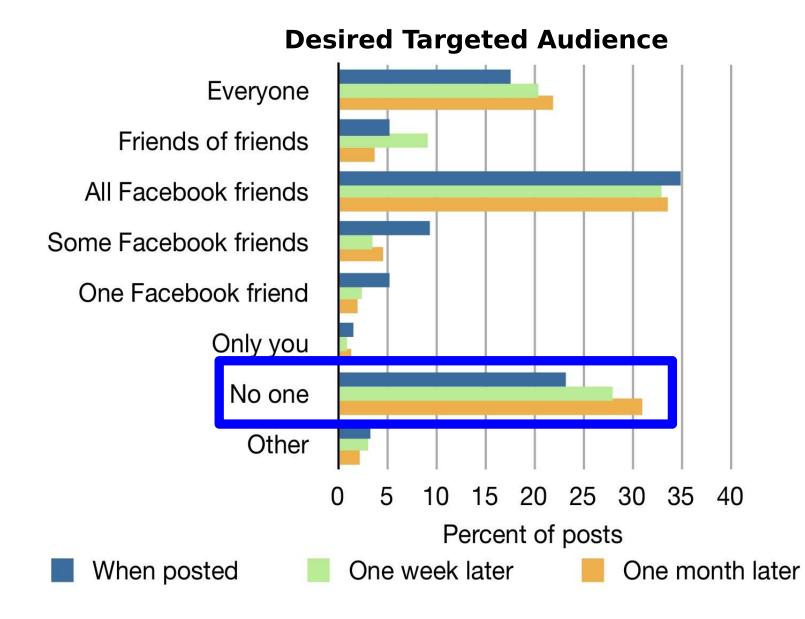


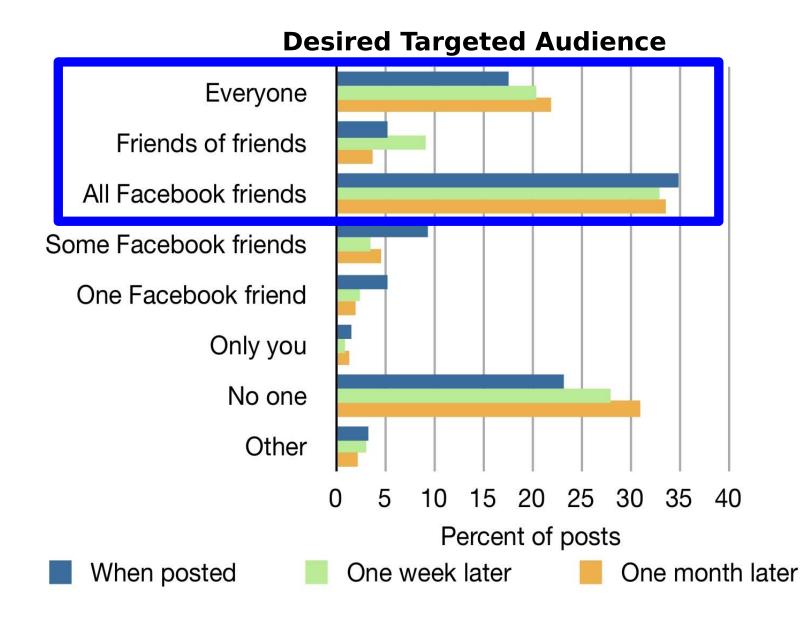
## Going forward, is there anyone <u>you particularly</u> <u>hope will look at</u> this post on Facebook?

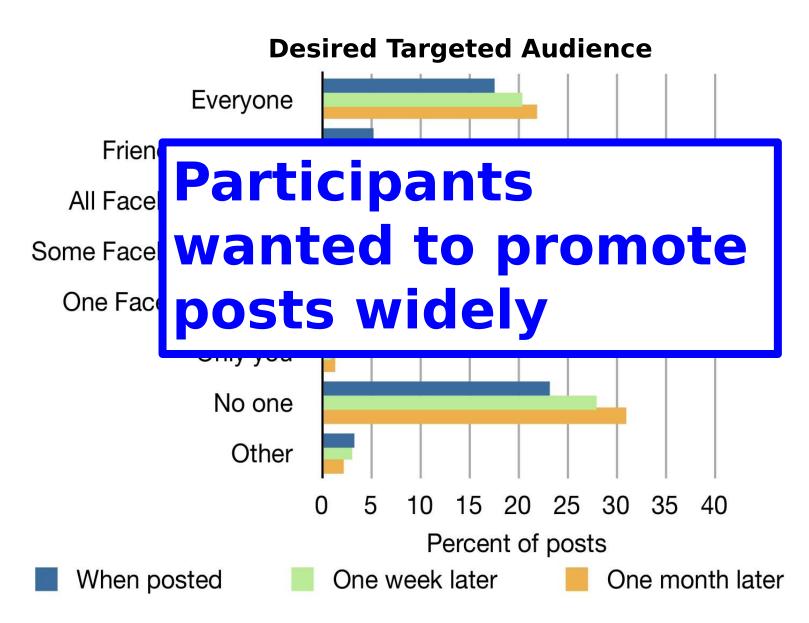
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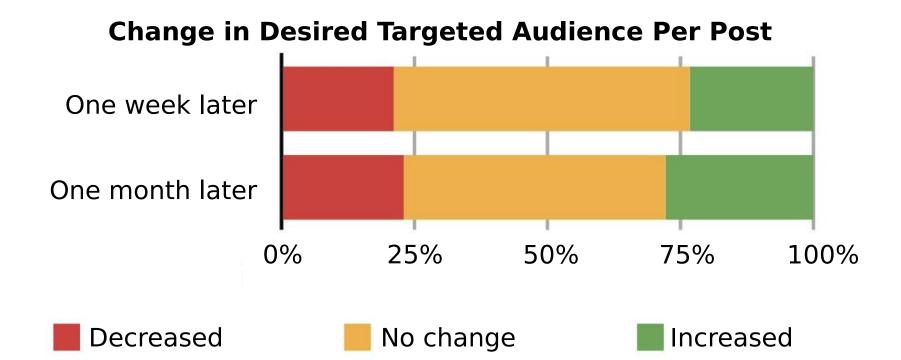






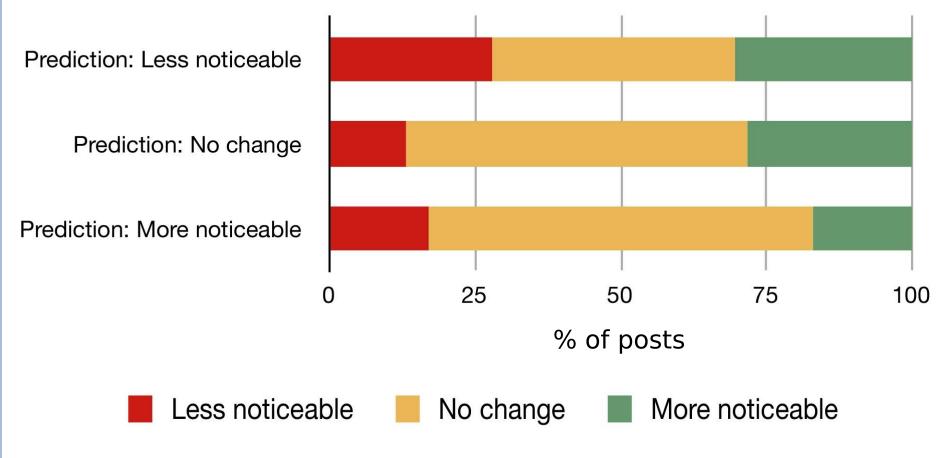
Did these preferences change over time?

#### **Changes in promotion over time**



# Did predictions align with actual changes?

#### **Prediction vs. Actual Change in Desired Targeted Audience**



#### **Detailed analyses**

- Also investigated differences based on characteristics of the post and the user
  - Type of post (link, photo, status update)
  - # of likes, # of comments
  - Participant's age, gender, # friends
- Created mixed models of changes, predictions, and survey responses
  - Primary independent variable: time

Do privacy preferences differ for even older content?

#### **Retrospective study**

- Up to 5 Facebook posts made in past week
- Up to 5 Facebook posts made one year ago
- Questions similar to longitudinal study

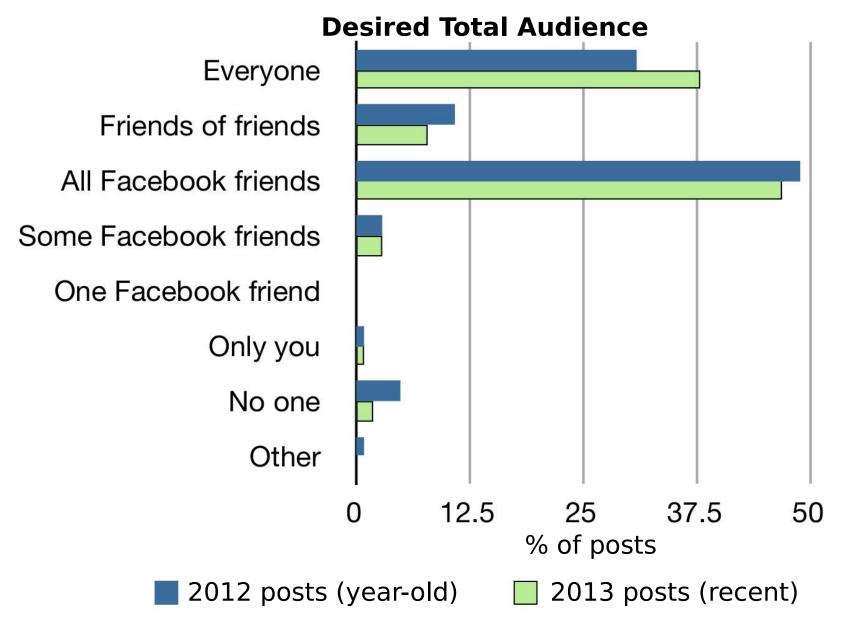
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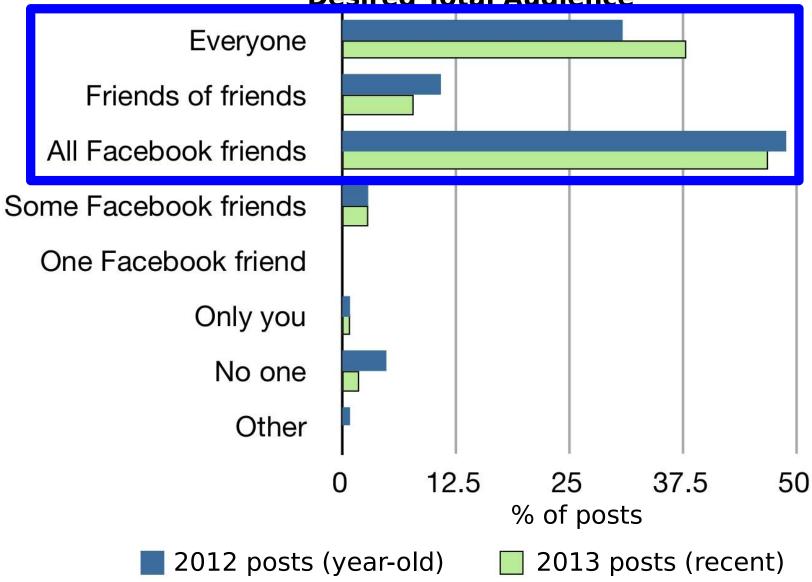
- Up to 5 Facebook posts made in past week
- Up to 5 Facebook posts made one year ago
- Questions similar to longitudinal study
- Recruited U.S. participants on Mechanical Turk
- Compensated \$3
- 234 participants
- Age 18 to 60 (median 26)
- 94% used Facebook at least daily
- 93% had used Facebook for 3+ years

#### **Total audience (access)**

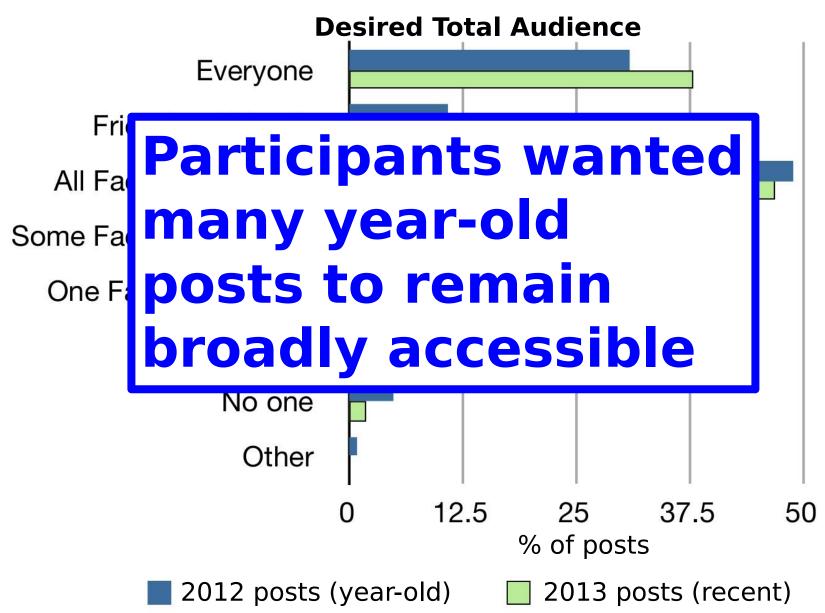


#### **Total audience (access)**

#### **Desired Total Audience**



#### **Total audience (access)**



# Why might people want old content to stay around?

#### **Participant sentiment**

 Participants responded to 12 statements on a 5-point Likert scale



1) I had forgotten that this post was still on Facebook

() Strongly agree () Agree () Neutral () Disagree() Strongly disagree () Not applicable

#### • 67% of year-old posts forgotten

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9% of year-old posts raise privacy concerns

67% of year-old posts forgotten

• 9% of year-old posts raise privacy concerns

 9% of year-old posts "do not depict participants in the manner they want to appear"

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• 68% of year-old posts helped in reminiscence

 67% of year-old posts forgotten Some old posts
 9% should disappear... rns ...but most should remain on Facebook • 9% in tl cipants

• 68% of year-old posts helped in reminiscence

#### Limitations

- Studied only Facebook
- Convenience sample
- Used Facebook API
  - May have excluded some participants
  - Missed quickly deleted posts
- Participants may have deleted year-old posts
- Facebook API only returns the few hundred most recent posts (retrospective study)
  - Excludes most frequent Facebook users

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  - Both increases and decreases

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- Opportunities for designing retrospective privacy mechanisms

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