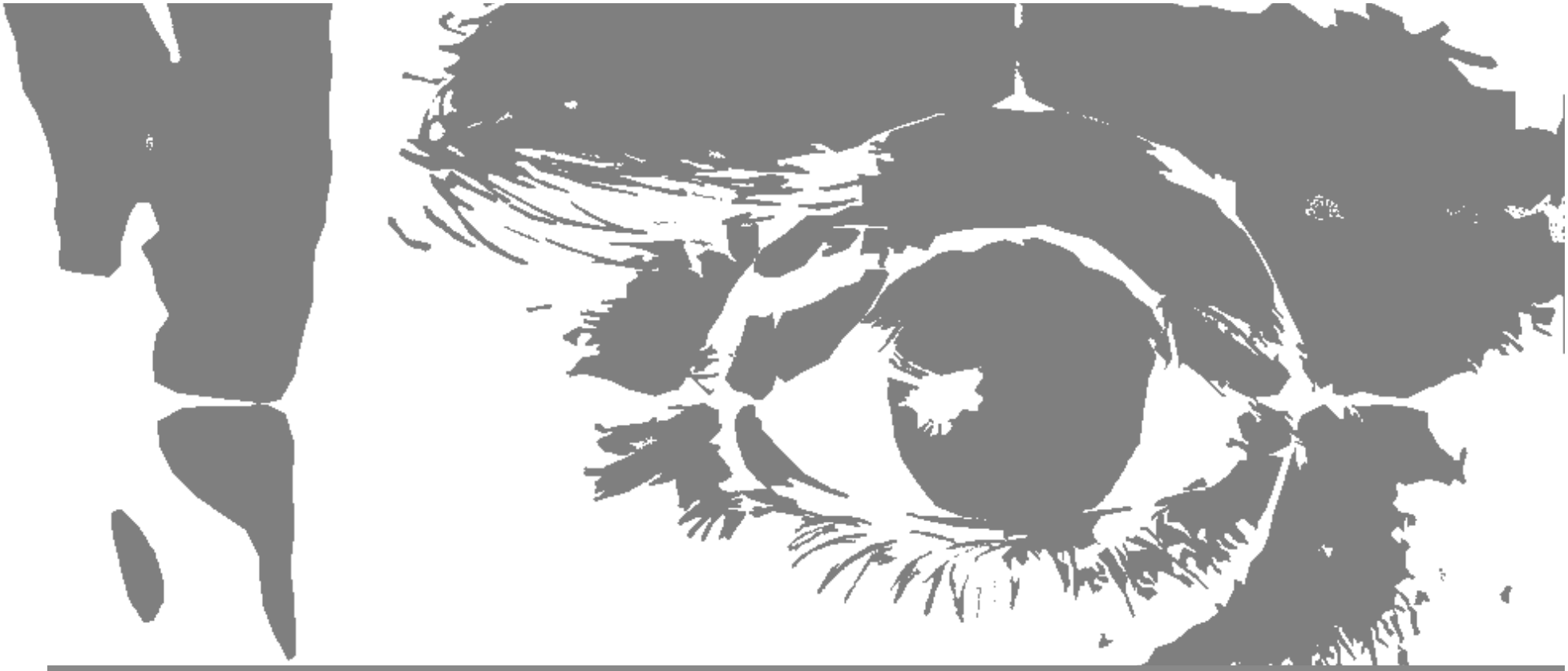


# From Managing Scarce Attention to Leveraging Potentially Rich Col***labor***ation

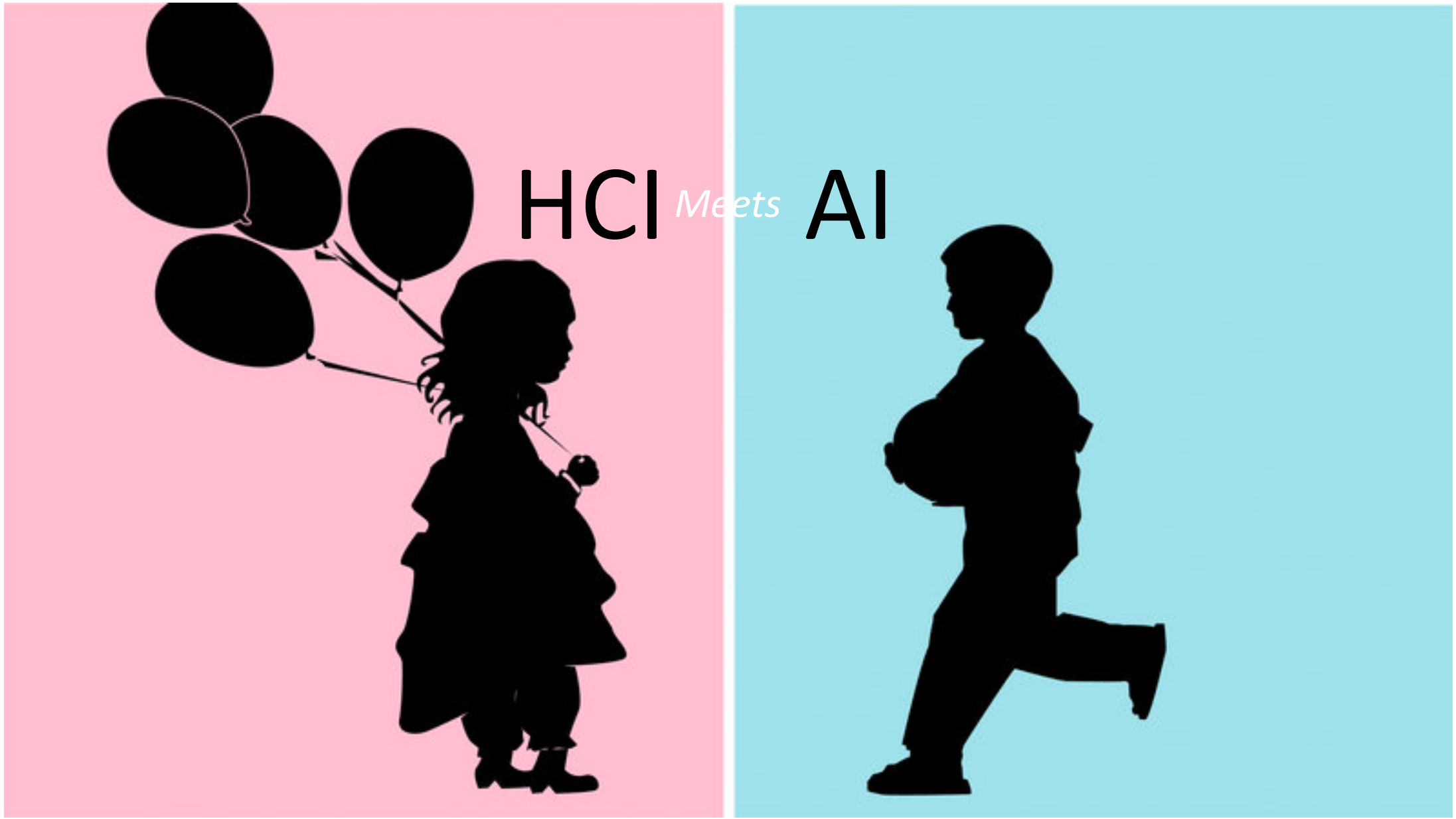
交大資工 助理教授 張永儒 **(Stanley Chang)**

# ABOUT ME

**H**uman **C**omputer **I**nteraction

**U**ser e**X**perience

# HCI *Meets* AI


HCI Meets AI

Me *Meets* AI

# Getting Users' Attention in Web Apps in Likable, Minimally Annoying Ways

(Tasse et al., 2016)

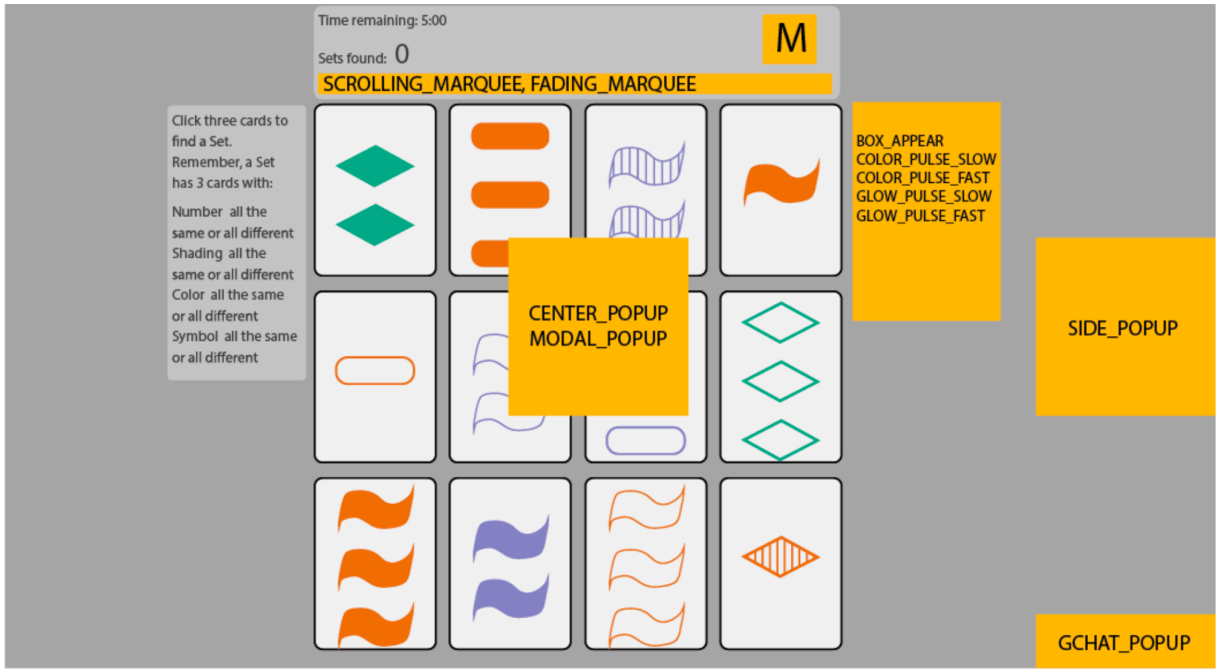
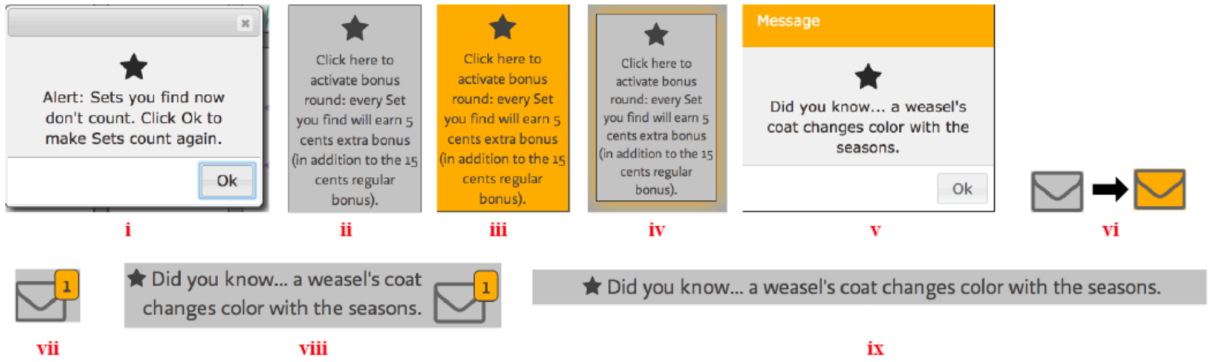
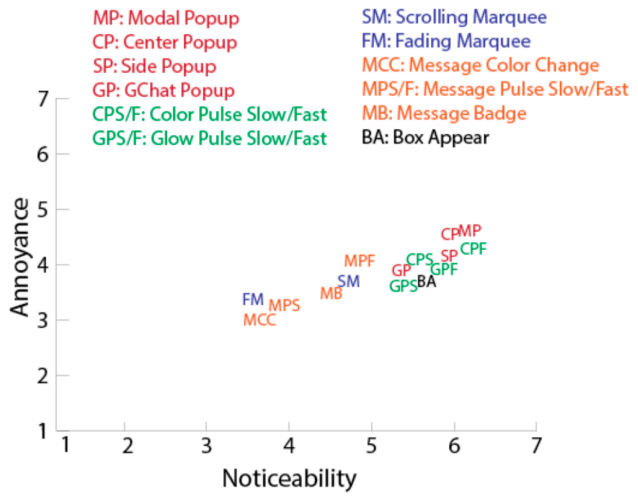
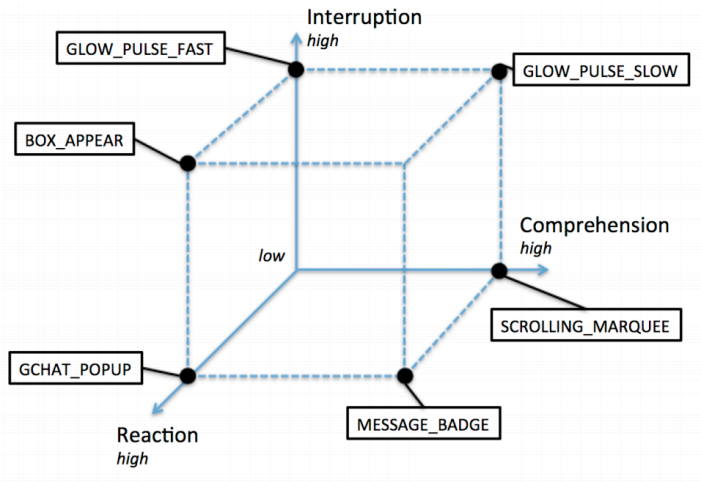
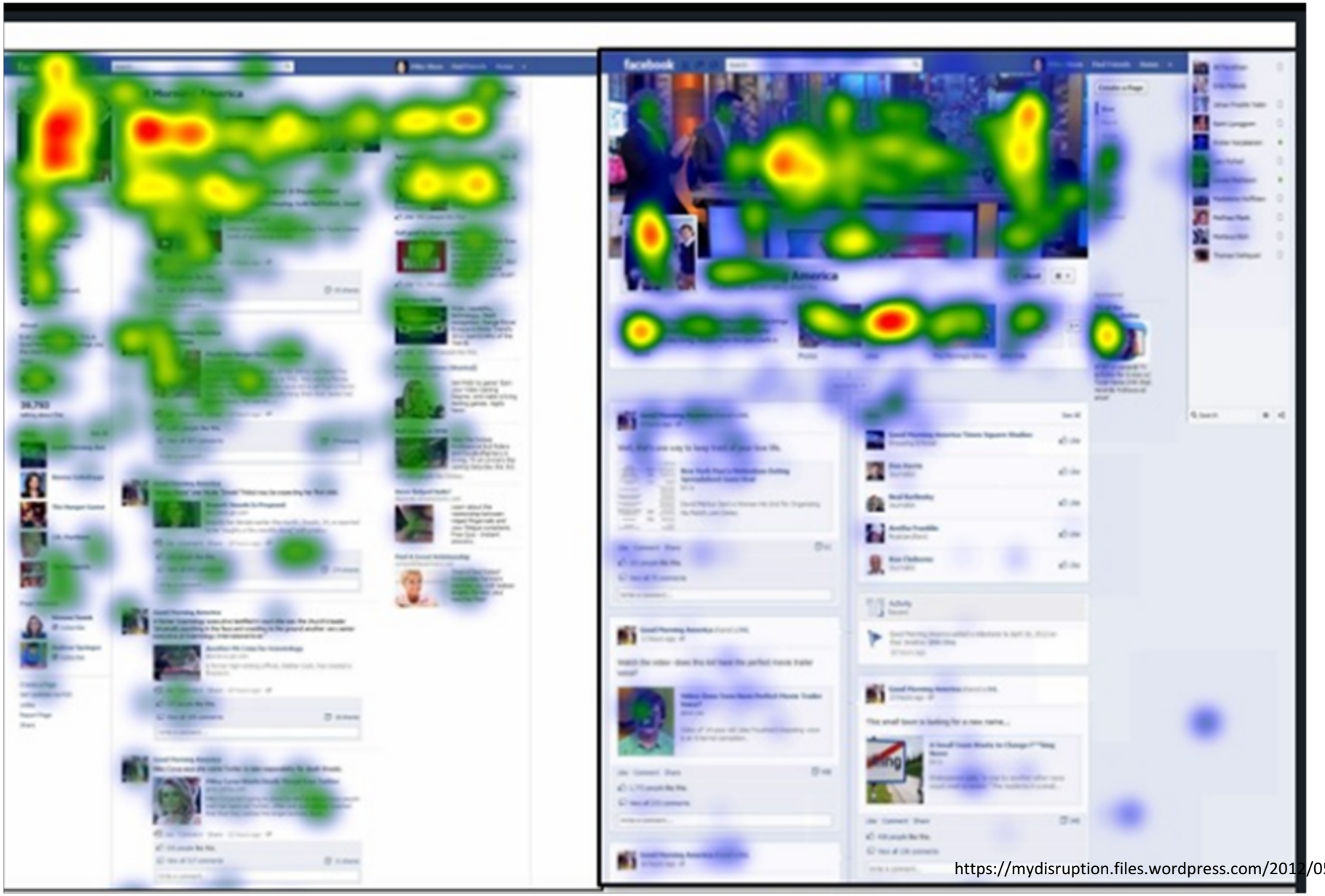



**Figure 3a** - Attention Grabber Layout Placement. The "MESSAGE" attention grabbers all appeared in the box marked "M".

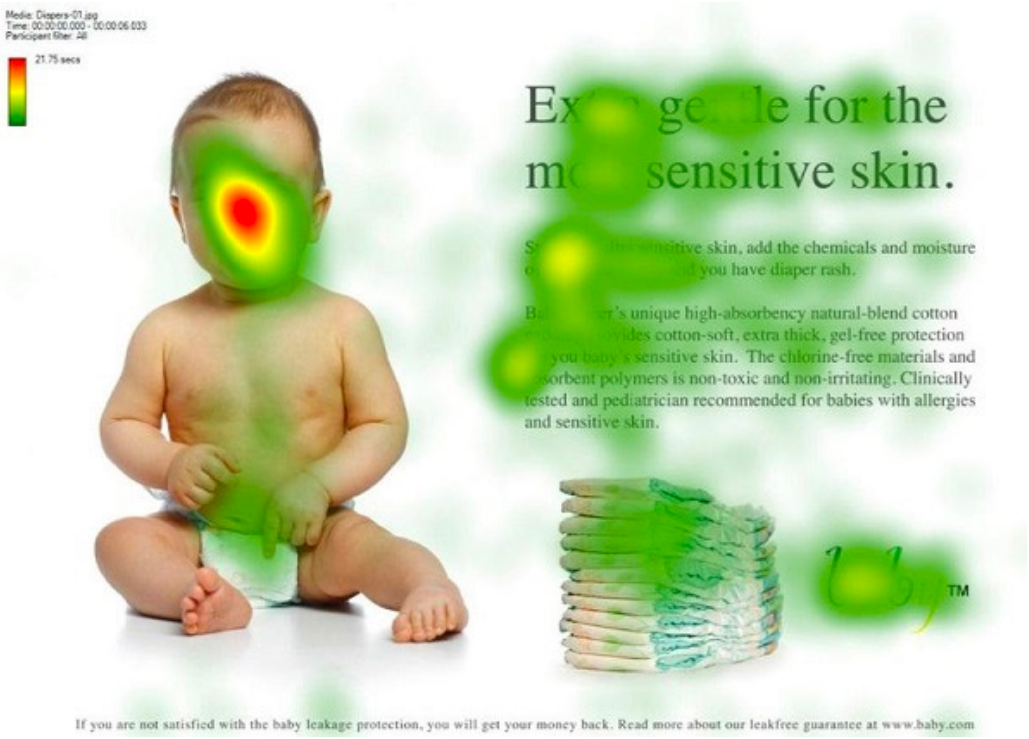


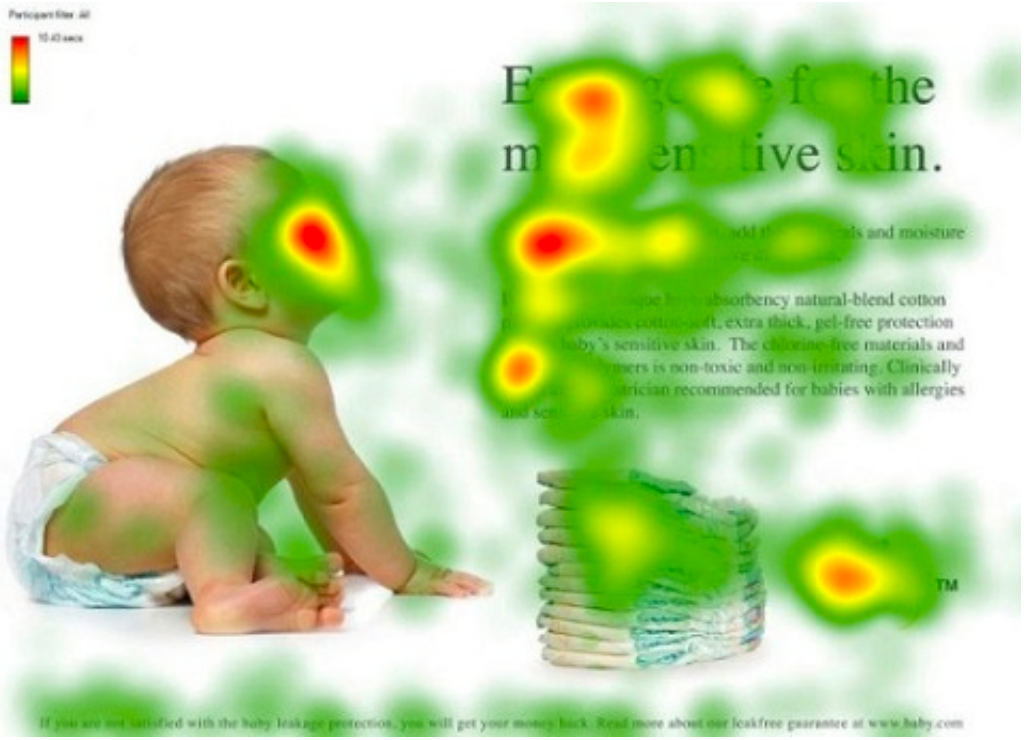





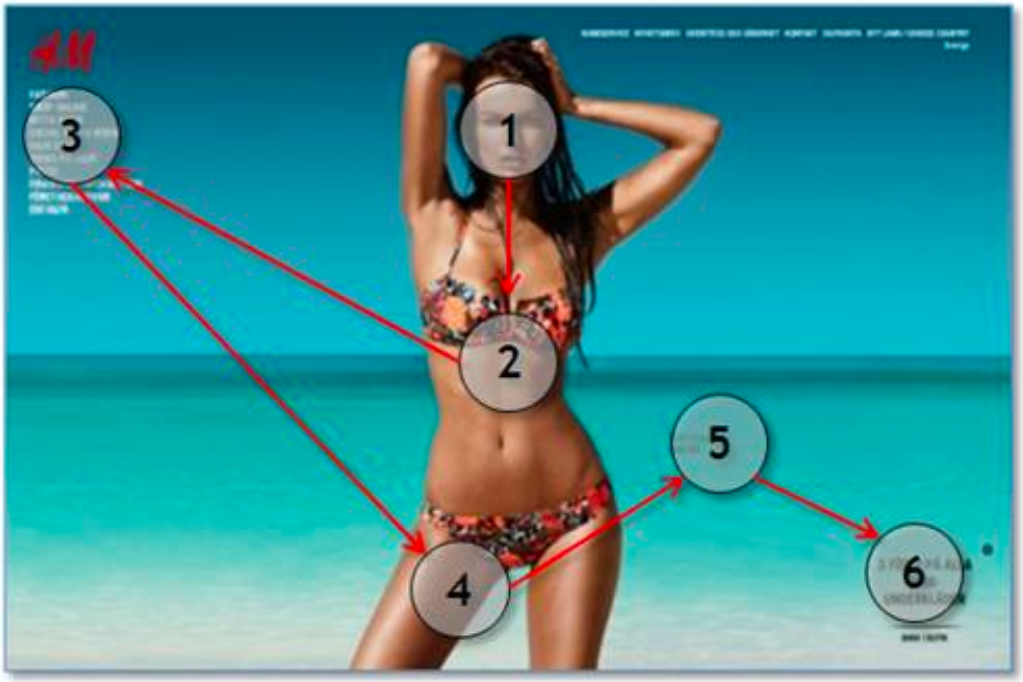
https://mydisruption.files.wordpress.com/2012/05/picture1.png

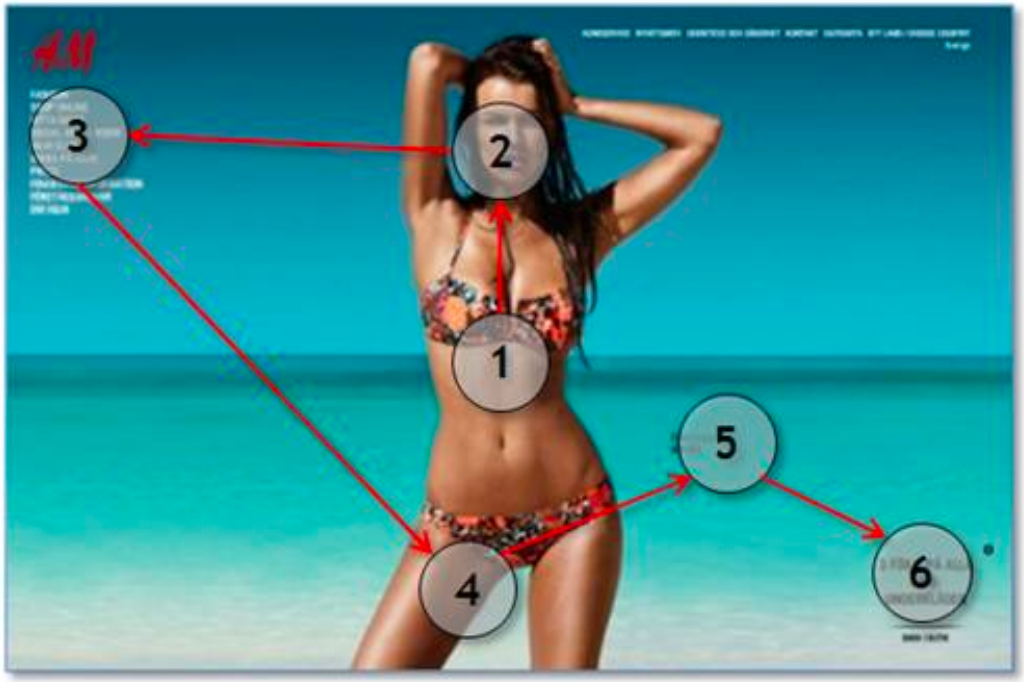


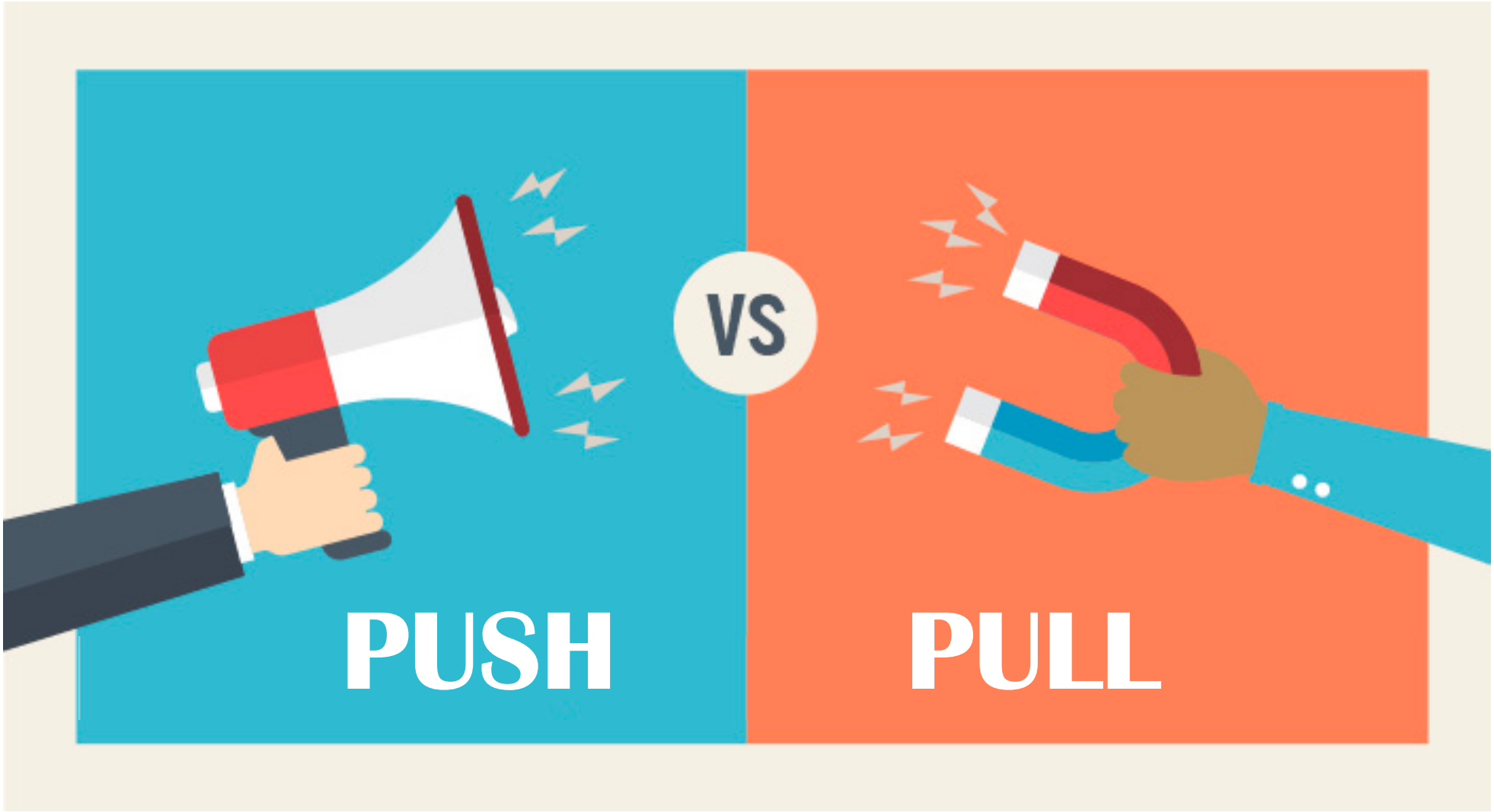

https://blog.kissmetrics.com/wp-content/uploads/2013/06/7-baby-face.jpg

# Visual Fixation Order




http://static3.businessinsider.com/image/53c401656bb3f7e5657346b6-915-631/men-spend-more-time-looking-at-the-woman-while-women-read-the-rest-of-the-ad.jpg

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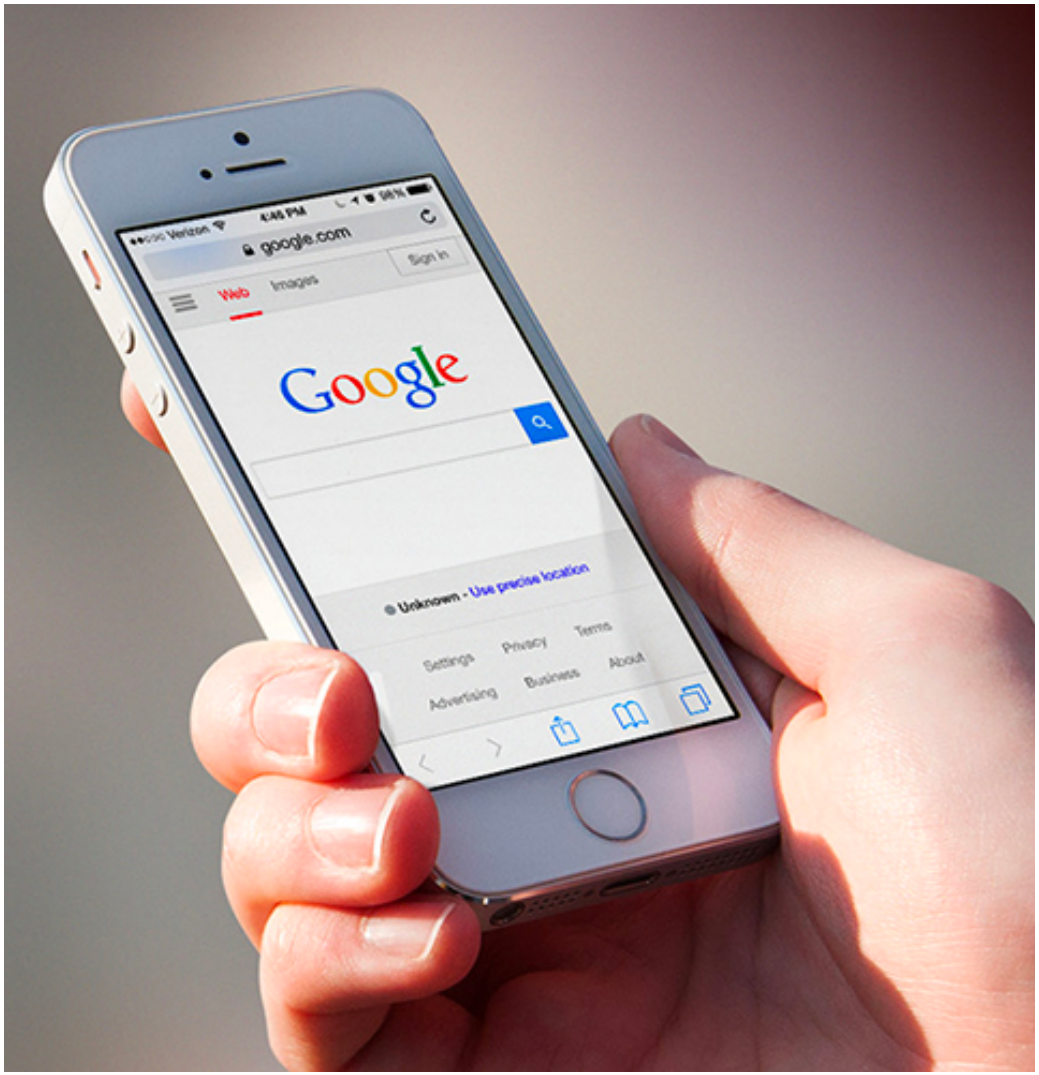


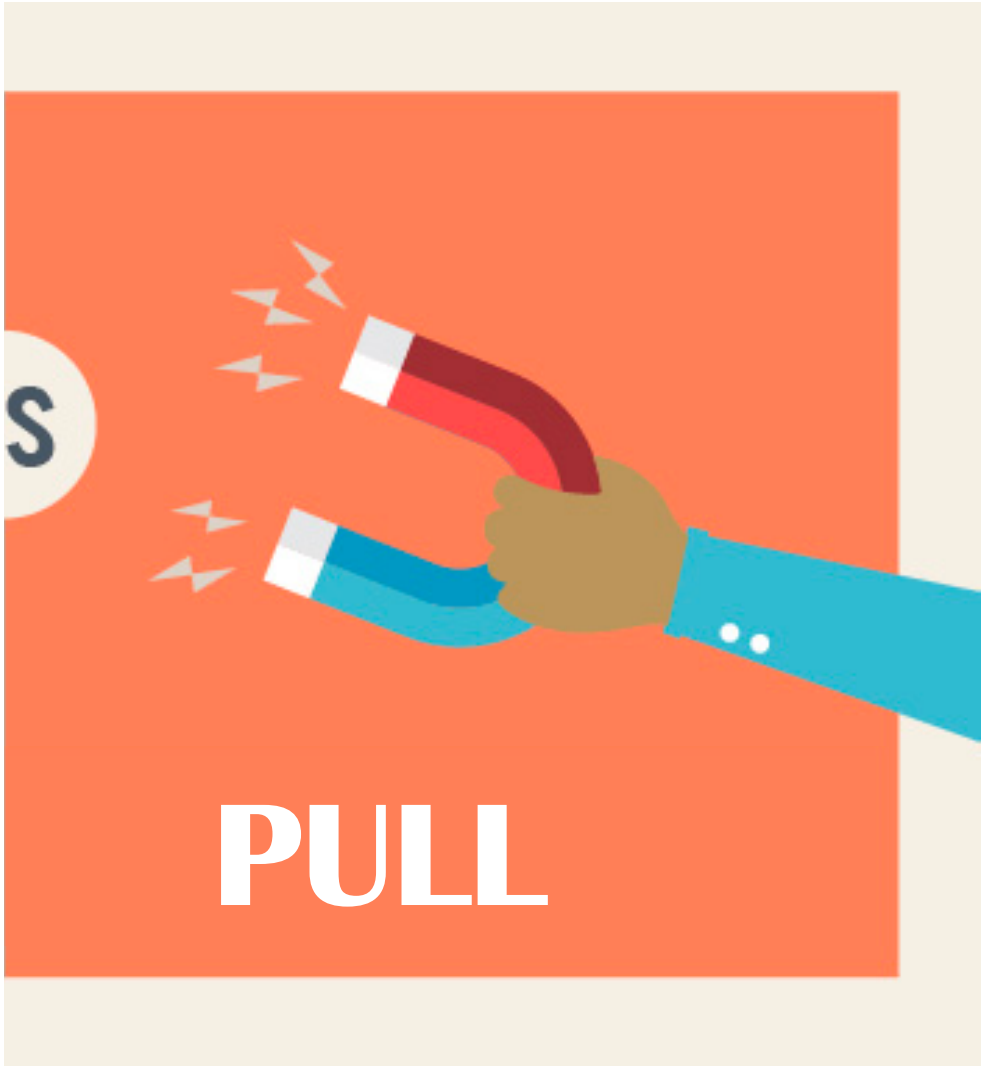


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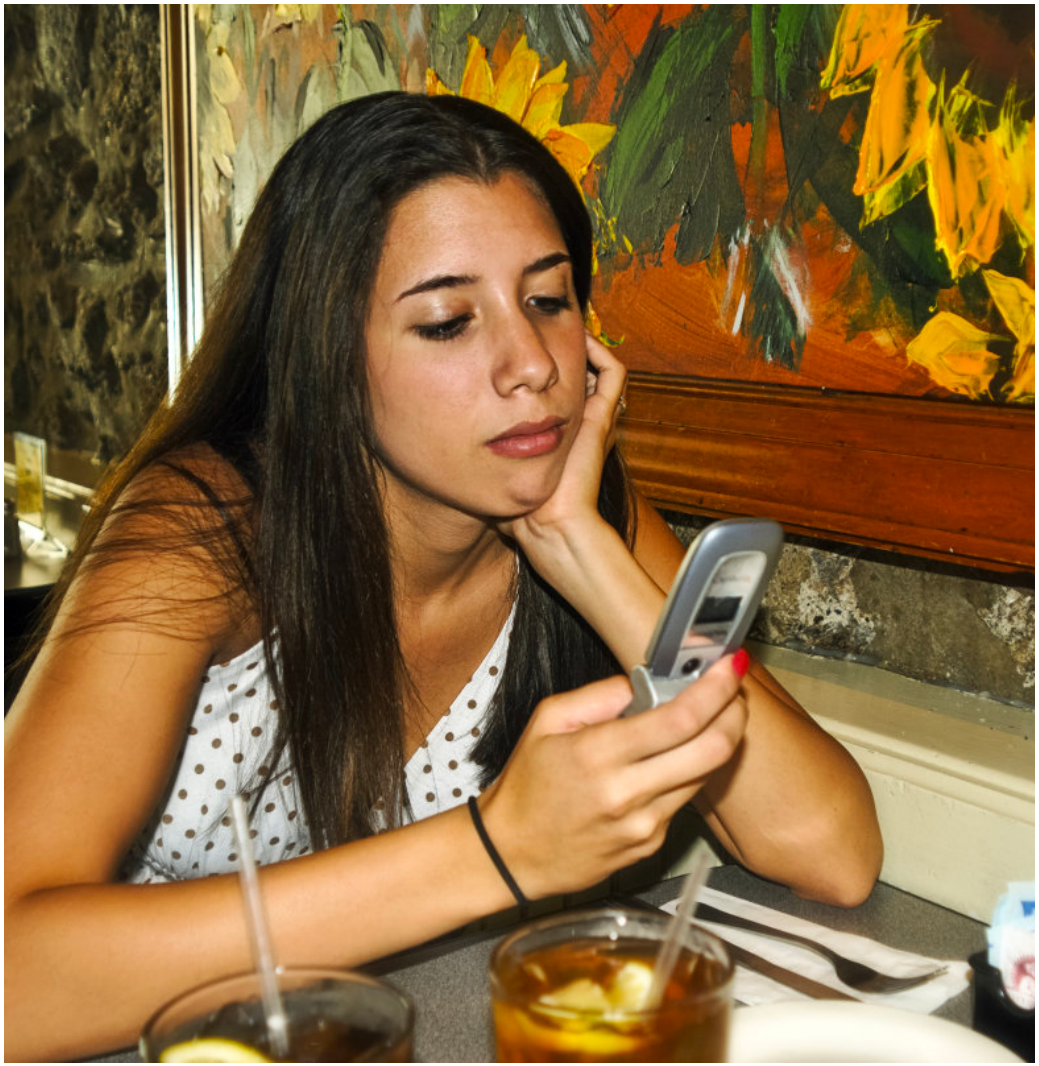

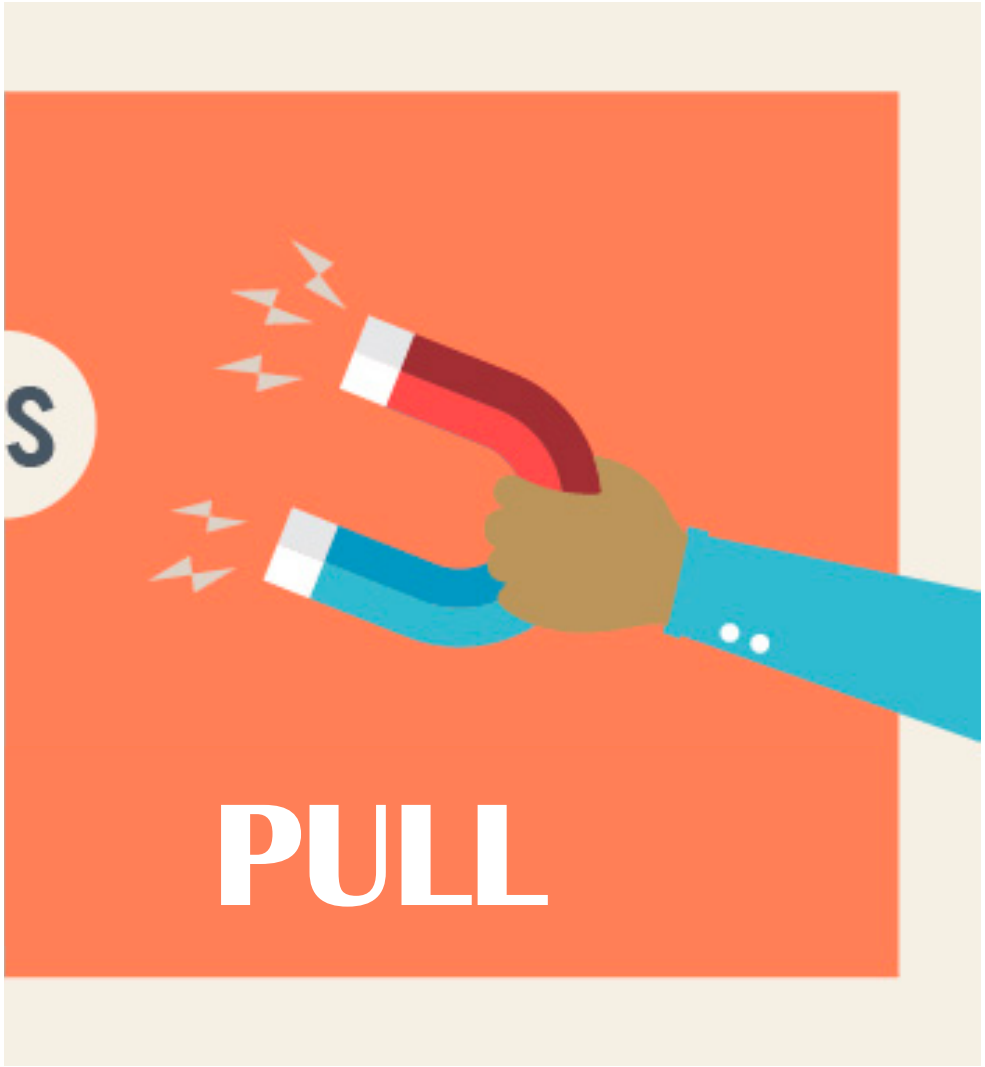


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# Survey

https://kahoot.it

Having Value in the Moment

# notification management

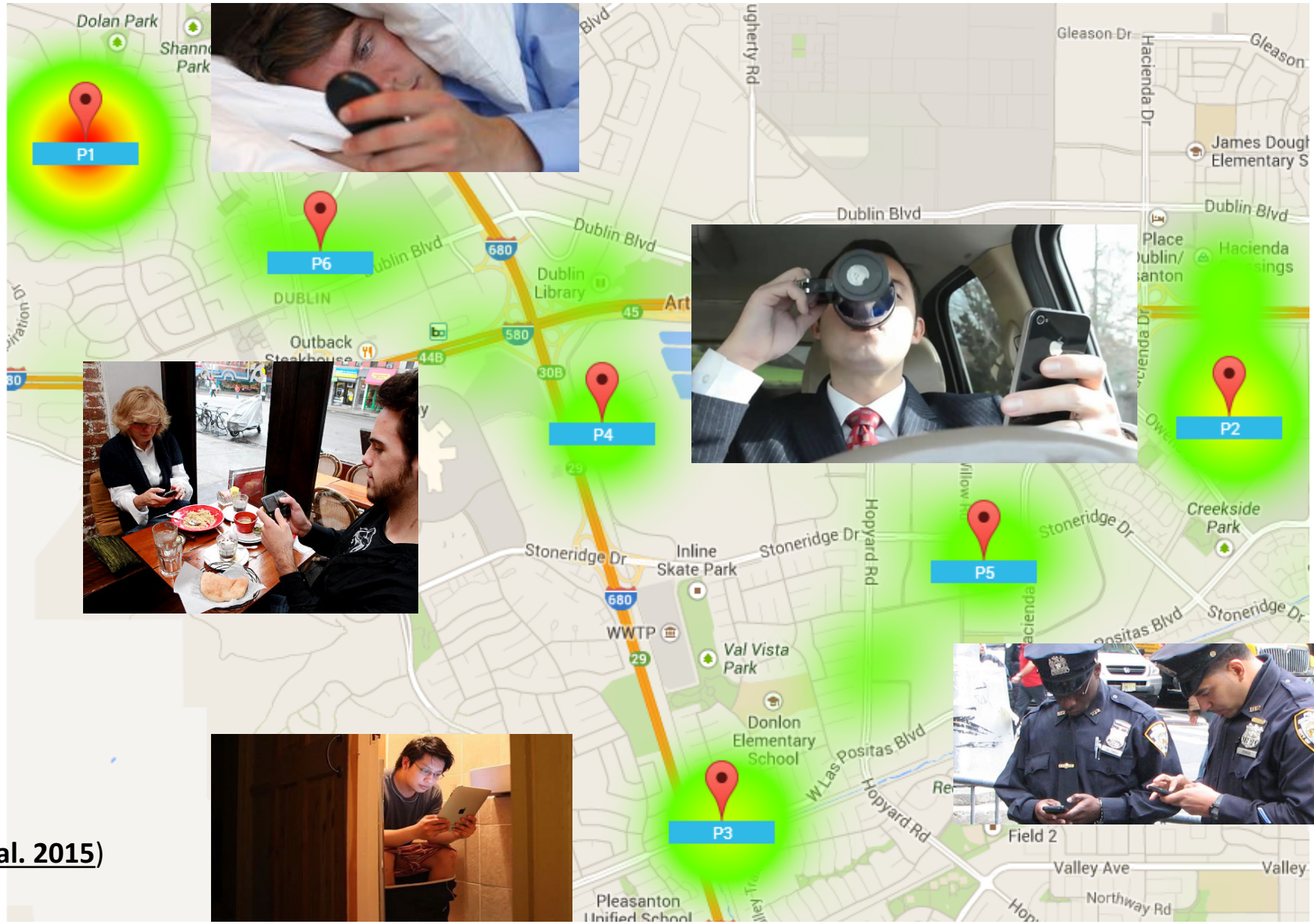
(**Chang et al. 2015**, Mehrotra et al. 2016, Sahami Shirazi et al. 2014, Schulze et al. 2014, Schulze et al. 2016, Weber et al. 2016)

(Weber et al. 2016)

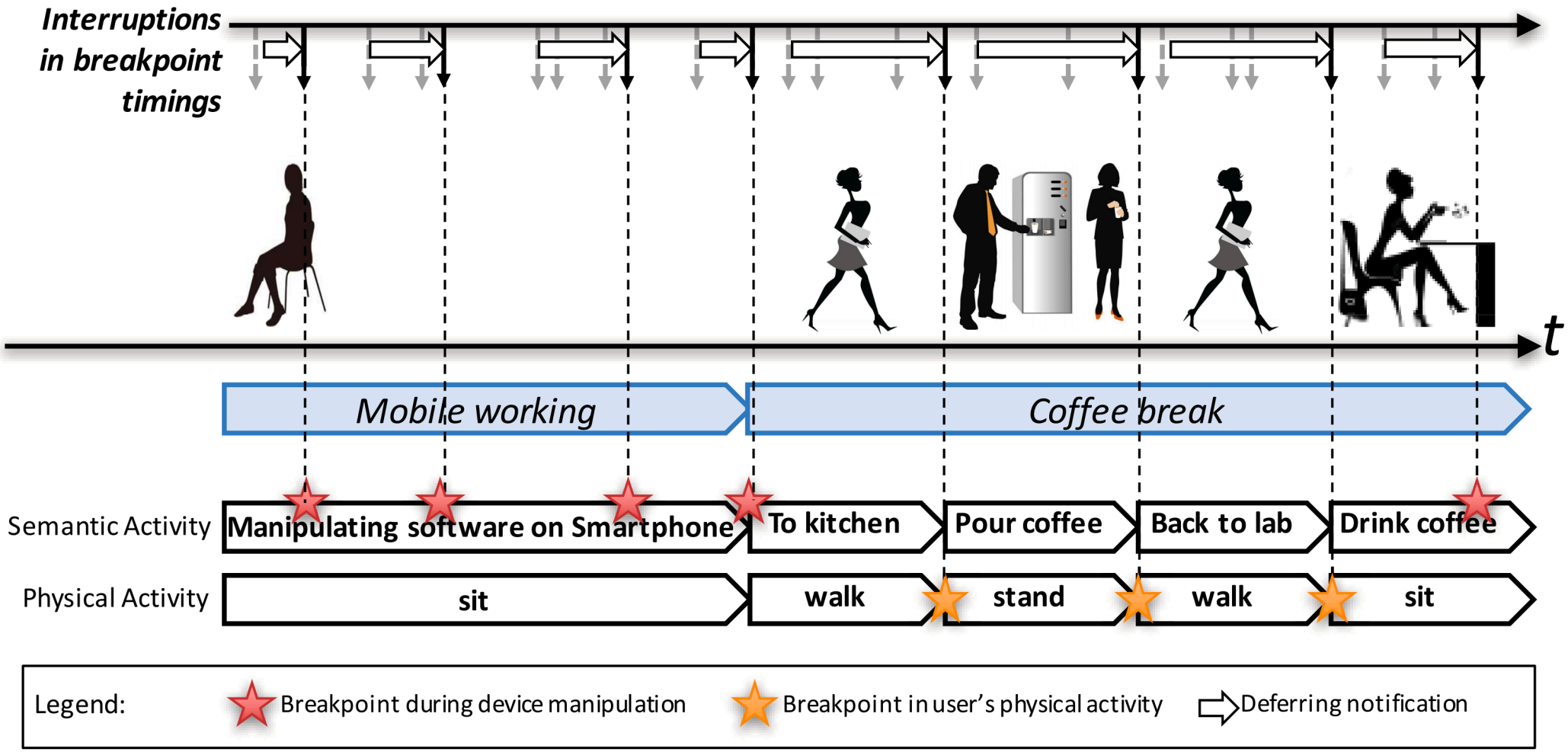
# notification multi-device

# interruptibility prediction

(Kim et al., 2015, Mehrotra et al. 2015, Pejovic et al., 2014, Pielot et al. 2014, Poppinga et al. 2014, Sahami Shirazi et al. 2014, Stern et al. 2011, Turner et al., 2015, Yuan et al., 2017)

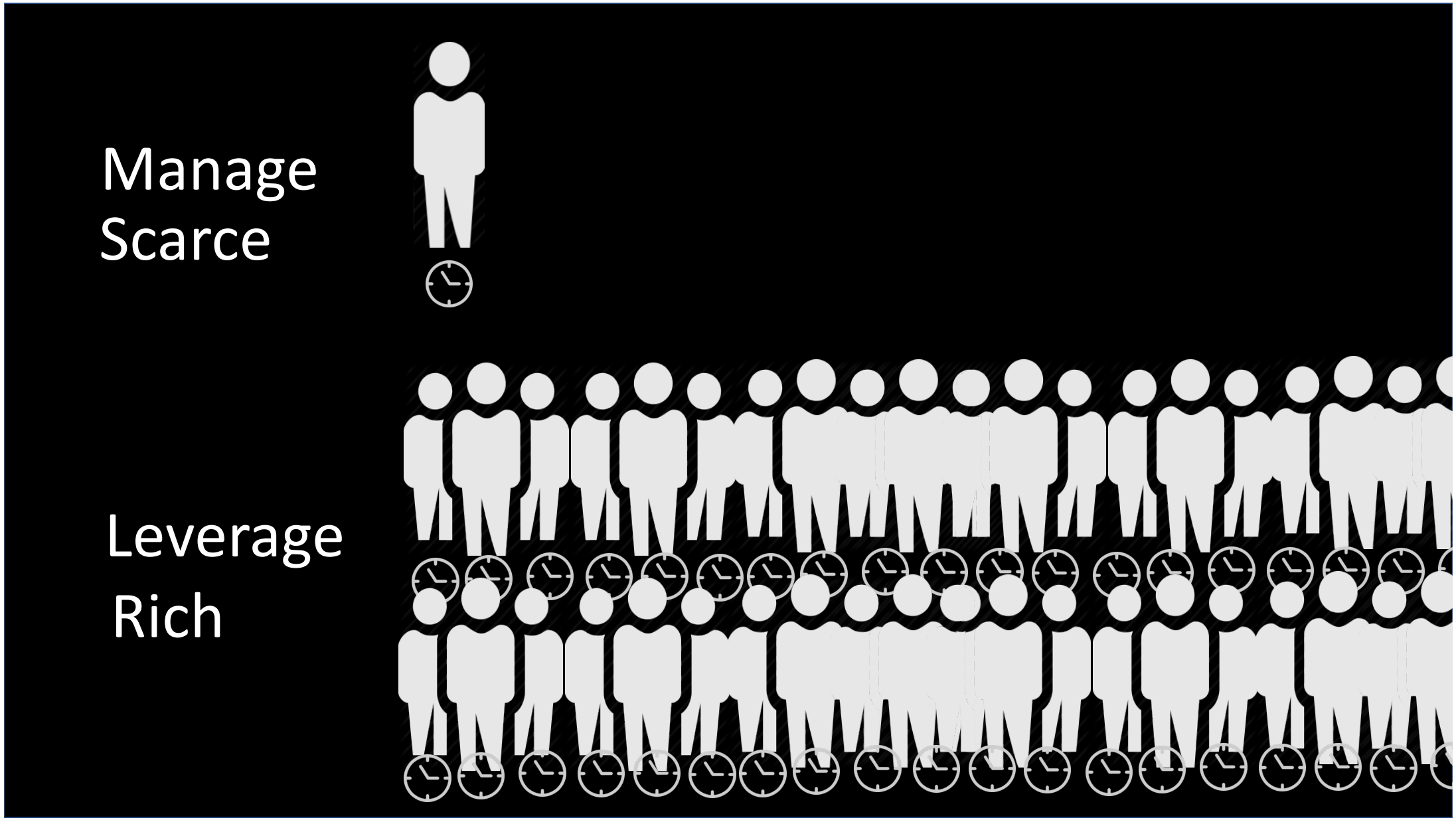



(Chang et al. 2015)

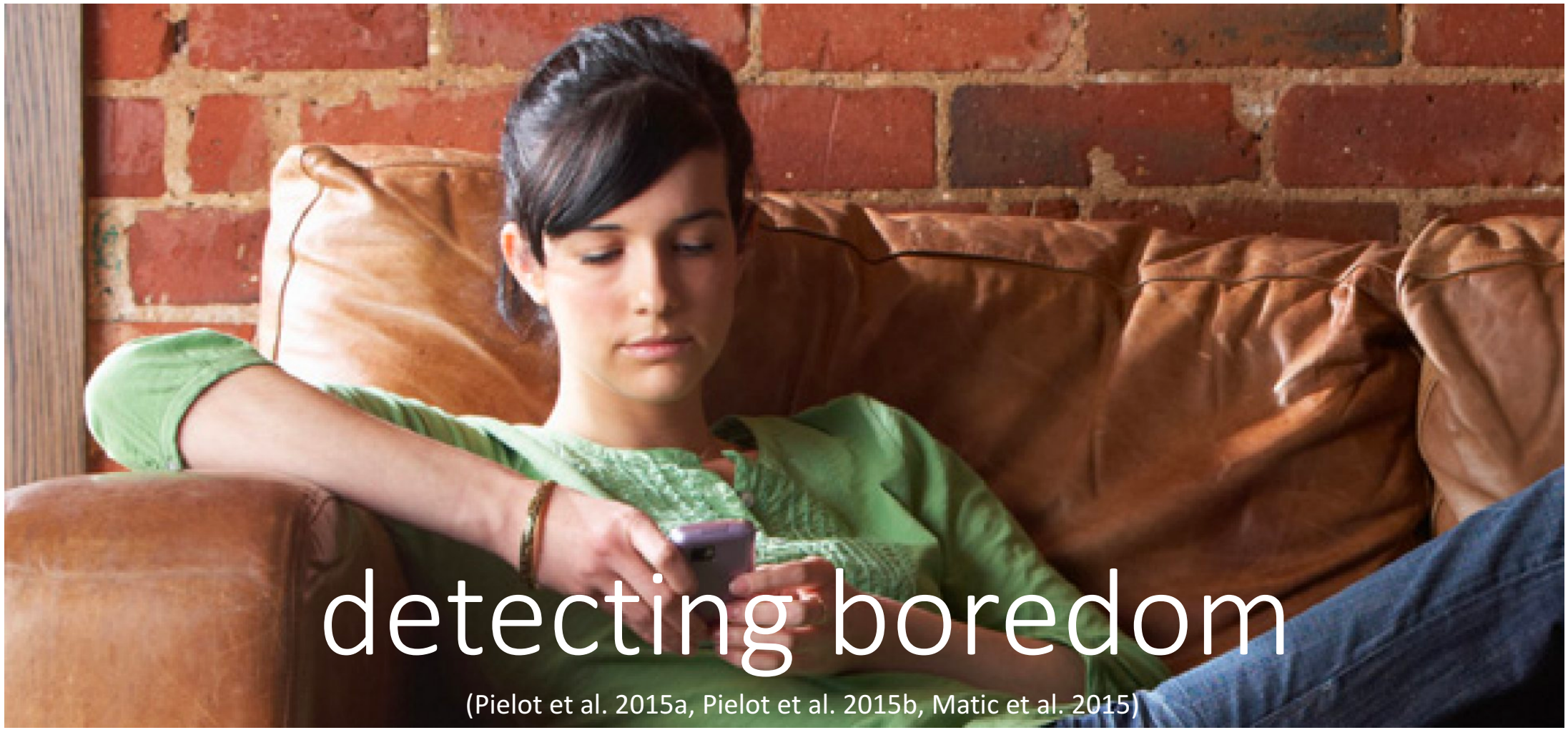



(Obuchi et al. 2016)

Manage Scarce


Manage
Scarce
Leverage
Rich

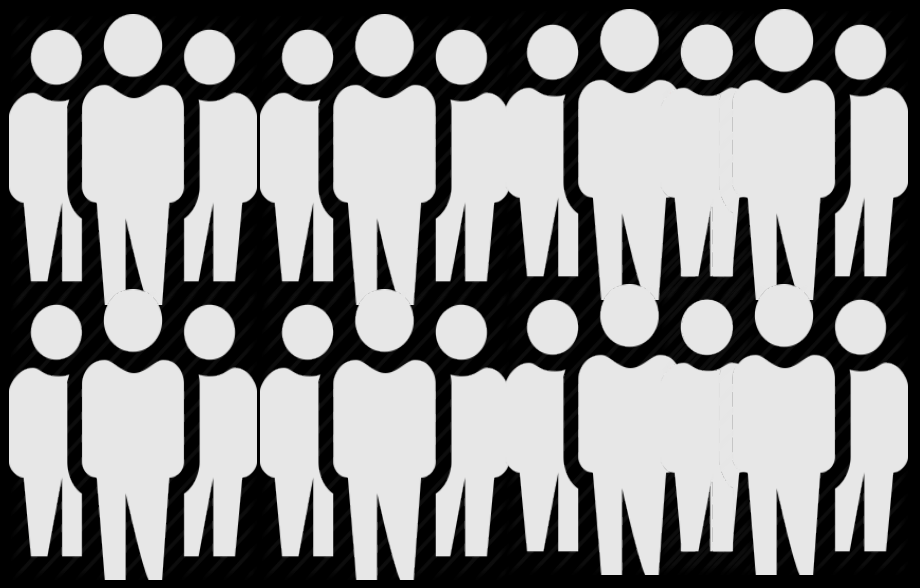
I WAS WAITING
FOR THE OPPORTUNE MOMENT
memegenerator.net

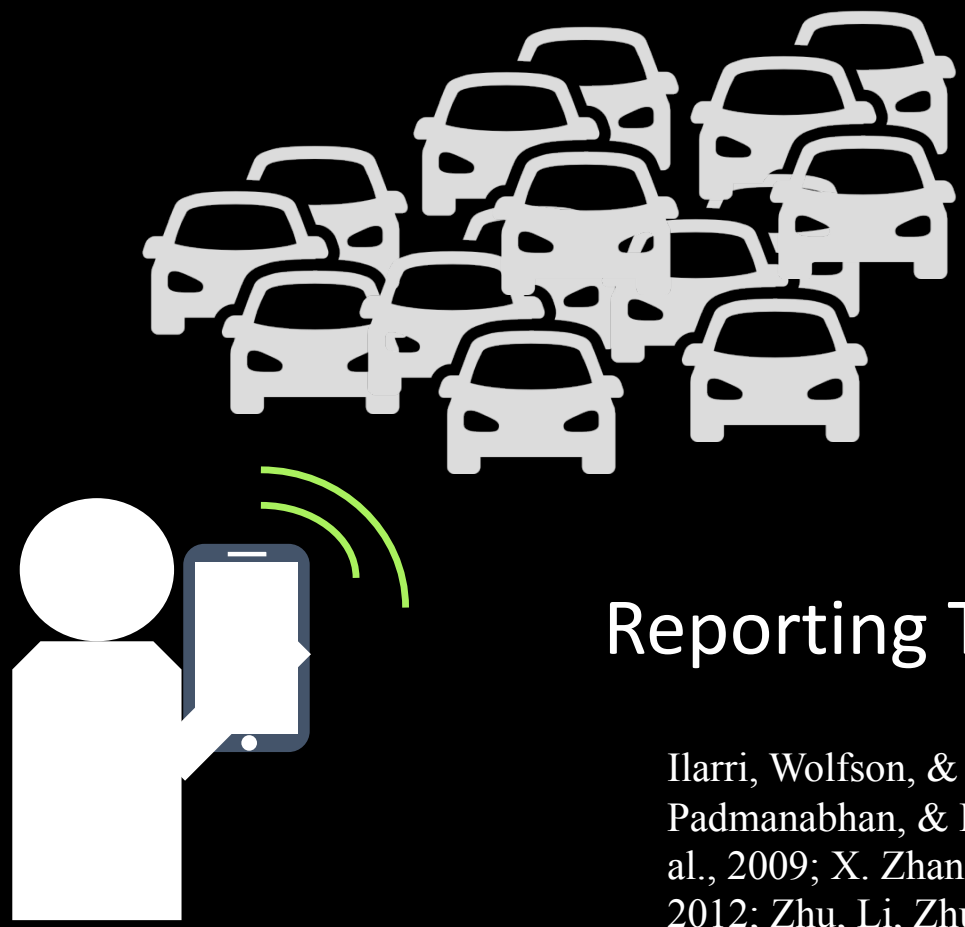


# detecting boredom

(Pielot et al. 2015a, Pielot et al. 2015b, Matic et al. 2015)

# MOBILE CROWDSOURCING





# Reporting Traffic Condition

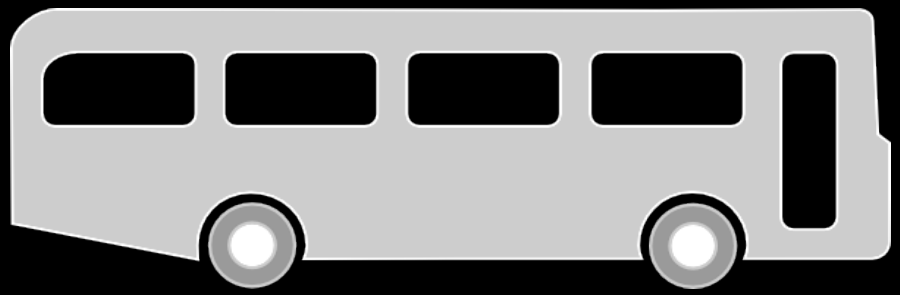
Ilarri, Wolfson, & Delot, 2014; Mohan, Padmanabhan, & Ramjee, 2008; Thiagarajan et al., 2009; X. Zhang, Gong, Xu, Tang, & Liu, 2012; Zhu, Li, Zhu, Li, & Zhang, 2013

# Measuring Air Quality

K. Hu, Wang, Rahman, & Sivaraman, 2014;
Kanjo, Bacon, Roberts, & Landshoff, 2009;
Paulos, Honicky, & Goodman, 2007

# Sharing Prices

(Deng & Cox, 2009; Dong, Kanhere, Chou, & Bulusu, 2008

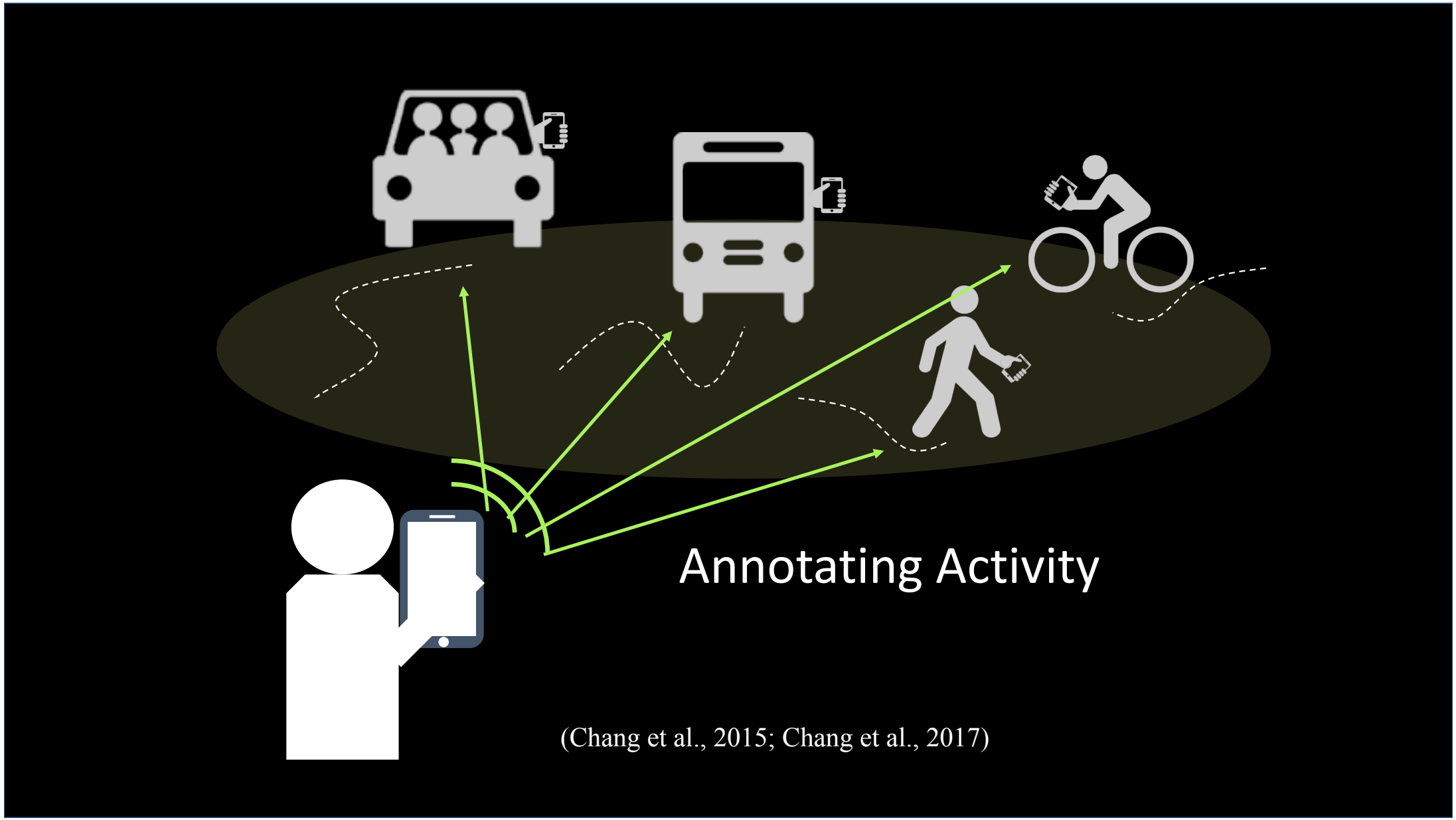


# Sharing Bus Location

(Farkas, Feher, Benczur, & Sidlo, 2015; Thiagarajan, Biagioni, Gerlich, & Eriksson, 2010; Tomasic, Zimmerman, Steinfeld, & Huang, 2014; Zhou, Zheng, & Li, 2012; Zimmerman et al., 2011a)

# Reporting Parking

(Coric & Gruteser, 2013; Villanueva, Villa, Santofimia, Barba, & Lopez, 2015)


Annotating Activity
(Chang et al., 2015; Chang et al., 2017)

# TİRAMİSU

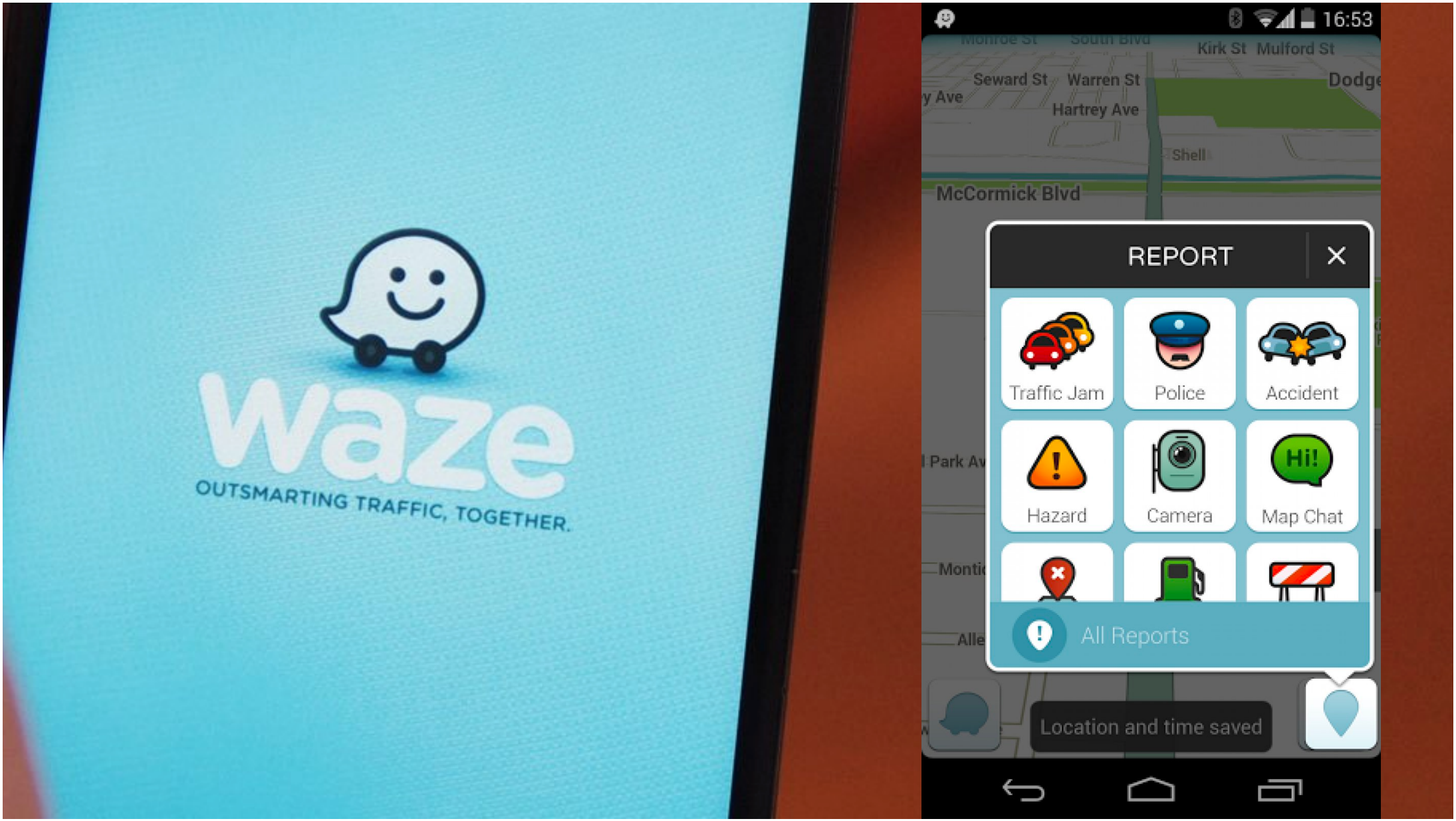
## the real-time bus tracker

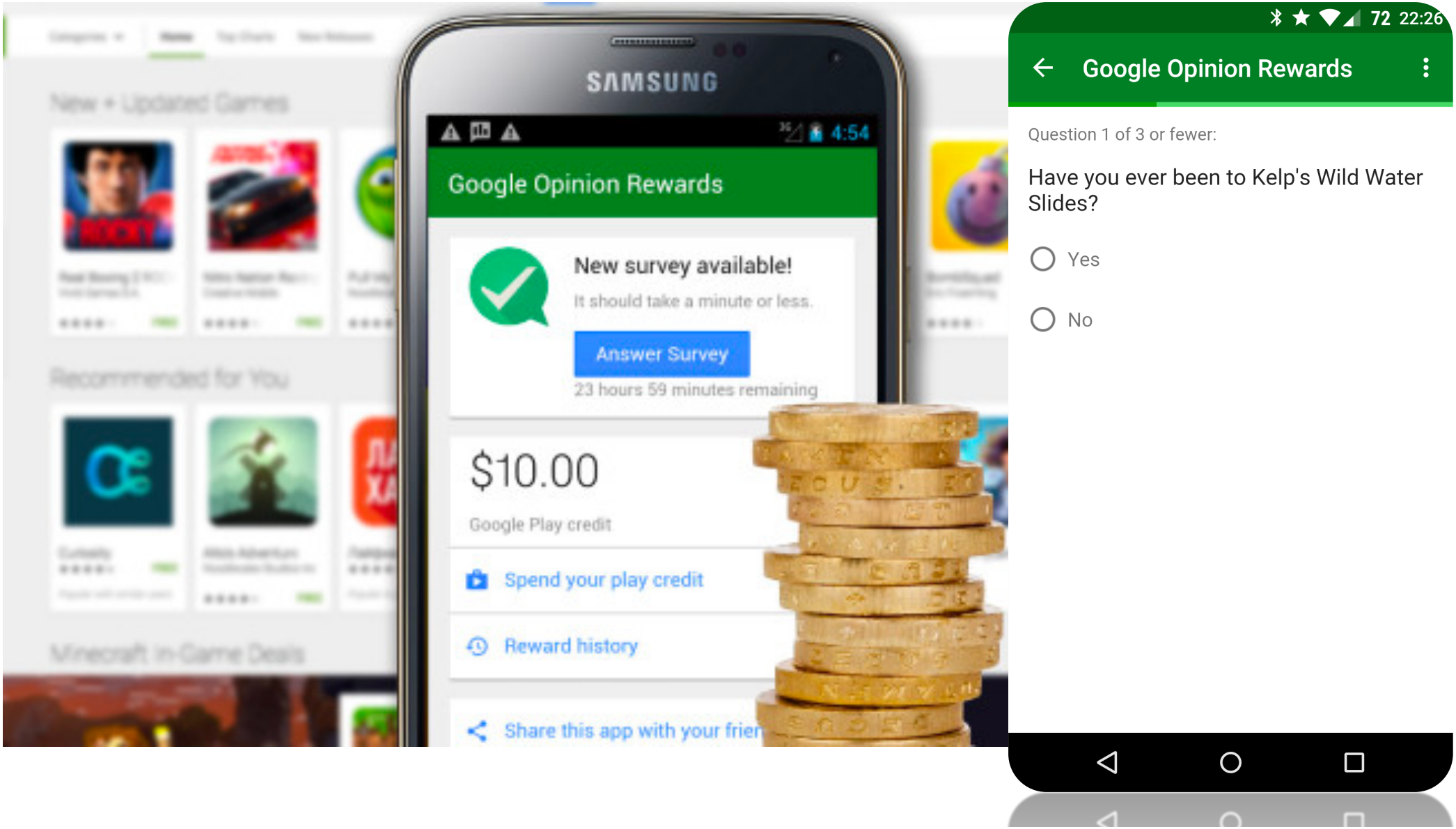
## Now Available for Android and iPhone

Free in Android Market and in iTunes

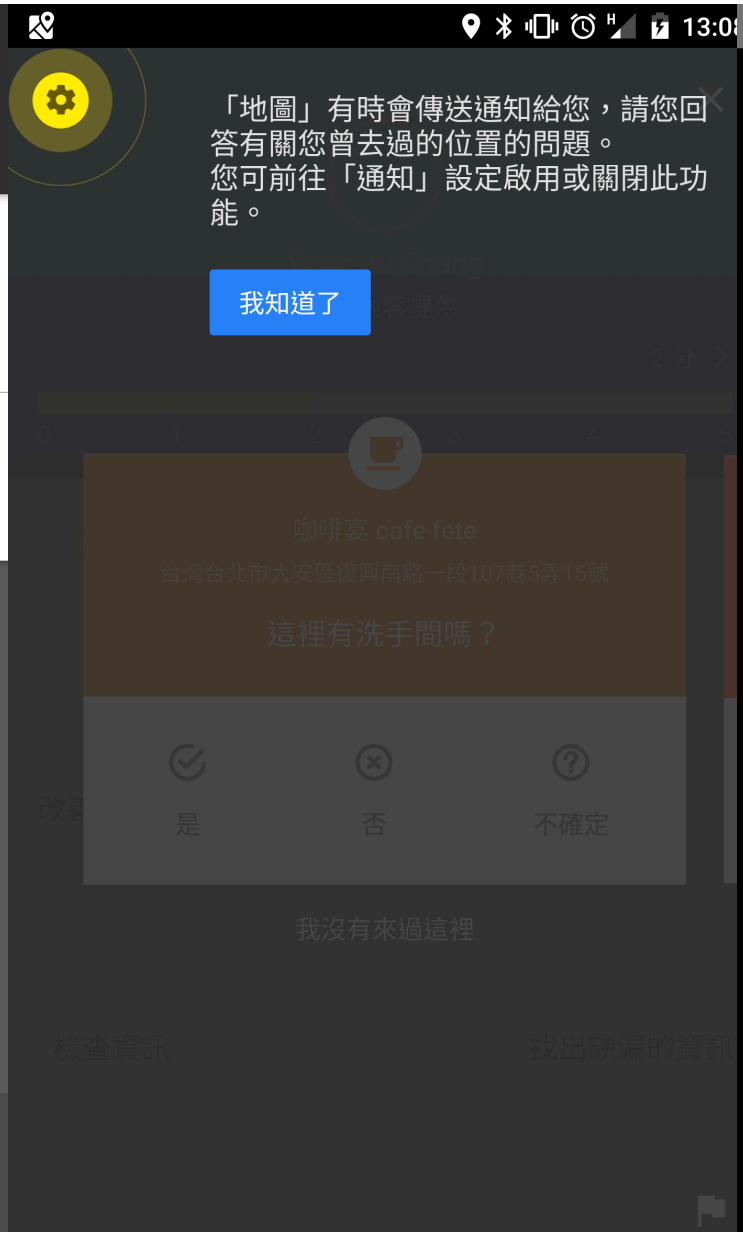
**Tiramisu** [tirame'su]
literally means "pick me up" in Italian.

Tiramisu app. provides easy access to schedule and real-time arrival information for the local public transportation.


waze
OUTSMARTING TRAFFIC, TOGETHER.
16:53
Kirk St
Mulford St
Seward St
Warren St
Hartrey Ave
Shell
McCormick Blvd
REPORT
Traffic Jam
Police
Accident
Hazard
Camera
Map Chat
Hi!
All Reports
Location and time saved

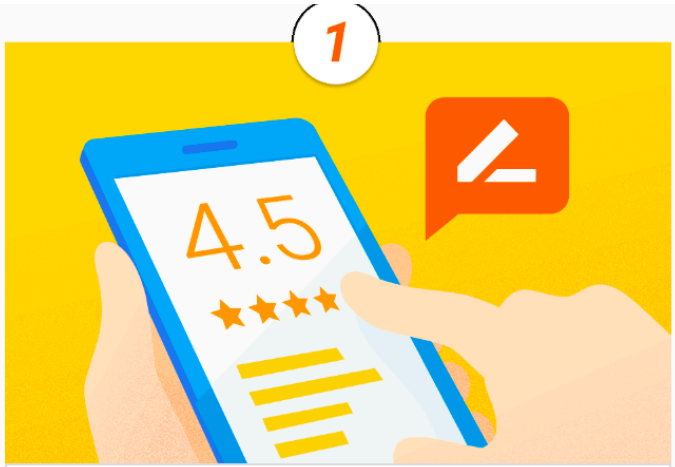

SAMSUNG
4:54
Google Opinion Rewards
New survey available!
It should take a minute or less.
Answer Survey
23 hours 59 minutes remaining
$10.00
Google Play credit
Spend your play credit
Reward history
Share this app with your frien
72 22:26
Google Opinion Rewards
Question 1 of 3 or fewer:
Have you ever been to Kelp's Wild Water Slides?
Yes
No

13:08 • 3月25日 週六
地圖 • 現在
建議上傳相片
「253新北市石門區崁仔腳58-1」是 Google 地圖上的熱門地點，歡迎新增自己的相片讓數以千計的使用者瀏覽。
地圖 • 現在
Google 地圖 - 咖啡宴 cafe fete
回答幾個簡短問題以協助他人
全部清除
Waze
Play 音樂
Facebook
Pokémon GO
Chrome
Salvage of South Korea's Sewol ferry: the facts
Yahoo News - 前天
64°
LINE


「地圖」有時會傳送通知給您，請您回答有關您曾去過的位置的問題。
您可前往「通知」設定啟用或關閉此功能。
我知道了
咖啡宴 cafe fete
台灣台北市大安區復興南路一段107巷5弄15號
這裡有洗手間嗎？
是
否
不確定
我沒有來過這裡

靠北邊叢山小
感謝你！
如果我們依據你的意見回饋進行變更，我們將與你聯繫。
提供更多編輯建議
關閉

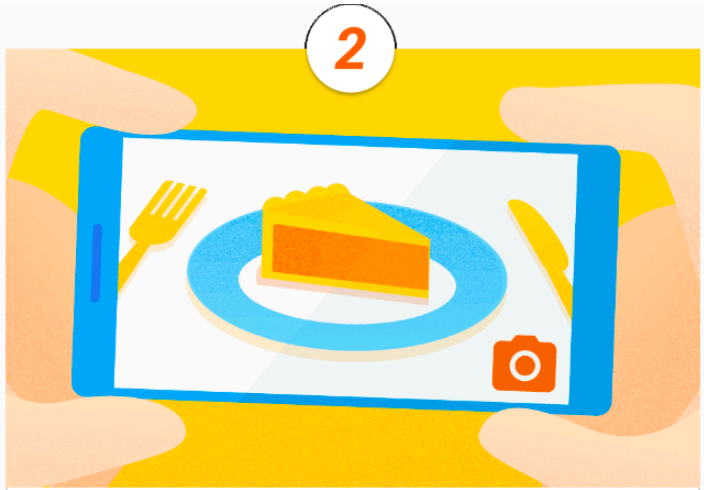
Local Guides




## Write a Review

Had a great meal? Know a nice park? Share your experience and help others decide where to go.

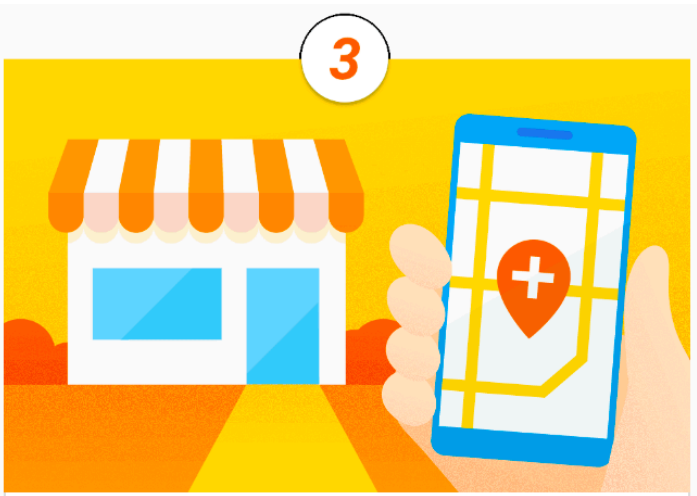
Learn More




## Add a Photo

A picture is worth a thousand words. Capture your experience with a photo and watch your view count soar.

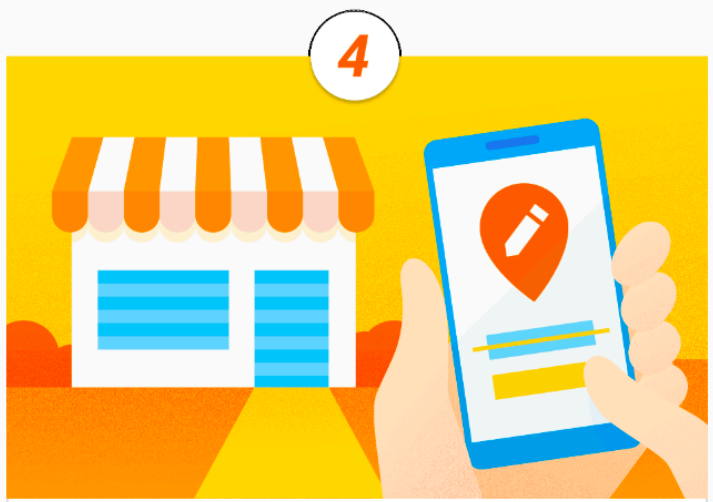
Learn More




## Add a Place

Find a place that's not on Google Maps? You can literally put it on the map for others to discover.

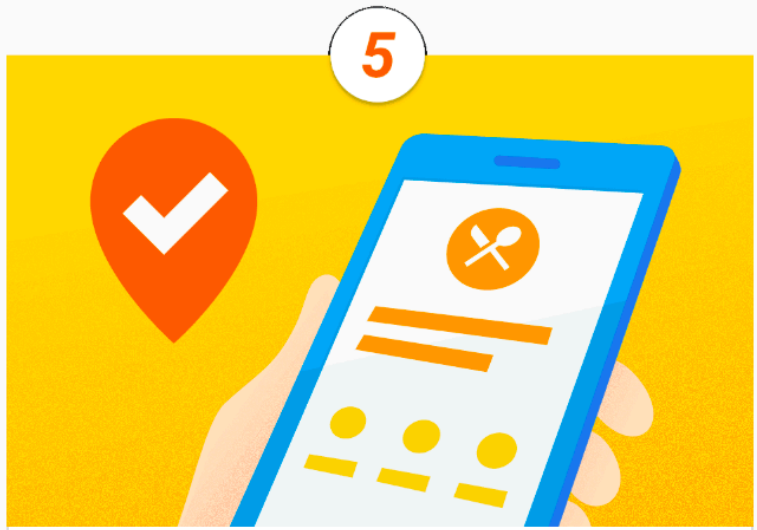
Learn More




## Edit a Place

Wrong hours? Missing a phone number? You can fix the information about places with a few taps.

Learn More

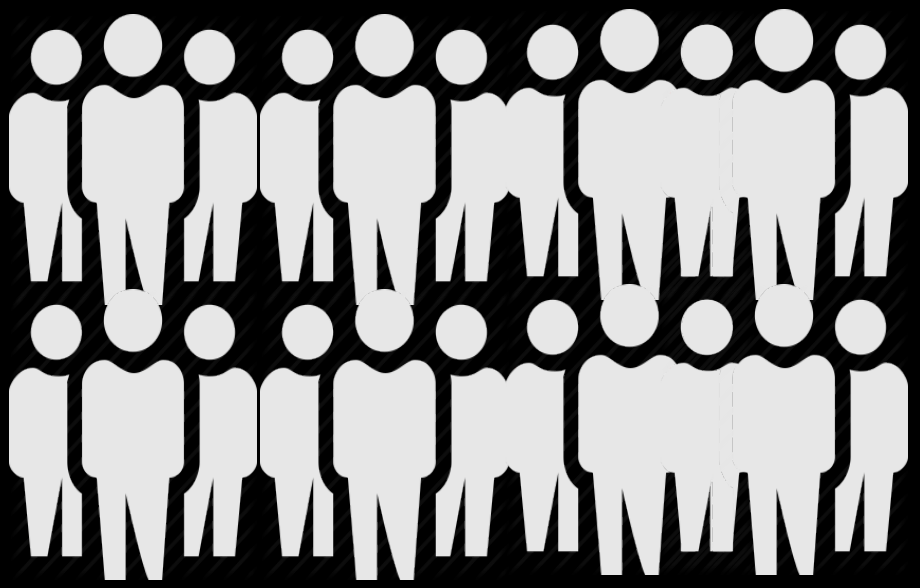



## Answer Questions

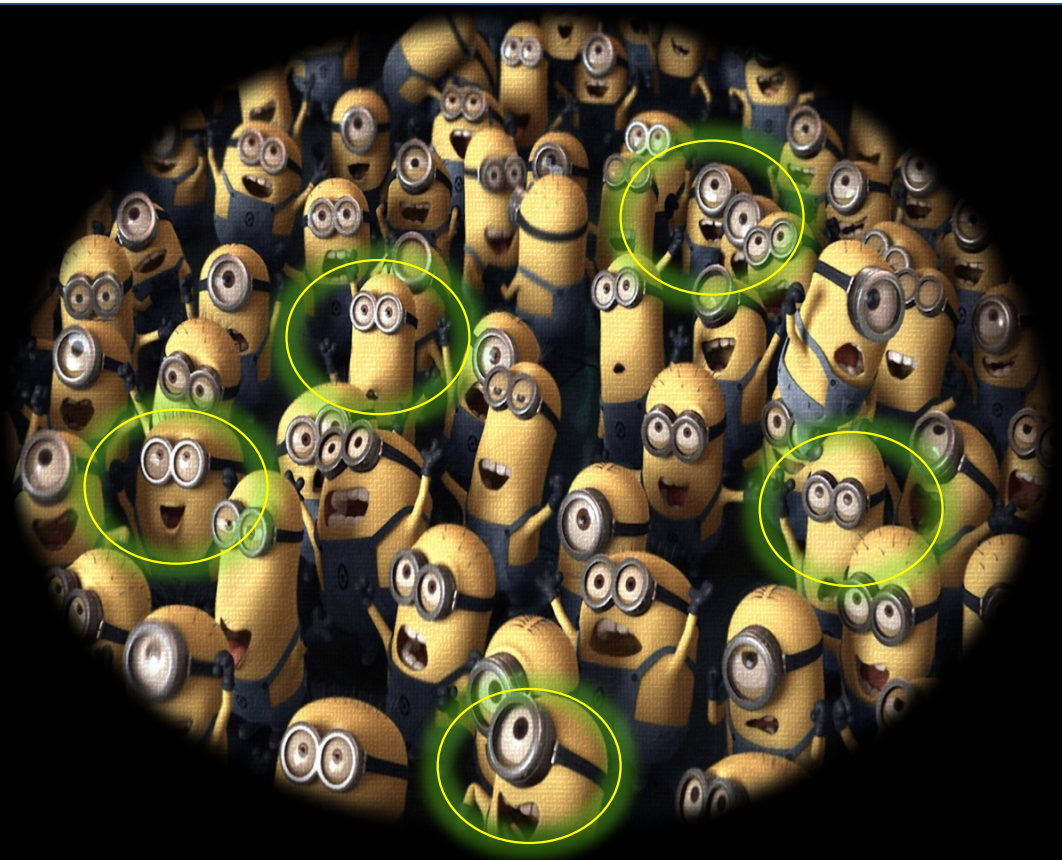
Share your insights and answer common questions about the places you visit.

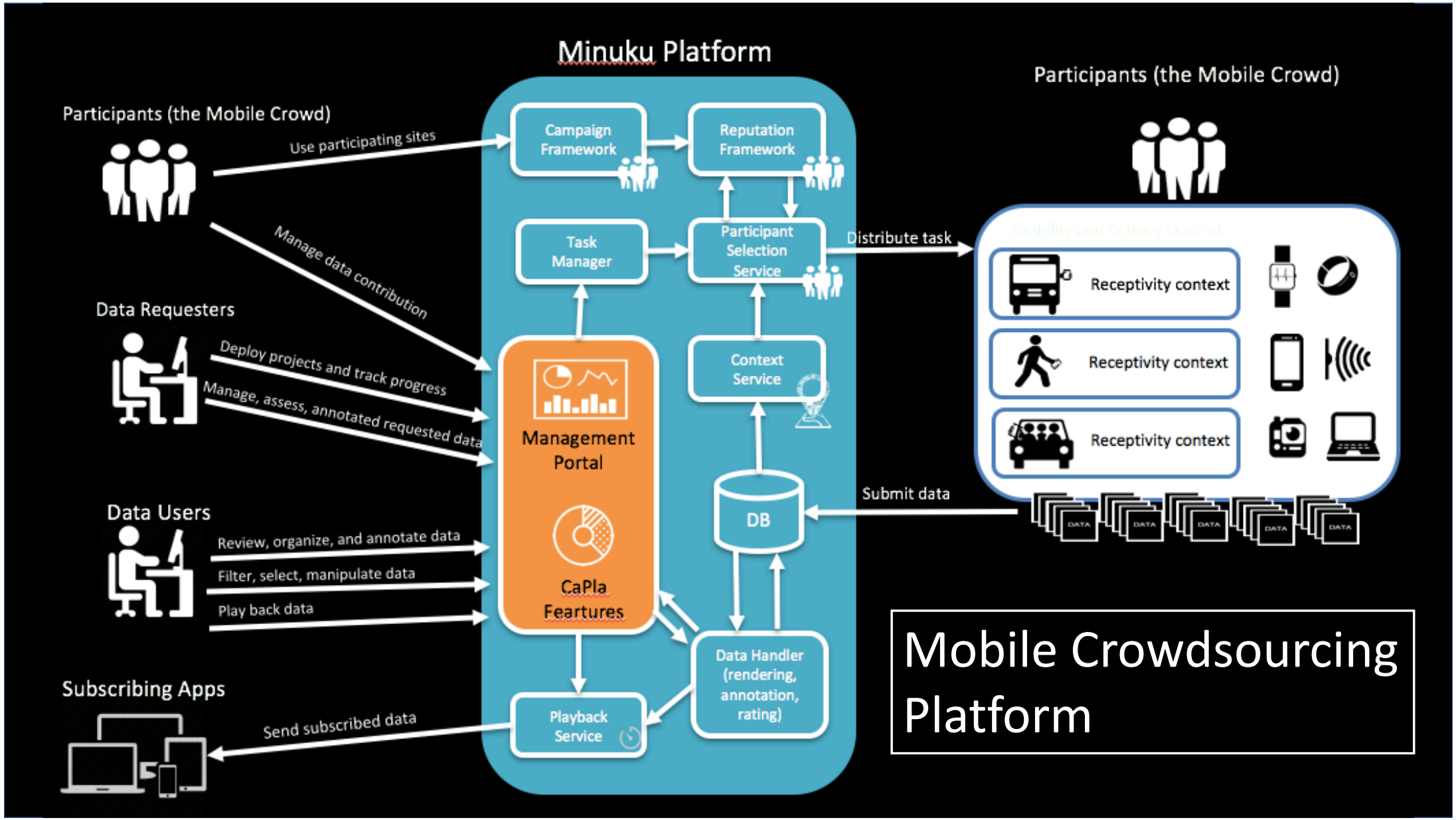
Learn More

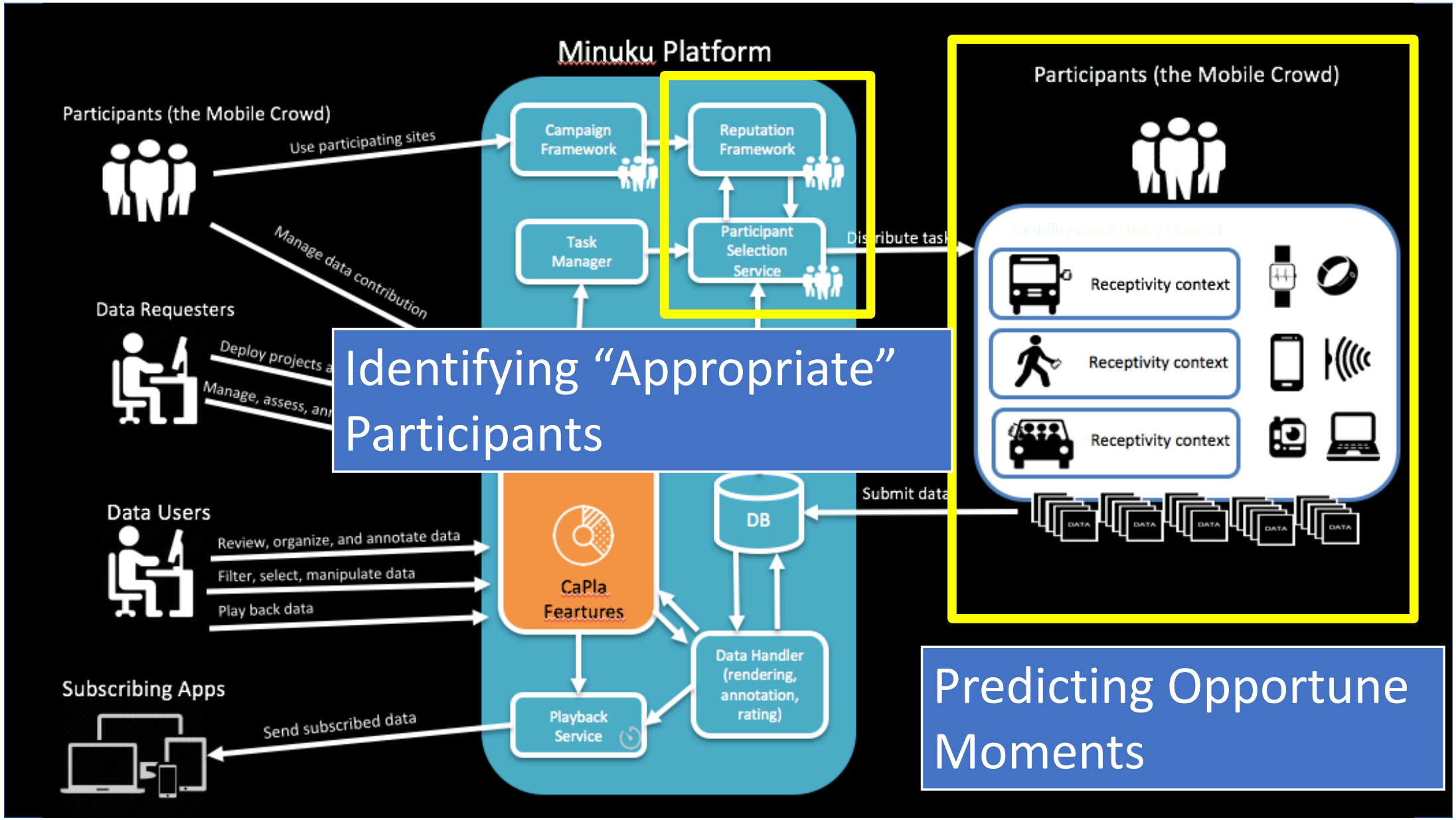
# MOBILE CROWDSOURCING



# MOBILE CROWDSOURCING




Minuku Platform
Participants (the Mobile Crowd)
Use participating sites
Manage data contribution
Data Requesters
Deploy projects and track progress
Manage, assess, annotated requested data
Data Users
Review, organize, and annotate data
Filter, select, manipulate data
Play back data
Subscribing Apps
Send subscribed data
Campaign Framework
Reputation Framework
Task Manager
Participant Selection Service
Context Service
Management Portal
CaPla Feartures
DB
Data Handler (rendering, annotation, rating)
Playback Service
Distribute task
Participants (the Mobile Crowd)
Receptivity context
Receptivity context
Receptivity context
Submit data
DATA
Mobile Crowdsourcing Platform


Minuku Platform
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Task Manager
Participant Selection Service
Distribute task
Participants (the Mobile Crowd)
Receptivity context
Receptivity context
Receptivity context
Data Requesters
Deploy projects
Manage, assess, an
Identifying "Appropriate" Participants
Data Users
Review, organize, and annotate data
Filter, select, manipulate data
Play back data
CaPla Feartures
DB
Submit data
Data Handler (rendering, annotation, rating)
Subscribing Apps
Send subscribed data
Playback Service
Predicting Opportune Moments

Thank you for your attention!

交大資工

張永儒 (Stanley Chang)

armuro@cs.nctu.edu.tw