Studying the Effects of Task Notification Policies on Participation and Outcomes in On-the-go Crowdsourcing

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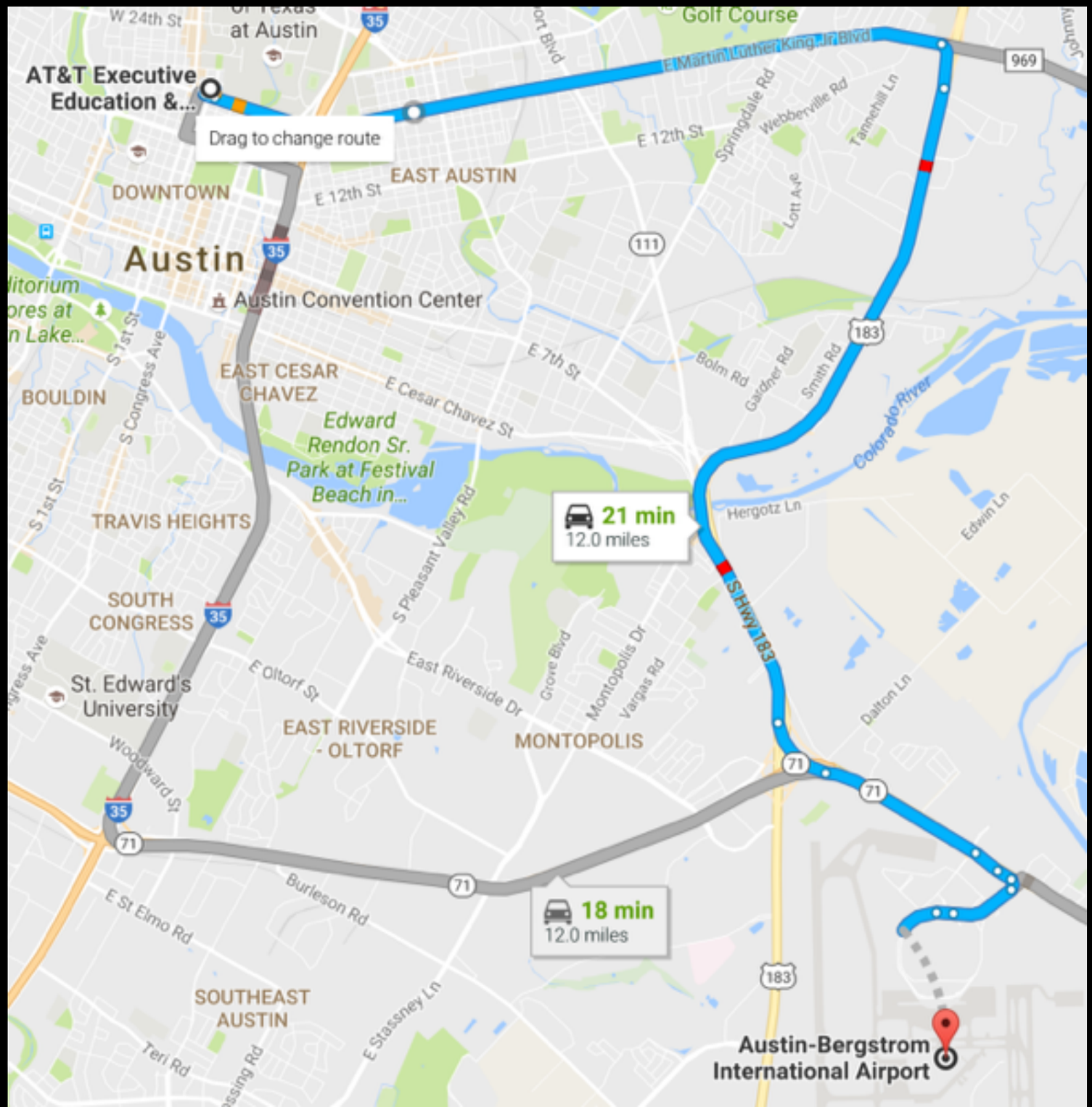
Last day of HCOMP...



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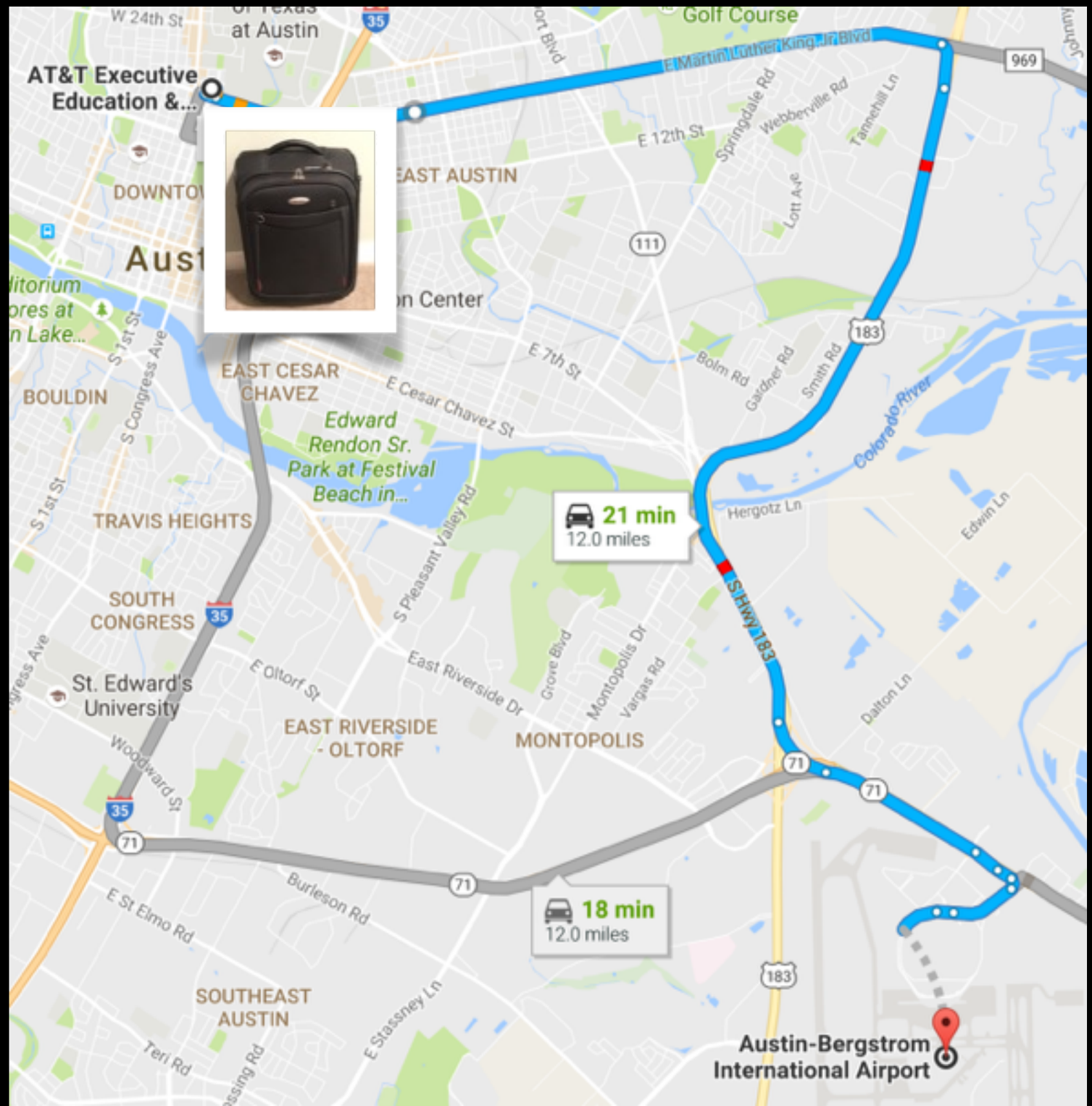

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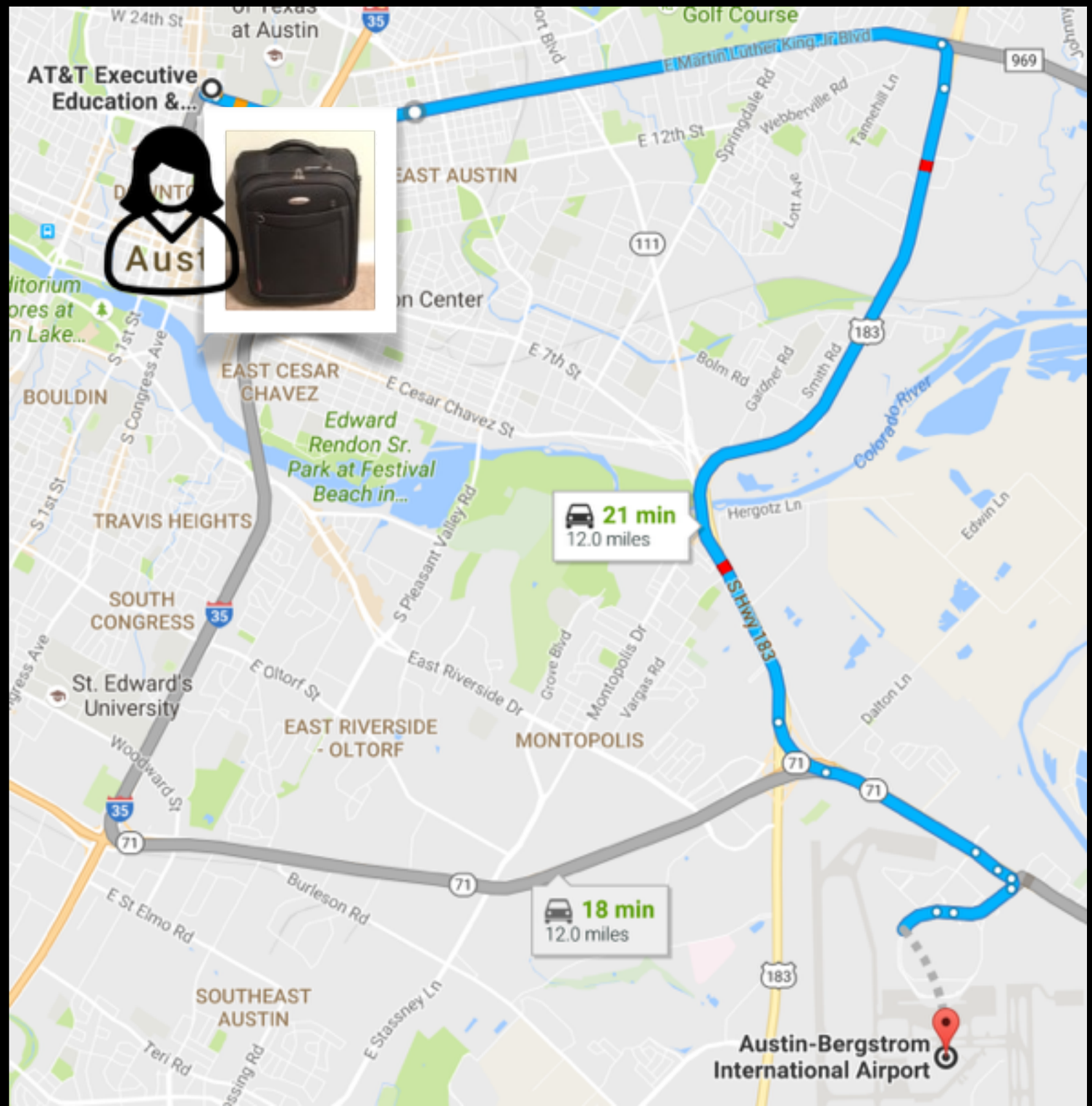

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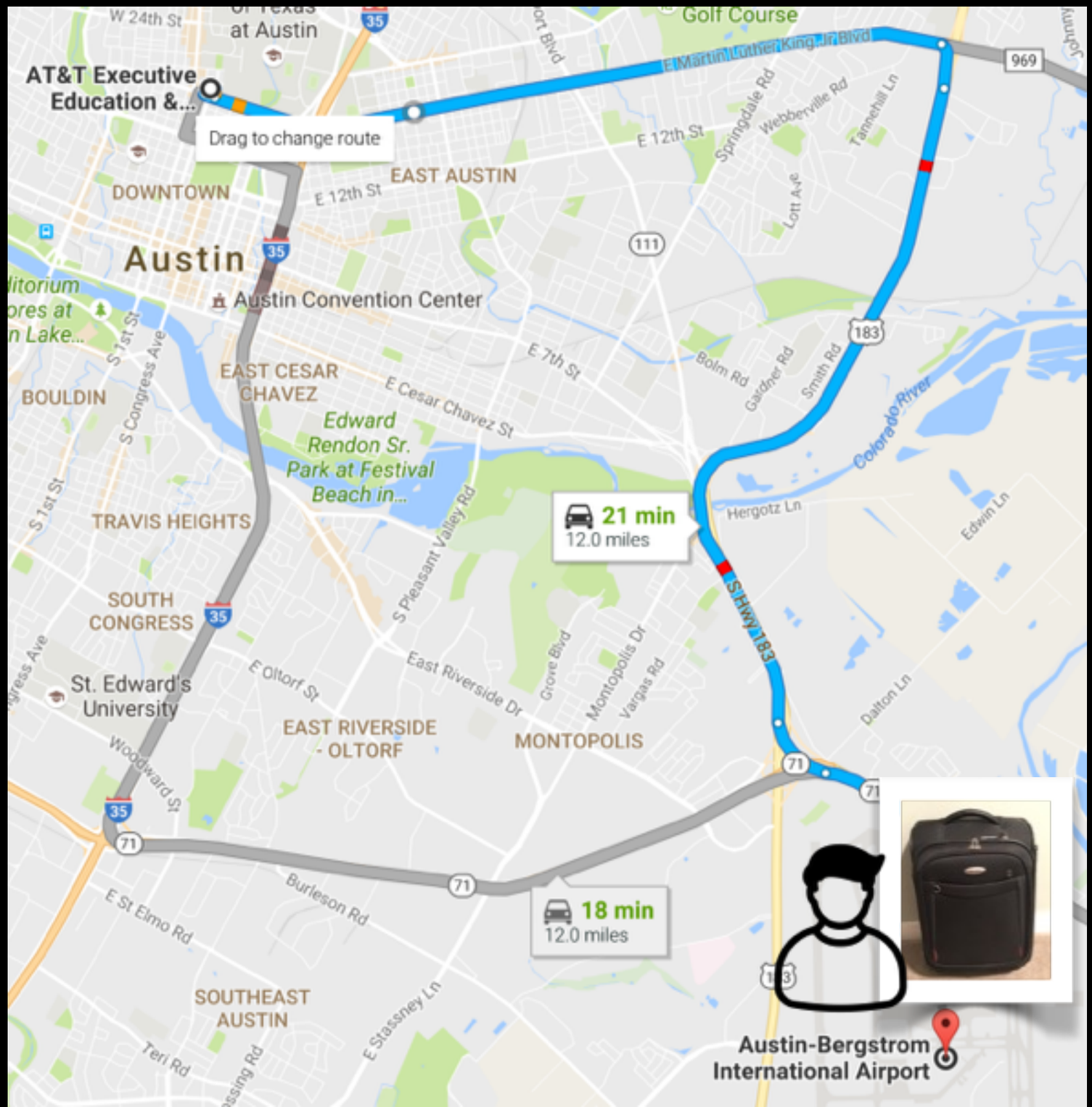


Leveraging people's existing routine for completing physical tasks

Regular routines

[Gonzalez et al., Nature'08]

Nation-wide package delivery

[Sadilek et al., AAAI'13]

Challenge: on-the-go people are not dedicated crowd workers

1. may or may not accept tasks
2. should minimally disrupt their routine

Directed approach

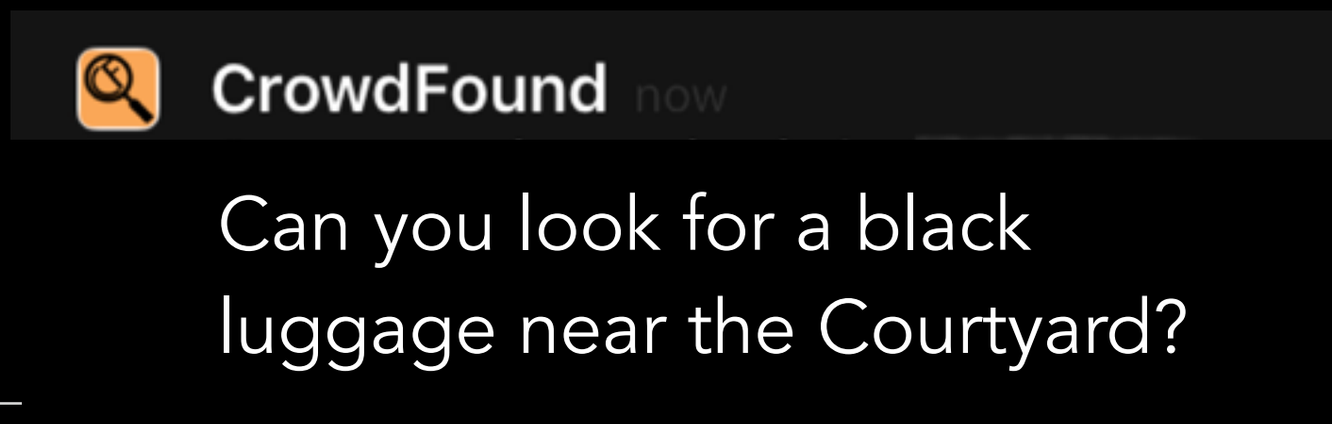
	Directed
Convenience	Low
System goals	High

Opportunistic approach

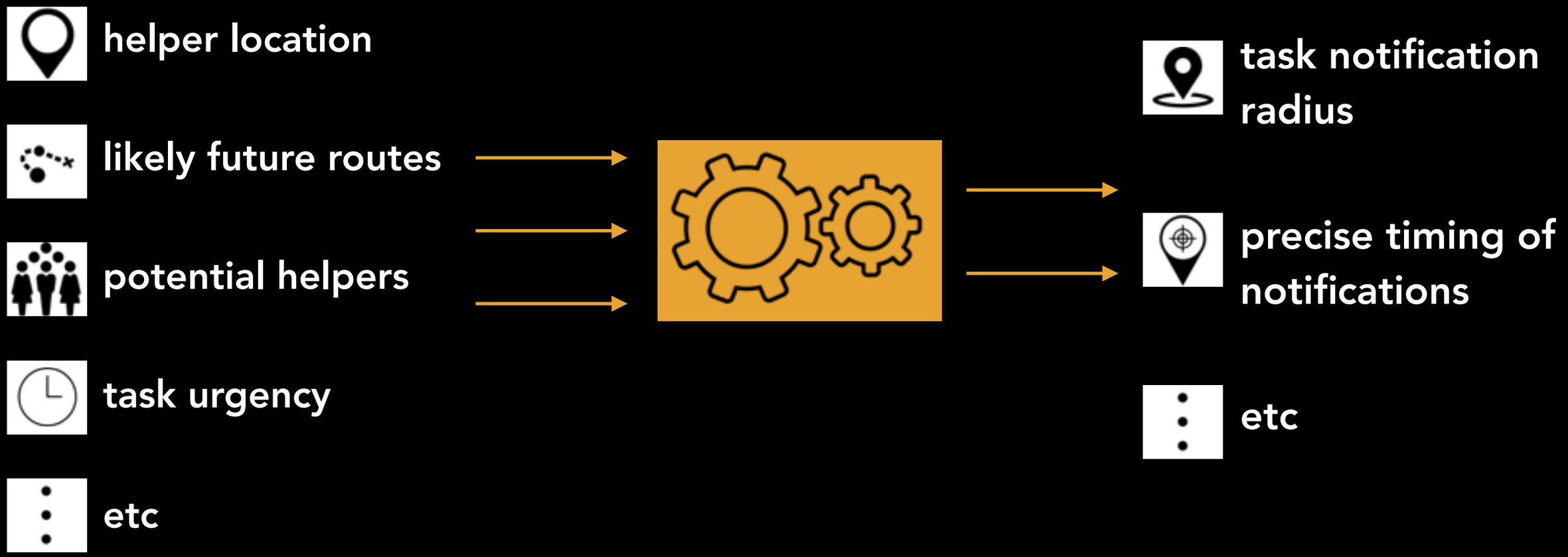
	Opportunistic
Convenience	High
System goals	Low

Our hybrid on-the-go approach

	On-the-go
Convenience	High
System goals	High?



Task notification policies in on-the-go crowdsourcing



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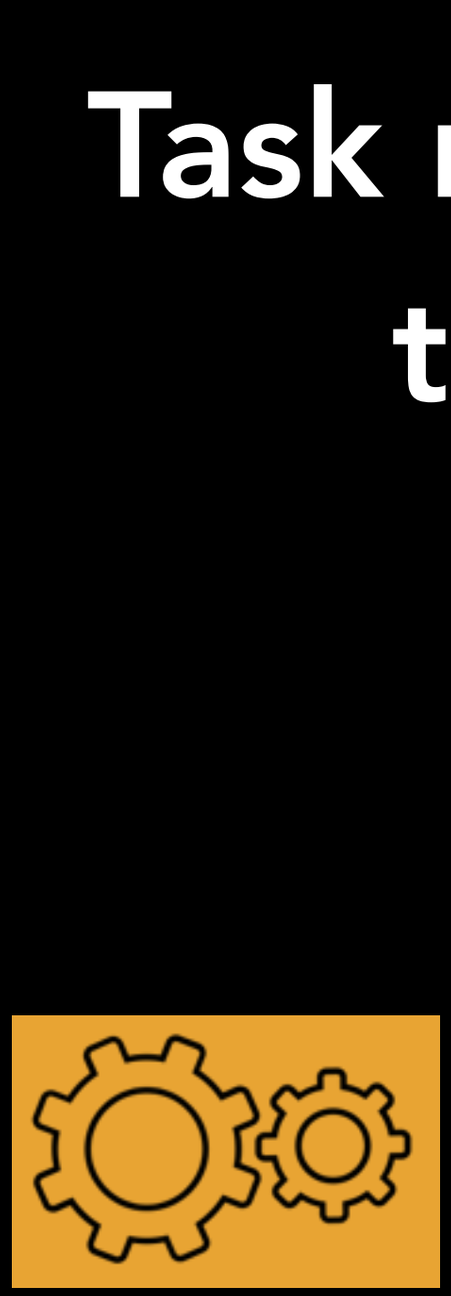


task notification radius

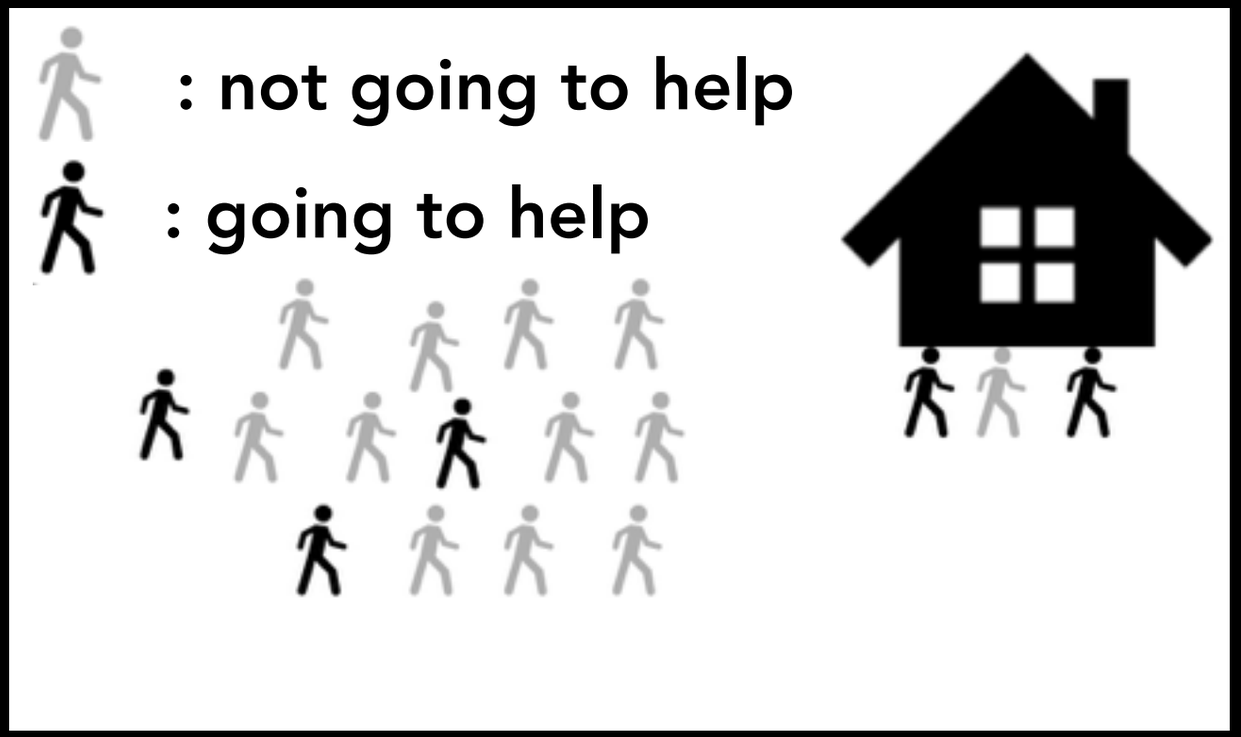
precise timing of notifications

etc

- Who
- Where/When

Challenges in designing task notification policies

- #1: How many people do you ping?
- #2: Where/When do you ping them?
- #3: What situations do people want to do tasks, and when do they not?



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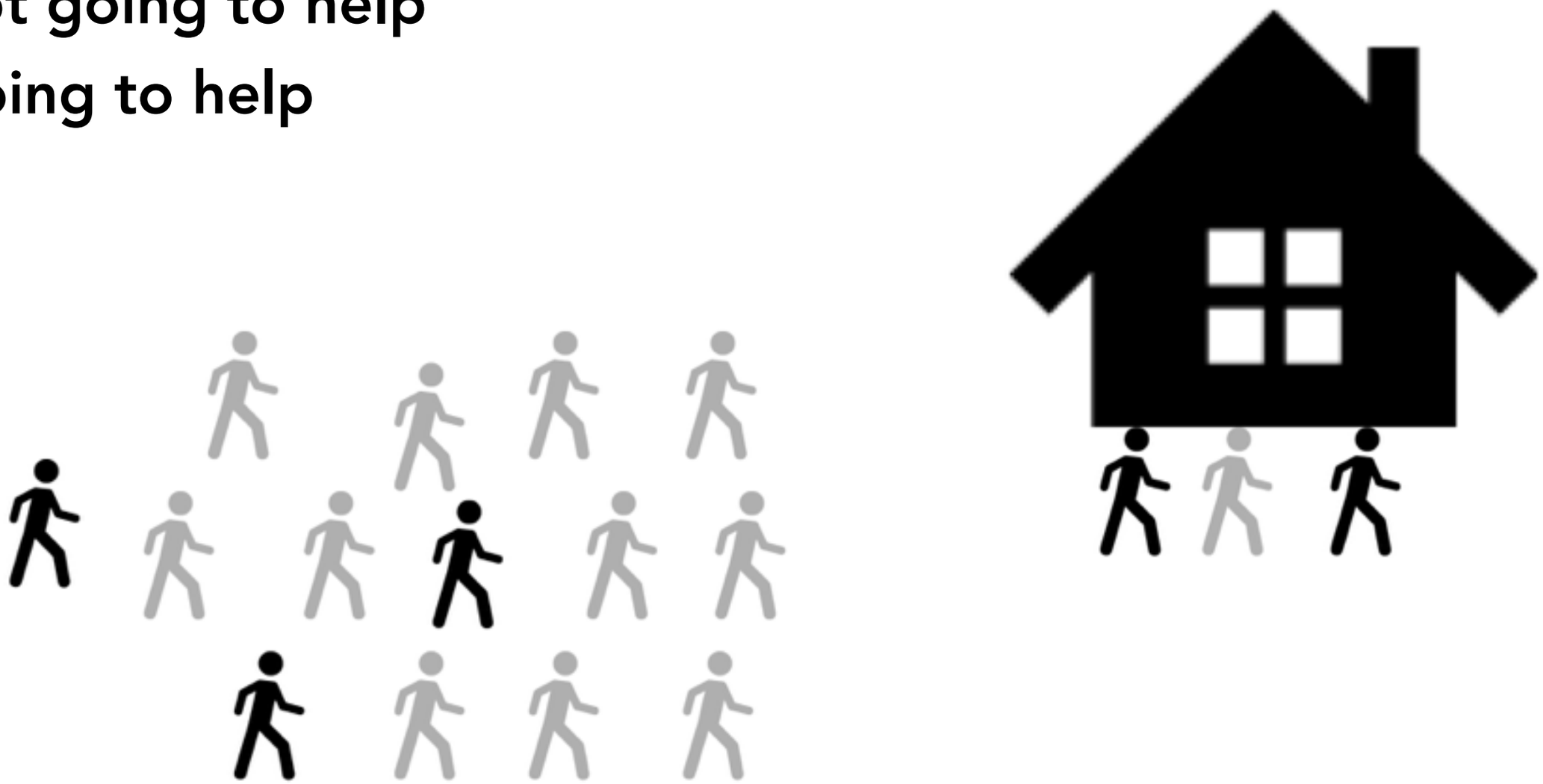
Small changes in notification policies have significant impact on individual behaviors and system goals

#1: How many people do you ping?

: not going to help

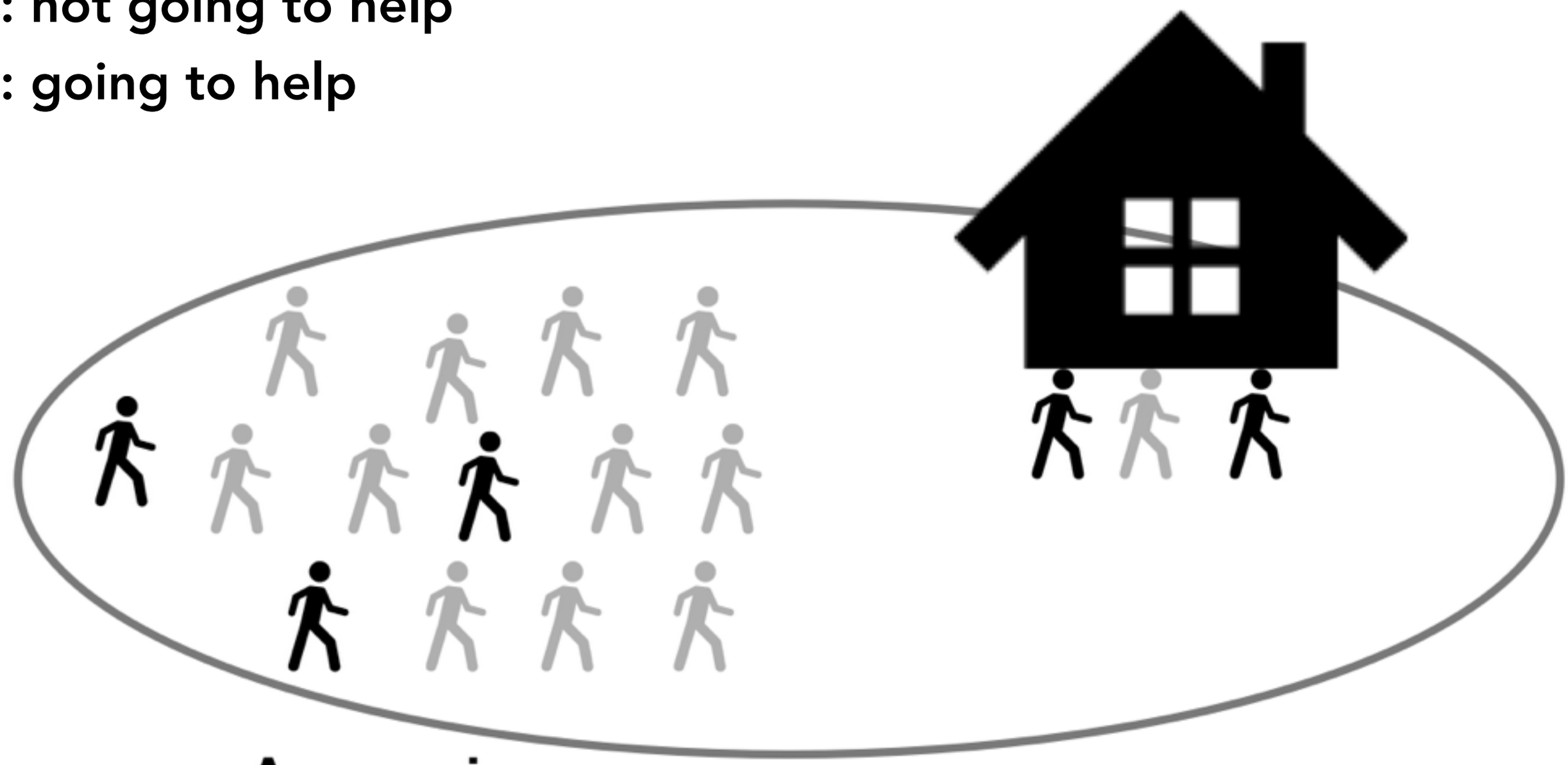
: going to help



Aggressive approach

: not going to help

: going to help



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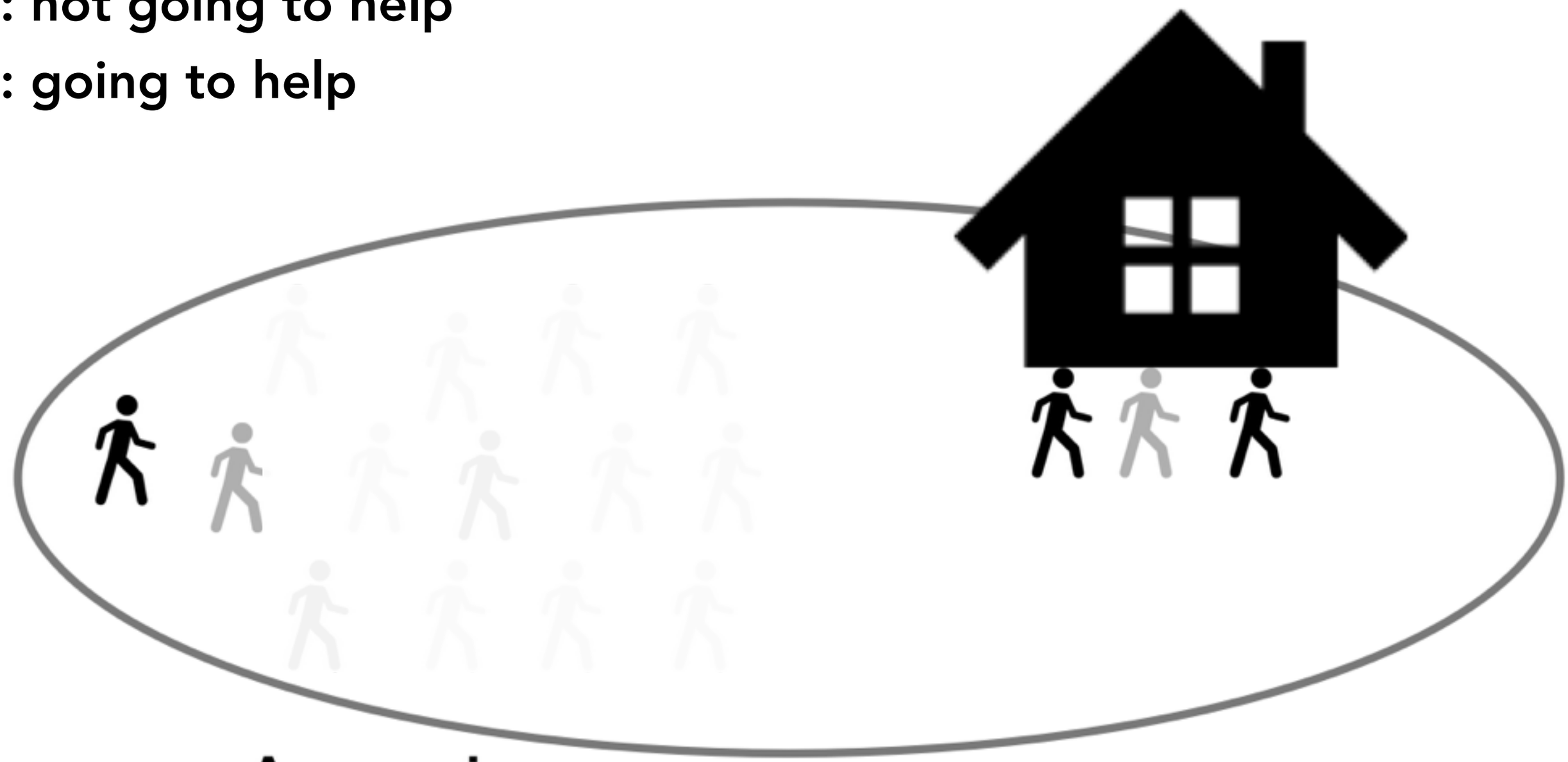


Aggressive

Conservative approach

: not going to help

: going to help

Conservative

Conservative approach

: not going to help

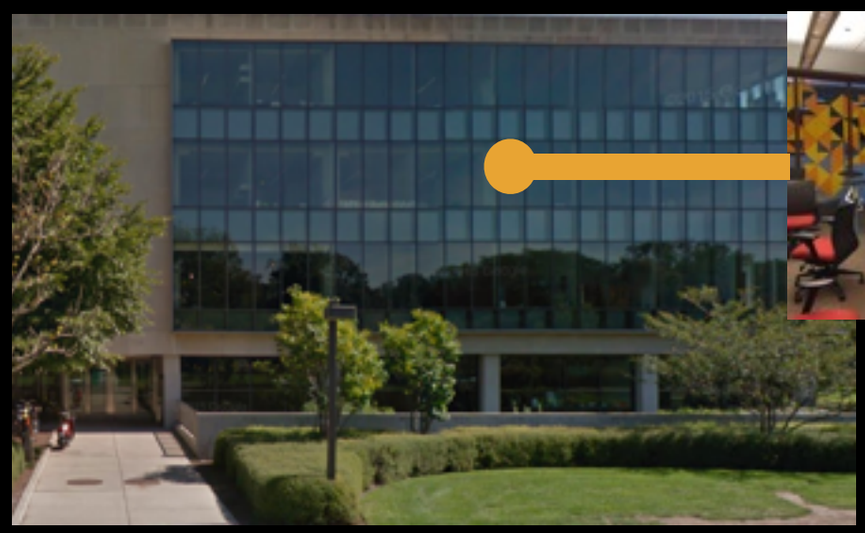
: going to help

Conservative

Experiment 1: package delivery

Pick-up location

Drop-off location



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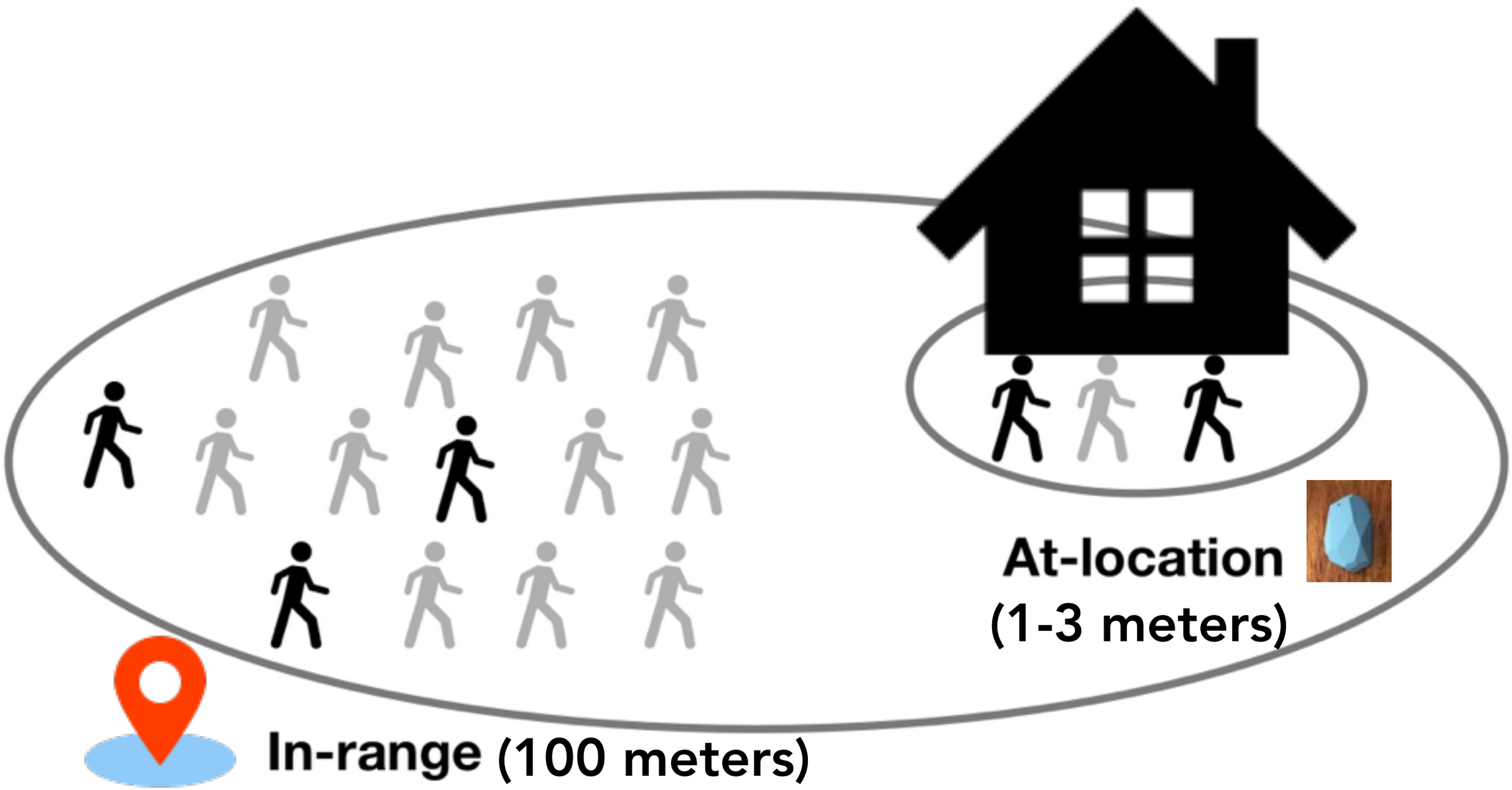

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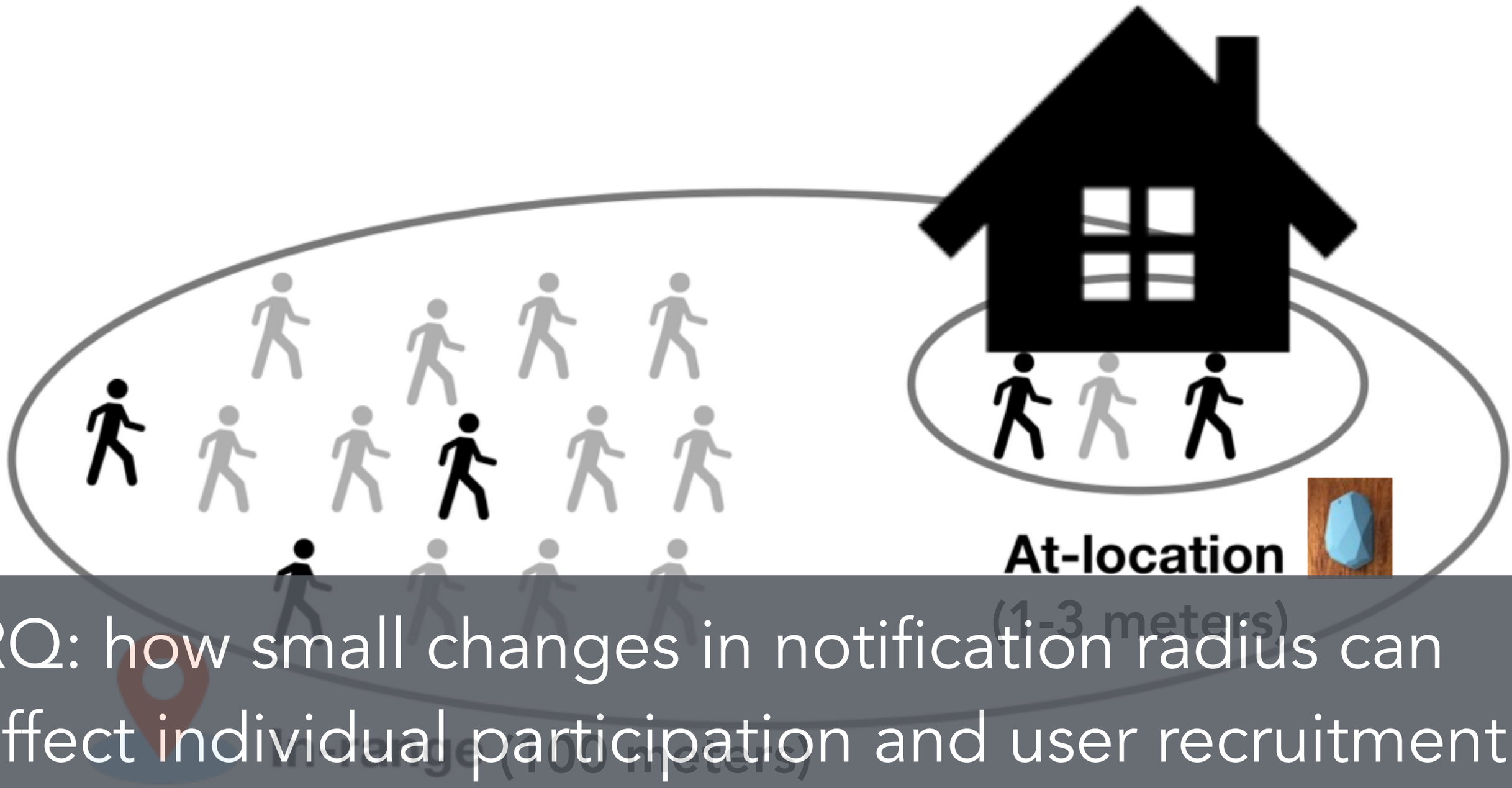
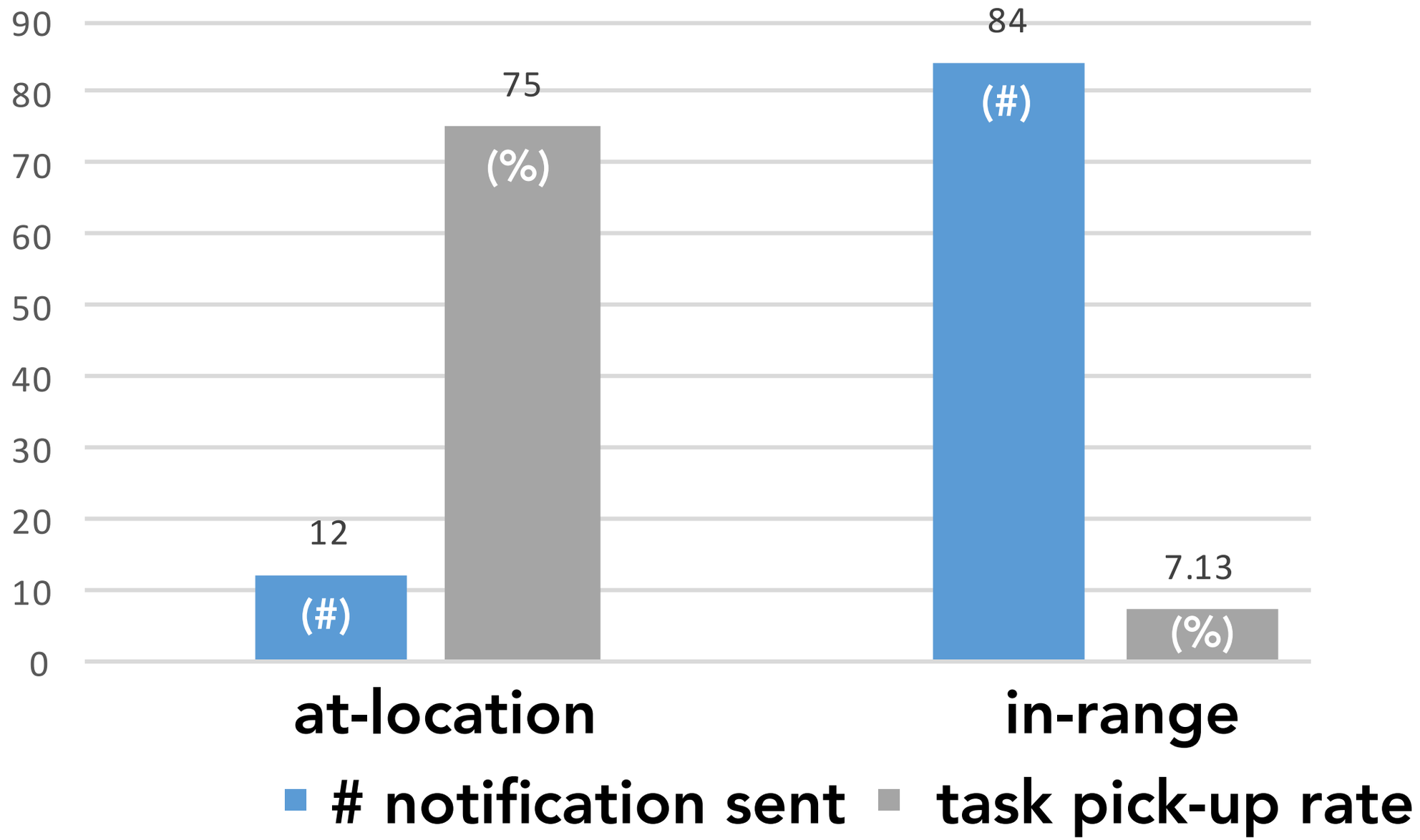


RQ: how small changes in notification radius can affect individual participation and user recruitment

Small changes had significant opposing effects on user recruitment and individual participation



Goal: finding the goldilocks zone

Future direction: managing on-the-go contributions to meet system goals

- models to monitor and predict cost of disruption, likelihood of helping, potential helper pool, task urgency, etc

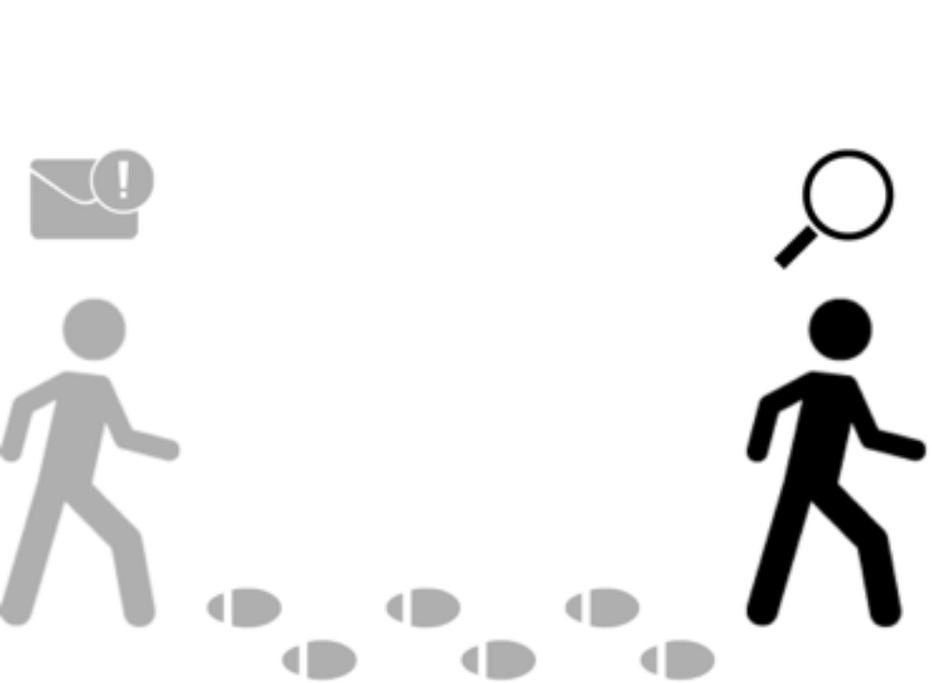
- decision-theoretic supply management framework that help us reason about and manage supply and demand

#2: Where/When do you ping?

If we send notifications late...

If we send notification early…

If we send notification early…



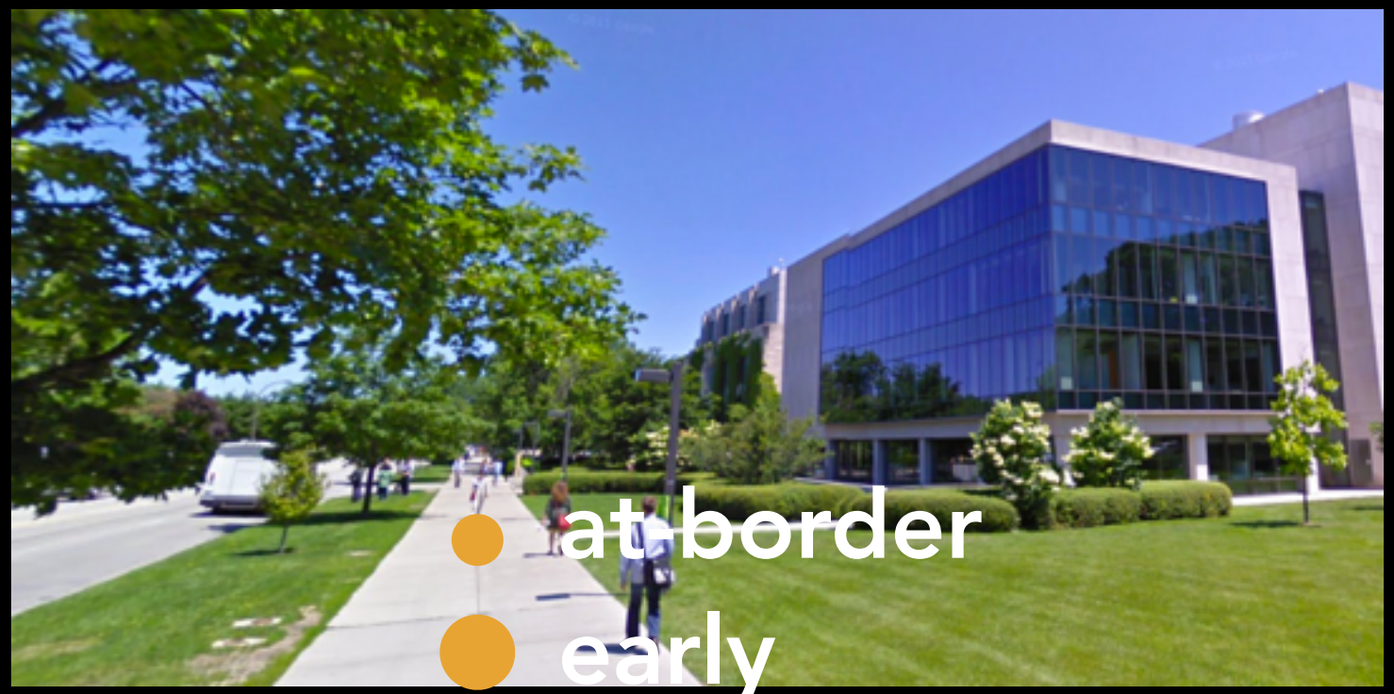
Experiment 2: finding lost items

Key ring

Card holder

Glove

Water bottle



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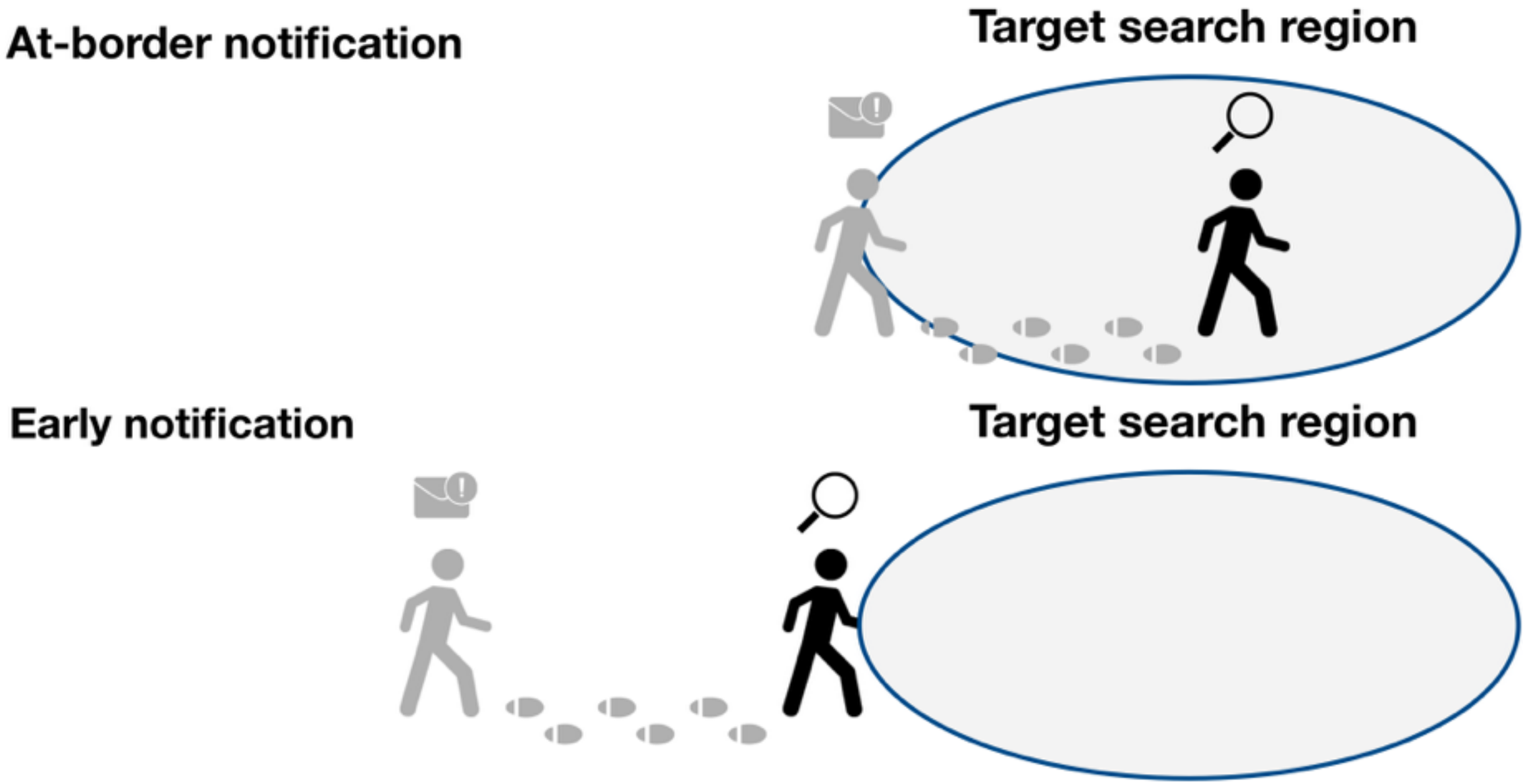

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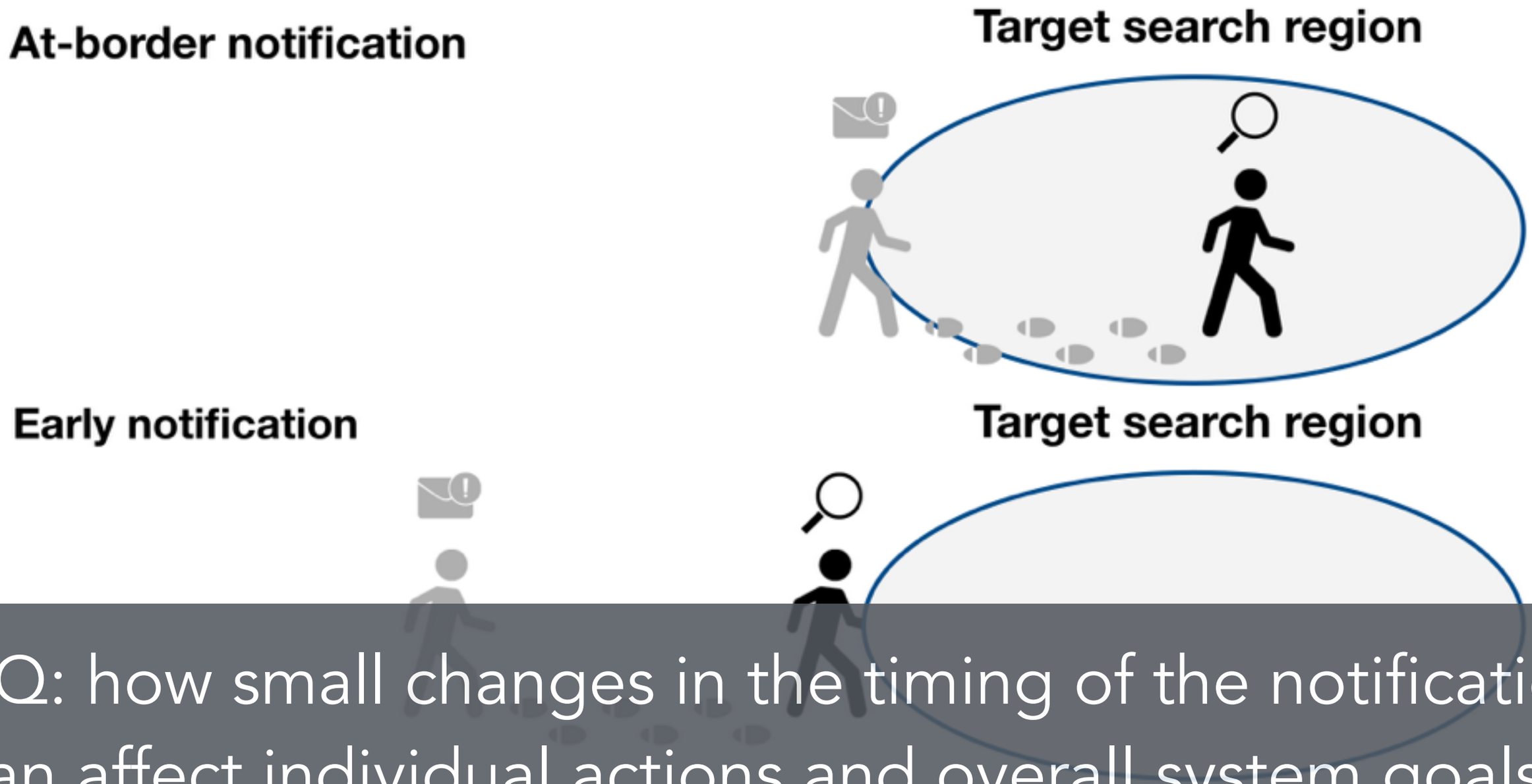
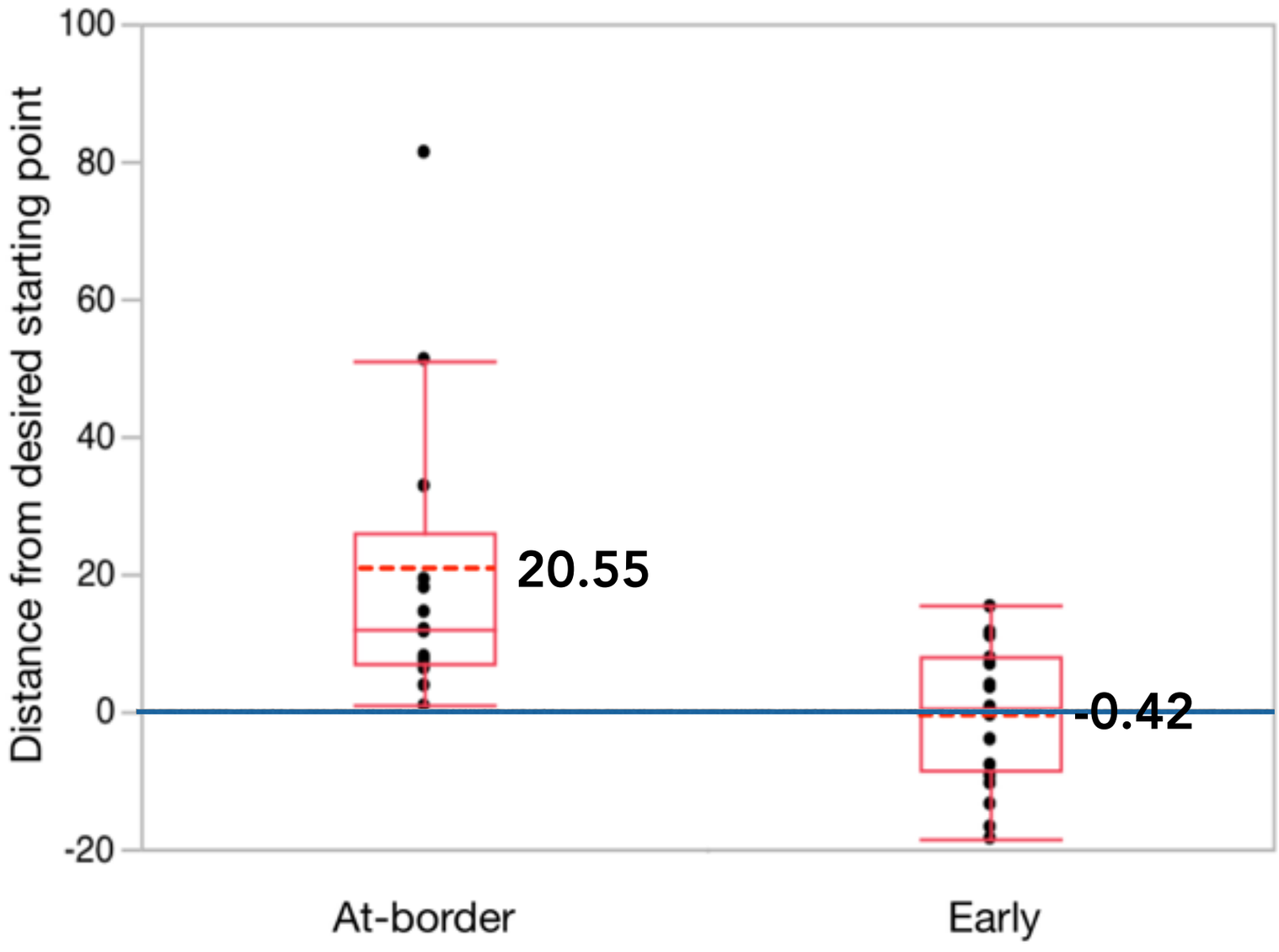


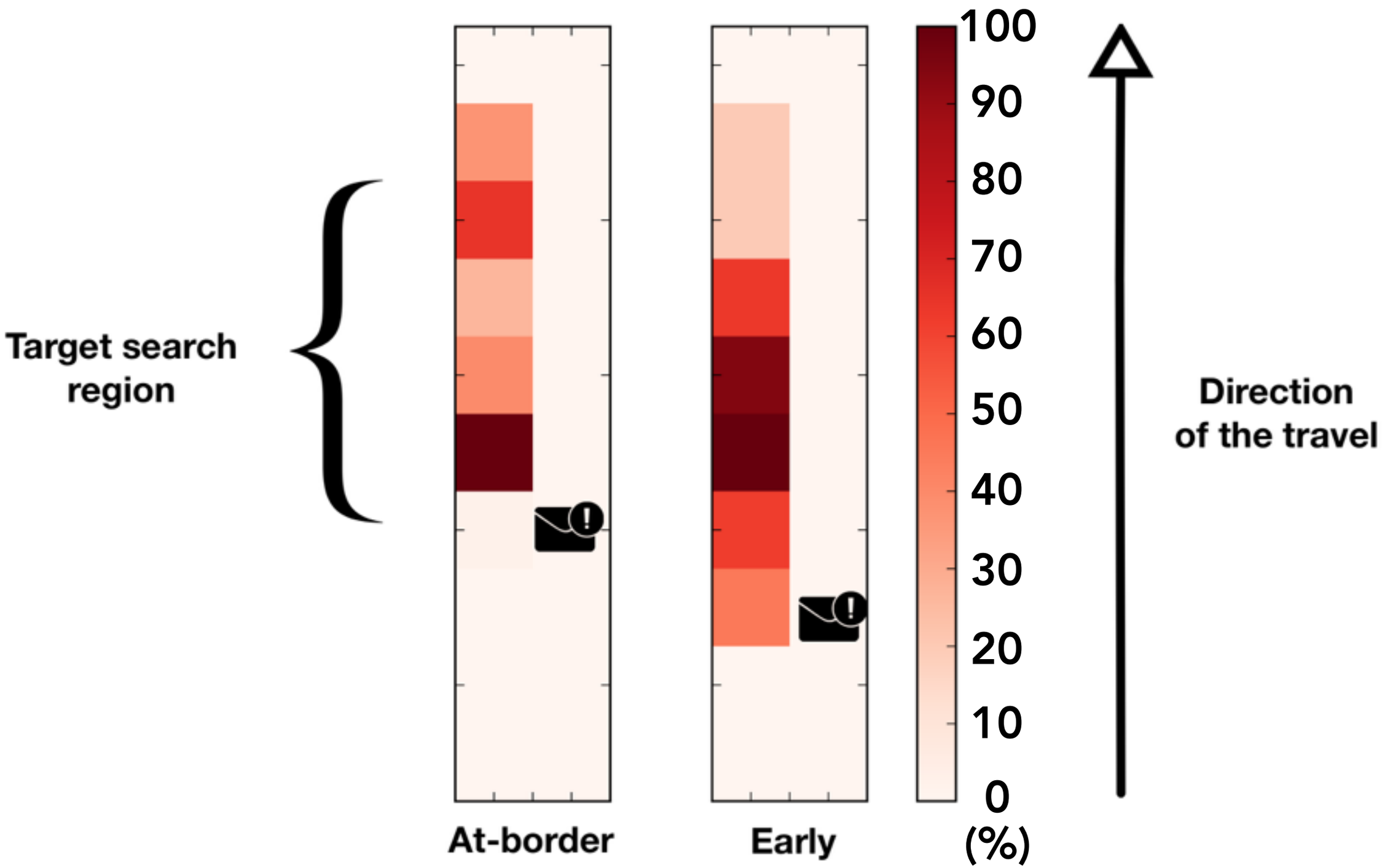
RQ: how small changes in the timing of the notification can affect individual actions and overall system goals?

Small changes in notification timing affected where they started searching

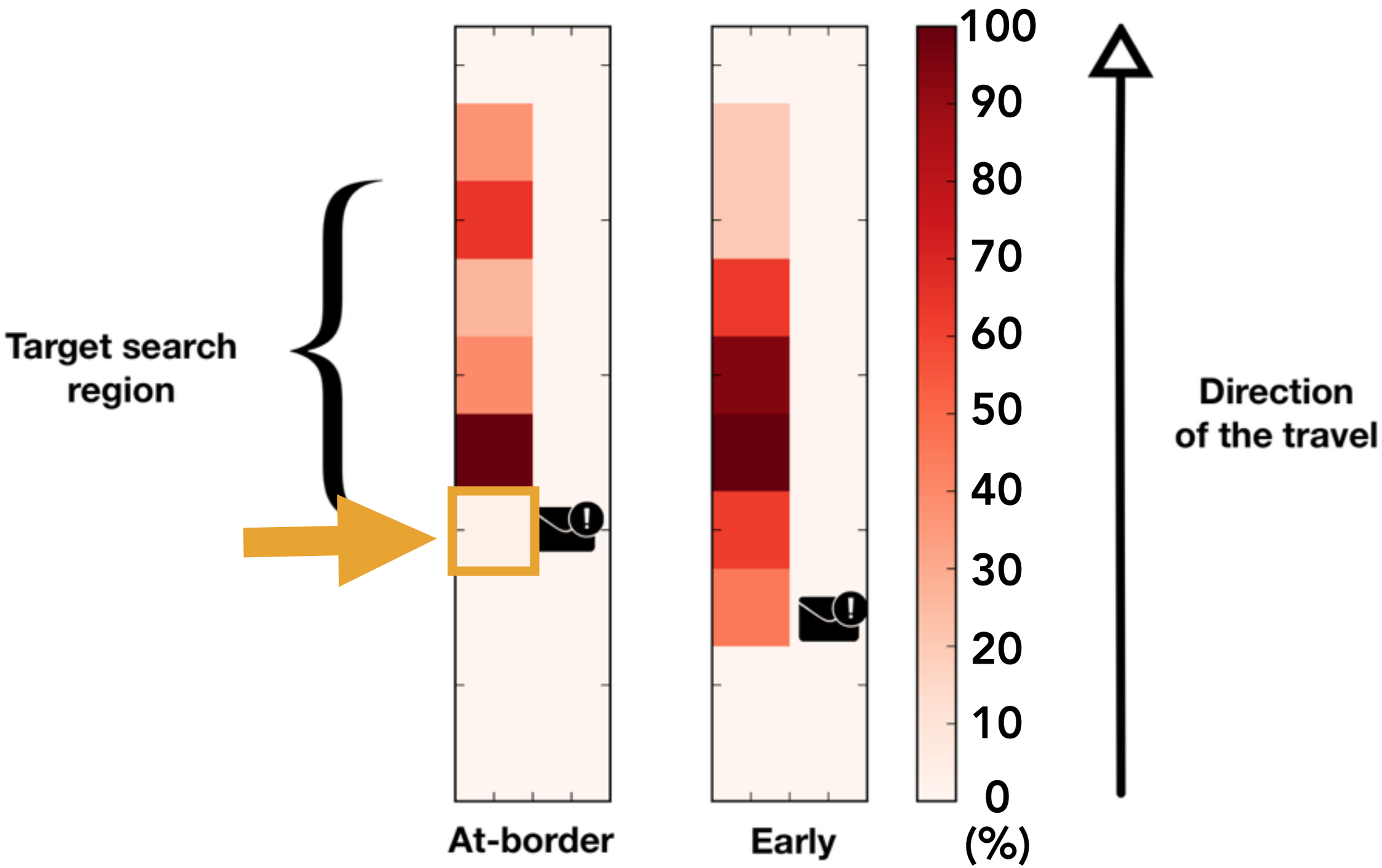


Z=3.4, p<.001

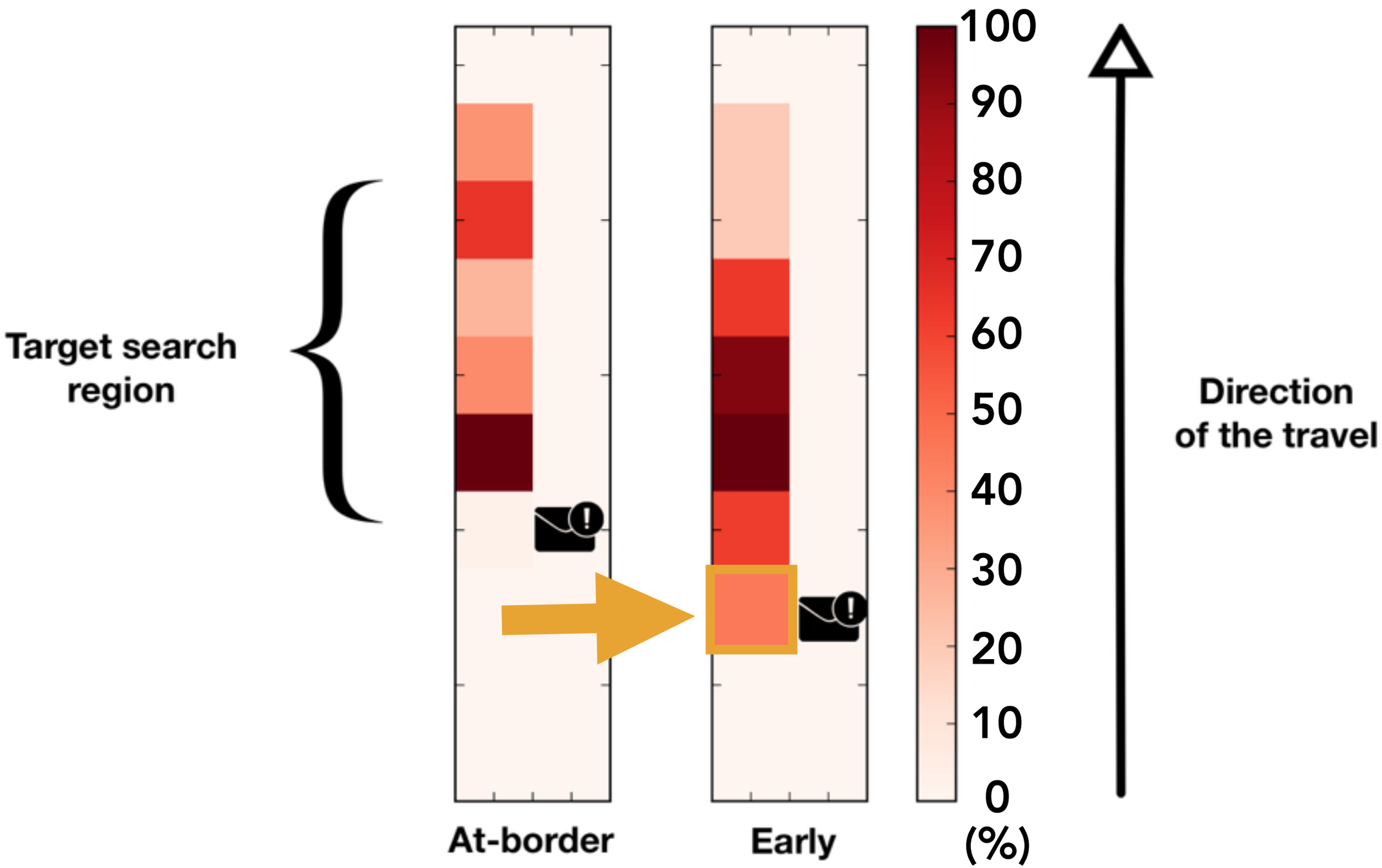
Individual actions influenced overall search coverage



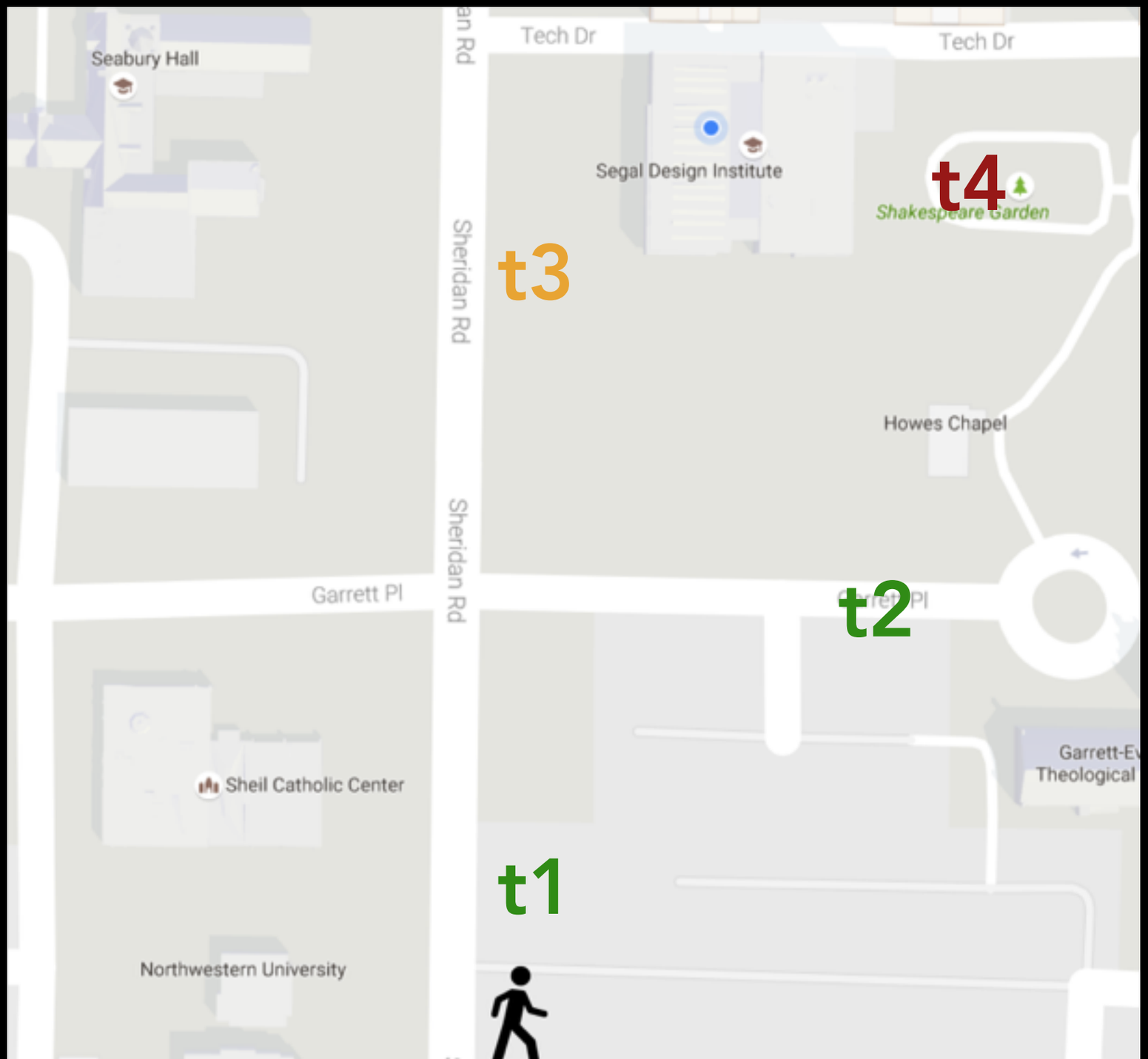
Missing areas in at-border notification



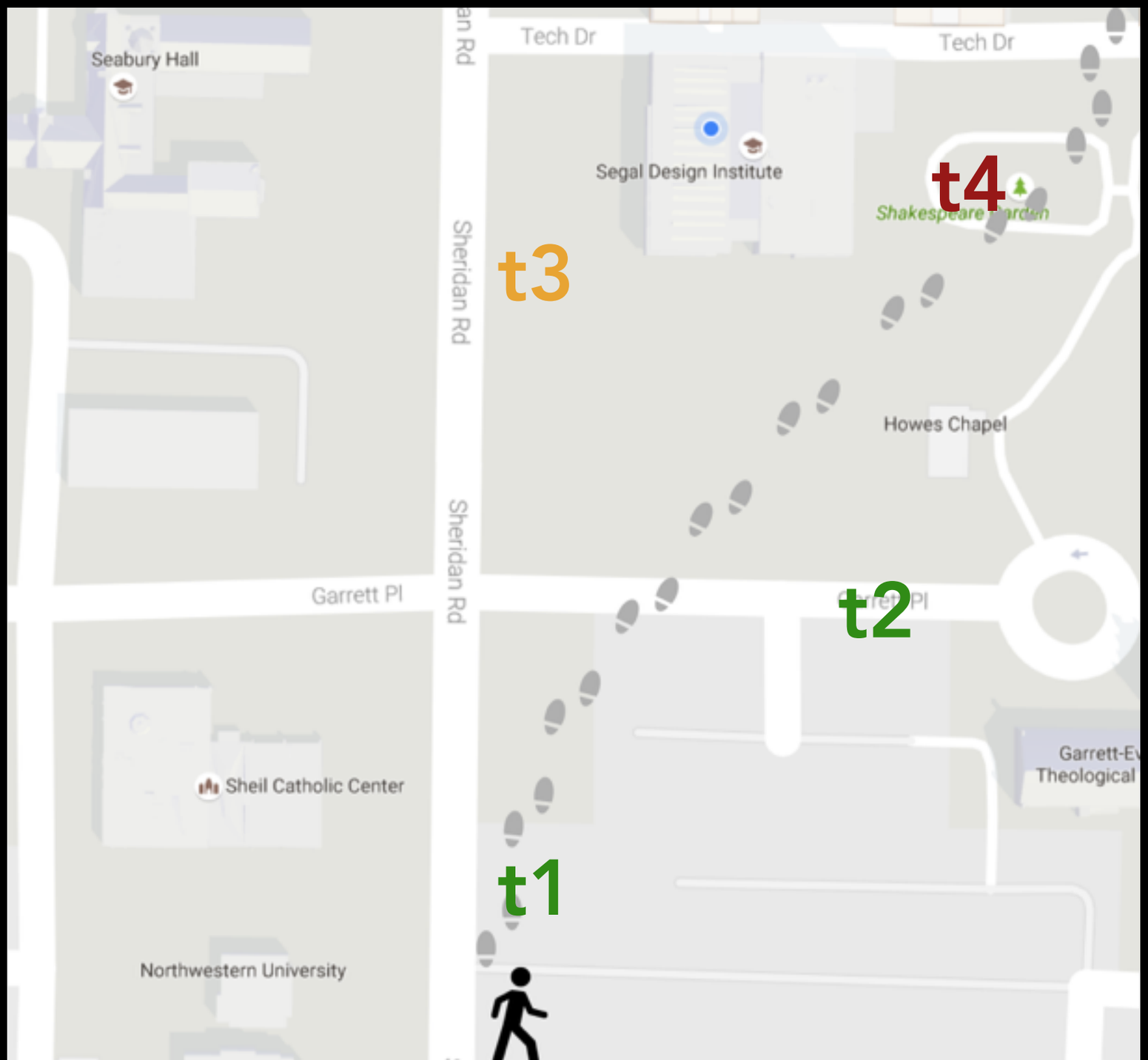
Wasted efforts in early notification



Goal: effectively use individual efforts



Future direction: timing the notifications to maximize value of actions



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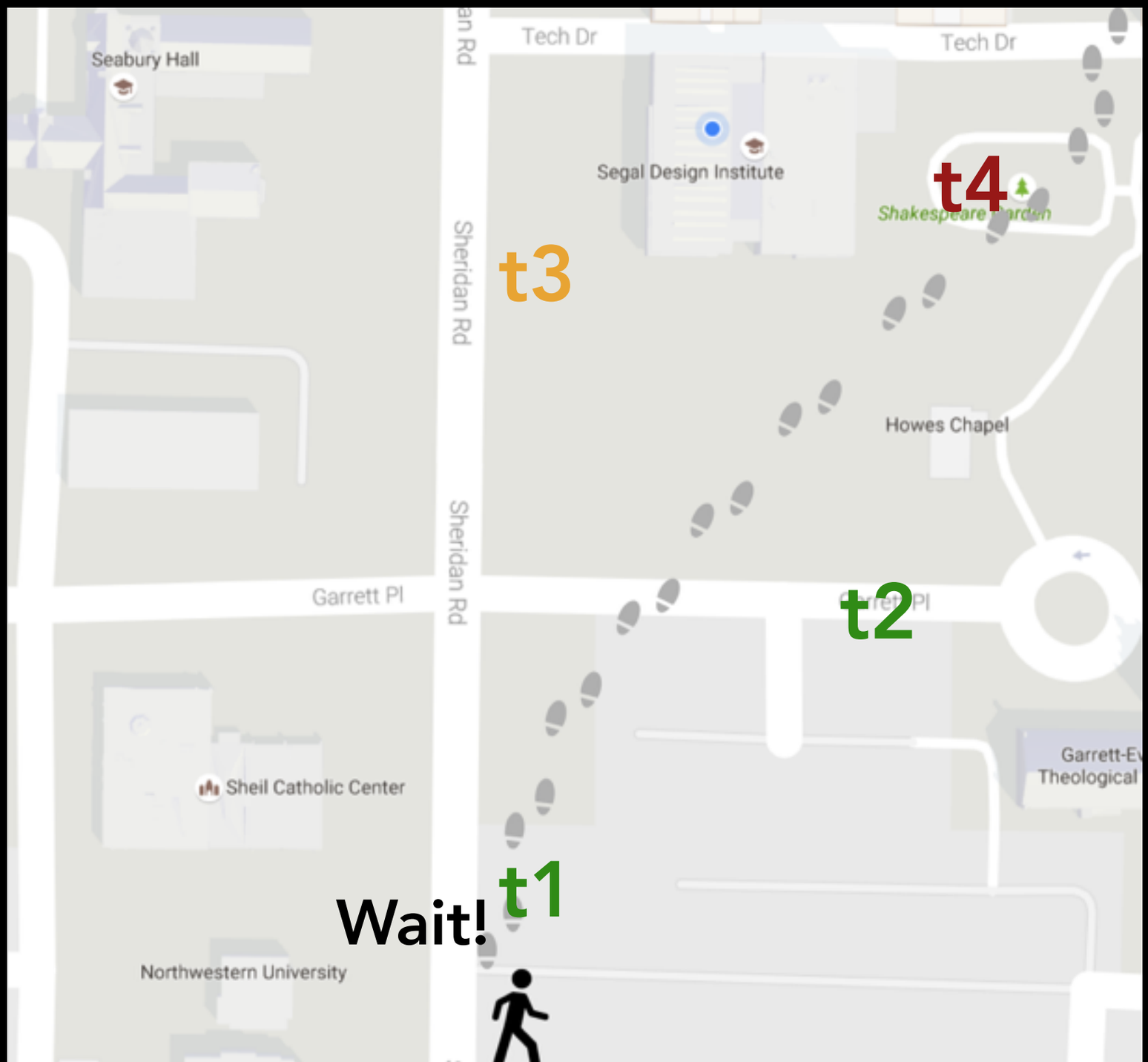

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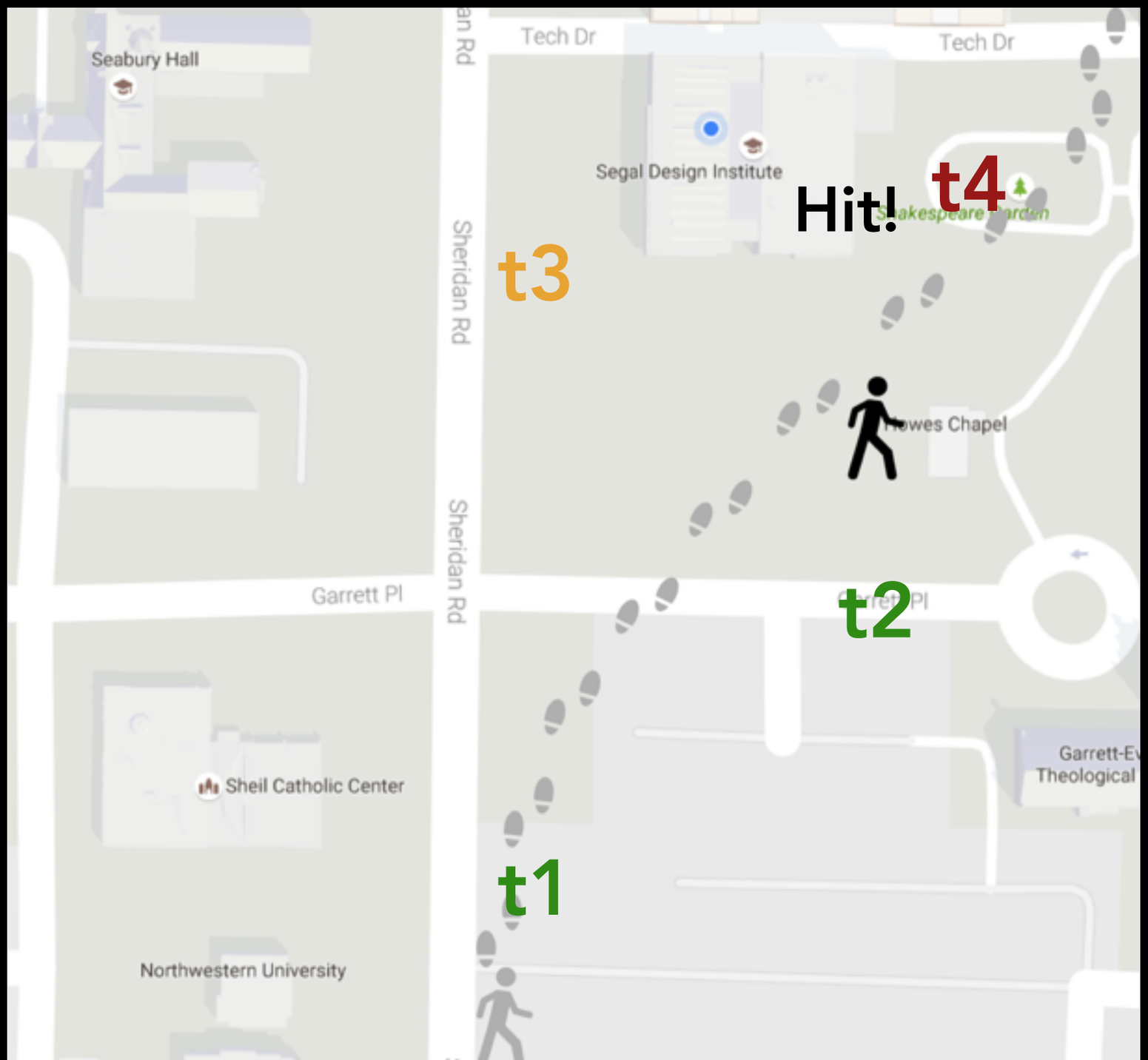

#3: What situations do people want to do tasks, and when do they not?

- Existing routes

- Backtrack

- Hand Availability

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Future direction: models to monitor and identify and situational factors, and use them to reason about who and when to ping

Design Opportunities for On-the-go Crowdsourcing

Open up new ways to help each ther in communities and neighborhood

Changing the ways commercial services work

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TECH

Google Takes on Uber With New Ride-Share Service

Alphabet's carpooling program in San Francisco offers rides at cheaper rates

Google's Waze is moving into Uber and Lyft's ride-sharing turf with plans to expand its own ride-sharing program in San Francisco. Photo: Getty Images

Recommen

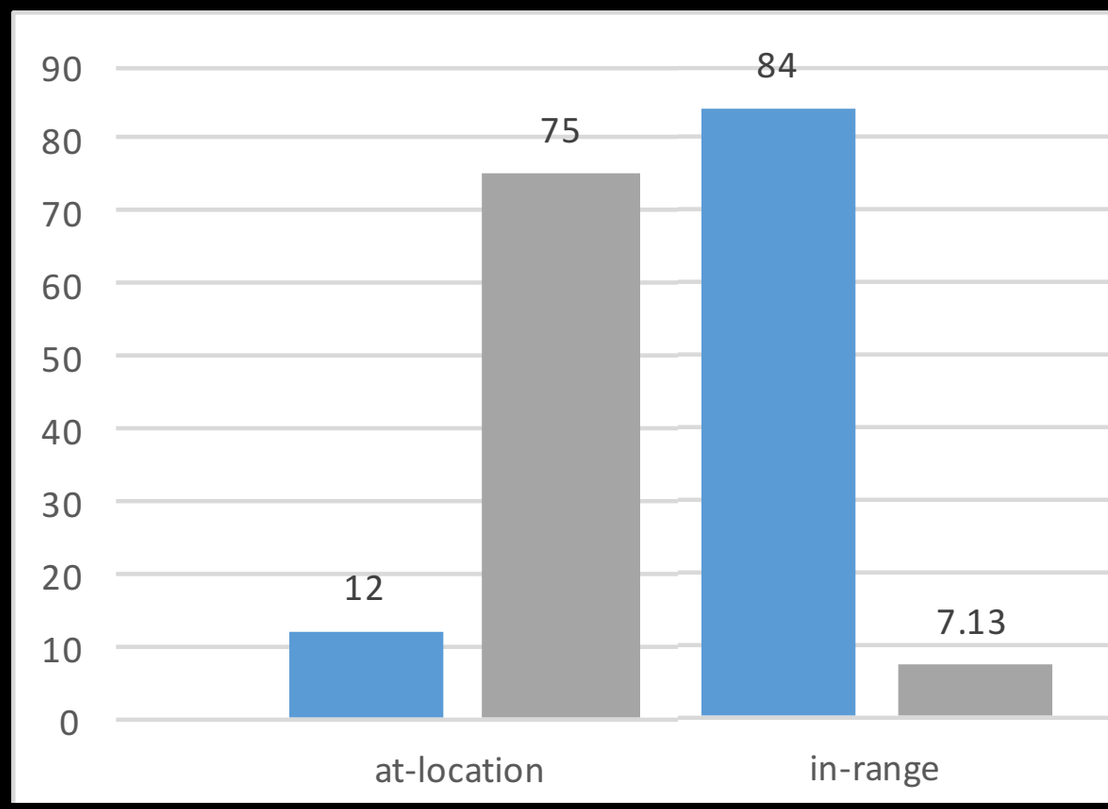
1. Uber S Rides Drivin
2. Stabbi Minne by Isla
3. World Court
4. The 'F at the Award
5. India' Race:

Most Popu

1. Apple Sierra

Conclusion

- Small changes can have significant effects on individual behaviors and system outcomes
- Situational factors influencing on-the-go helping behavior
- Opens up new opportunities for tasks and services; benefiting each other; mutually enriching



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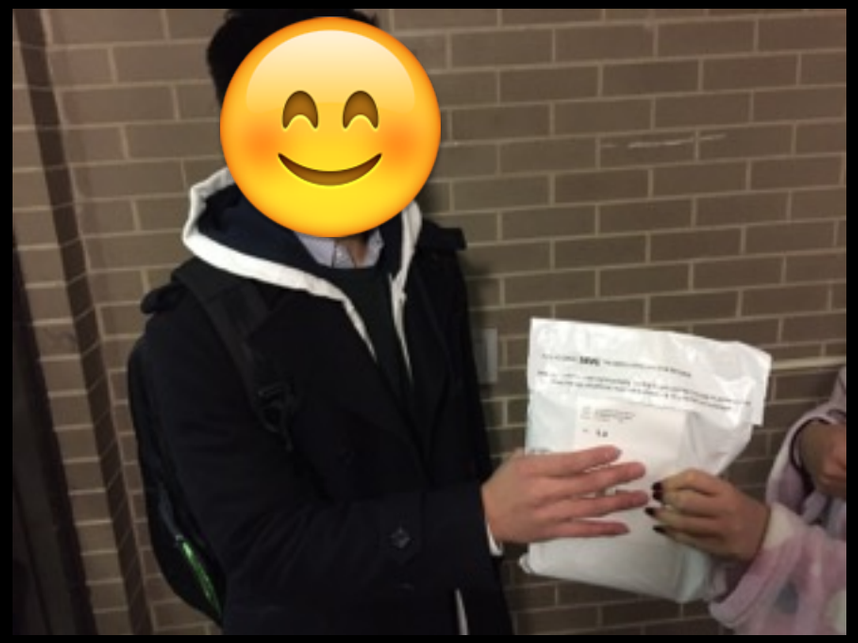

Don’t forget your luggage

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