

[www.iscycle.ie](http://www.iscycle.ie)  
@ajamesgreen  
@iscycle\_ie



## ISCycle: Ebikes for enabling active (and inclusive and sustainable) mobility

James Green | Louise Foley | Catherine Woods  
Yvonne Ryan | Colin Fitzpatrick





# ISCycle

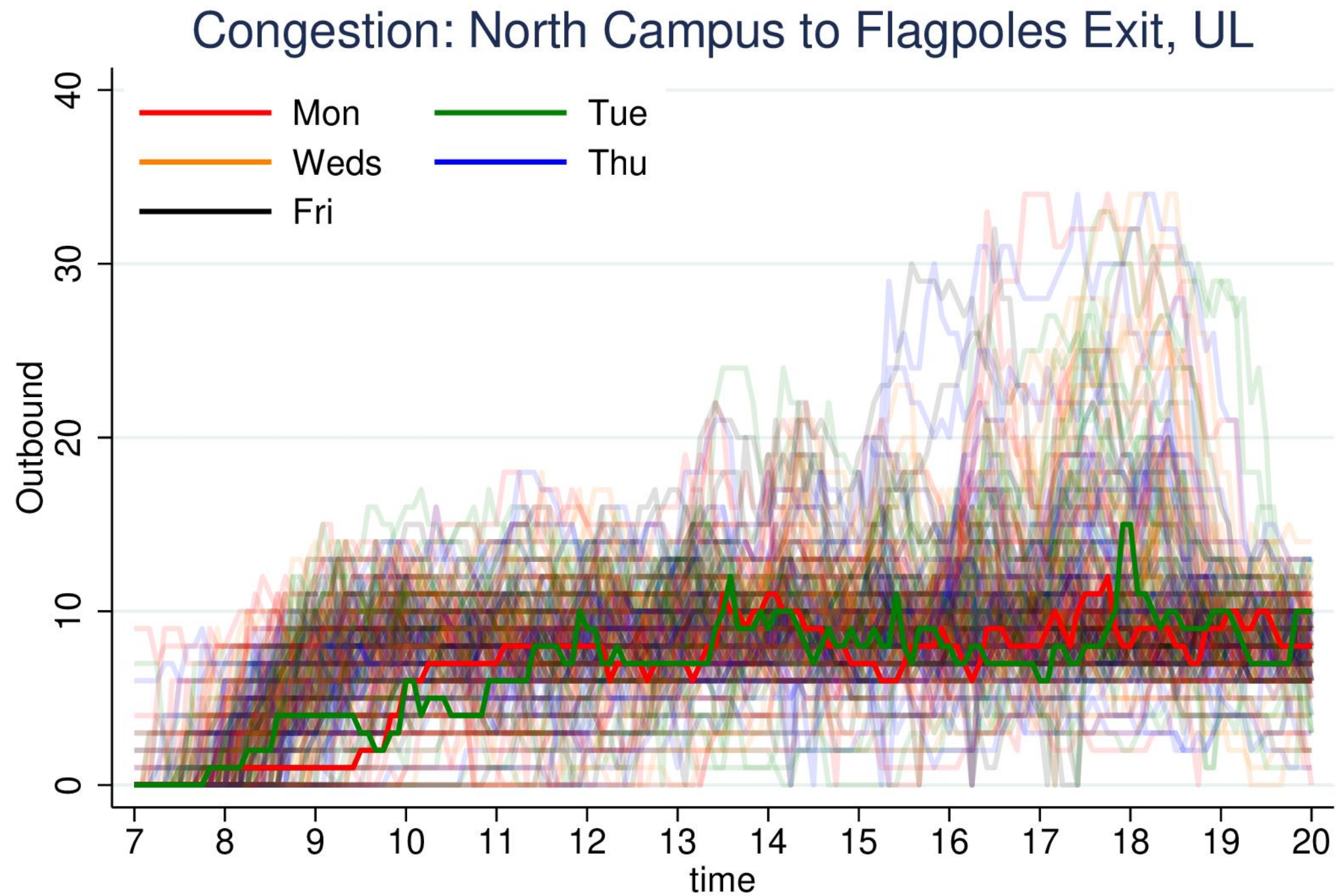
- To trial an innovative and inclusive behaviour change intervention to promote ebike uptake, active travel, and modal shift away from private cars.
- To determine immediate benefits and longer-term circular economy implications of ebiking, taking a life cycle perspective to evaluate the environmental impacts.
- To provide evidence-based guidance and economic impact assessment to policy makers to implement inclusive, sustainable ebike policies in the future.



River E-Scooter (Manchester Evening News)



# Our context



Date range: 3 Jan 2022 to 17 Jan 2023; current week in bold.

# Our main intervention

- Participants randomised to control or 4/8/12 week ebike loan
- Just-in-time-adaptive interventions
- Passive travel tracking
  
- Ebikes are not easy things (usually) to try
- Difficult for trip chaining
  - May underlie gender gap in active transport





# Söderberg et al. (2022)

- Small Swedish randomised wait-list controlled trial (n=65, 8 women)
- Loaned ebike for 5 weeks
- Standard step-through, low-spec (front hub)

12.5 "Adding objects" (ebikes)

+ [unstated] 2.3 self-monitoring (via trip logging)





# InterMob (Teran-Escobar et al., 2022)

- Protocol, collection underway
- 6-month intervention (n=150) (e)bikes + free public transport
- Active control: pollution monitoring (n=150)
- 18-month follow-up

12.5 "adding objective" (e)bikes + free public transport

5.2 "salience of consequences" (motivational interviewing)

4.1 "instructions on how to perform the behaviour" (personalised transport advice)

1.1 "goal setting"; 1.4 "action planning"; 1.2 "problem solving" (obstacles prevention)

1.7 "review outcome"; 8.2 "habit formation", 2.4 "self-monitoring of outcomes"



# Our points of difference

- Interested in working out what 'dose' leads to habit formation
- Aiming for inclusivity & promoting trip chaining





# Cycling as a habit

- When you leave the house, do you 'actively' choose your mode of transport?





# Leaving the house

## Taking the car

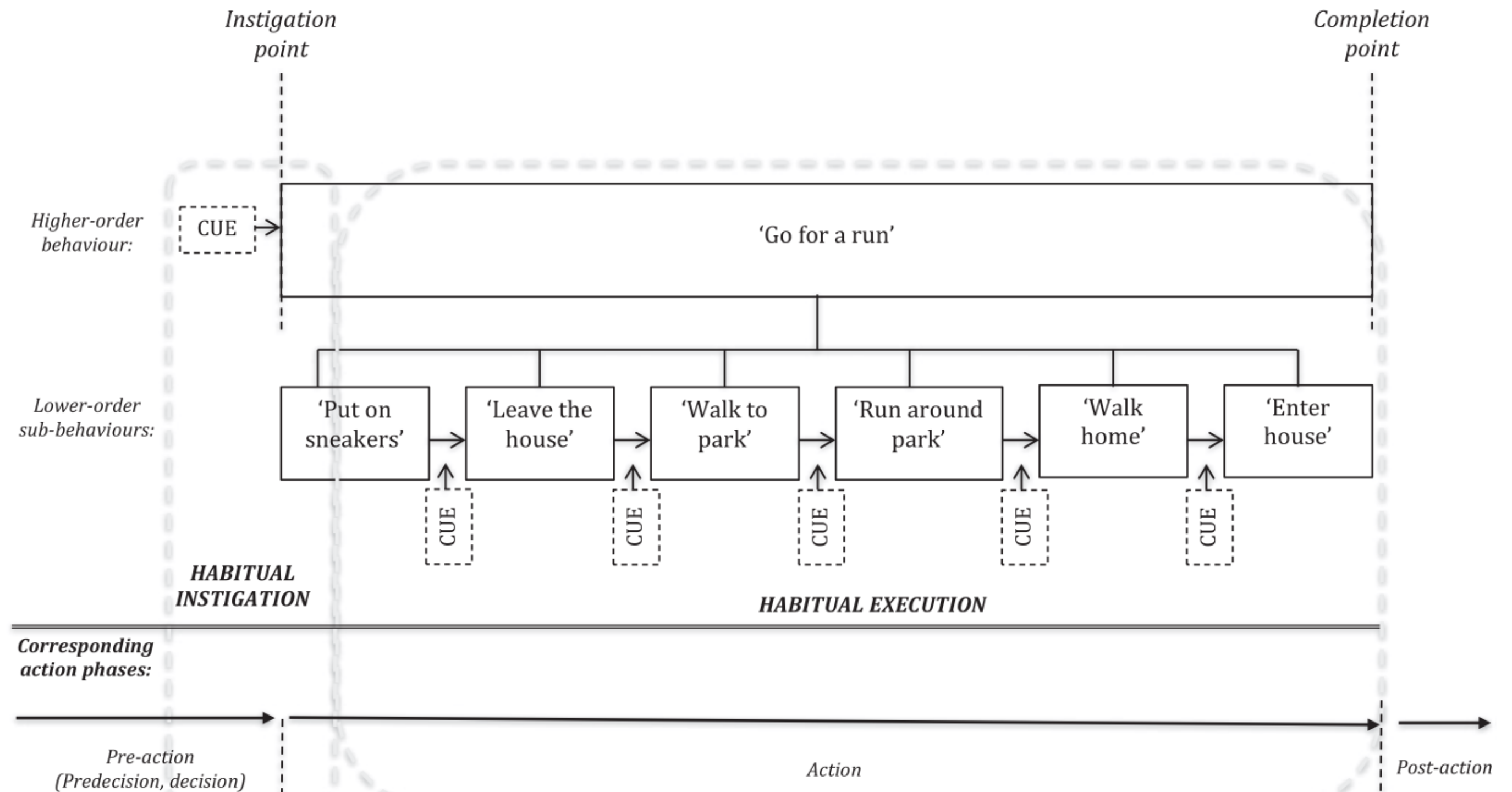
- Grab your keys

## Taking the bike

- Grab your keys
- Consider whether it is going to rain
- Pack your jacket
- Decide whether to take gloves
- Consider whether you can carry everything
  
- (mostly though, you're just not prepared)



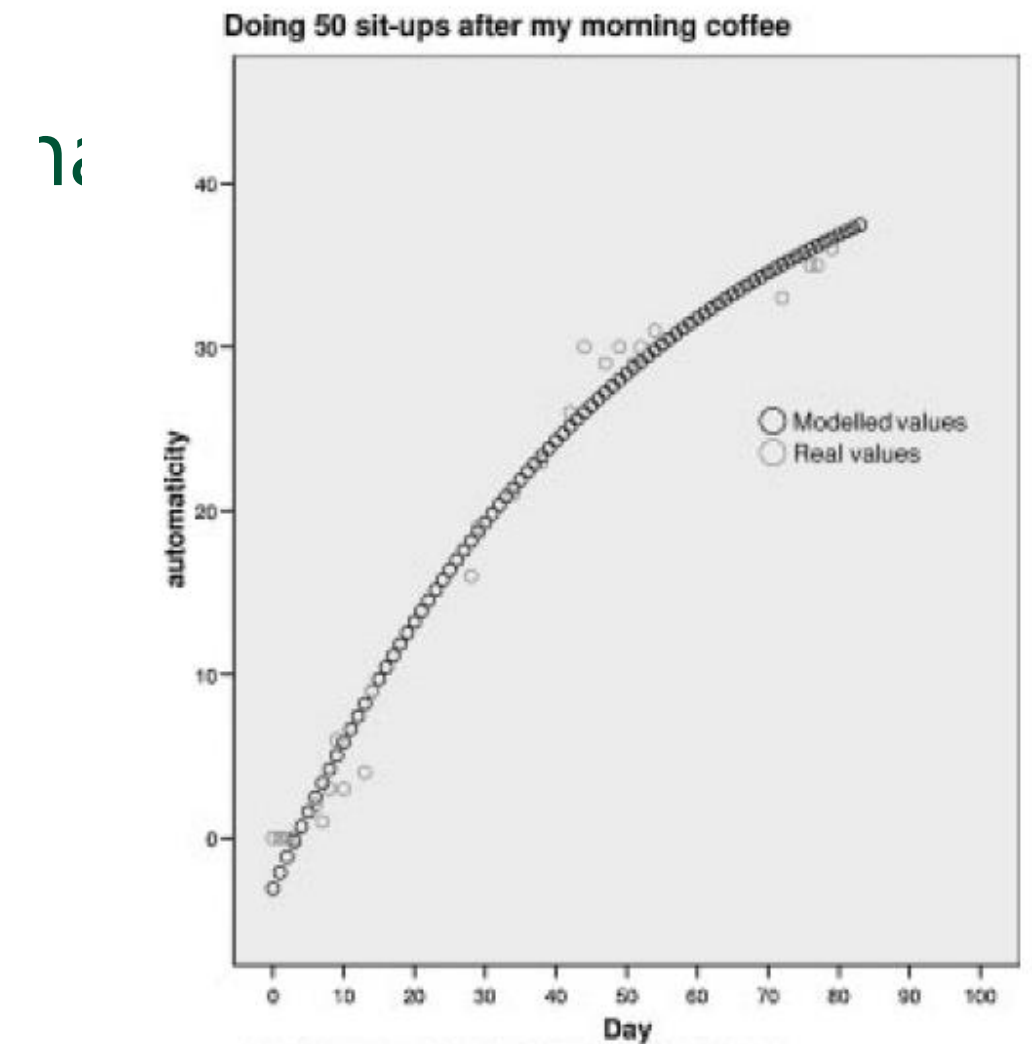
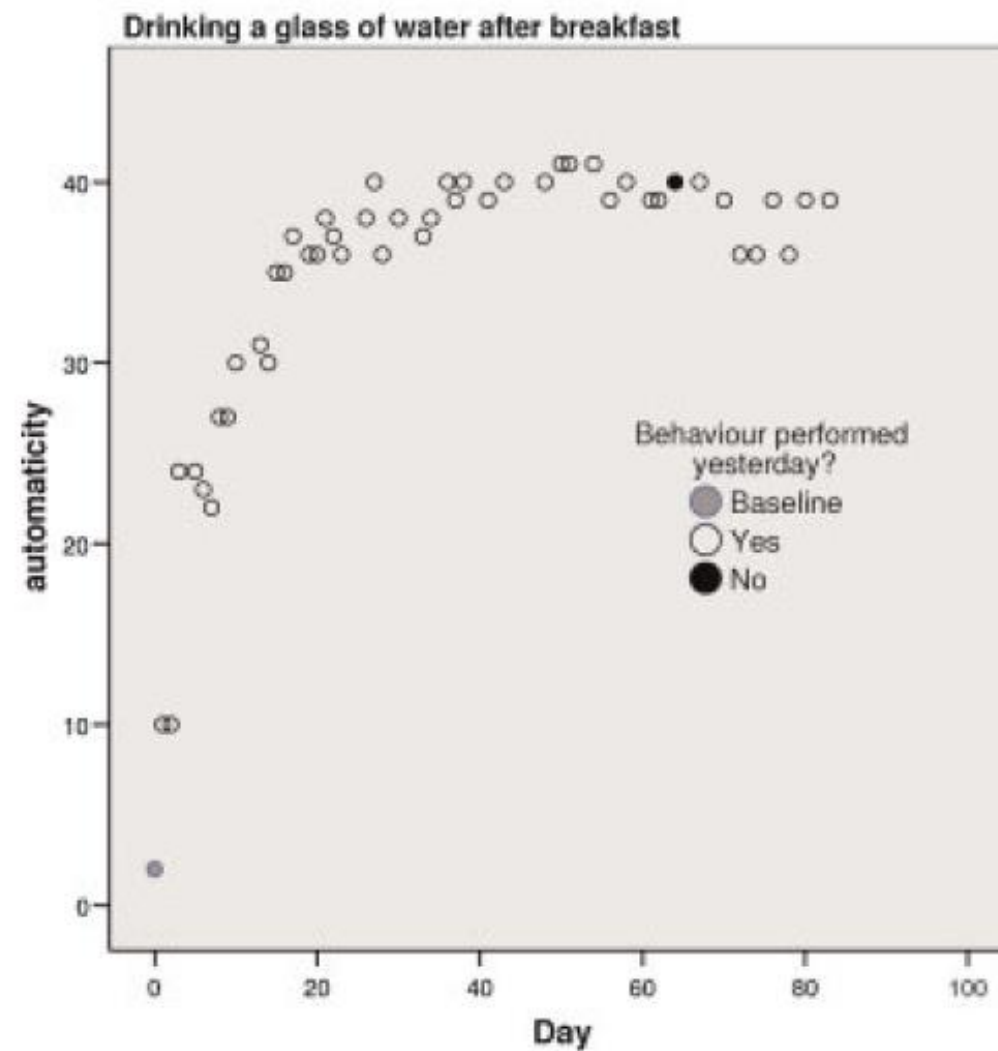
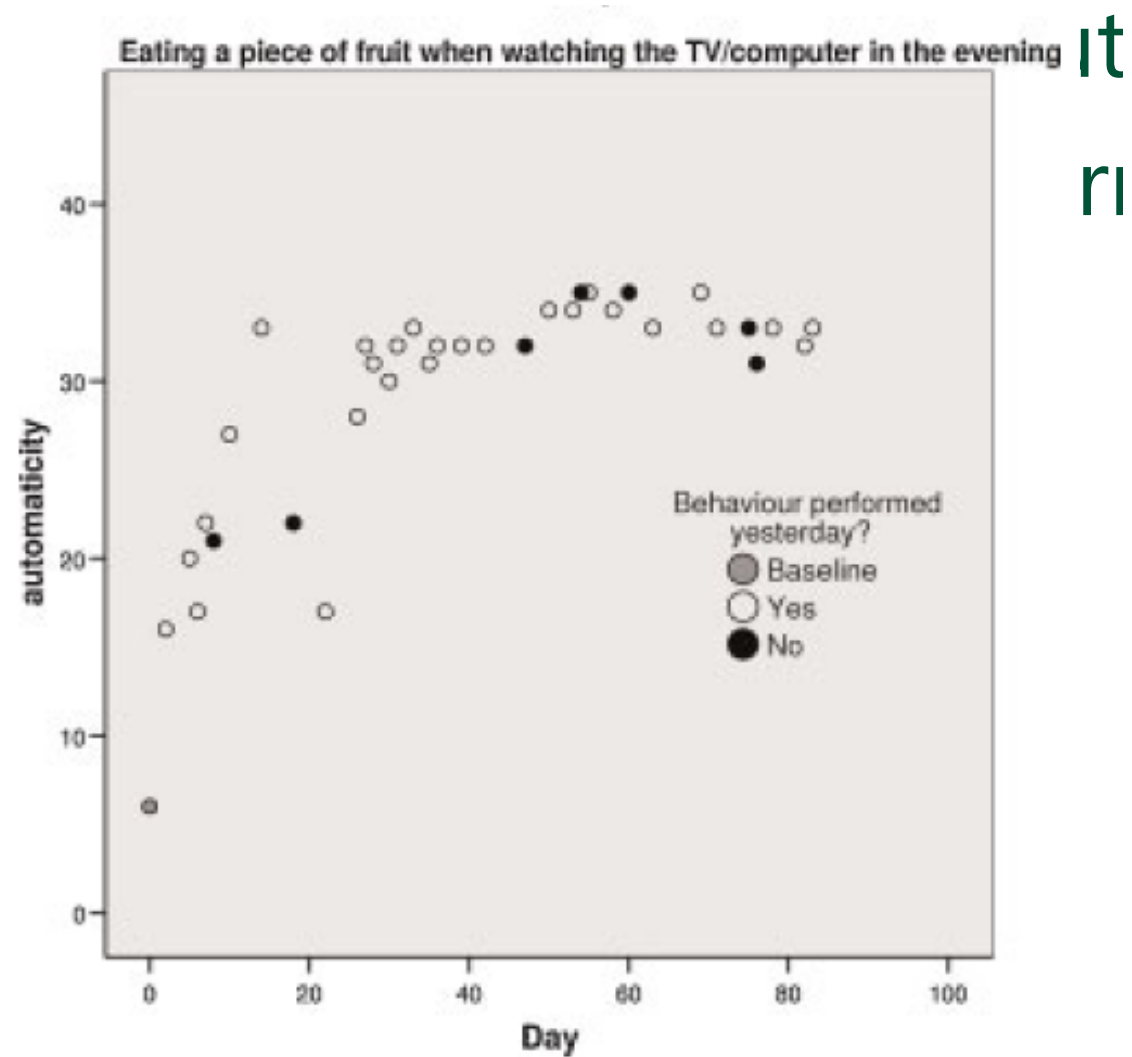
# Does execution complexity predict whether you will do it?



Gardner, Phillips & Judah (2016)



# How long do you have to repeat a behaviour to form a habit?



- Lally, Van Jaarsfeld, Potts & Wardle (2009)



# How do we promote trip chaining/inclusivity

























# Where to next?



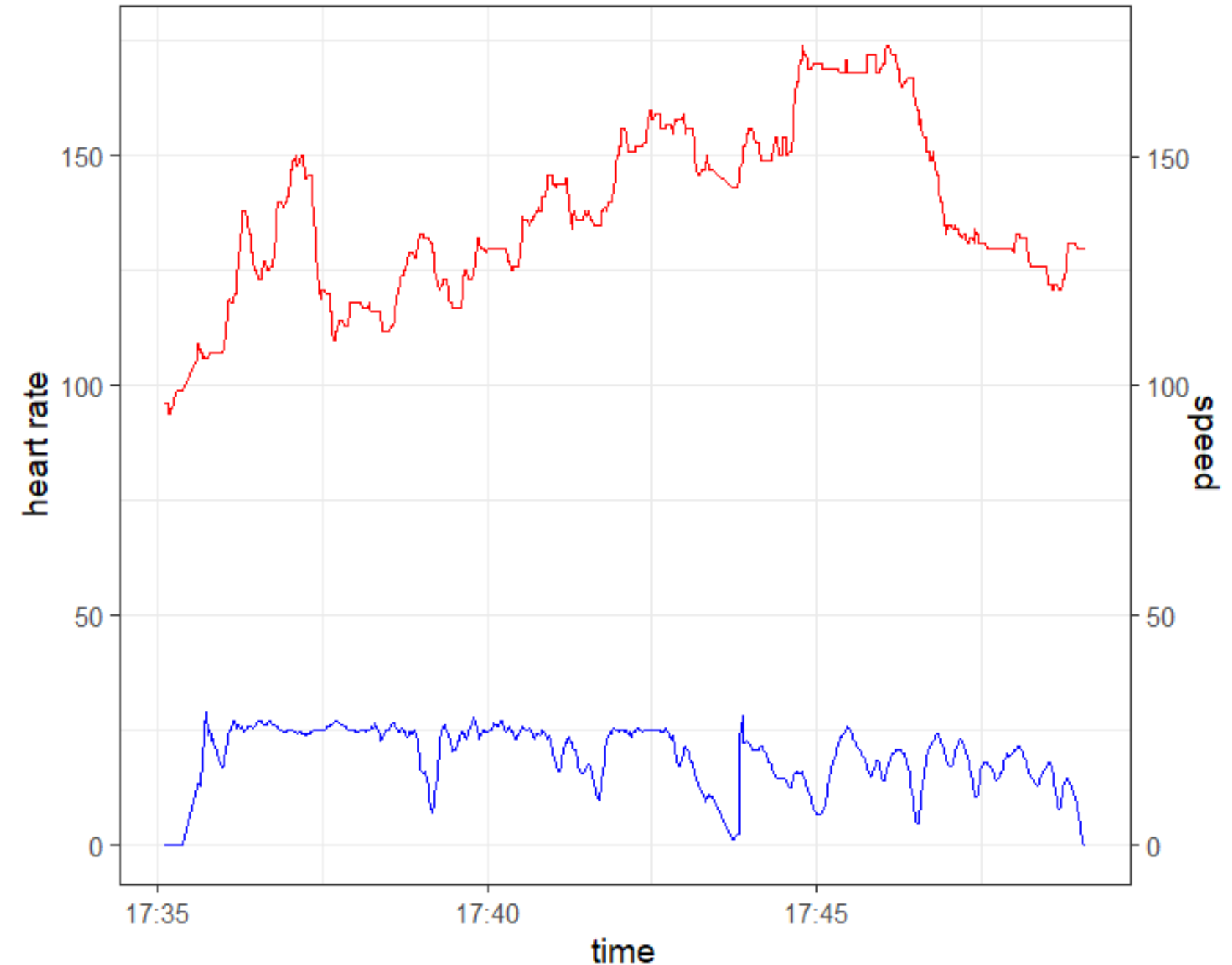


# Where to next?

- Estimating how much physical activity is in ebiking
- ?Recommendations for ebiking as activity

Are you better to:

- Turn the power down?
- Ride for longer?
- Go faster



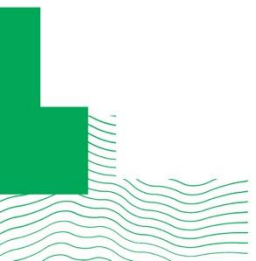


Thank you!

[www.iscycle.ie](http://www.iscycle.ie)

@ajamesgreen

@iscycle\_ie





# ISCycle Design

- Compare 4 v 8 v 12 week arms for automaticity
- Also adding some other key objects to the environment — gloves, panniers, rainwear, helmets etc.



# Further ingredients

Intervention Component	Mechanism of Action	BCTs
Brief session of goal setting & action planning, based on transport use patterns observed in baseline data	Increased <i>reflective motivation</i> Increased <i>automatic motivation</i>	8.3 Habit formation 1.4 Action planning 1.2 Problem solving 1.1 Goal setting (behaviour)
Weekly review of transport use using <i>Your Timeline</i> data in Google Maps	Increased <i>reflective motivation</i>	2.3 Self-monitoring (behaviour)
Summary of ebike use in previous week with reminder to increase ebike use in following week	Increased <i>reflective motivation</i>	2.2 Feedback on behaviour 7.1 Prompts & cues



# Further ingredients

Intervention Component	Mechanism of Action	BCTs
Cycling training [optional component]	Increased <i>psychological capability</i> Increased <i>physical capability</i>	4.1 Instruction on how to perform the behaviour
Personalised cycle route planning [optional component]	Increased <i>psychological capability</i> Increased <i>physical opportunity</i>	1.2 Problem solving
Just-in Time Adaptive Interventions (JITAs)	Increased <i>reflective motivation</i>	7.1 Prompts and cues ?2.2 Feedback on behaviour



# Thinking about a systems approach

---

- Updating the intervention between sites
- Determining whether individual level components have an additive effect compared to changing the system





# InterMob (Teran-Escobar et al., 2022)

1.5h meeting + 1h meeting

- 5.2 "Salience of consequences" (motivational interviewing)
- 4.1 "Instructions on how to perform the behaviour" (personalised transport advice)
- 1.1 "goal setting" (mobility change goal setting)
- 1.4 "action planning"
- 1.2 "problem solving" (obstacles prevention)

By SMS (weekly for 3 months; by-monthly for last 3 months)

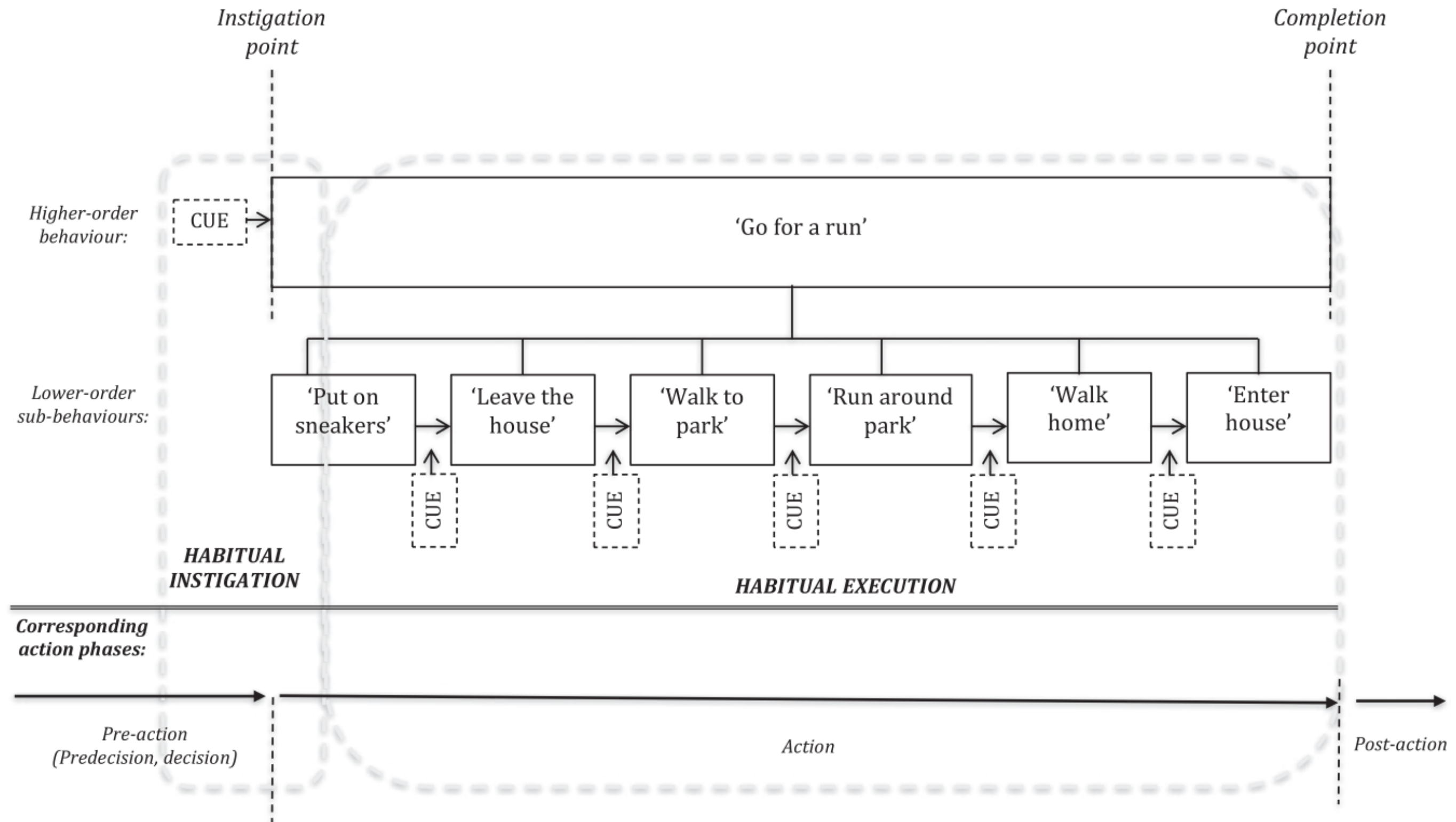
1.7 "review outcome" (prompt refresh of goal-setting) (by SMS)

8.2 "habit formation" (prompt to keep same contexts) (by SMS)

2.4 "self-monitoring of outcomes" (prompt to self-monitor well-being consequences)



# Habitual instigation v. habitual execution



Gardner, Phillips & Judah (2016)



# Thankfully not!



Current Research in Behavioral Sciences

Volume 3, 2022, 100081



## Habit and behavioural complexity: habitual instigation and execution as predictors of simple and complex behaviours

Benjamin Gardner  

Show more 

+ Add to Mendeley  Share  Cite

<https://doi.org/10.1016/j.crbeha.2022.100081>

Under a Creative Commons license

[Get rights and content](#)

 [Open access](#)