SNEAK (BB/W01775X/1)

Merely swapping dishes across a weekly menu can deliver health and sustainability gains

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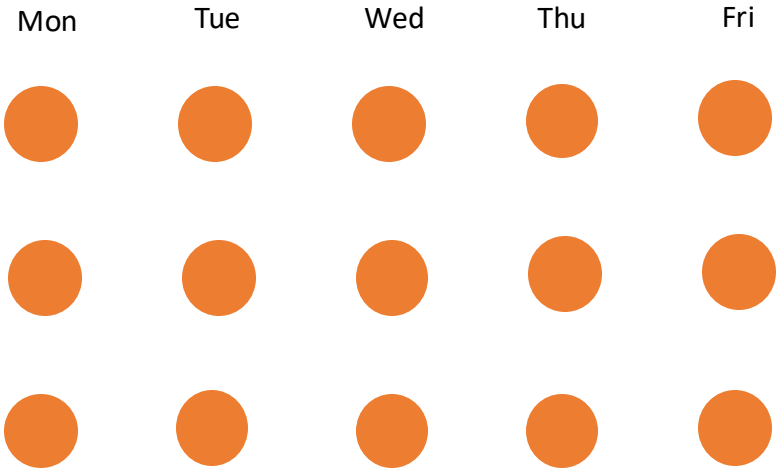
Contents

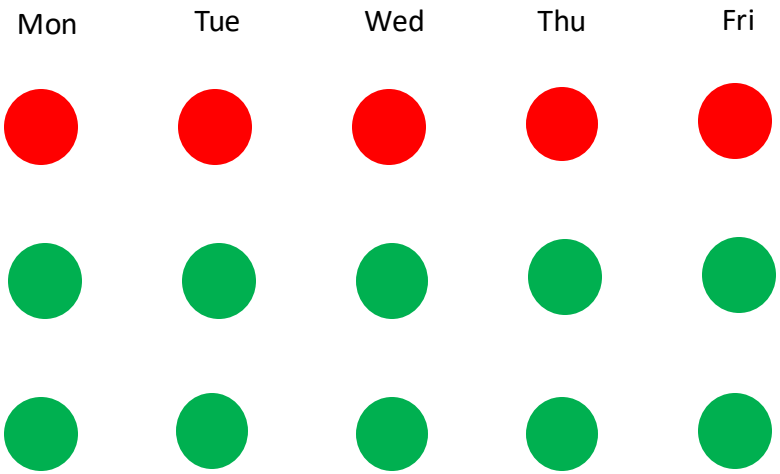
(1) Recap of SNEAK-y idea
(2) Summary of the main study at UoB canteen
(3) Assessing the wider applicability
(4) Theoretical framing and conceptualisation, with new case studies

SNEAK swaps (weekly menu optimisation)



- A weekly menu comprising 15 dishes has 1.4 million unique configurations

SNEAK swaps (weekly menu optimisation)



- A weekly menu comprising 15 dishes has 1.4 million unique configurations
- The number of times each dish is selected depends on the two “rival dishes” offered on the same day

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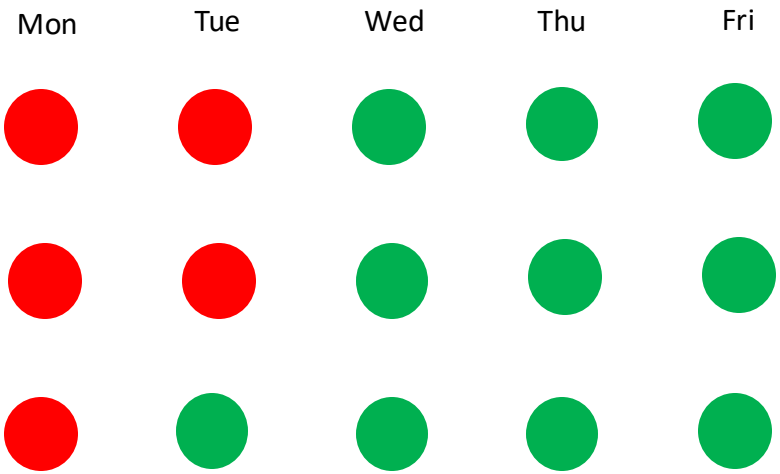

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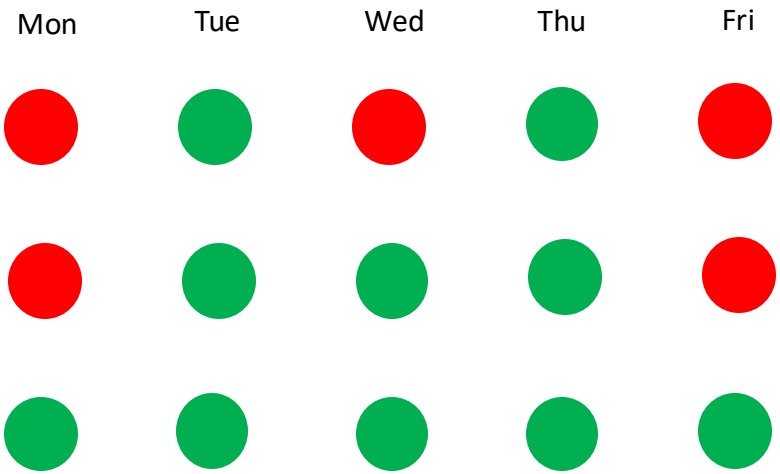

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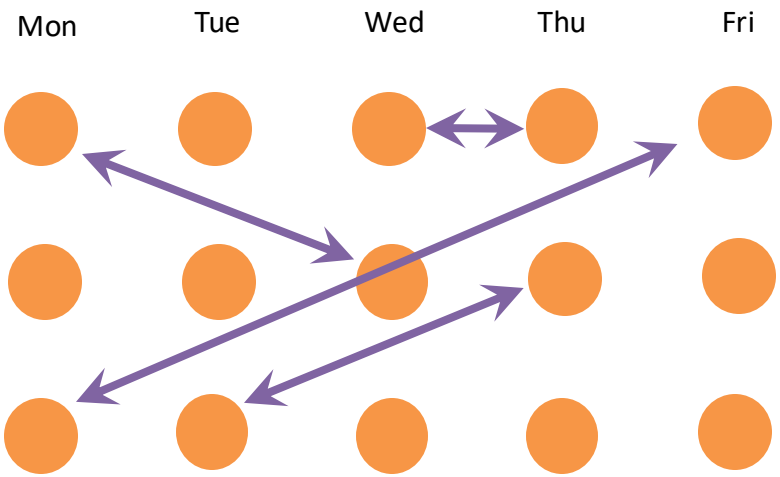

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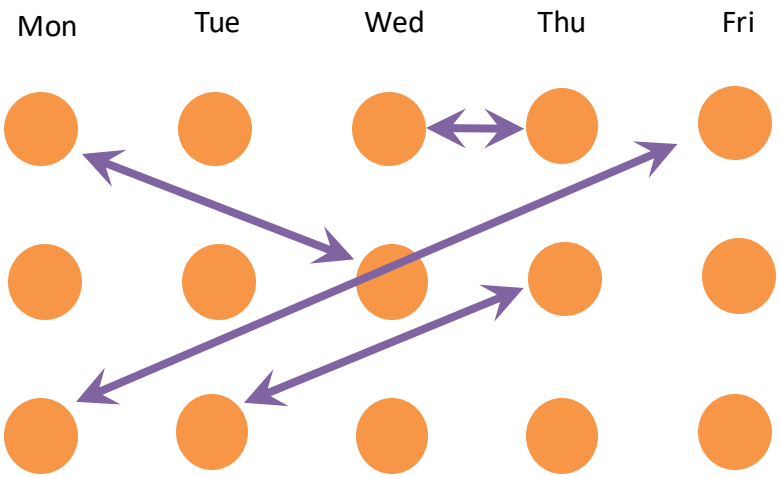

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Carbon footprint reduced (30.7%)
Saturated fatty acid intake reduced (6.3%)

nature food

Brief Communication

https://doi.org/10.1038/s43016-025-01218-8

Dish swap across a weekly menu can deliver health and sustainability gains

Annika N. Flynn [1] ✉, Taro Takahashi [2,3], Alex Sim [4] & Jeffrey M. Brunstrom [1,5]

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Newsweek

‘Sneaky Technique’ Manipulates You Into Eating Better

Daily Mail

Reshuffling canteen menu can help diners choose greener, healthier meals – study

Süddeutsche Zeitung

Linsencurry schlägt Currywurst

(Lentil curry beats curried sausages)

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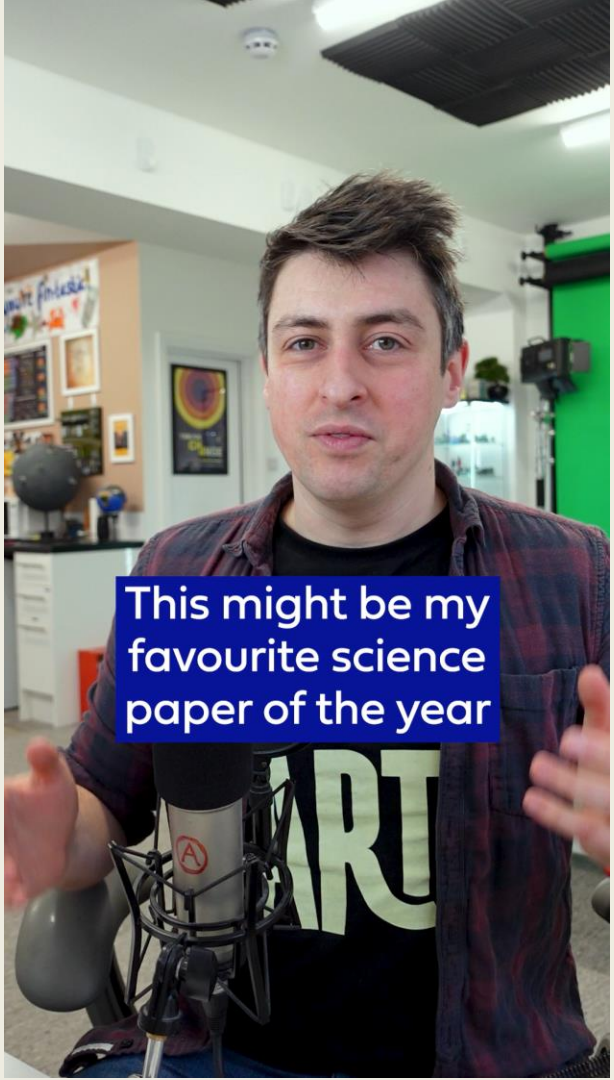
In lieu of Materials & Methods…

My favourite science paper of the year 1.4m view

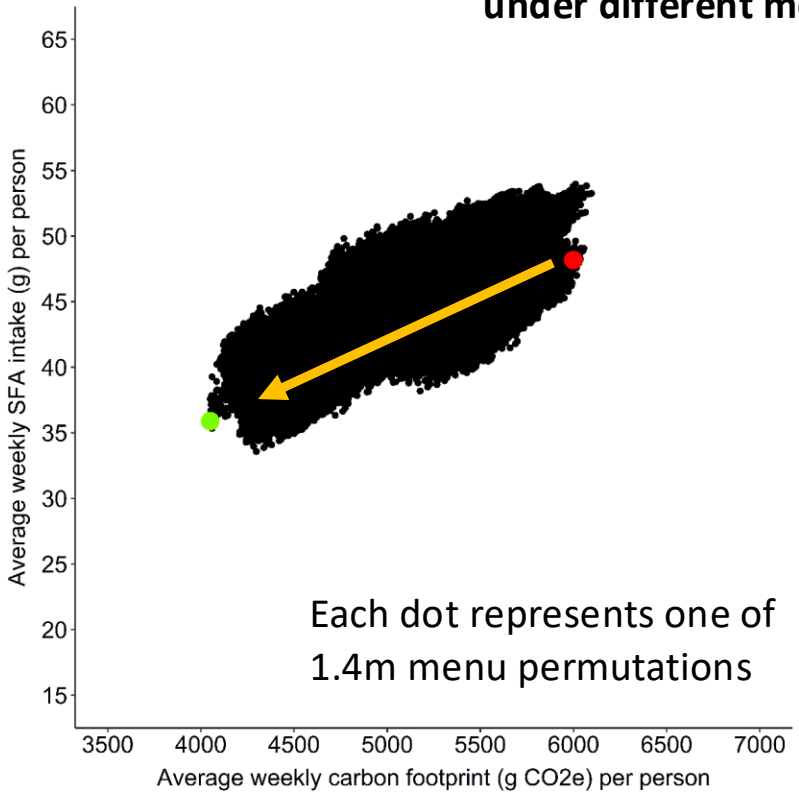
@SimonClark YouTube GB



Video courtesy of Dr Simon Clark

What happened behind the scene

Distribution of carbon footprint and saturated fatty acid intake under different menu configurations



- Baseline menu (designed by our chef)
- Optimal menu (mathematically derived)

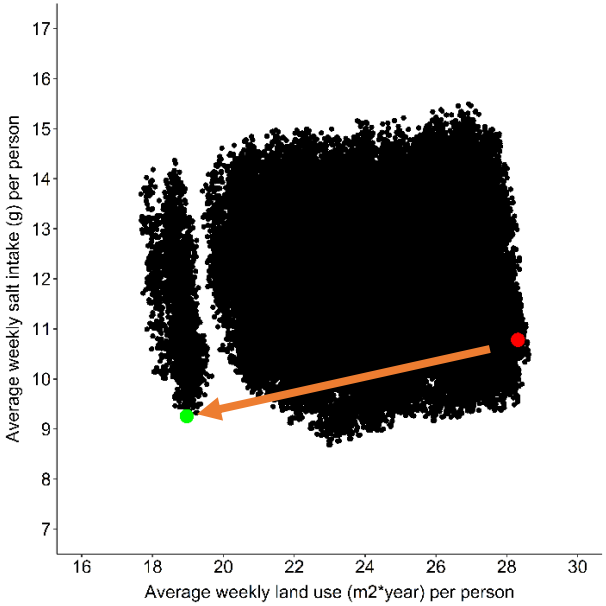
Wider applicability

(1) Other target variables

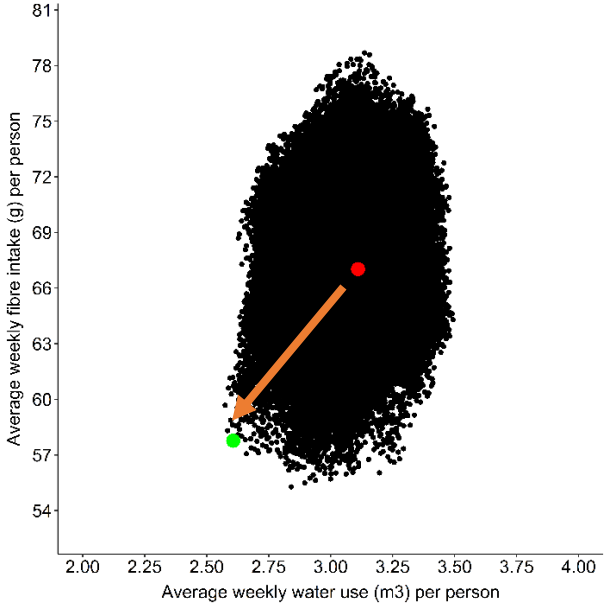
Baseline menu (designed by our chef)

Optimal menu (mathematically derived)

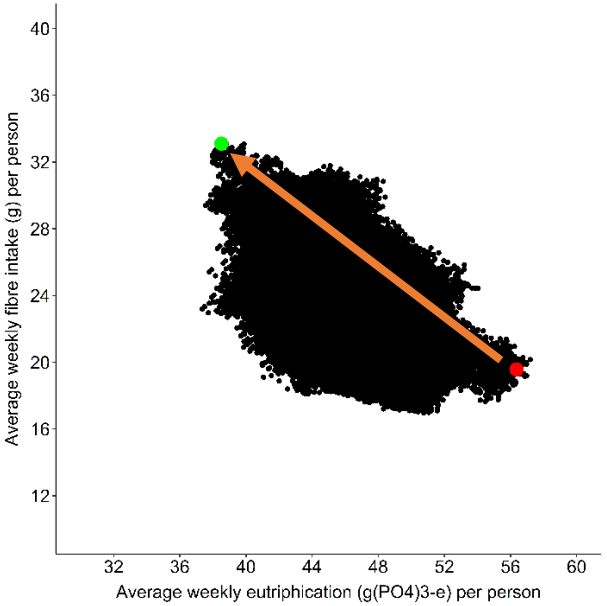
Land use / salt intake



Water use / sugar intake



Eutrophication / fibre intake



Flynn *et al*. (2025a) *Nature Food*

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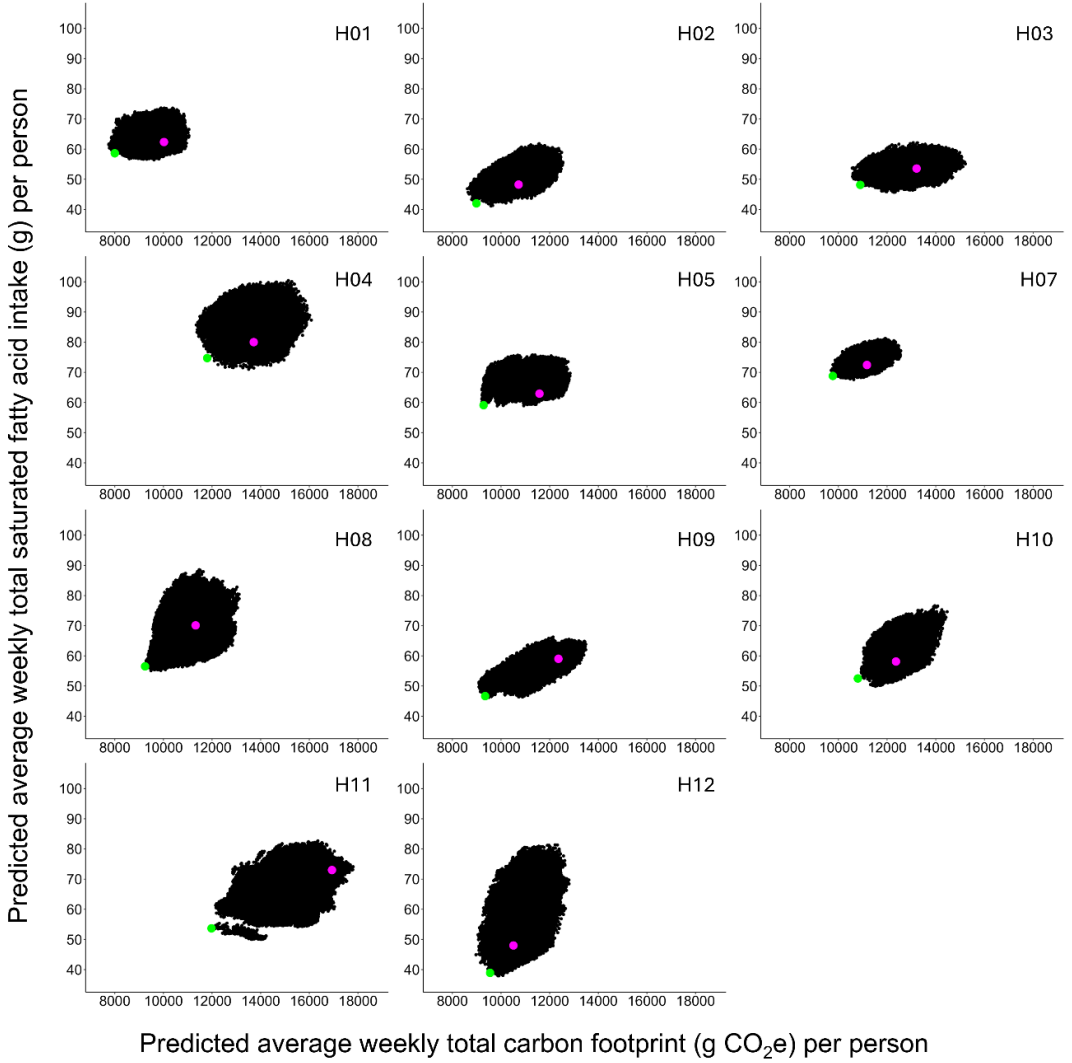
Wider applicability

(2) Other procurement settings

Menus from 12 NHS hospitals across the UK

- **Baseline menu (designed by our chef)**
- **Optimal menu (mathematically derived)**

Particularly suitable environment for SNEAK swaps as education and active nudging are inappropriate



Flynn *et al*. (2025b) *Philosophical Transactions of the Royal Society B*

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Theoretical framing and conceptualisation

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- Designing a menu based on what we *should* eat, is too naïve
- Menu optimisation should fully consider **choice architecture**, and under that architecture what we *will* eat
- People are busy and not always interested in our cause

Theoretical framing and conceptualisation

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- Designing a menu based on what we *should* eat, is too naïve
- Menu optimisation should fully consider **choice architecture**, and under that architecture what we *will* eat
- People are busy and not always interested in our cause

- Only 15% of trays returned empty
- 149.4 g CO_2e wasted per dish

Theoretical framing and conceptualisation

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- Designing a menu based on what we *should* eat, is too naïve
- Menu optimisation should fully consider **choice architecture**, and under that architecture what we *will* eat
- People are busy and not always interested in our cause — importance of behind-the-scene work to keep consumers (i) less disturbed and (ii) less affected

Ongoing/planned studies using the same principle

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- **SNEAK-i** (ingredient-level mathematical swaps)
- **SNEAK-r** (retail application with walk-out option for consumers)
- **SNEAK-s** (conventional menu substitution or “swapping out”)

Ongoing/planned studies using the same principle

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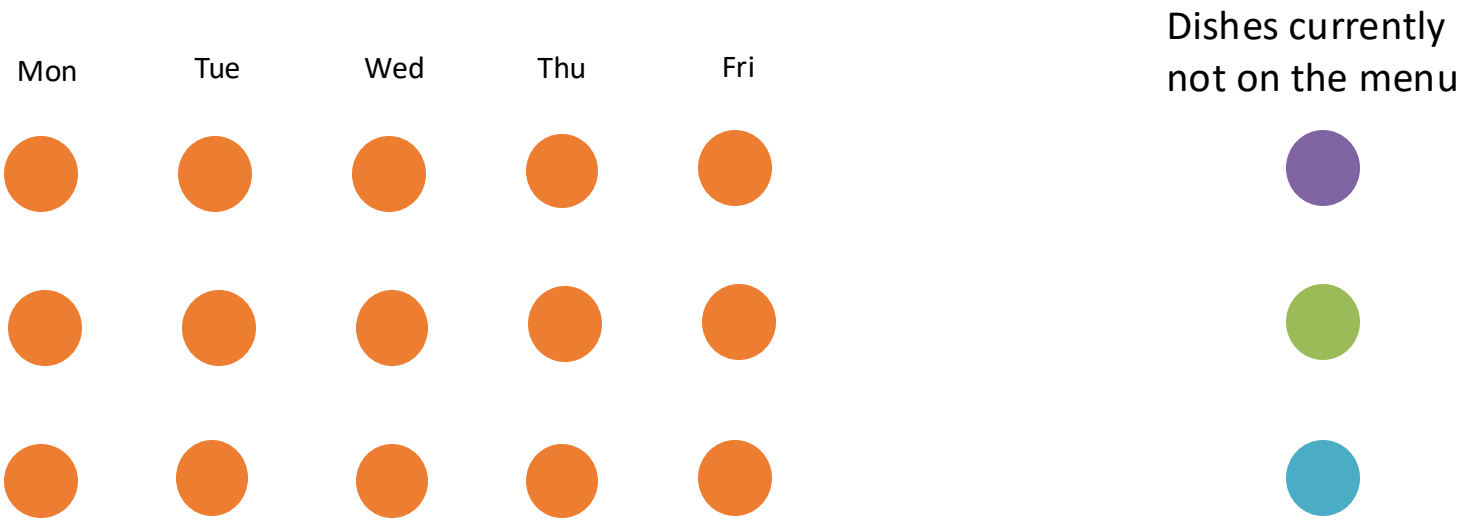
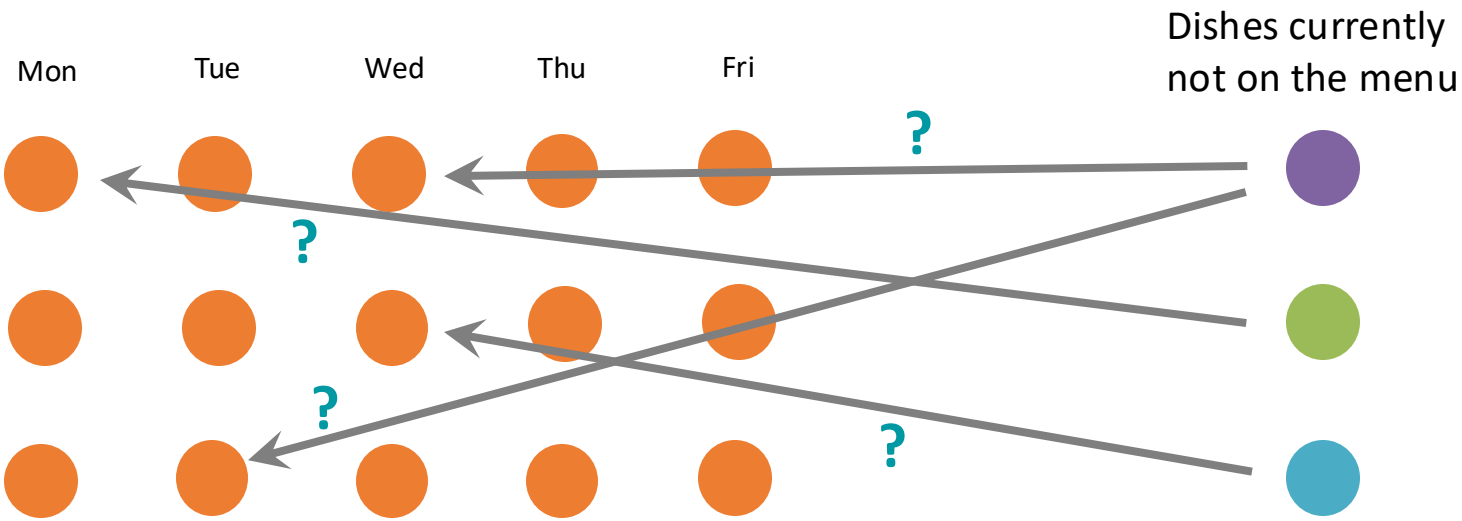
- **SNEAK-i** (ingredient-level mathematical swaps) 13:50
- **SNEAK-r** (retail application with walk-out option for consumers)
- **SNEAK-s** (conventional menu substitution or “swapping out”)

SNEAK-S (optimised menu substitution)



SNEAK-s (optimised menu substitution)



- What dish to use to win the competition?
- Where to insert it to win the competition?

SNEAK-S (optimised menu substitution)

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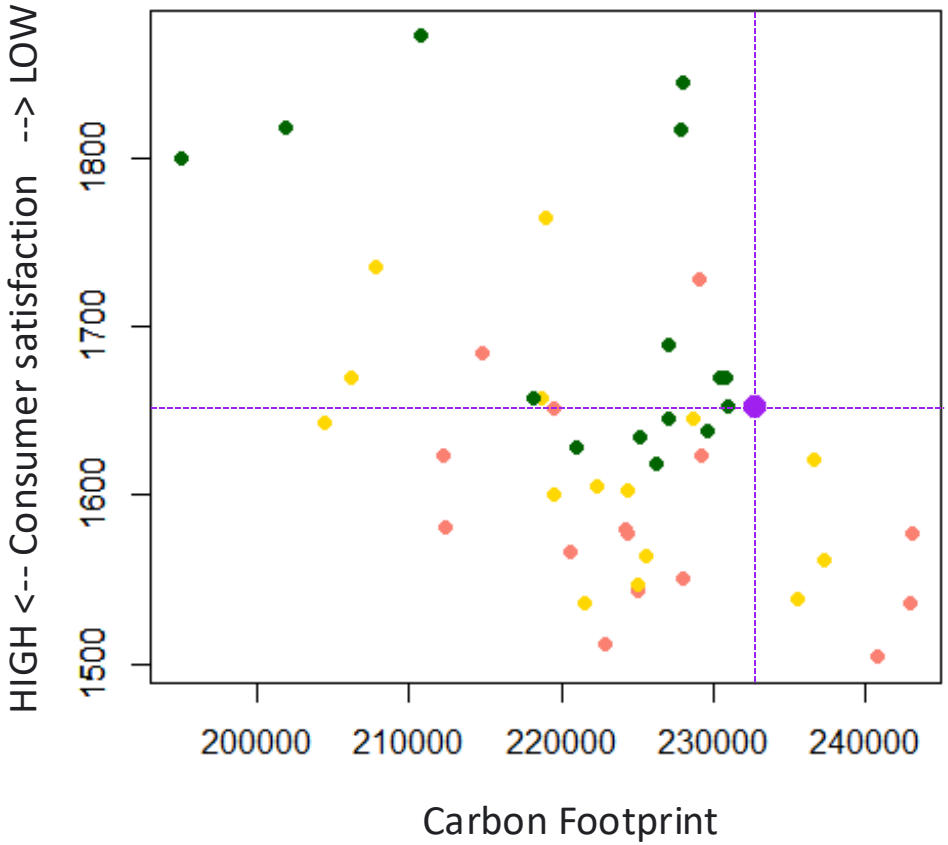

- Baseline menu (designed by our chef)
- New high-carbon dish inserted
- New medium-carbon dish inserted
- New low-carbon dish inserted

Early results:

Medium-carbon, medium-popular dishes offer the best balance between **(i) impact per dish selected**, and **(ii) probability of the dish selected**

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