

# Healthy Living Made Easier

## The psychology of nudging

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ISPNBA 2017  
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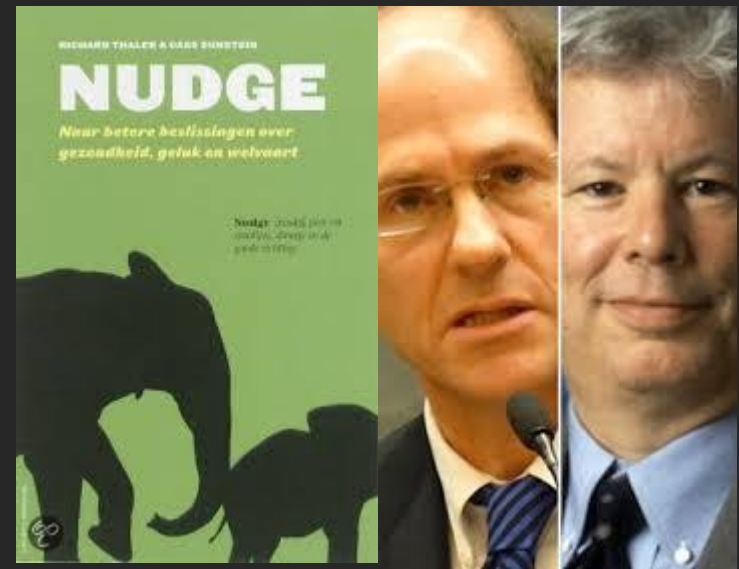


# What is this thing we are talking about?

“Simple changes in ‘choice architecture’ (presentation of alternatives) that do not interfere with an autonomous choice but provide subtle hints to make another choice”

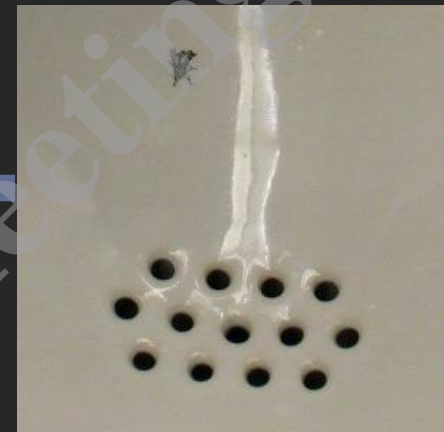
*With a number of propositions suggesting slightly different definitions*

Marchiori, Adriaanse & De Ridder, 2016



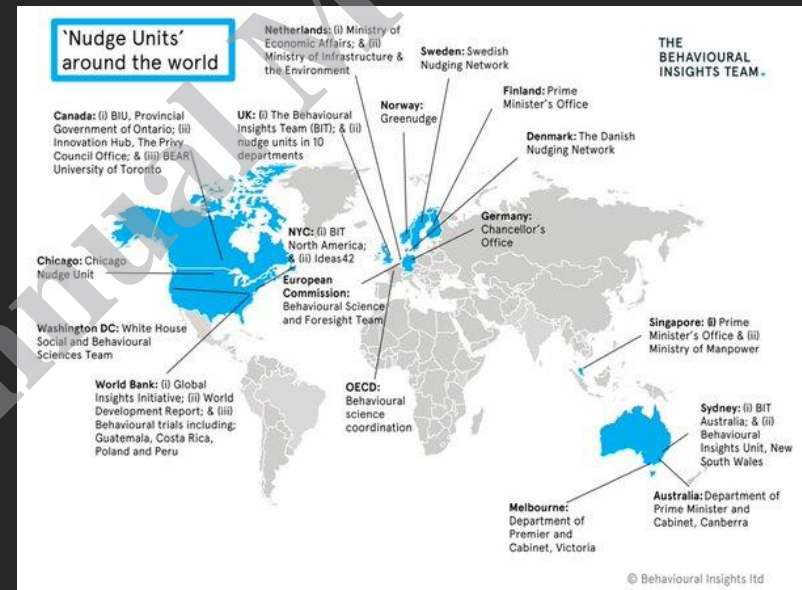
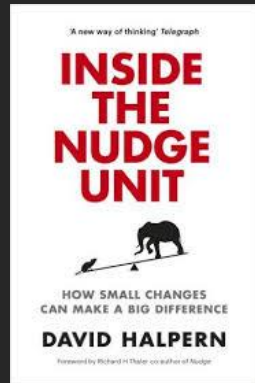
# Interventions that qualify as nudges

- ✓ attractive or default options
- ✓ respect autonomous choice
- ✓ alternative choice without costs



# Nudges are popular

In policy making  
and amongst  
(health) professionals



In domains such as sustainable behavior, traffic, prosocial behavior, organ donation, retirement savings, and public health

Because they are a promising alternative to existing efforts to trigger desired behavior change that often fail

# Nudges are also contested

Soft paternalism?

SMUDGE FUDGE NAG

Concerns about manipulation (government should not act as a marketer) and violation of autonomous decision making

Especially voiced by lawyers and philosophers

But also worries about too much emphasis on individual responsibility where legislation would be in place



Bovens, 2008

Hausman & Welch, 2010

# Nudging in the land of the free

Nudging as an alternative for reluctance to use rules and mandates that govern better individual decisions about welfare

Big issues: health insurance/pensions

(European) public health nudges relatively harmless?





## Less controversial for psychologists?



Nature of decisions about health behavior requires nudge type of interventions, making it easier to do what people actually want to do but don't in the spur of the moment

# Selfregulation dilemmas



immediate temptations  
that distract from  
attainment of health goals





## Nudges speak to

Ignorance: we want to lead a happy and healthy life but we don't know how

Inertia: we know how to lead a happy and healthy life but we are busy/lazy/forgetful

Lack of willpower: we know how to lead a happy and healthy life but we are distracted by other opportunities

Uneasiness: we know how to lead a happy and healthy life but thinking about it makes us nervous

# Capitalizing on the promise of nudges

Address psychological issues  
underlying nudge theory for making  
nudges work in public health

## TO DO LIST

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- 1 Suitability of nudges*
- 2 Acceptability of nudges*
- 3 Long-term effects of nudges*

De Ridder. 2014

Marchiori, Adriaanse, & De Ridder, 2016

# Issue 1

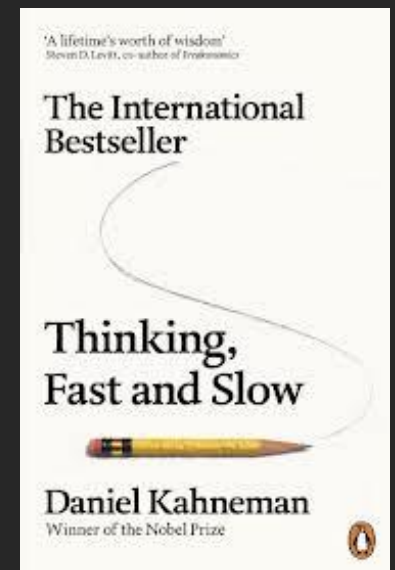
Suitability of nudges:

Do nudges respect the nature of health  
behavior decisions?

# Theory behind nudging

Nudges are smart applications of insights into *bounded rationality* (Simon, 1955)

Many everyday decisions involve rapid intuitive decision making with little conscious effort, using mental shortcuts (heuristics)

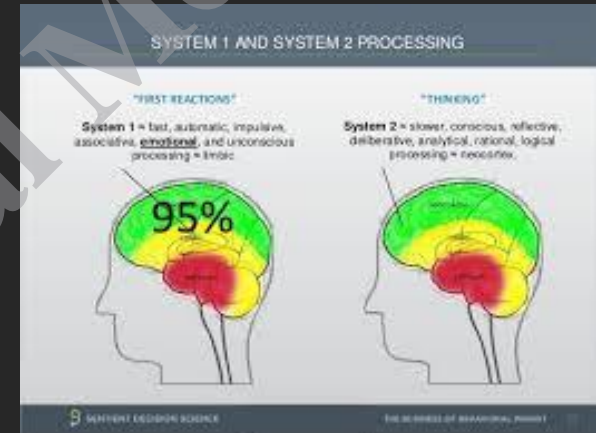


# Kahneman's dual system account

System 1: fast, automatic, 'unconscious'  
Default system and more adaptive in case of immediate decisions, not necessarily error prone. Operates in concert with:

System 2: slow, effortful, 'conscious'  
Requires access to capacity-limited central working memory resource

Note difference with reflexive/reflective dual systems account popular in health psychology stating that system 1 leads to risky decisions and that system 1 should be tamed by system 2



# Behavioral economics or psychology?

Thaler: Read a good book recently?

Kahneman: Dick Thaler wrote a book with Cass Sunstein.

And it is a good book. It explains behavioral economics and the importance of behavioral economics in policy.

And it illustrates the strange ways in which psychology does influence policy.

But, basically, you never cite a single psychology thing.

Thaler: Oh, that's not true. You appear on every third page.

Kahneman: Well, but I appear in my guise as an economist.

Thaler: You have no guise as an economist.

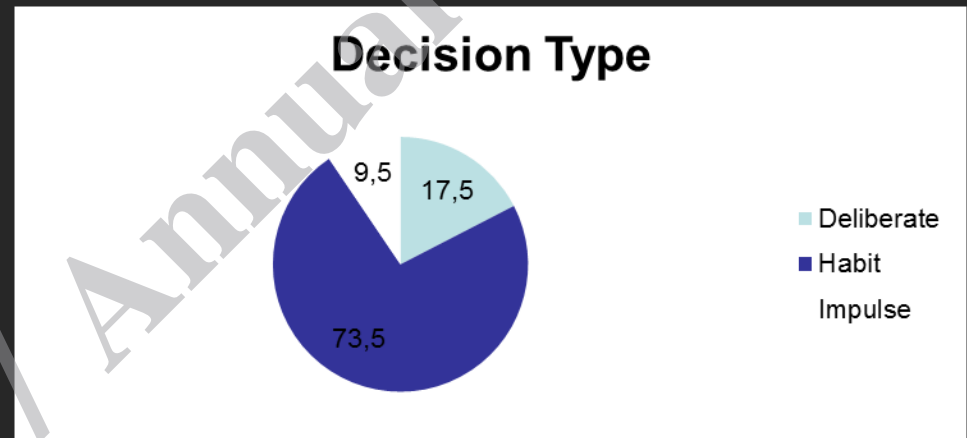


APS 20<sup>th</sup> Convention 2008,  
Inside the Psychologist's Studio



# Decisions about health behavior

Are often system 1 or 'mindless' (= habit or impulse)



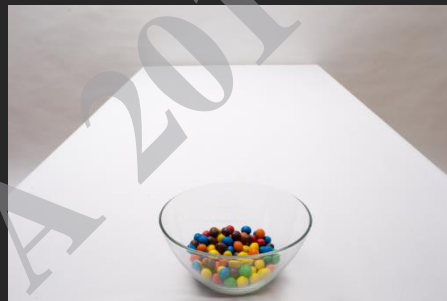
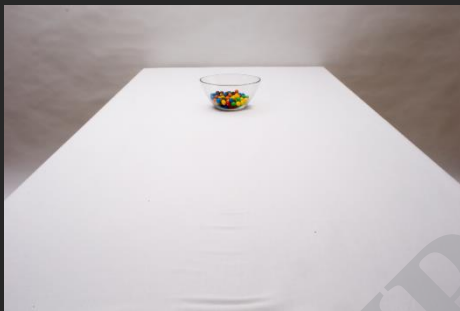
Marchiori, Adriaanse, & De Ridder, in prep

-> *Take advantage of 'mindlessness' rather than fight it*

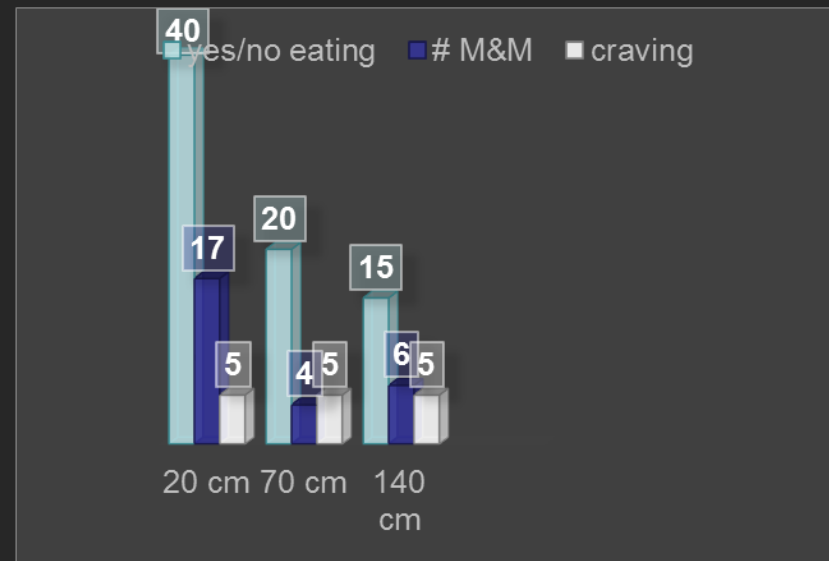
Different from boosting System 2 (e.g., improving knowledge) or fighting System 1 (e.g., weaken bad automatic associations)

# Example 1

Decreasing accessibility (not availability) to foods makes them less salient and acts as cooling down strategy rendering resistance less required



Maas, De Ridder, De Vet & De Wit, 2012

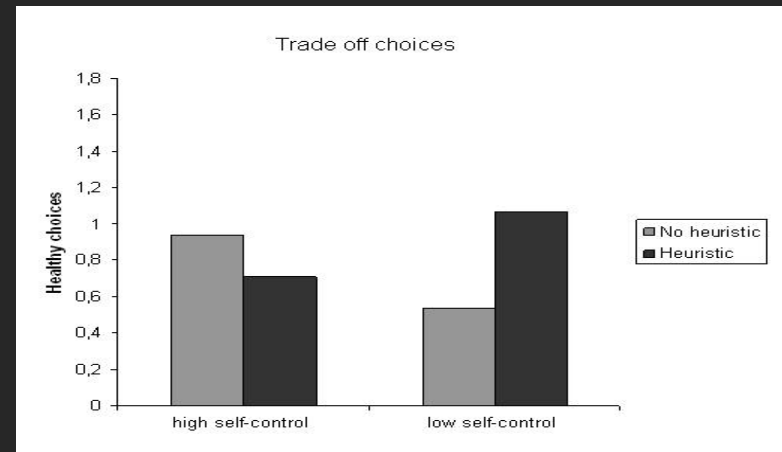


## Example 2

Low self-control + social proof heuristic = more healthy choices (healthy and less tasty compared to unhealthy and tasty)



Replication in  
supermarket setting



Salmon, Fennis, De Ridder, Adriaanse, & De Vet, 2014

## Next questions

While some nudge interventions have proven successful, it is unknown how they operate in relation to health goals and motivation for health behavior or to what extent people experience effort or doubt in response to nudges

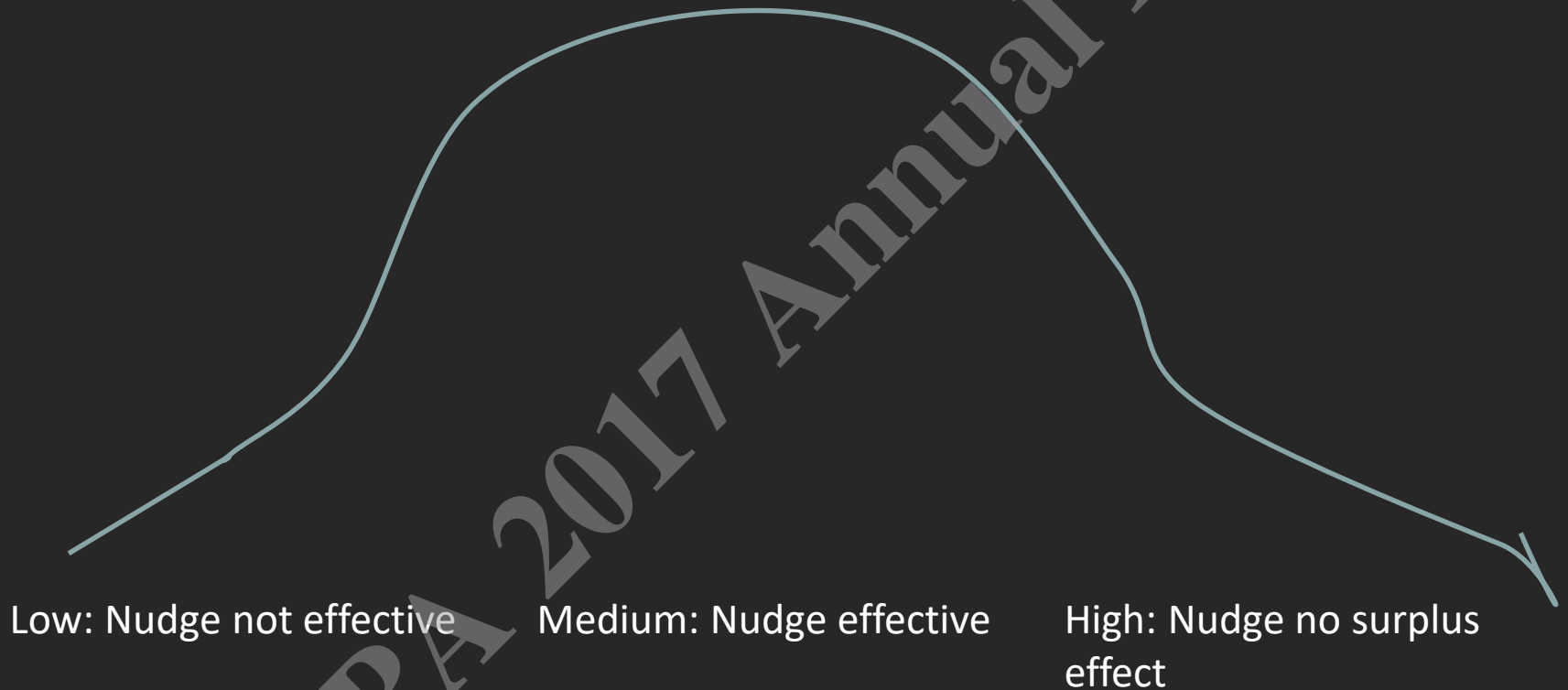
*NUDGIS: Novel Understanding of Designs for Good Intervention Strategies in the Food Environment*



*Welfare Improvement through Nudging Knowledge*

*Health Improvement through Nudging Techniques*

Hypothesized effectiveness as a function of goal strength/motivation



Venema et al., under review

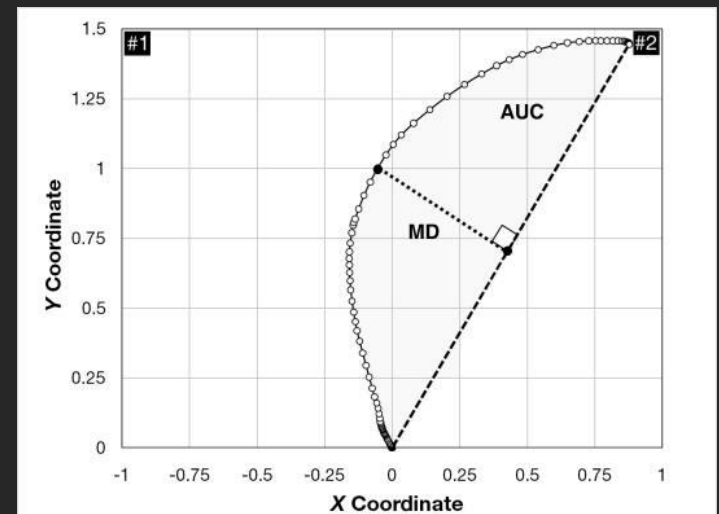
# Can nudges influence decision doubt?

Social proof nudge (“*the majority of people...*”) decreases doubt when confronted with choice -> more certain to act upon health goal -> important implications for mechanisms of effectiveness and ethics of nudging

(And in case of low health goals: Social proof nudge may increase doubt -> opportunity to reconsider)

Mouse Tracker Task:  
Maximum Deviation =  
Size of Response Conflict = Doubt

Gillebaart et al., 2015  
Venema et al., in prep





POSITIVE

NEGATIVE

ISB NPA 2017 Annual Meeting



## Issue 2

Acceptability of nudges:

Do people like some support in making  
decisions about health  
(or do they object to patronizing)?

# Do people endorse nudges?

*YES!*

Depending on the source of nudging (experts rather than 'the government' are considered more trustworthy and as having good intentions)

If they understand what the nudge is about (health nudges more appreciated than financial nudges)

If they agree with the purpose of the nudge (health, safety, clean energy)

->If so, they don't mind so much about level of intrusiveness (even default rules are accepted)

Junghans, Cheung & De Ridder, 2015

Junghans et al., 2016

# Liking of health nudges by Europeans in 6 countries

Survey in 6 EU countries (N = 7000) according to level of intrusiveness

Government campaigns (e.g., public education campaigns in movie theaters to reduce smoking and overeating): >77%

Governmentally mandated rules (caloric/salt labels; traffic lights): >78%

Default rules (healthy food replacement): >75%

Manipulation (subliminal advertising): > 43%

Other mandates (e.g., sweet-free cashier zone, meat-free day): > 60%

## Appropriate nudges

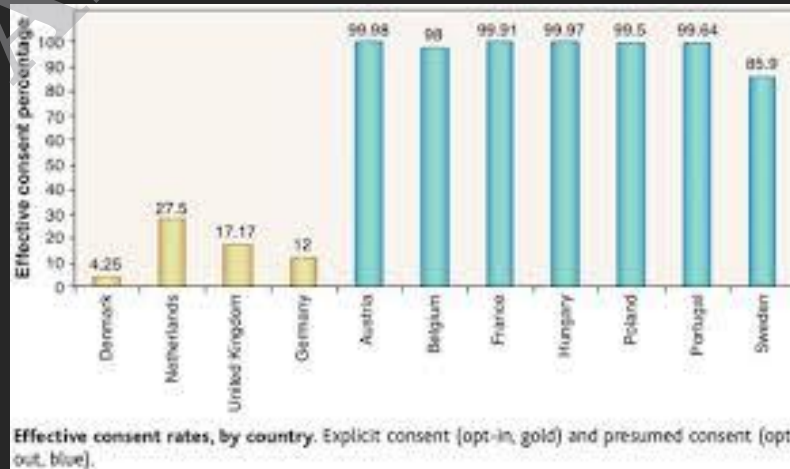
Default rules are accepted but not when it relates to controversial issues

Default assumption of Christianity for US census data (21% US)

Ask about organ donation when obtaining drivers' license (49-72% EU)

But people may mind less than they think

Opt-out leads to higher # of people available for organ donation



# Nudge warnings don't ruin effect

Journal of Public Health Advance Access published July 17, 2015

Journal of Public Health | pp. 1-5 | doi:10.1093/pubmed/kdv096

## Nudging healthy food choices: a field experiment at the train station

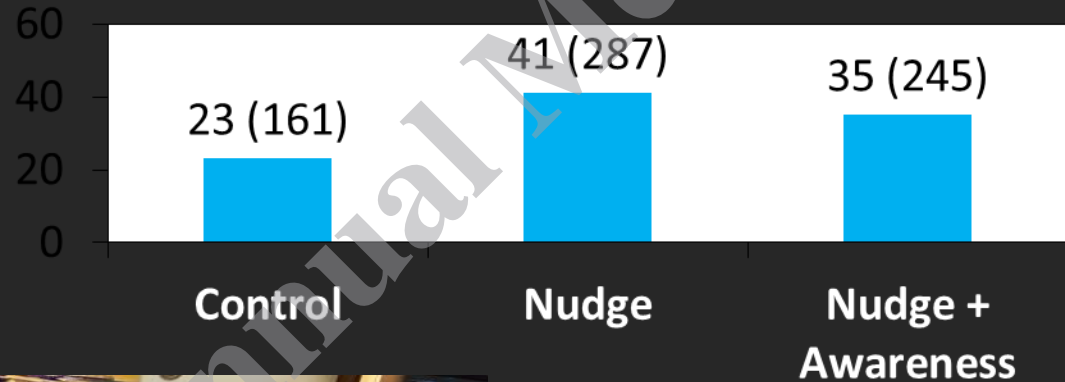
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Address correspondence to Floor M. Kroese, E-mail: F.M.Kroese@uu.nl

### ABSTRACT

**Background** Recognizing the mindless nature of many food decisions, it has been suggested that attempts to increase healthy eating should not focus on convincing people what is 'right', but rather aim to adjust the environment such that people are automatically directed toward healthy choices. This study investigated a nudge aiming to promote healthy food choices in train station snack shops.

Downloaded from



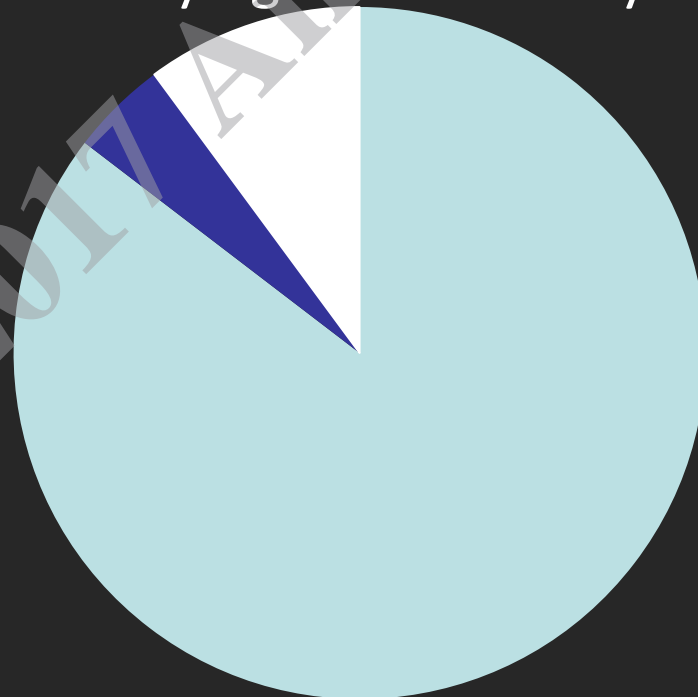


# Nudge approval in experimental setting

Does this set-up help to make a healthy choice? **55% Yes**

Do you think it affected *your* choice? **90% No**

What do you think about us trying to influence your product choices?



■ Good (N = 76)

■ Annoying (N = 4)

■ Don't care (N = 9)

## Issue 3

(Long-term) effects of nudges:  
Healthy habit formation  
& boundary conditions

# Assessing effectiveness

Most nudge projects focus on identification & design of good nudges – which is a challenge in its own right

Very few experimental designs: most of them short term and at group level (big data)

Assessment of long-term effects with inclusion of individual responses (behavioral mediators/moderators) is lacking

Few exceptions suggest effects up to > 4 weeks

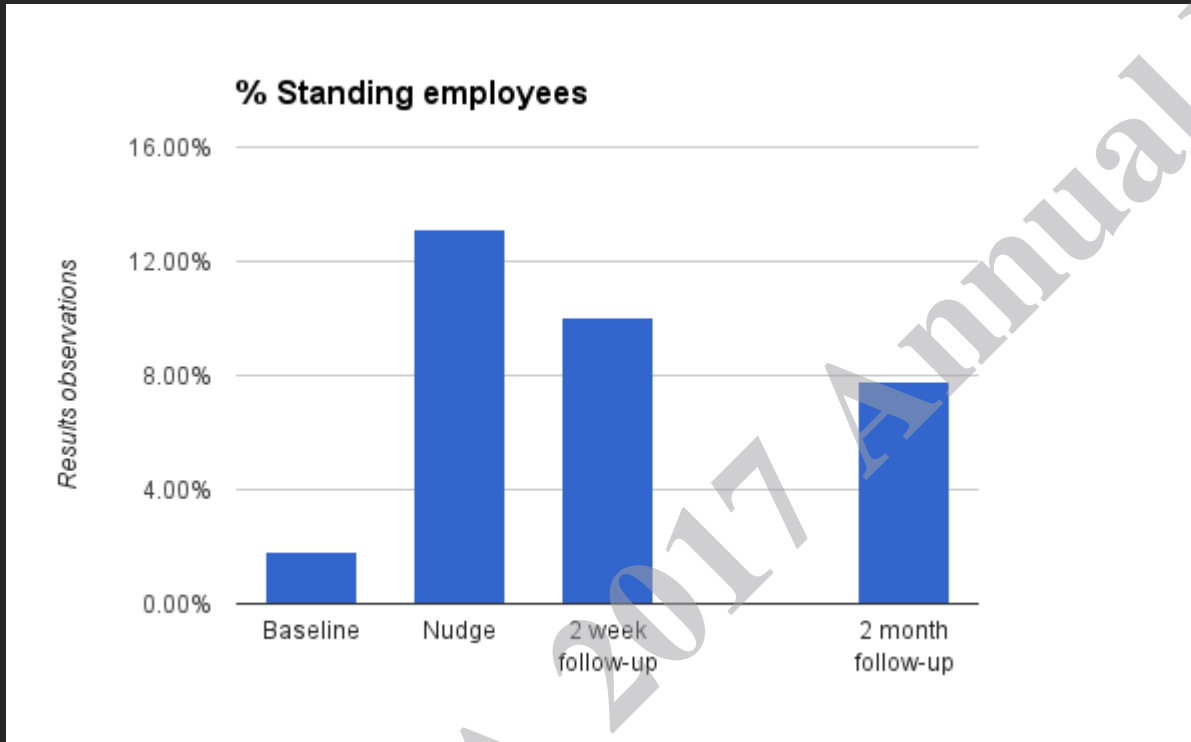
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Image 1. Intervention part 1: green footprint stickers leading from the main entrance to the stairwell.

Two identical A3 size posters were placed on eye height on the second door leading to the stairwell and on the wall of the first platform of the stairwell, which is halfway up to the first floor. They contained an approving injunctive normative message in the form of a positive emotion in combination with the positive explanatory (Dutch) message "Good thing! Do trap reem is good voor het milieu en voor je eigen gezondheid!" (Image 2), which translates in "Good job! Taking the stairs is good for the environment and for your own health!". The goal of this way of framing was to let participants feel good about their stair use and thereby reinforce future stair use. Lastly, two identical A4 size posters containing a disapproving injunctive normative message in the form of a negative emotion in combination with an informative message about energy use of elevators and a reason for taking the stairs, namely, to help the environment (Image 3), were placed above the elevator buttons, on eye height. No health related message was included on these two posters because this could lead to confusion when combined with the energy related statement. The logo of the Green Office Utrecht, the organization that supported this project financially, was printed on the bottom of all four posters. Figure 2 shows the exact location of the different environmental changes in the intervention site.

# I'm still standing... (after default nudge removal)



Venema et al., under review

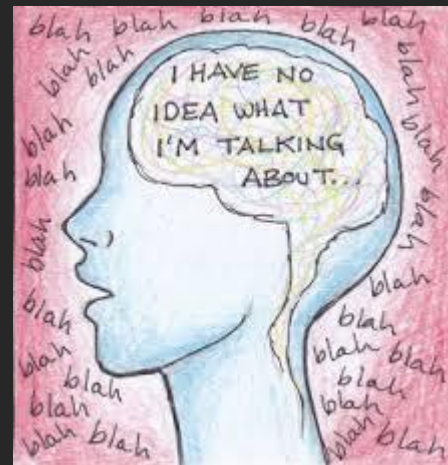
## Important issues to address

Habits: does regularly performing the behavior translate into habits and a healthy person identity?

Autonomy & responsibility: does nudging increase autonomy because of acting in line with one's goals or does it lead to infantilization?

Does nudging lead to 'genuine' preference change or to a fragmented self with someone finding himself doing things he did not want to do?

Issues raised by philosophers in need of psychological investigation



# Boundary conditions

*Funny nudges:*

Will people keep using the famous piano stairs after a while?

And do 'over-attractive' options lead to reactance?

Making it **easy** may be more effective  
- unless there is inherent fun



# Default = preselection and/or salience?

Preselected healthy options are chosen more often (55%) than salient healthy options (46%) in an online shopping environment



Marchiori, Adriaanse & De Ridder, in press



# Salience & Accessibility Nudges

Salience promoting bread rolls over croissants: 10% increase of sales (continued over 7 weeks)

Accessibility promoting fresh fruits: 73% increase (continued over 7 weeks)





# Conclusions

Nudges have great potential as an alternative for existing interventions for health promotion

- ✓ Align with nature of many health behaviors (“want to but...”)
- ✓ Are accepted by the general public

But

- ✓ Concerns about manipulation and portrayal of individuals as incompetent
- ✓ Dismissal of trivial effects



# Future directions and challenges

Problematic & promising aspects of nudging require thorough psychological investigation

Nudge design & categorization

Nudge theory (heuristics) vs nudge inflation

Long-term effectiveness – habits & identity

Terminology – manipulation or choice architecture

Transparency – awareness of nudge being present

Alignment with goals and motivation

Impact on competence, autonomy & responsibility



[www.selfregulationlab.nl](http://www.selfregulationlab.nl)



[winkthenudgeconference.com](http://winkthenudgeconference.com)

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