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Health Goal Priming

How to benefit from nonconscious motivational routes to health behaviour

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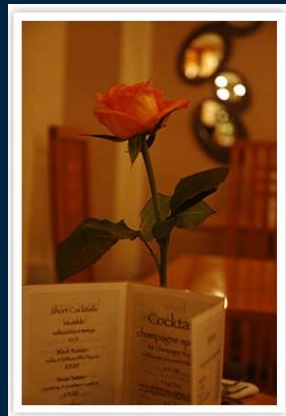
Health Goal Priming

Advances in psychological research: limited influences of conscious intentions on behavior

Limits effectiveness of interventions that rely on conscious intentions

How to systematically stimulate healthy behavior without relying on conscious intentions?

Use nonconscious motivational routes to health behavior - underlying principles and examples



Why interventions without talking?

Central role for conscious intentions in classic Social Psychology and interventions (e.g., Theory of Planned Behavior)

Accumulating evidence for other influences

Webb & Sheeran, 2006

- Meta-analysis of experimental studies of intention-behavior link

- Successful interventions: medium to large effect on intention, but small to medium effect on behavior

- Partial mediation of intervention effect by intention change

- Important moderators: control, habits, reward context of behaviour

Nonconscious influences on behaviour

Subtle environmental cues activate ...

Habits – e.g., making the same lunch choices repeatedly in work cafeteria (Danner, Aarts, & de Vries, 2009)

Social norms – e.g., eating more from larger portions because that seems appropriate (portion size effect; Wansink & van Ittersum, 2007)

Impulses and nonconscious goals – e.g., food words trigger hedonic eating goals in chronic dieters (Papies, Stroebe, & Aarts, 2007)

... often leading to undesired behaviours.

How?

Using nonconscious influences

Nonconscious influences based on individual cognitive structures that are activated by environmental cues.

Habits: learned through repeated performance

Norms and goals: learned through (social) rewards

How can we use these principles to trigger desired behaviours?

... change individual cognitive structures or

... change which cognitive structures get activated by the environment

Goal priming

Priming: exposure to external cues activates a mental representation and possibly affects behavior

Goal priming: ... Activates a *goal representation* and possibly affects behavior of *individuals who have that goal*

Goal: desired (end)state or behavior, associated with reward value (Custers & Aarts, 2005, 2007)

Meta-analysis on goal priming (Weingarten et al., in press, Psychological Bulletin): exposure to goal-related words leads to goal-directed behavior, especially if goal is strongly valued by individuals; small but robust effect

Examples of goal priming

Priming goal of “forming an impression” leads to better memory organization and recall compared to memorization (Chartrand & Bargh, 1996)

Priming “drinking” leads to increased motivation to drink and soda consumption, but only when participants are fluid-deprived (i.e., have a goal to drink; Veltkamp, Aarts, & Custers, 2008)

Priming “achievement” increases motivation and effort, but only among achievement-motivated individuals (Hart & Albarracin, 2009)

Priming with religious thoughts increases prosocial behavior, but only if reward-related (e.g., “heaven”) and not if neutral (e.g., “hymn”; Harrell, 2012)

→ Can health goal priming lead to healthy behavior in health-motivated individuals?

Health Goal Priming

Empirical studies: examine effects of health goal prime in tempting, food-rich environments – conflict between long-term and short-term goals

2 conditions: health goal prime condition and control condition

2 groups: participants for whom health goal is relatively more or less important (i.e., individual cognitive structure – associated with reward?)

General procedure:

1. participants unobtrusively primed (or not)
2. behavior observed (unhealthy items bought, snacks consumed, etc.)
3. questionnaire administered to assess importance of goal (and control measures)

Priming in the grocery store

Nieuw receptidee

Gezond en Goed voor de lijn
- extra slank recept

Gegratineerde tortellini met broccoli
2 personen
15-30 minuten

Ingrediënten
200 gram tortellini
250 gram broccoli
1 pakje kaassaus

6 sprieten bieslook
2 theelepels pesto (potje)
1 eetlepel geraspte Parmezaanse kaas

Bereiding
1. Kook de tortellini in ruim water gaar volgens de gebruiksaanwijzing op de verpakking. Maak de broccoli schoon en verdeel de groente in kleine roosjes. Kook de broccolirosjes de laatste 4 minuten mee met de tortellini.
2. Maak van het pakje kaassaus een saus volgens de gebruiksaanwijzing. Warm de grill voor.
3. Was de bieslook en knip de sprieten klein. Roer de bieslook en de pesto door de saus. Doe de tortellini met de broccoli in een ovenvaste schaal en schenk de saus er over. Strooi de Parmezaanse kaas er over. Laat het gerecht onder de hete grill goudbruin kleuren.

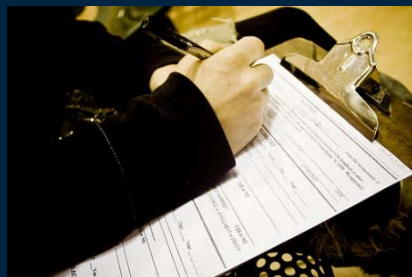
Weinig calorieën!
310 kcal per persoon

broccoli
tje)
rmezaanse kaas

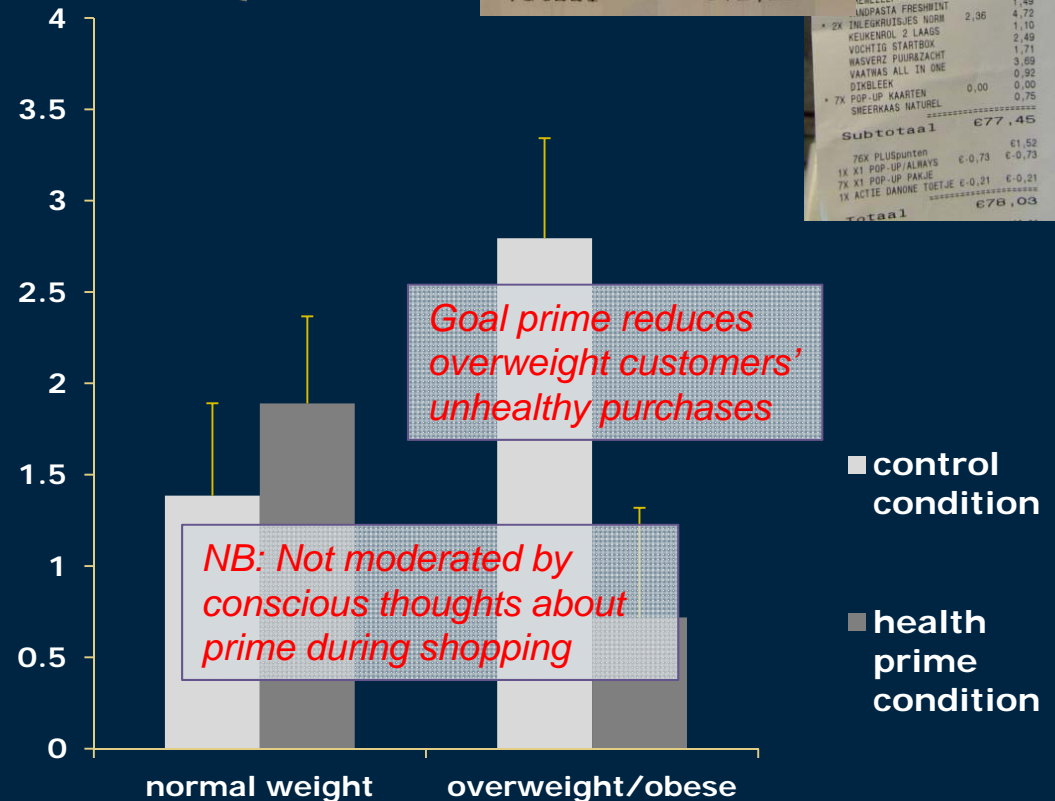
ruim water gaar
wijzing op de
roccoli schoon en
leine roosjes. Kook
atste 4 minuten mee

kaassaus een saus
wijzing. Warm de

ieslook en de pesto
venvaste schaal en
over. Laat het



number of unhealthy snacks purchased



Papies, Potjes, Keesman, Schwinghammer, & van Koningsbruggen, 2014, *International Journal of Obesity*

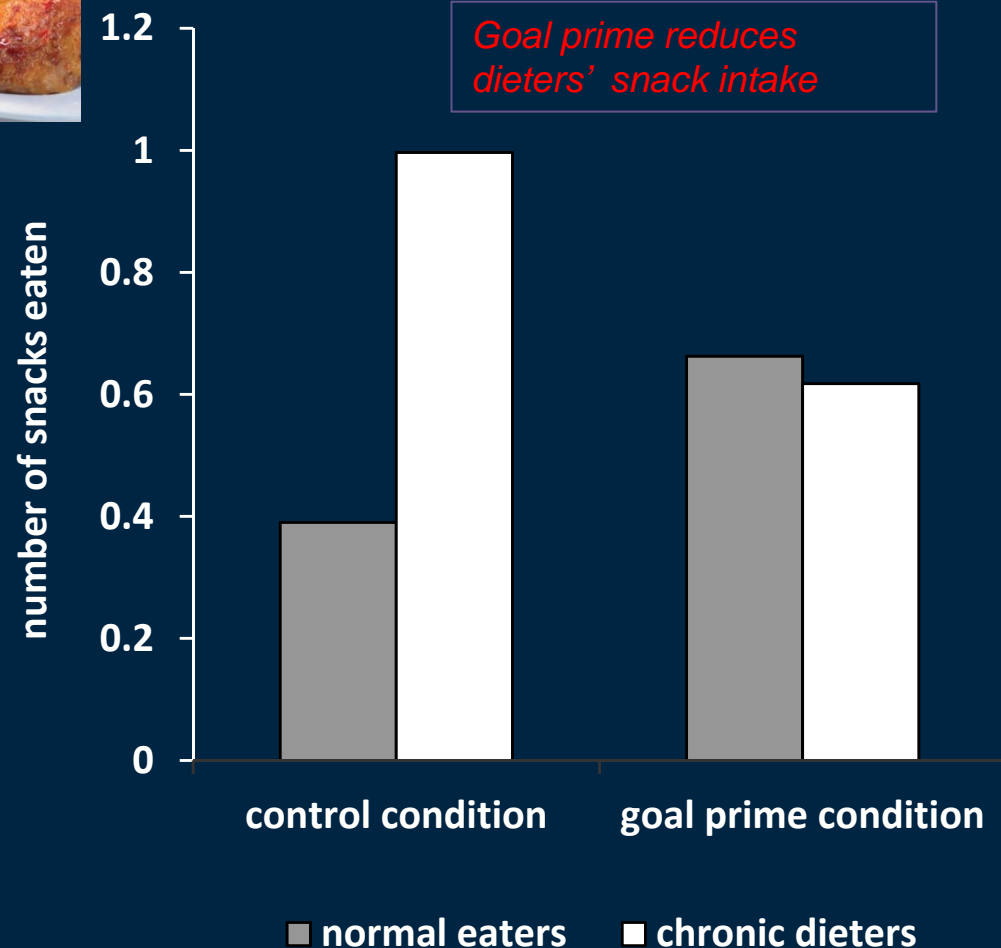
Priming at the butcher's



control condition:
yummy smell of
grilled chicken

Goal prime condition:
yummy smell of
grilled chicken +
diet-recipe poster
on glass entrance
door

DV: number of free
meat snacks eaten
while waiting /
being served



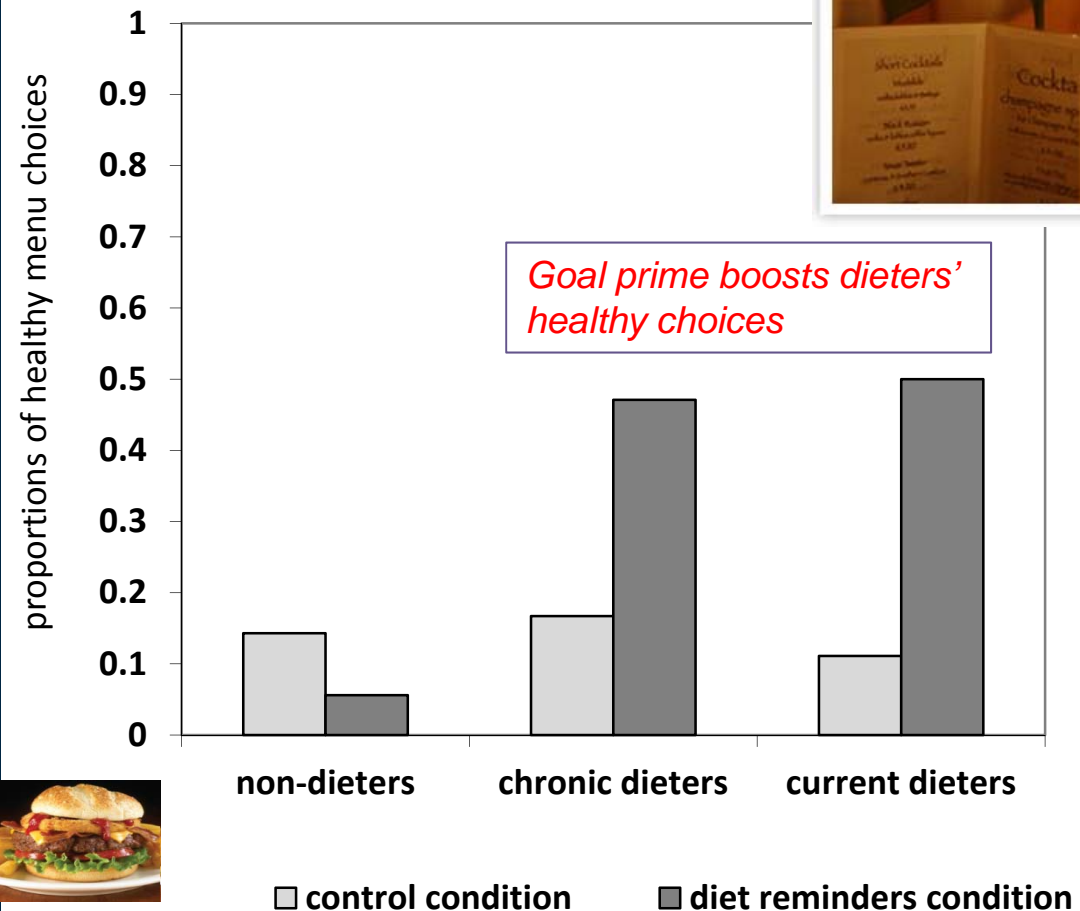
Priming while dining

Control condition:
salads
announced on
extra menu page



Goal prime
condition: diet-
related words
integrated in
salad menu

DV: menu choice
(burger/sate vs.
salad/steamed
fish)



Preventing the portion size effect

Laboratory study: watching movie clips and ads

Portion size manipulation: Snacking on M&M's from large or small pack

Goal prime manipulation: Control ads vs. diet-related ads

DV: amount of M&M's eaten

Control condition

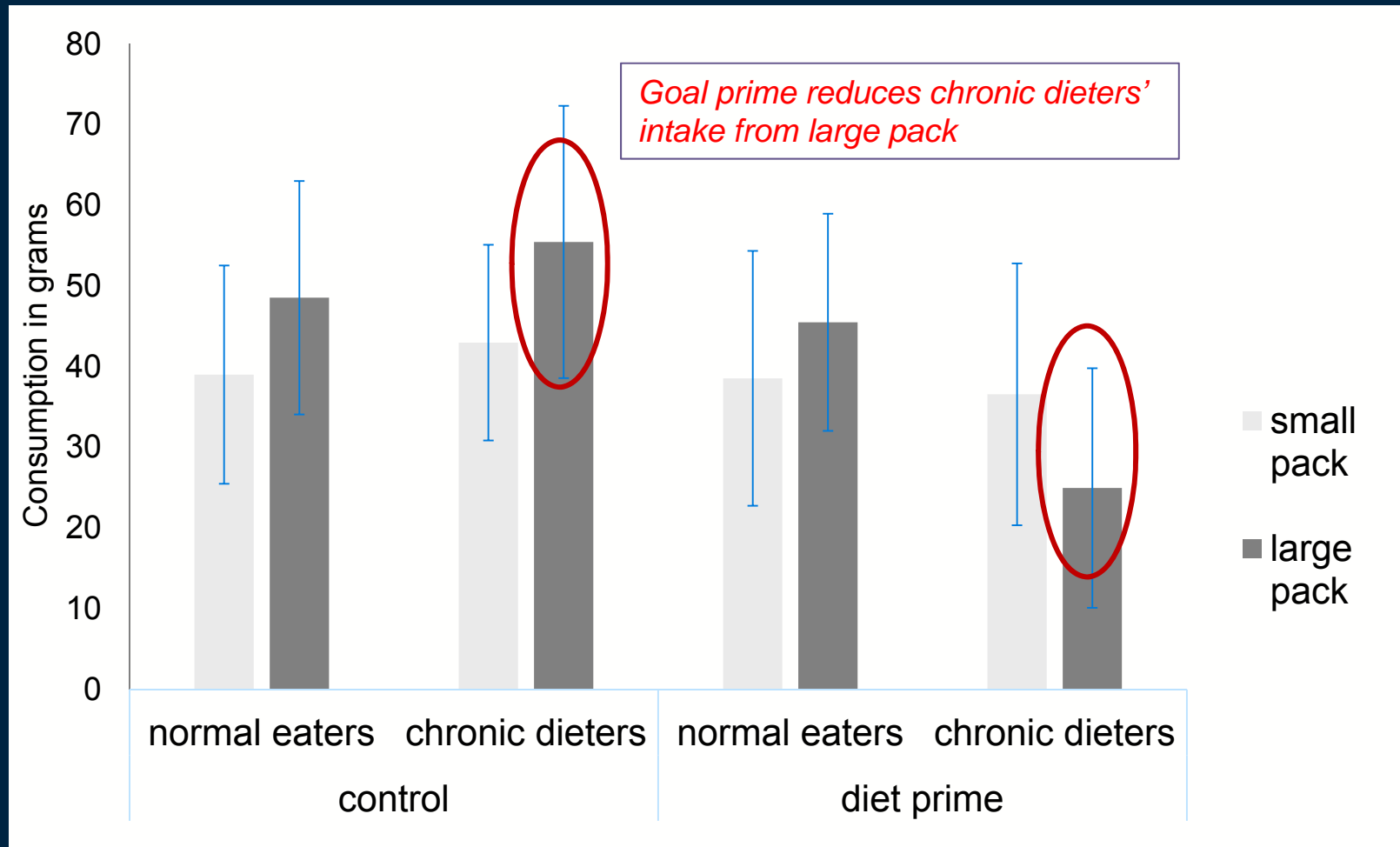


Diet prime condition



Versluis & Papies, *in revision*

Preventing the portion size effect



Summary

Subtle environmental cues can trigger healthy behaviour, among those who value the primed concept

Different from *nudges* and structural changes to the environment, which change the choice set; different from re-training cue/behaviour-reward associations, which change the underlying cognitive structures

Goal primes: subtle cues operating in existing environments and cognitive structures

Long-term implications: Repeated goal pursuit in response to primes in stable context might be conducive to healthy habit formation (see Lally & Gardner, 2013) and thus change cognitive structures through behavior

Thoughts for the future

Effective in conditions of conflicting goals, where environment typically activates short-term hedonic goal vs. long-term “investment goal”

Other possible domains of application:

- other health behaviours (alcohol, fluid intake, exercise, personal transport)
- interpersonal relations (work relationships, intimate relationships, parenting & education)
- environmental behaviour (energy use, travel, purchasing consumer goods)
- ...

A proposal for effective application

Five conditions for effective goal primes:

1. Communicator needs to know **target group**,
2. ...their **long-term goals**,
3. ...how to best **activate** these
4. ...at the **right time**.
5. Receiver needs to know **which goal-directed behaviour** to perform to pursue the primed goal, in the given situation.

Example: using goal primes to reduce alcohol consumption

1. Target group: Who is motivated to reduce – students, parents, pensioners...?
2. Long-term goals: for which reasons – physical health, productivity, brains, looks...?
3. How to prime : which words, symbols, pictures etc. best represent this goal?
4. When to prime: when is the critical decision made? Entering the pub, at the bar, in the restroom....?
5. What to do: which behaviours serve primed goal – order soda, water, go home...?



Conclusions

Goal primes can be effective
intervention tools

Targeted at motivated individuals

Support people in pursuing the
goals they truly want to
achieve



Thank you!

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Mike Keesman

Guido van Koningsbruggen

Irma Potjes

Saskia Schwinghammer

Harm Veling

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