



University of St.Gallen



Sustainable Consumption and Behaviour Change

Week 3: Insights of psychology on behaviour change
Stefanie Lena Hille, Assistant Professor on Energy
Consumer Behaviour

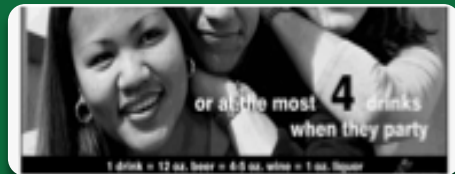
*“From insight
to impact”* 



Content of today's session



Conventional behaviour change instruments



Power of social norms



Breaking habits



Positive spillover & moral licensing



Group work

Traditional behavior change instruments widely in use

1



Direct regulation

Examples: water use restrictions, technical standards of appliances, etc.

2



Economic instruments

Examples: Waste charges, grants for insulation, etc.

3



Labeling and information campaigns

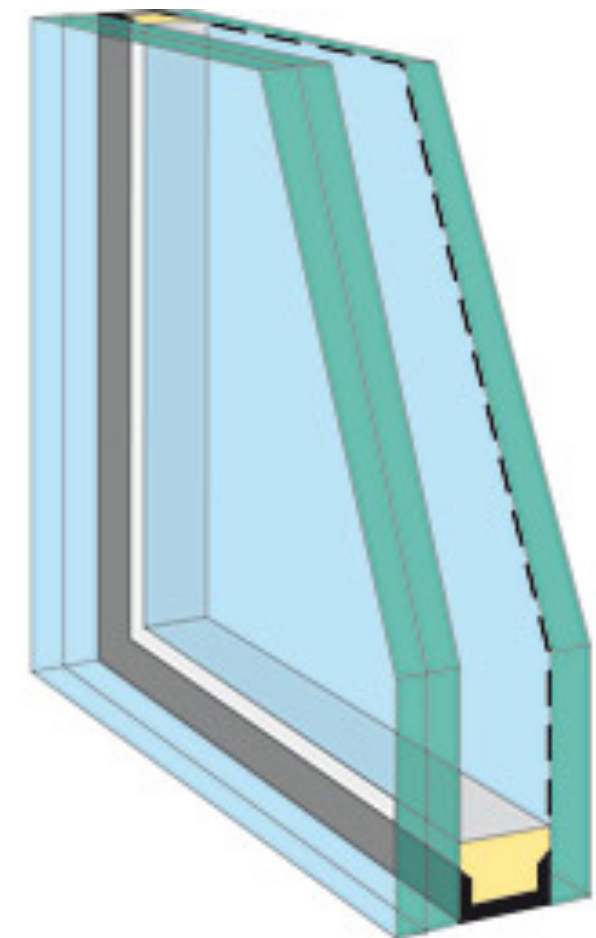
Examples: eco-labels, information campaigns, etc.

Source: Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?. *Environmental education research*, 8(3), 239-260



1) Direct regulation

- Often regulation constrains the choices available to consumers
- Examples of direct regulation:
 - **Standards** (e.g. minimum efficiency standards for buildings, vehicles, products; maximum CO2 emissions allowed for new cars, etc.)
 - **Bans/mandates** (e.g. mandated double-glazing of windows of new buildings, etc.)





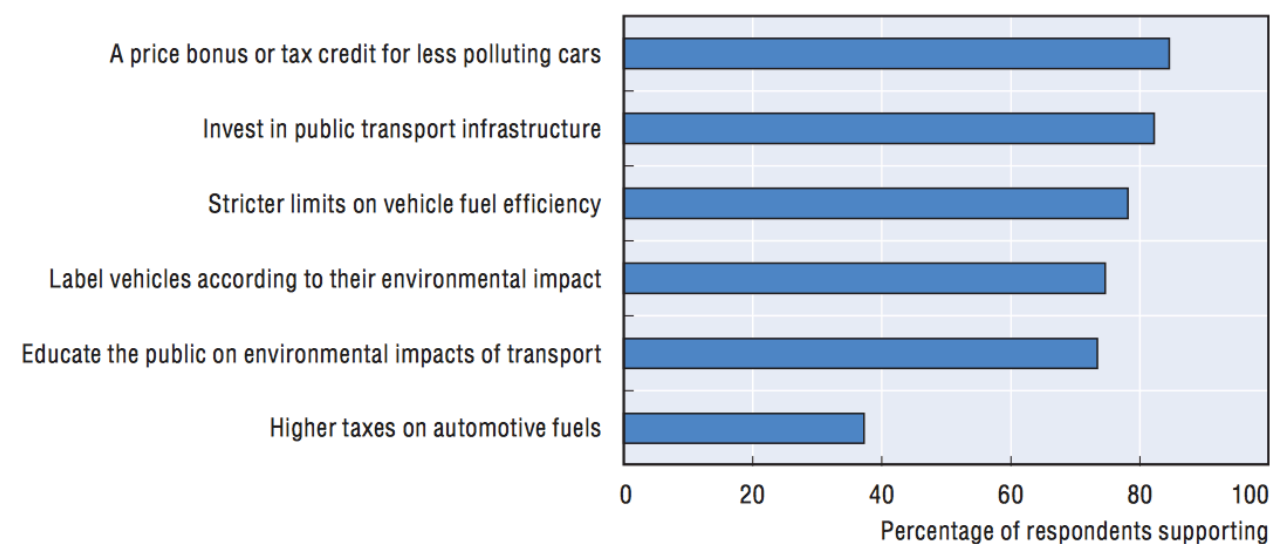
2) Economic instruments

- Direct effect on the relative prices of different goods and services
- Promote consumption choices which reflect associated environmental impacts (even if consumers are not aware of the impacts)
- Examples of economic instruments:
 - **Taxes/charges** (e.g. fuel taxes, registration taxes, charges for road usage, water charges, electricity charges, unit-based waste charges, etc.)
 - **Grants/subsidies** (e.g. grants for installation of solar panels, reduced sales tax on electric cars, reduced VAT for energy-efficient and water-efficient appliances, etc.)



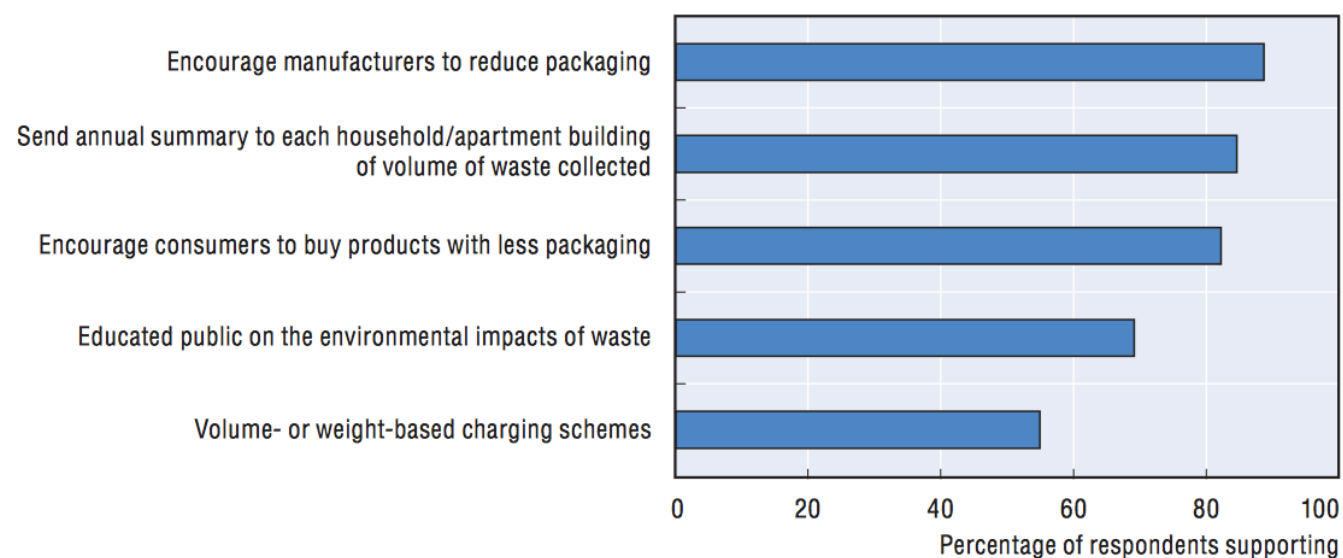
Public support for policy measures

Figure 1.7. **Support for different policies to address vehicle CO₂ emissions**



- Most people support for measures in which consumers stand to gain
- Least support for measures for which consumers will be liable

Figure 1.8. **Support for different policies to reduce household waste generation**





Rewards and incentives often short-lived

- In general, larger incentives or disincentives lead to greater behavioural responses
- Incentives/rewards are often expensive
- Effects of financial incentives are often surprisingly short-lived, with behaviour reverting back to baseline levels upon removal of the reward





Rewards and incentives might even backfire

- People may even respond negatively to extrinsic rewards (e.g. showing loss of motivation)
- If a person is intrinsically motivated to be altruistic (e.g. volunteer work), giving monetary rewards to incentivize the desired behaviour may have a counteractive effect by “crowding out” the intrinsic motivation (example blood donation)
- When intrinsic motivation is high, intrinsic rewards in the form of praise or public recognition may have stronger and more consistent behavioural effects than monetary rewards





Financial penalties

- Financial penalties are usually expected to act as a disincentive to undesired behaviour
- However, they have been found to sometimes have the unintended effect of legitimising, and thus increasing such undesired behaviour (example day-care center in Israel)





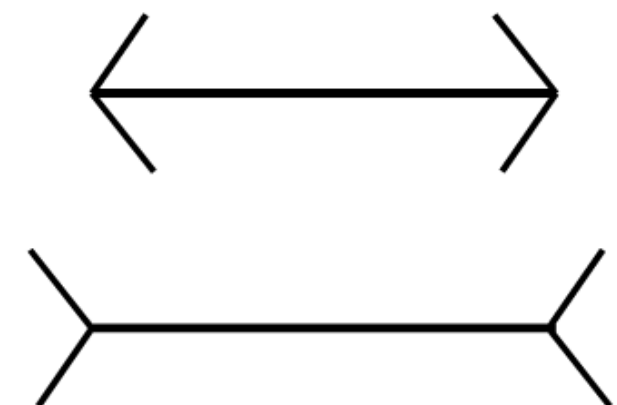
3) Information campaigns



- Numerous studies document that information & education alone often has little or no effect upon sustainable behaviour
- Still, information provision should be a component of a behaviour change program

The rational consumer is not more than an ideal type

- Too much information could actually worsen things as it might create a poverty of attention
- Studies paint a more realistic picture of consumers, that are influenced by:
 - Restricted capacity to deal with information
 - Limited willingness to make informed decisions (“the brain is lazy”)
 - Framing and context of information



Source: Micklitz, H. Oehler, A. Piorkowsky, M., Reisch, L., Strünck, C. (2010): The consumer – trusting, vulnerable or responsible? Plea for a differentiated strategy in consumer policy.



Role of trust in information programs

- The efficacy of public awareness campaigns can often depend on the perceived credibility of the communication source
- If the source of a message seems untrustworthy or incompetent, people can be skeptical and either disengage, or react defensively to the information
- In delivering messages to consumers, attention should be paid to establishing **two broad types** of trust in the message source:
 - Competence-based trust (i.e. perceived expertise)
 - Integrity-based trust (i.e. perceive honesty, fairness, concern for public interest)



Source: Frederiks, E. R., Stenner, K., & Hobman, E. V. (2015). Household energy use: Applying behavioural economics to understand consumer decision-making and behaviour. *Renewable and Sustainable Energy Reviews*, 41, 1385-1394.



Role of messenger of information

- We are open to influence from people in:
 - Authority (an expert, someone with legitimate power to direct our actions, etc.)
 - We like
- Effects are less likely from authority than when we are influenced by someone we like



**Neighborhood Solar Champions**

EARN

✓ Earn 10% off your next purchase when a someone you refer purchases from us.

10 % OFF

Seeking Solar Champions!

Would you like to become a Solar Champion in your neighborhood?

The [San Francisco Department of the Environment](#) and the [Pacific Energy Center](#) are offering free solar training for SF citizens interested in helping spread the word about solar in their neighborhoods.

What: Neighborhood Solar Champions Training Course
Where: Pacific Energy Center, 851 Howard Street
San Francisco 94103
Cost: Free!

Call (415) 355-3773 to register for an upcoming course.

Requirements:

- Interest in promoting solar energy in your neighborhood
- Commitment to giving at least two presentations in your neighborhood a year
- Comfortable with public speaking
- Ability to participate one full day of training
- No prior solar technical experience necessary (though helpful)

For more information, please contact:
Jason Houck, Renewable Energy Associate
SF Department of the Environment
Email: jason.houck@sfgov.org
Tel: (415) 355-3773

We look forward to working with you as a Neighborhood Solar Champion!



Traditional instruments should be complemented with softer psychological motivators

- Policy-makers should also consider what is known from behavioural and social science research about psychological motivators that can be at least as effective, less yet costly

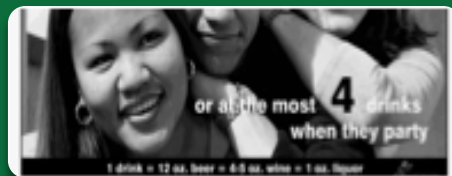




Content of today's session



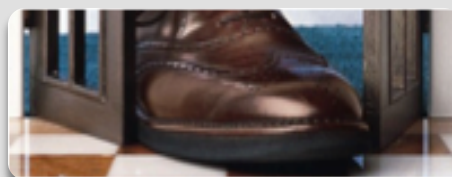
Conventional behaviour change instruments



Power of social norms



Breaking habits



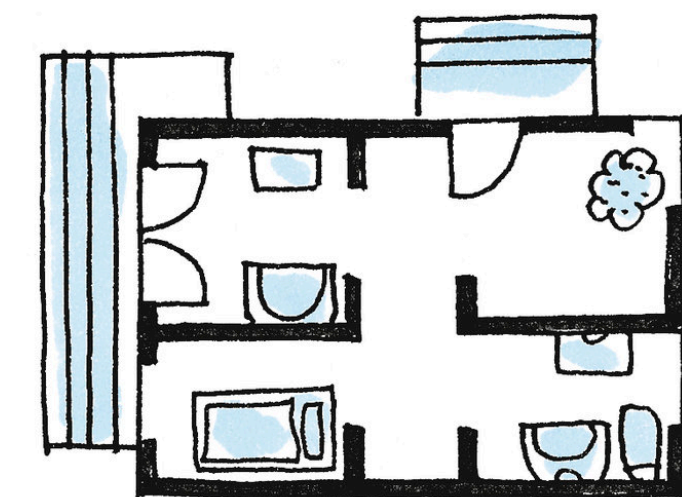
Positive spillover & moral licensing



Group work

Influence of social norms on human behaviour

- Human behaviour always takes place in a certain environment



- In each of these contexts, there are social norms applicable

Source: Lindenberg, S. (2012). How cues in the environment affect normative behavior. *Environmental Psychology: An Introduction*, New York: Wiley, 119-128.



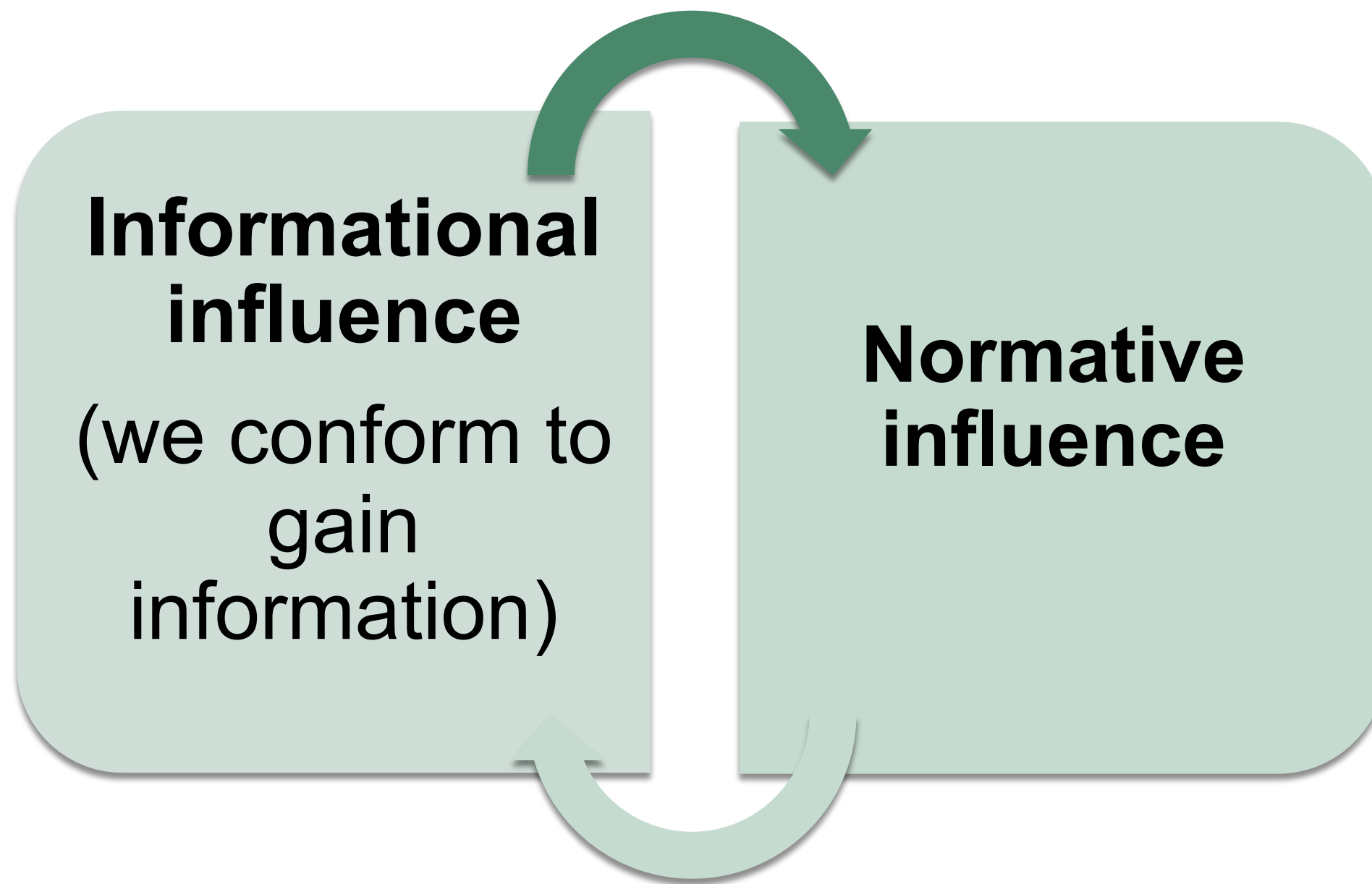
The Ash Experiment (1951)



Source: <http://www.youtube.com/watch?v=TYIh4MkcfJA>



Two types of influence that explain these results





Two types of social norms

- **Social norms** are “*rules and standards that are understood by members of a group, and that guide and/or constrain human behavior without the force of law*”
- Social norms differ from personal norms which are rules or standards for one’s **own behavior**

Injunctive norms refer to the behavior commonly approved or disapproved (e.g. littering)

Descriptive norms refer to the behavior shown by most group members (e.g. most people in the Netherlands use bicycle to cover short distances)



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The bystander effect: witnessing the actions of other people has a powerful effect on behaviour



Source: <http://www.youtube.com/watch?v=z4S1LLrSzVE>



Possible explanations for the bystander effect

- **Diffusion of responsibility:**

- When large group is confronted with an emergency, each person tends to assume that “someone else will take care of it”
- In this sense, the responsibility is “diffusing” from one person to another

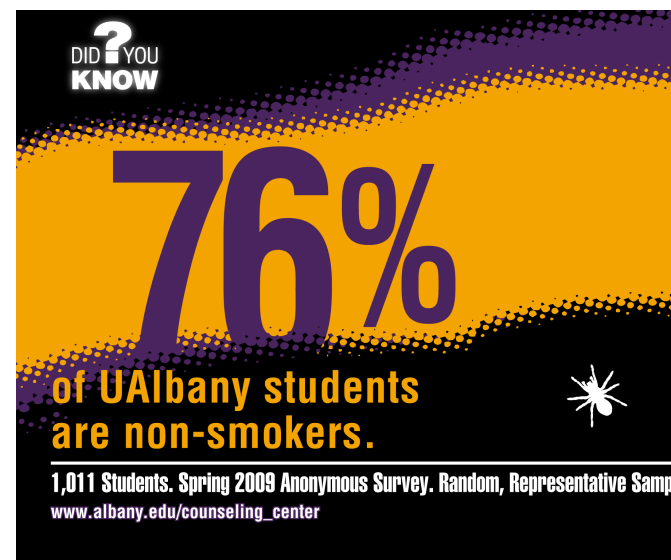
- **Normative social influence:**

- Bystanders monitor the reactions of other individuals in an emergency situation to see if others think that it is necessary to intervene
- If nobody is intervening, an individual will feel less obliged to assist, thus conforming to the actions of the majority



Influence of social norms in written form on behavior

- Recent research has shown that **direct observation** of others is not required for normative social influence to have its effect
- Instead, communicating a descriptive norm (how most people behave in a given situation) via **written information** can induce conformity to the communicated behavior



Source: Nolan, J. M., Schultz, P. W., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2008). Normative social influence is underdetected. *Personality and social psychology bulletin*, 34(7), 913-923; Parks, C. D., Sanna, L. J., & Berel, S. R. (2001). Actions of similar others as inducements to cooperate in social dilemmas. *Personality and Social Psychology Bulletin*, 27, 345-354. 22

Influence of social norms on tax return behavior

Information about the fact that tax money funded public goods, e.g. environmental protection

Information about legal risks of not paying taxes

Increased information on filling out tax return form

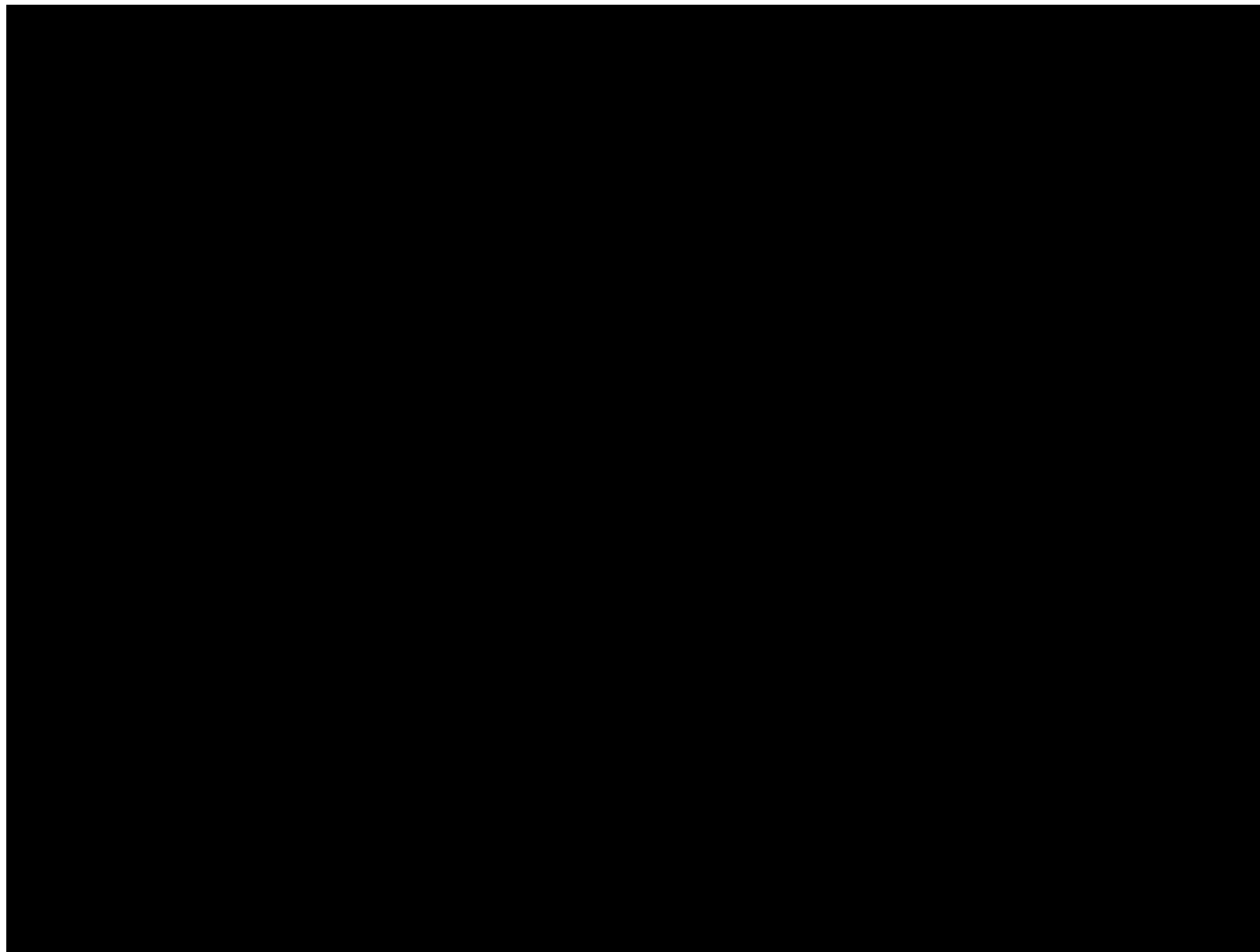
Information that 90% of people had already fulfilled their tax return obligations

Which kind of information was most successful in changing people's behavior?

Source: Sunstein, C. and R. Thaler (2008) *Nudge: improving decisions about health, wealth, and happiness*, New Haven and London: Yale University Press



Iron eyes Cody television commercial



How
effective do
you consider
this ad?



Message at Petrified Forest National Park (Arizona):

- Message at Petrified Forest National Park (Arizona):
 - *“Your heritage is being vandalized every day by theft losses of petrified wood of 14 tons a year, mostly a small piece at a time”*



How effective do you consider this message?



Aligning descriptive and injunctive norms

- Under certain circumstances, normative information can backfire to produce the opposite of what a communicators intends to achieve

- When the socially undesirable action is commonplace (e.g. lots of littering), a focus on the injunctive (and not the descriptive norm) is recommended

- When the socially desirable action is commonplace, aligning descriptive norms (what other people typically do) with the injunctive norm (what other people typically approve or disapprove) can optimize the power of normative appeals



Power of cross-norm inhibition effects

- Keizer, Lindenberg and Steg (2008) found in multiple experiments that when people observe that others violate a certain social norm or legitimate rule, they are more likely to violate even other norms or rules, which causes disorder to spread (and the other way around)





Cross-norm effect of cues on respecting rules

- **Situation 1:** The entrance to a parking lot is unexpectedly closed off (physically and with a sign from the police)
- Next entrance in 200 m & but possibility to squeeze through



- **What will people do?**
- Keizer, Lindenberg and Steg (2008) found that **27%** of the people who came for their car squeezed through the fence

Source: Keizer, K., Lindenberg, S., & Steg, L. (2008). The spreading of disorder. *Science*, 322(5908), 1681-1685; Lindenberg, S. (2012). How cues in the environment affect normative behavior. *Environmental Psychology: An Introduction*, New York: Wiley, 119-128.



Cross-norm effect of cues on respecting rules

- **Situation 2:** In addition to situation 1, four bicycles were locked to the fence while a sign prohibited doing so



- **What will people do?**
- Keizer, Lindenberg and Steg (2008) found that **82%** of the people who came for their car squeezed through the fence
- **Conclusion:** A cue in the environment that others did not keep to one rule (concerning the bicycles), made many people disregard another rule (concerning the detour)

Source: Keizer, K., Lindenberg, S., & Steg, L. (2008). The spreading of disorder. *Science*, 322(5908), 1681-1685; Lindenberg, S. (2012). How cues in the environment affect normative behavior. *Environmental Psychology: An Introduction*, New York: Wiley, 119-128.



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Cross-norm effect of cues on littering behaviour

Condition 1



Condition 2



What do you think was the percentage that littered a flyer in these conditions?

Source: Keizer, K., Lindenberg, S., & Steg, L. (2008). The spreading of disorder. *Science*, 322(5908), 1681-1685.



Group work

Develop an idea how this insight could be used for designing a behavior change campaign to foster environmentally friendly behavior?

Further readings:

- Aronson, E. & O'Leary, M. (1982): The relative effectiveness of models and prompts on energy conservation: A field experiment in a shower room. *Journal of Environmental Systems*, 12, 219-224
- Nolan, J. M., Schultz, P. W., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2008). Normative social influence is underdetected. *Personality and social psychology bulletin*, 34(7), 913-923.
- Cialdini, R. B. (2003). Crafting normative messages to protect the environment. *Current directions in psychological science*, 12(4), 105-109.
- Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological science*, 18(5), 429-434.
- Schultz, P.W., Khazian, A. & Zaleski, A. (2008): Using normative social influence to promote conservation among hotel guests. *Social influence*, 3, 4-23.
- http://www.inudgeyou.com/wp-content/uploads/2012/11/Opowerreport_540x491.jpg

Content of today's session



Conventional behaviour change instruments



Power of social norms



Breaking habits



Positive spillover & moral licensing

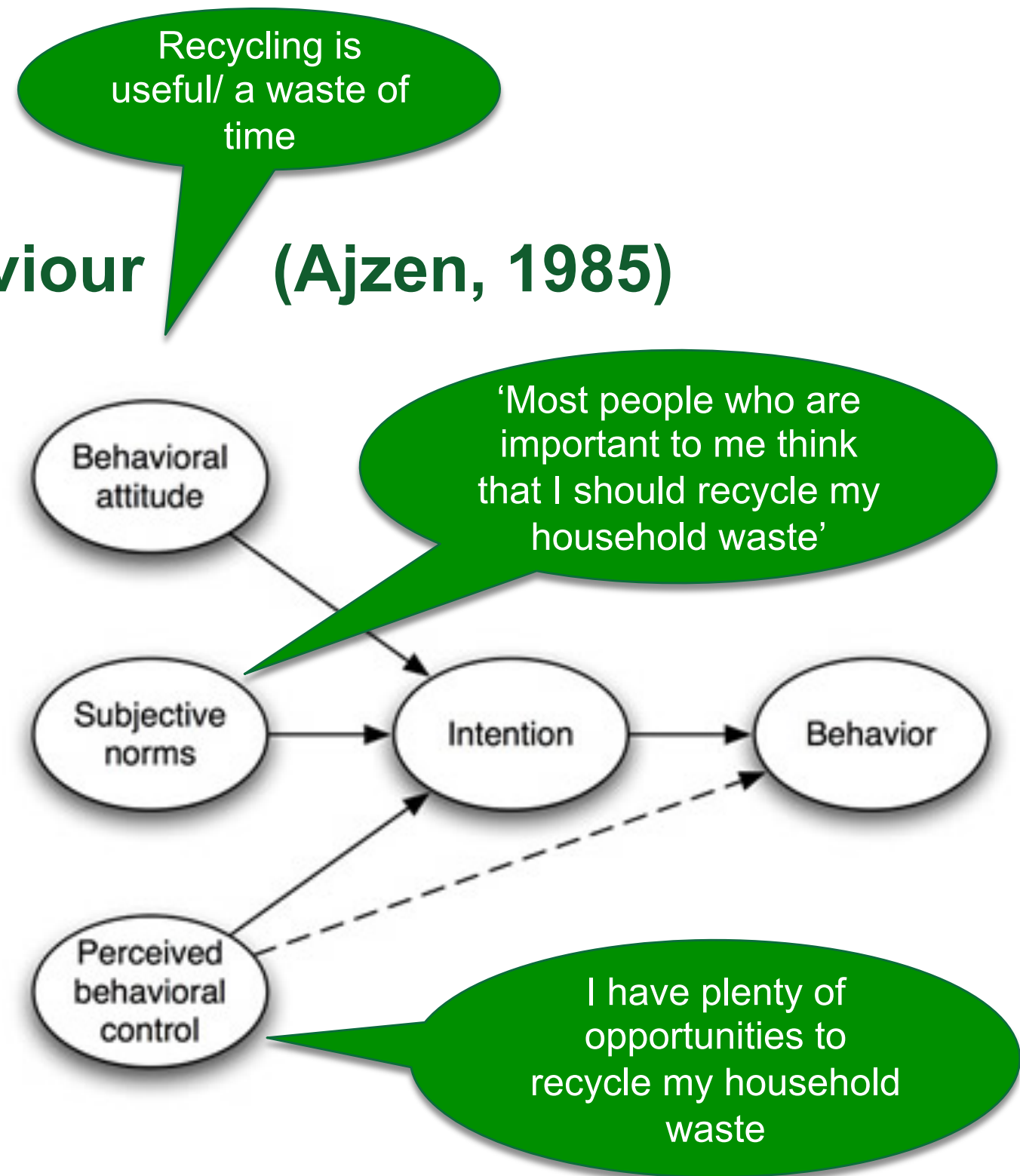


Group work



Theory of planned behaviour (Ajzen, 1985)

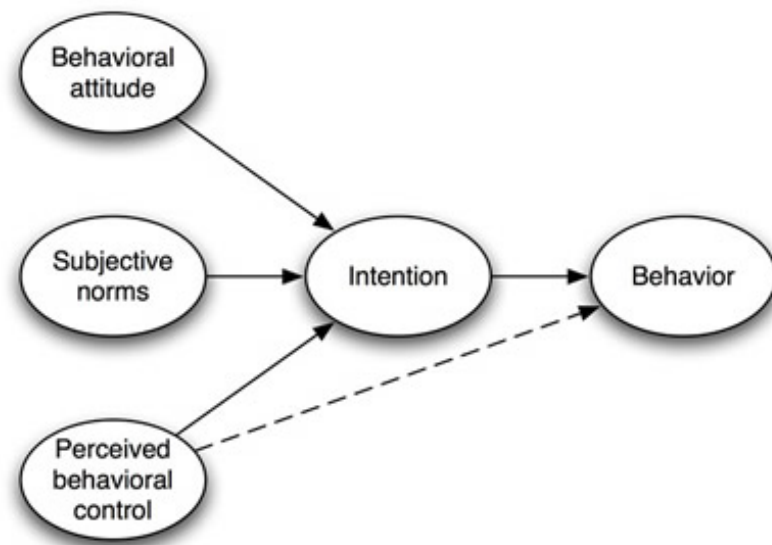
- Theory is based on the assumption that behaviour results from the intention to engage in specific behaviour
- The stronger one's intention, the more effort a consumer will make to conduct a particular behaviour, and the more likely he or she will engage in the behaviour



Source: Steg, L., van den Berg, A. E., & De Groot, J. I. (Eds.). (2012). *Environmental psychology: An introduction*. John Wiley & Sons. Ajzen, I. 1985. "From intentions to actions: A theory of planned behavior". In *Action-control: From cognition to behavior*, Edited by: Kuhl, J and Beckman, J. 11–39. Heidelberg: Springer; Ajzen, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50: 179–211.



Role of other factors in the TPB model



- The theory of planned behavior assumes that **other factors**, such as socio-demographics (age, gender, etc.), general beliefs and values, etc. influence behavior **indirectly** via attitudes, subjective norms or perceived behavioral control (PBC)
- Example: people living in the countryside may have a lower PBC to take the bus than people living in cities
- Nevertheless, it was shown by several studies that the predictive power of the TPB increases when other predictors are included in the model (e.g. habits, personal norms, etc.)

Source: Steg, L., van den Berg, A. E., & De Groot, J. I. (Eds.). (2012). *Environmental psychology: An introduction*. John Wiley & Sons. Ajzen, I. 1985. "From intentions to actions: A theory of planned behavior". In *Action-control: From cognition to behavior*, Edited by: Kuhl, J and Beckman, J. 11–39. Heidelberg: Springer; Ajzen, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50: 179–211.



Influence of habits might be stronger than that of intentions

- The first time a behaviour is performed, intentions should be a strong predictor
- The more often the same behaviour is repeated, the stronger becomes the influence of habits, until it is stronger than that of intentions
- Behaviour performed daily or weekly in stable contexts is predicted strongly by past behaviour and the intention-behaviour link is significantly weaker





Habits are important predictors of environmental behaviours

- In the environmental domain, habits appear to be important predictors of many different behaviours, such as travel mode choice, energy use, food purchase, etc.
- Many environmental behaviours can be considered habitual because they are deeply implemented into our everyday routines



Source: Klöckner, C. A., & Verplanken, B. (2012). Yesterday's habits preventing change for tomorrow? The influence of automaticity on environmental behaviour. *Environmental Psychology–An Introduction*, 197-209; Verplanken, B. & Aarts, H. (1999): Habit, attitude, and planned behaviour: Is habit an empty construct or an interesting case of automaticity? *European Review of Social Psychology*, 10, 101-134.



Habits lead to less interest in information on alternative behaviour

- People with strong habits not only inspect fewer pieces of information but also implement fewer pieces in the actual decision making process
- Providing information on the negative impact of behaviour or procedural information on how to perform the positive alternative may not be perceived or processed if behaviour is habitualised
- Changing habitual behavior is extremely difficult → Established habits have to be deactivated first



Source: Klöckner, C. A., & Verplanken, B. (2012). Yesterday's habits preventing change for tomorrow? The influence of automaticity on environmental behaviour. *Environmental Psychology–An Introduction*, 197-209; Aarts, H. & Custers, R. (2009): Habit, action, and consciousness. In W.P. Banks (Ed.), *Encyclopedia of Consciousness* (Volume 1, pp. 315-328), Oxford: Elsevier.



Intentions & Commitments

- In a commitment intervention, people are asked to pledge (commitment) to change behaviour
- Example of research:
 - A sample of registered voters were approached one day prior to a U.S. presidential election and asked: “Do you expect you will vote or not?”
 - All agreed that they would vote
 - Compared to voters who were not asked this simple question, their likelihood of voting increased by 41%





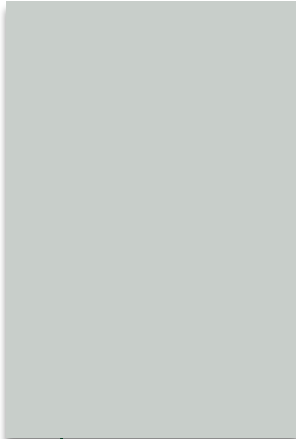
Intentions & Commitments

- When individuals commitment to something, it often alters the way they perceive themselves
- When later to comply with the commitment, there is a strong internal pressure to behave “consistently”
- It can be assumed that a commitment affects behaviour change via reduction of cognitive dissonance
- Cognitive dissonance: we like our attitudes and behaviour to be consistent; when they are inconsistent we feel tension (e.g. “I promised this, but I am not acting accordingly”)

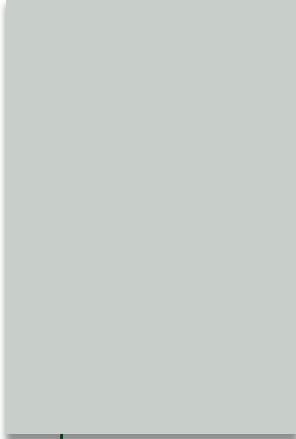
Source: Bachman, W. & Katzev, R. (1982): The effects of non-contingent free bus tickets and personal commitment on urban bus ridership. *Transportation Research*, 16A, 103-108; Matthies, E., Klöckner, C. A., & Preißner, C. L. (2006). Applying a modified moral decision making model to change habitual car use: how can commitment be effective?. *Applied Psychology*, 55(1), 91-106; Steg, L., van den Berg, A. E., & De Groot, J. I. (Eds.). (2012). *Environmental psychology: An introduction*. John Wiley & Sons; Festinger, L. (1962). Cognitive dissonance. *Scientific American*.



Using commitments effectively



Written commitments appear to be more effective than verbal commitments



Public commitments appear to be more effective than private commitments (e.g. publishing it in a newspaper)

Further readings:

- Thøgersen, J. & Møller, B. (2008): Breaking car use habits. *Transportation*, 35, 329-345.
- Klöckner, C. A., & Verplanken, B. (2012). Yesterday's habits preventing change for tomorrow? The influence of automaticity on environmental behaviour. *Environmental Psychology—An Introduction*, 197-209.
- Fujii, S., Gärling, T., & R. Kitamura 2001. Change in drivers' perceptions and use of public transport during a (...). *Environment and Behavior* 33(6), 796–808.



Group discussion

How could that insight on commitments be used for changing behavior in the environmental field?

What other ideas do you have to deactivate habits to use the car?



Content of today's session



Conventional behaviour change instruments



Power of social norms



Breaking habits



Positive spillover & moral licensing



Group work



Reverse relationship between behaviour and attitudes?

- Social psychological evidence suggests that some behaviours are not mediated by either attitude or intention at all
- In fact the reverse correlation, in which attitudes are inferred from behaviours, is sometimes observed

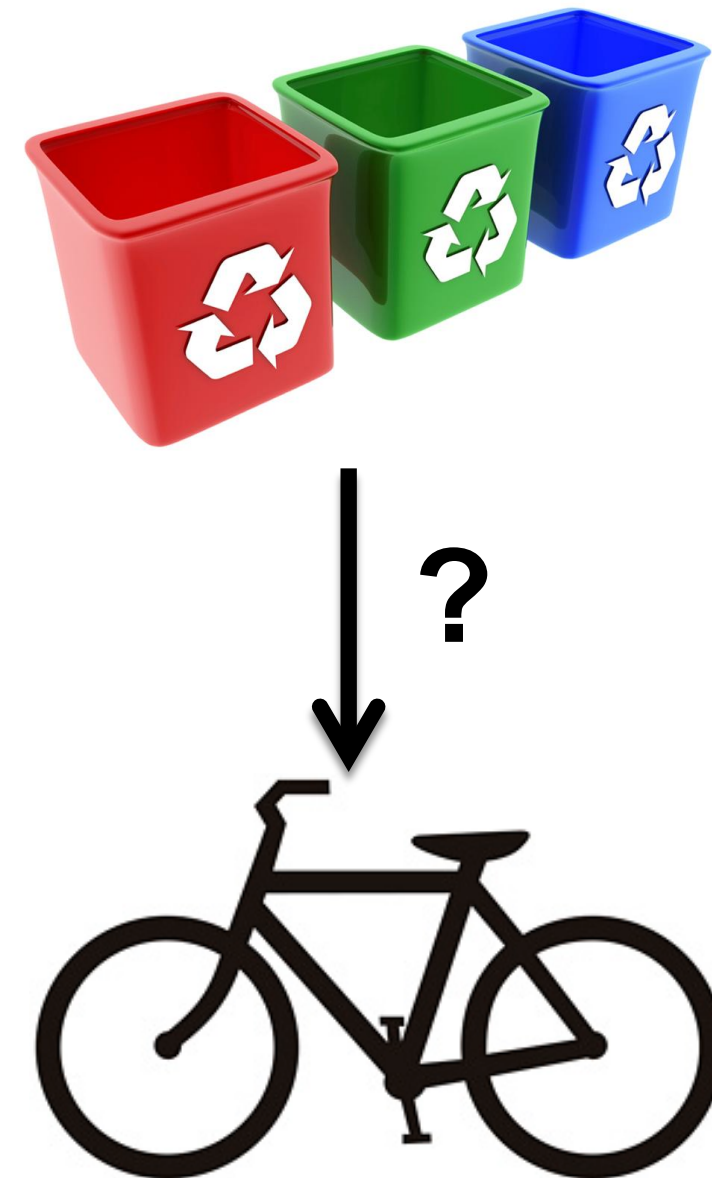


Source: Jackson, T. (2005): Motivating sustainable consumption: A review of evidence on consumer behavior and behavioral change. Sustainable Development Network Research.



Positive spill-over on other behaviours

- People may recycle simply as a result of changes in municipal waste collection services, without even having decided that “*recycling is a good thing*”
- But once they start recycling, some people will infer from this that they are to some extent “green”
- Possibility that this new attitude will “spill over” into other behaviors (e.g. cognitive dissonance)?





Positive spill-over on acceptance renewable energy projects

- The “not in my backyard” (NIMBY) opposition is a growing challenge that policy makers & wind developers face
- NIMBY describes resistance to specific projects close to one’s area while exhibiting acceptance of similar projects elsewhere
- Evidence that **opposition decreases, rather than increases** with the degree of being directly affected by a specific wind power project
- Being exposed to a wind farm (even involuntarily), can lead to change in attitudes, which could spill-over in other domains

Source: Wüstenhagen, R., Wolsink, M., & Bürer, M. J. (2007). Social acceptance of renewable energy innovation: An introduction to the concept. *Energy policy*, 35(5), 2683-2691; http://www.socialacceptance.ch/images/State-of-the-Art_Acceptance_Wind_Energy_Ireland.pdf

Not in my back yard! Green energy MP fights turbine plans in his Suffolk constituency

- Tim Yeo chairs Common energy and climate change committee
- Has previously called for 'bribes' for communities to accept wind farms
- But he has joined campaign against plans in his South Suffolk seat

By JOHN STEVENS and TAMARA COHEN

PUBLISHED: 17:02 GMT, 24 January 2014 | UPDATED: 03:15 GMT, 25 January 2014



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View comments

A senior Tory MP and leading supporter of green energy is risking accusations of hypocrisy after objecting to plans for a giant wind turbine in his constituency.

As chairman of the Commons energy and climate change select committee, Tim Yeo has called for the urgent building of renewable energy sources and claimed it may be necessary 'to bribe' communities to accept wind farms.

The former environment minister also has close links to green firms and last year raked in more than £73,000 from directorships in the industry.

But he has joined local residents in opposing





Moral licensing – a compensatory ethic



(Marc Rosenthal for The Washington Post)



Moral licensing – a compensatory ethic

- Tiefenbeck and colleagues carried out a water conservation campaign at an apartment complex with 200 similar units in the Boston area
- Only ½ of residents received weekly feedback on their water consumption

- Group **reduced water consumption** relative to control group
- Group **increased electricity consumption** relative to control group

- People who get the impression that they are already “*doing something for the environment*” might feel “*morally licensed*” to make less environmental choices in other domains





Moral licensing – a compensatory ethic

- Higgins' (1996) **self-discrepancy theory**: The desired “moral self” serves as a reference point
- People tend to experience emotional distress when they perceive that they **are not living up to their moral aspirations** and are more likely to engage in moral behaviors to compensate
- The compensatory mechanisms can be reversed, producing a sense of **entitlement to some moral laxity**, when perceiving that their behavior has matched or even **exceeded their ideal self**

Source: Zhong, C. B., Liljenquist, K. A., & Cain, D. M. (2009). Moral Self-Regulation. Psychological perspectives on ethical behavior and decision making, 75; Higgins, E. T. (1996). The "self digest": self-knowledge serving self-regulatory functions. Journal of personality and social psychology, 71(6), 1062; Thøgersen, J. (2012): When one pro-environmental behaviour leads to another.. Or not? Presentation at BehaviourWorks Australia.



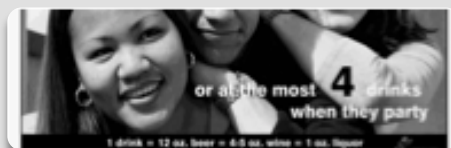
Implications for behavior campaigns

- People do not make decisions in a **vacuum**, but their decisions are **embedded in a history of behaviors**
- There is a **need for more studies** to determine whether **evidence for moral licensing** can be found in other contexts and whether the effect is only a short-term phenomenon
- There might be a need to **rethink environmental messages** of campaigns
- People should know that their actions are important for the environment, but they should not get the impression that they are already “doing enough” and rest on their laurels

Content of today's session



Conventional behaviour change instruments



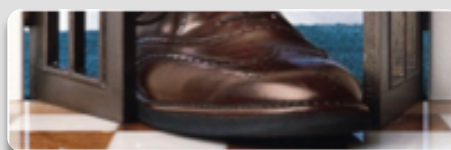
Power of social norms



Power of cross-norm effects



Breaking habits



Positive spillover and moral licensing



Group work



Group work (4 people)

- Imagine that you start working in the Human Resource Department of a company. Your task is to develop a company-internal behavior change campaign with the aim to increase the number of your employees that regularly commute by public transportation or bike to work (instead of using their own car).
- Identify four measures that can be directly introduced by the employer and discuss whether you think they will be effective or ineffective (explain why) or whether they are associated with any possible risks.
- Keep in mind that your budget available is very small!
- Use a flipchart and leave some space for next week, where you will update the flipchart integrating also the insights from behavioral economics!



4 – Insights from behavioral economics on behavior change (October 21)



- ✓ Power of bounded rationality
- ✓ Power of framing effects
- ✓ Power of hyperbolic discounting
- ✓ Power of direct feedback, prompts and gamification
- ✓ Power of the default option
- ✓ Etc.

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