University of St.Gallen



Sustainable Consumption and Behaviour Change

Week 4: Insights of behavioural economics/psychology on behaviour change

Stefanie Lena Hille
Asst. Professor on Energy Consumer Behaviour

"From insight to impact"

University of St.Gallen

Content of today‘s session



Power of framing



Power of feedback and prompts



Power of gamification and emotions



Power of the default option



Continuation of the group work

University of St.Gallen

People often do not behave in a complete rational way, as in real life people…

- Often have to take decisions under time pressure and rely on mental shortcuts
- Are influenced by emotions and moods
- Are influenced by other people
- Are often not self-controlled and far sighted and disciplined
- Are influenced by the choice architecture



Source: Adapted from Reisch, L. (2010): Nudging consumers into more sustainable lifestyles: Lessons from Behavioural Economics: http://ec.europa.eu/research/biotechnology/eu-us-task-force/pdf/20th-meeting/sustainable_lifestyles_en.pdf

University of St.Gallen

Framing: Loss aversion

- The way (e.g. format, sequence, etc.) a decision (or different elements thereof) are presented lead often to different decisions
- Example: many tradeoffs can be stated in two, mathematically equivalent ways (e.g. yoghurt, survival rate, etc.):

90%
survival rate

10%
mortality rate



- Loss aversion = People tend to focus on losses much more than on gains & people dislike losing more than they like winning

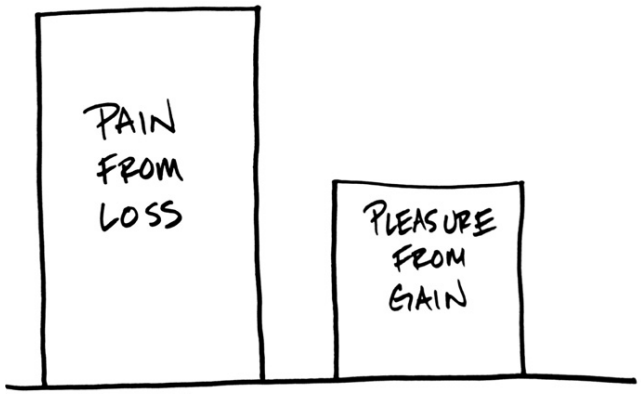
Source: Tversky, A., & Kahneman, D. (1986). Rational choice and the framing of decisions. *Journal of business*, p. 251-278.

University of St.Gallen

Endowment effect explained by loss aversion

- People tend to place more value on items that they already have in their possession (i.e. that is part of their endowment)
- The satisfaction people lose from giving up what they already have is greater than the satisfaction they gain from obtaining something they did not previously own





©2014 Behavior Gap

Source: Thaler, R. (1980): Toward a positive theory of consumer choice. *Journal of Economic Behavior and Organization*, March, 39-60.

University of St.Gallen

The endowment effect (experiment 1)

- Students in every other seat were given university mugs
- Then students reported how much they would be willing to sell the mug for ($4.50)
- Students who did not get a mug reported the price they would be willing to pay to get one ($2.25)



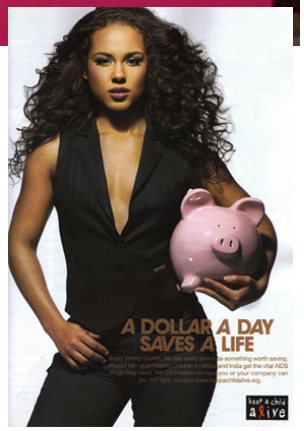
Source: Kahneman, D., Knetsch, J., Thaler, R. (1990): Experimental tests of the endowment effect and the Coase theorem. *Journal of Political Economy, 98*(6), 1325-1348; Slide adapted from Dr. Russell James III from the Texas Tech University.

University of St.Gallen

Framing: Cost framing

- Reframing an aggregate expense into a series of smaller, daily expenses → prices seem to be lower and thus more attractive to consumers (pennies-a-day strategy)





You can sleep in comfort on one of their matrasses for only 10c a night!





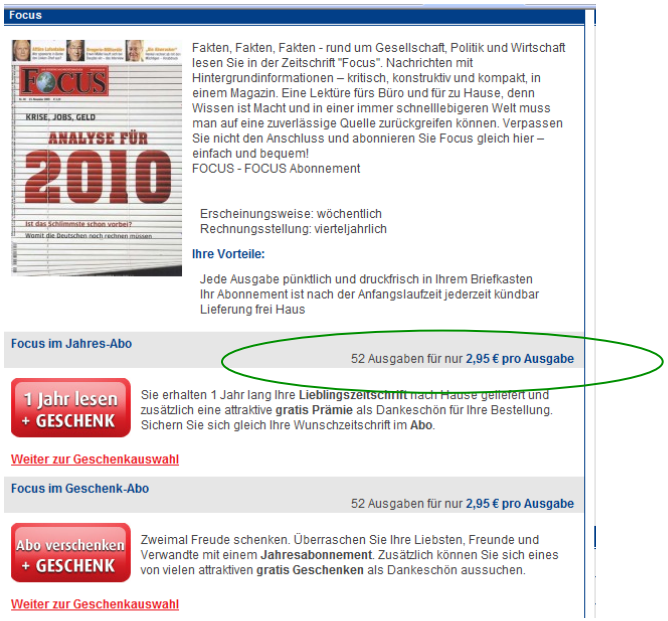
If you can afford this (showing a bottle of Evian) then you can afford this (showing a luxury sofa bed priced at $1.50 a day)



Source: Gourville, J. T. (1998). Pennies-a-day: The effect of temporal reframing on transaction evaluation. *Journal of Consumer Research*, *24*(4), 395-403.

University of St.Gallen

Framing: Cost framing



1 cigarette pack a day:
3.000 CHF/ year or
30.000 CHF/ 10 years



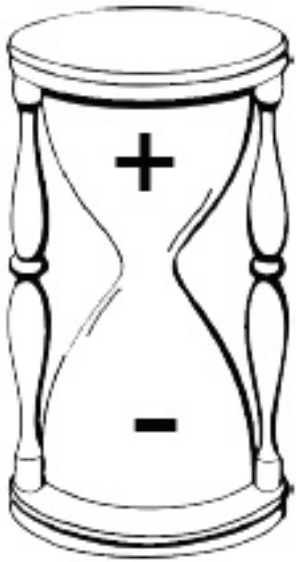
- **Aggregating the costs for undesirable behaviors**/products aims at motivating people to change their behavior when faced with its **long-term financial implications (Reverse pennies-a-day strategy)**

Source: Gourville, J. T. (1998). Pennies-a-day: The effect of temporal reframing on transaction evaluation. *Journal of Consumer Research*, *24*(4), 395-403.

University of St.Gallen

Cost framing relevant to tackle hyperbolic discounting

- People perceive things as less valuable or significant if further away in time
- People often "discount the future" → smaller immediate reward is preferred (CHF 5 now) over larger future reward (CHF 10 in 1 year)
- People often avoid actions that are costly in the short-term (e.g. time and money to purchase energy-efficient appliances) despite longer-term benefits (e.g. reduced electricity bills)



University of St.Gallen

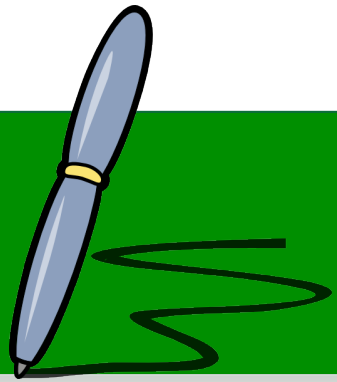
Cost framing: Importance of relativity

Situation 1



- You are in a shop and are about to buy a **new suit** that costs CHF 500
- Another shopper stops to tell you that exactly the same suit is for sale, at a different shop 10 minutes away, for CHF 10 less

Situation 2



- You are about to buy a new pen that costs CHF 15
- Another shopper stops to tell you that exactly the same pen is for sale, at a different shop 10 minutes away, for CHF 10 less

University of St.Gallen

Framing: Relativity impacts food consumption



Source: http://www.youtube.com/watch?v=mAcU6SMWfEw

University of St.Gallen

Decoy effect: The importance of irrelevant alternatives

- A decoy is an alternative that is added to a consideration set so that the relative attractiveness of other alternatives is changed
- Adding irrelevant alternative to a choice set may favor other option
- Explanation: People can easily get deceived by the illusion of relativity



Source: Huber, J., Payne, J. W., & Puto, C. (1982). Adding asymmetrically dominated alternatives: Violations of regularity and the similarity hypothesis. *Journal of consumer research*, 90-98; http://assets03.blog.usabilla.com/wp-content/uploads/ID-relativity.jpg

University of St.Gallen

The decoy effect – the importance of irrelevant alternatives (TED talk of Dan Ariely on 11:05 – 15:45)



Source: http://video.ted.com/talk/podcast/2008P/None/DanAriely_2008P-480p.mp4; Ariely, D. (2008). *Predictably irrational* (p. 20). New York: HarperCollins.

University of St.Gallen

Framing: Labels matter

- "Suppose you are purchasing a round trip flight from Los Angeles to New York City, and you are debating between two tickets, one of which includes a carbon tax / carbon offset. Which one would you choose?"

Experimental group 1

Ticket A
$392.70 round trip ticket including a carbon **tax**

Experimental group 2

Ticket A
$392.70 round trip ticket including a carbon **offset**

or

Ticket B

$385.00 round trip ticket

Source: Hardisty, D. J., Johnson, E. J., & Weber, E. U. (2010). A dirty word or a dirty world? Attribute framing, political affiliation, and query theory. Psychological Science, 21(1), 86-92.

14

University of St.Gallen

Framing: Labels matter

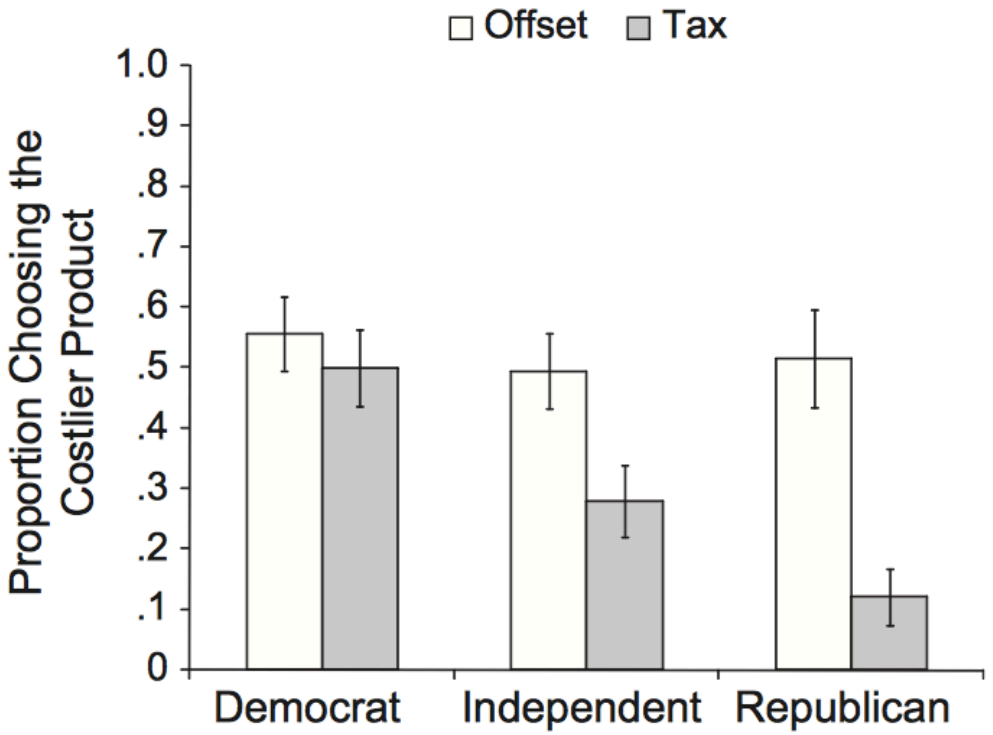


Fig. 1. Proportion of Democrats, Independents, and Republicans who chose the more expensive product, averaged across products, in the offset and tax attribute-framing conditions in Study 1. Error bars represent ±1 *SE*.

Source: Hardisty, D. J., Johnson, E. J., & Weber, E. U. (2010). A dirty word or a dirty world? Attribute framing, political affiliation, and query theory. Psychological Science, 21(1), 86-92.

University of St.Gallen

Label effect: Money not fungible when budget is specifically dedicated to certain purpose

- In the UK, the government allocates payments (£100-300) to households inhabited by the elderly to support heating costs ("Winter fuel allowance")
- It's a direct cash transfer but it is named with a specific purpose

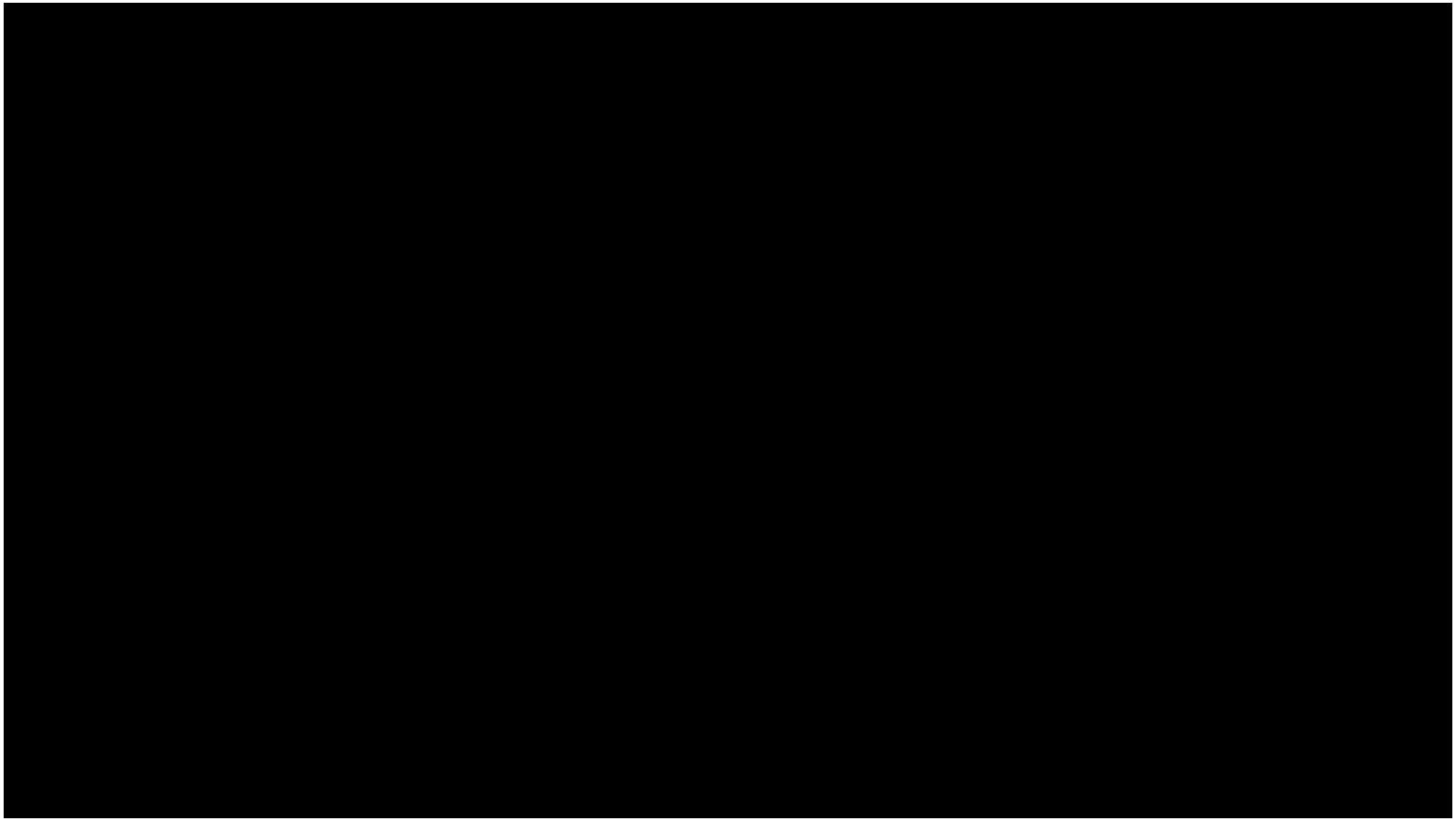


- Experiment shows that when money is given as cash (without a label), only 3% is spent on fuel
- When money is labeled as Winter fuel payment, 41% is spent of fuel

Source: https://www.gov.uk/winter-fuel-payment/overview; Beatty, T. K., Blow, L., Crossley, T. F., & O'Dea, C. (2011). *Cash by any other name? Evidence on labelling from the UK Winter Fuel Payment* (No. W11/10). IFS Working Papers.

University of St.Gallen

Power of “free” or “zero costs”



Source: http://www.youtube.com/watch?v=WS1bwMdgmKc

University of St.Gallen

Power of “free” or “zero costs”



- People are often overly excited about things that are for free (the ‘zero-price’ effect)
- People overreact to free promotions, whether they involve buying one item and getting another free, or simply new product giveaways
- Anecdotal example of the effect of “free”:
  - Major online retailer introduced free shipping in most of the European countries in which it traded
  - However, it mistakenly only reduced shipping prices to 1 French Franc
  - While the numbers of orders increased dramatically across Europe, there was very little increase in France

Source: McGeevor, K. (2009). Designing policy to influence consumers: consumer behaviour relating to the purchasing of environmentally preferable goods; Shampanier, Kristina, Nina Mazar and Dan Ariely. 2007. "Zero as a Special Price: The True Value of Free Products." Marketing Science 26(6):742-757.

University of St.Gallen

Framing

How can that insight be used for behavioural change campaigns?

University of St.Gallen

Content of today‘s session



Power of framing



Power of feedback and prompts



Power of gamification and emotions



Power of the default option



Continuation of the group work

University of St.Gallen

Basketball video demonstration (task: count number of passes made by the white team)



Source: Basketball video demonstration (http://www.youtube.com/watch?v=vJG698U2Mvo)

University of St.Gallen

‘Invisible’ energy consumption

- Inattentional blindness: we consciously experience only those objects and events to which we directly attend

- Particularly with energy and electricity consumption, we are often not paying attention to the use of unnecessary amounts of energy



- Energy is often invisible to people, as we only pay the electricity bill every other month

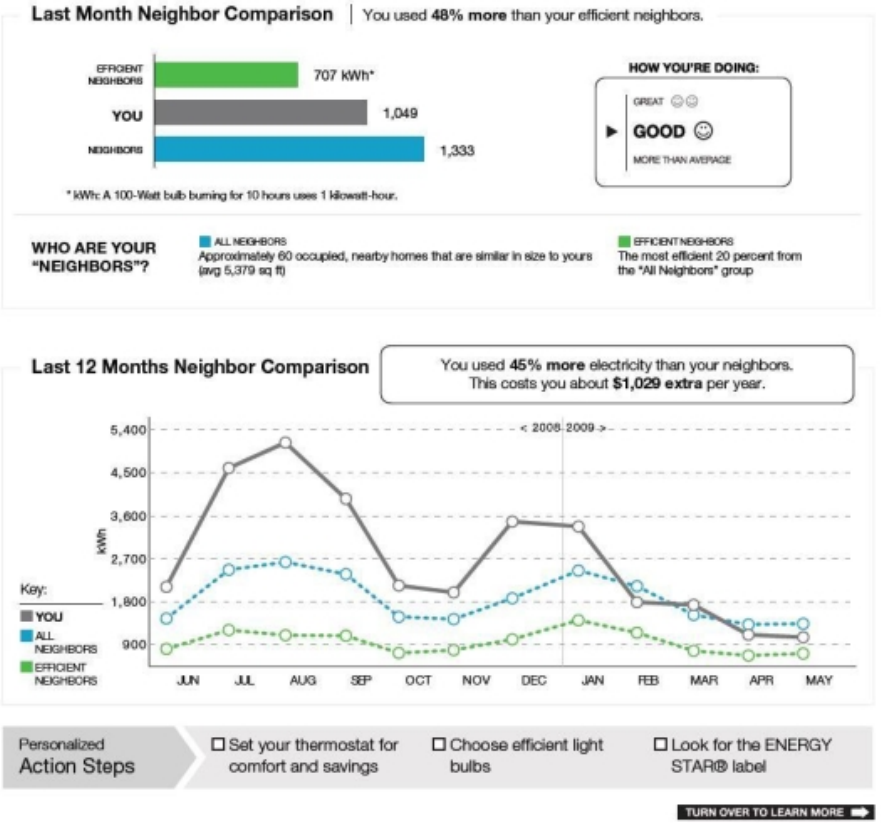
- Making the invisible visible: e.g. by prompts, direct & indirect feedback

http://www.chicagotribune.com/lifestyles/chi-nudging-polluters_thinkapr06-story.html#page=1; Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.

University of St.Gallen

Indirect feedback measures

- **Indirect feedback** include more informative and frequent bills containing historical and/ or comparative information (comparison with similar households) on energy consumption



Source: EEA (2013): Achieving energy efficiency through behaviour change: what does it take? European Environment Agency Technical Report, Nr. 5/2013.

University of St.Gallen

Direct feedback via smart displays

- **Direct feedback** include information received via the consumers' computer/ in-home display/mobile phones/tablets or any other electronic device via smart meters

- Direct feedback enables consumers to connect their usage data directly to their behaviour





Source: EEA (2013): Achieving energy efficiency through behaviour change: what does it take? European Environment Agency Technical Report, Nr. 5/2013.

University of St.Gallen

Feedback via audits/ personalised advice

- Information delivered in person very effective

- Green Doctor Project (free of charge, subsidised by governments): Example of a personalized advice service, targeted at lower income households



- Besides providing information and advice, Green Doctors also offered the installation of energy saving light bulbs, water savers, etc.

Source: https://www.ebico.org.uk/about-ebico/70-green-doctor-project

University of St.Gallen

Prompts (friendly reminders)

- Prompts are effective in reminding people to engage in certain behaviors
- A prompt is a visual or auditory aid which reminds people to carry out an activity that they might otherwise forget
- The purpose of a prompt is not to change attitudes or increase motivation, but simply to remind people to engage in an action that they are already predisposed to do



Source: McKenzie-Mohr, D. (2013). Fostering sustainable behavior: An introduction to community-based social marketing. New society publishers.

University of St.Gallen

Safety prompt



Source: The Hunting Dynastie (2010): Creating Sustainable Behaviour. Presentation.

University of St.Gallen

Prompts

How can that insight on prompts be used for behavioural change campaigns?

University of St.Gallen

Content of today‘s session



Power of framing



Power of feedback and prompts



Power of gamification and emotions



Power of the default option

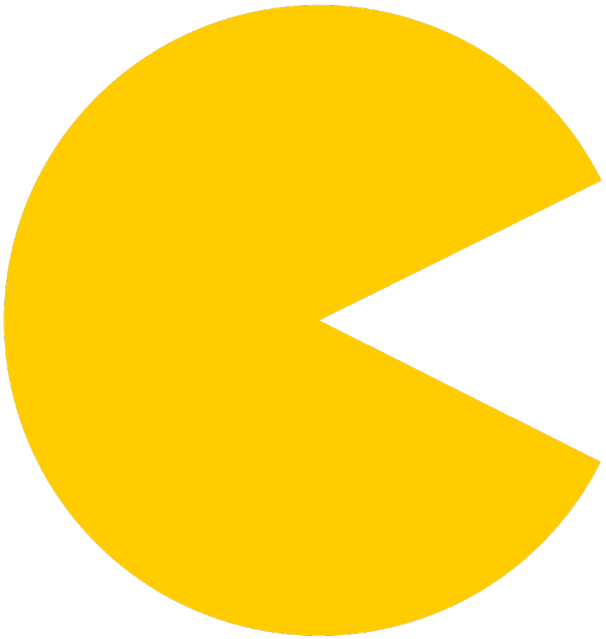


Continuation of the group work

University of St.Gallen

Gamification & Competitions

- Games tap into the world of “fun”, affect emotions and have the ability to involve users more deeply
- The power of gaming is derived from the underlying behavioral psychology that motivates people to play



Source: Huber, M. Z., & Hilty, L. M. (2015). Gamification and sustainable consumption: overcoming the limitations of persuasive technologies. In *ICT Innovations for Sustainability* (pp. 367-385). Springer International Publishing.

University of St.Gallen

Power of the certainty/lottery effect

- Consumers overestimate small opportunities to gain larger rewards
- Rather than small, certain monetary incentives (e.g. rebates) → small chance at a large monetary incentive (e.g. lottery ticket)



Source: http://ewp.industry.gov.au/sites/prod.ewp/files/submissions/Energy%20White%20Paper/EWPGP128-802.pdf

University of St.Gallen

Power of experience

- People often consider the consequences of climate change as **temporally remote**
- **Spatial discounting:** people perceive things as less significant if further away in space (e.g. climate change impacts only people in other parts of the world)
- People with **direct experience** of consequences related to climate change are more:
  - *Concerned about problems related to climate change*
  - *Willing to reduce energy use*



Source: Spence, A., Poortinga, W., Butler, C., & Pidgeon, N. F. (2011). Perceptions of climate change and willingness to save energy related to flood experience. *Nature climate change*, *1*(1), 46-49; Akerlof, K., Maibach, E. W., Fitzgerald, D., Cedeno, A. Y., & Neuman, A. (2013). Do people "personally experience" global warming, and if so how, and does it matter?. *Global Environmental Change*, *23*(1), 81-91.

University of St.Gallen

Power of positive feelings / good associations

- A message/ messengers can be more persuasive if it/they are associated with things people like
- One way to do this is the luncheon technique:
  - Food often has positive feelings and experiences associated with it
  - Research shows that people approve more of speeches/ develop a more favorable view of people and things which they hear whilst eating
  - People who share food or drinks tend to feel more closely bonded with one another



Source: Razran, G. H. (1938). Conditioning away social bias by the luncheon technique. *Psychological Bulletin*, *35*(9), 693.

University of St.Gallen

Gamification/ Power of experience & positive feelings



University of St.Gallen

Content of today‘s session



Power of framing



Power of feedback and prompts



Power of gamification and emotions



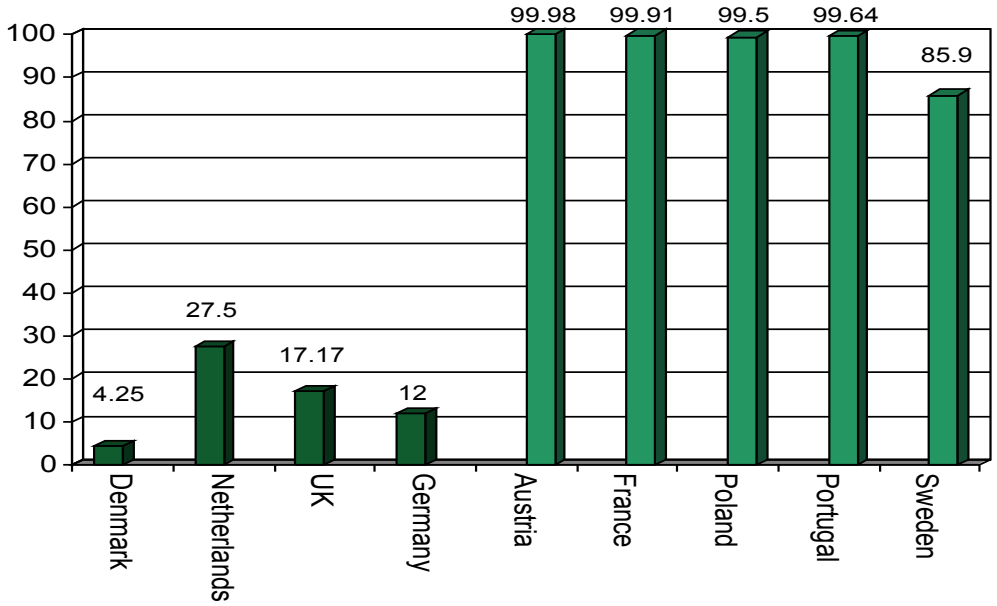
Power of the default option



Continuation of the group work

University of St.Gallen

Default for organ donations



Percentage of people who are donating organs (2003)

- Opt-in policy: people have to register first to become a donor
- Opt-out policy: everybody is a organ donor unless they opt out

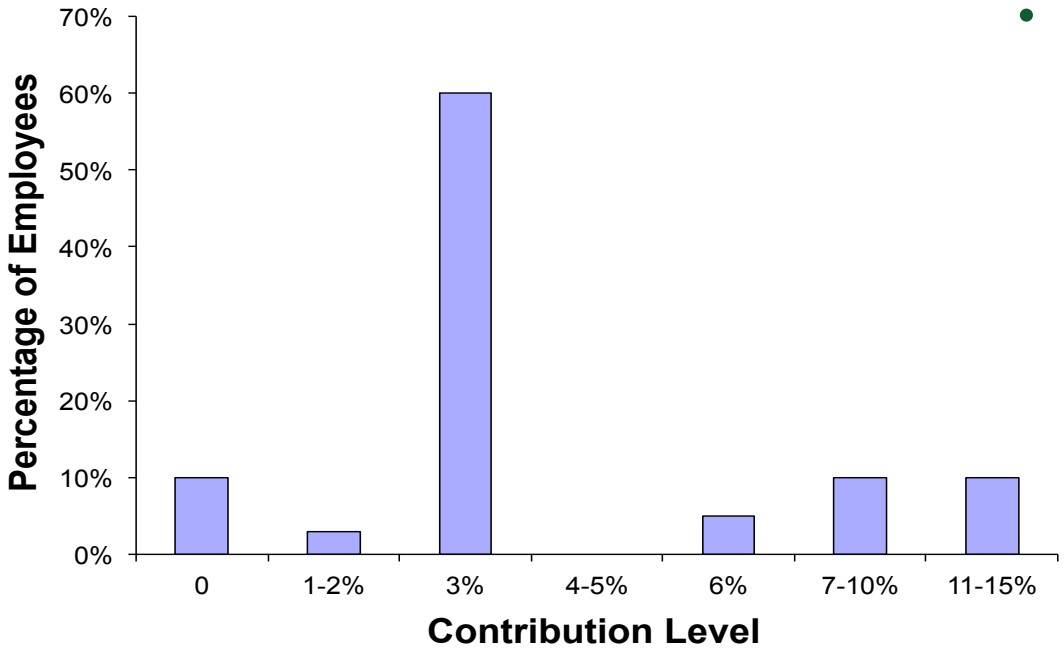
- Default = What you get when you don´t actively make a choice
- Presenting option as a default increases chance it will be chosen

Source: Johnson, E. J., & Goldstein, D. (2003). Do defaults save lives?. Science, p. 1338-1339.

University of St.Gallen

Default for retirement saving

- In a firm where new employees save nothing towards their pension as a default, 70% of employees saved nothing towards their pension

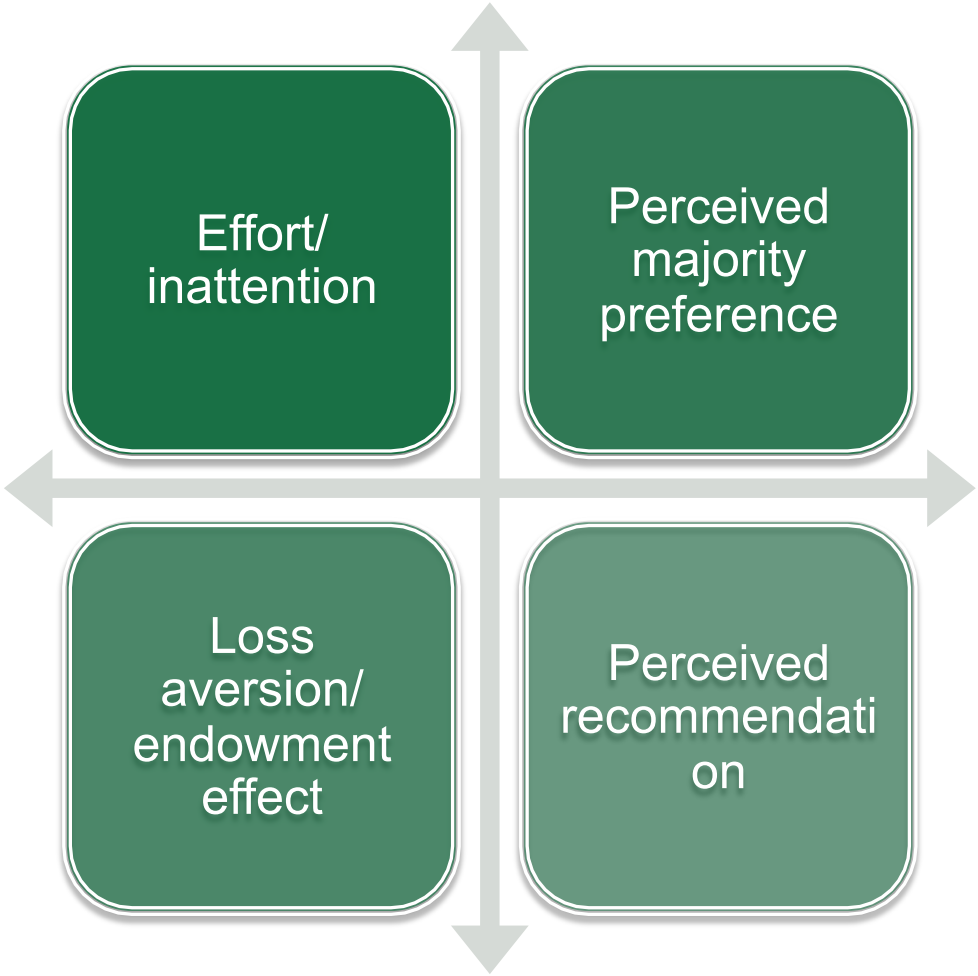


- When the default of the contribution level is set at 3%, more than 60% stick with this contribution level

Source: Beshears, J., Choi, J. J., Laibson, D., & Madrian, B. C. (2009). The importance of default options for retirement saving outcomes: Evidence from the United States. In *Social security policy in a changing environment* (pp. 167-195). University of Chicago Press.

University of St.Gallen

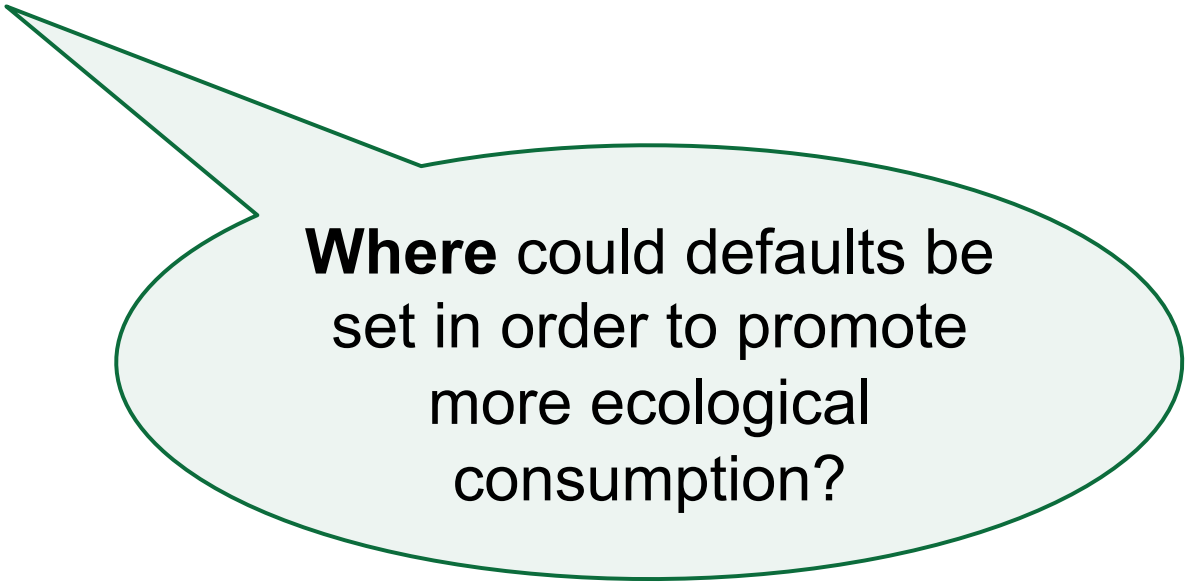
Possible causes of default effects



Sources: Adapted from Johnson, E.J. (Columbia University, Center for Decision Science): Decisions by Default (Presentation)

University of St.Gallen

Class discussion on defaults (1)



University of St.Gallen

Class discussion on defaults (2)

Do you think that green defaults used by governments can help people **make better decisions**? **Would you support setting a green default**?

University of St.Gallen

Content of today‘s session



Power of framing



Power of feedback and prompts



Power of gamification and emotions



Power of the default option



Continuation of the group work

University of St.Gallen

Outlook: 5 & 6 – Entrepreneurship as social change (full day on November 2)

- **9.00** - 10.30: Slot 1
- 10.30-11.00: Break

- 11.00 - 12.30: Slot 2
- 12.30 - 14.00: Break

- 14.00 - 15.30: Slot 3
- 15.30 - 16.00: Break

- 16.00 - **17.30**: Slot 4

✓ Guest lecturer Dr. rec. soc. Kim Poldner (lecturer at Wageningen University and Research centre)



University of St.Gallen

Outlook: Session 7: Role of multinational companies to foster sustainable consumption (morning session Nov 3)



✓ Guest lecturer Lorenz Isler (Sustainability manager at IKEA Switzerland)

- **09:15** – 10.30: Presentation by IKEA & Q&A
- 10.30 – 10.40: Introduction to group work
- 10.40 – 11.10: Break
- 11.10 – 12.00: Group work
- 12.00 – 12.30: Discussion of results of group work

University of St.Gallen

Outlook: 8: Role of multinational companies to foster sustainable consumption (afternoon session on Nov 3)



- ✓ Guest lecturer Gieri Hinnen (Senior Manager Political Affairs and Environment at Swiss International Airlines)

- **14.00 –** 15.15: Presentation by SWISS & Q&A
- 15.15 – 15.45: Break
- 15.45 – 15.50: Introduction to group work
- 15.50 – 16.50: Group work
- 16.50 – **17.30**: Discussion of results of group work

Prof. Stefanie Lena Hille
Assistant Professor for Energy
Consumer Behaviour
University of St.Gallen (HSG)
Tigerbergstrasse 2
9000 St.Gallen
Switzerland
+41 (0)71 224 27 18
stefanie.hille@unisg.ch
www.unisg.ch