AGRICULTURAL AND RESOURCE ECONOMICS
KASETSART UNIVERSITY

Food Consumption and Bias

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FB Page: EatEcon

Food choice and the battle between good and evil

Food choice and the battle between good and evil

- **Food decisions often involve the trade-off between current pleasure and future health benefit.**

Obesity research

Aims to answer

What drives individuals to choose unhealthy foods rather than healthy ones?

- Hedonic goods are considered to be those associate with an extreme sensory experience.
- Utilitarian goods are more functional, associated with some goals.

Snack

VS

Broccoli

Wants

Should

Just, D. R. (2011). Behavioral economics and the food consumer. *The Oxford handbook of the economics of food consumption and policy*, 99-118.

Human needs

Maslow's Hierarchy of needs Theory of Motivation

Self-fulfillment needs

Psychological needs

Basic needs

Self-actualization
desire to become the most that one can be

Esteem
respect, self-esteem, status, recognition, strength, freedom

Love and belonging
friendship, intimacy, family, sense of connection

Safety needs
personal security, employment, resources, health, property

Physiological needs
air, water, food, shelter, sleep, clothing, reproduction

Hedonic value

Utilitarian value

Needs

Hedonic Needs

Social Needs

Functional Needs

Nonsocial Needs

Symbolic Needs

Happy now!!!

- Spend money first and save later
- Eat first, lose weight later
- Enjoy eating now, ill later
- Eat now, exercise tomorrow
- Play first, read later

I know it's good, but I can't resist it.

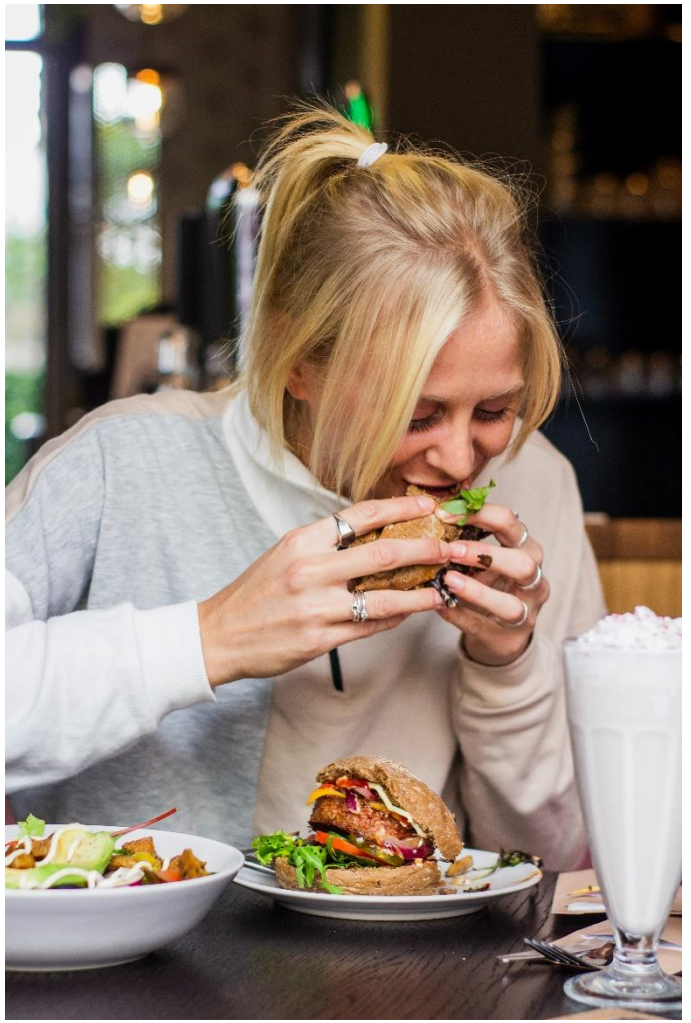


Photo by Louis Hansel on Unsplash

Food choice and the battle between good and evil

1. Habits, Addiction, and Rationality
2. Self-control and time discounting
3. Dual – process models of food consumption
4. References and defaults
5. Mental accounting

Heuristics and biases are closely related to the prevalent theories in behavioural economics – prospect theory and mental accounting

Reisch, L. A., & Zhao, M. I. N. (2017). Behavioural economics, consumer behaviour and consumer policy: state of the art. *Behavioural Public Policy*, *1*(2), 190-206.

System 1

Autopilot

Fast

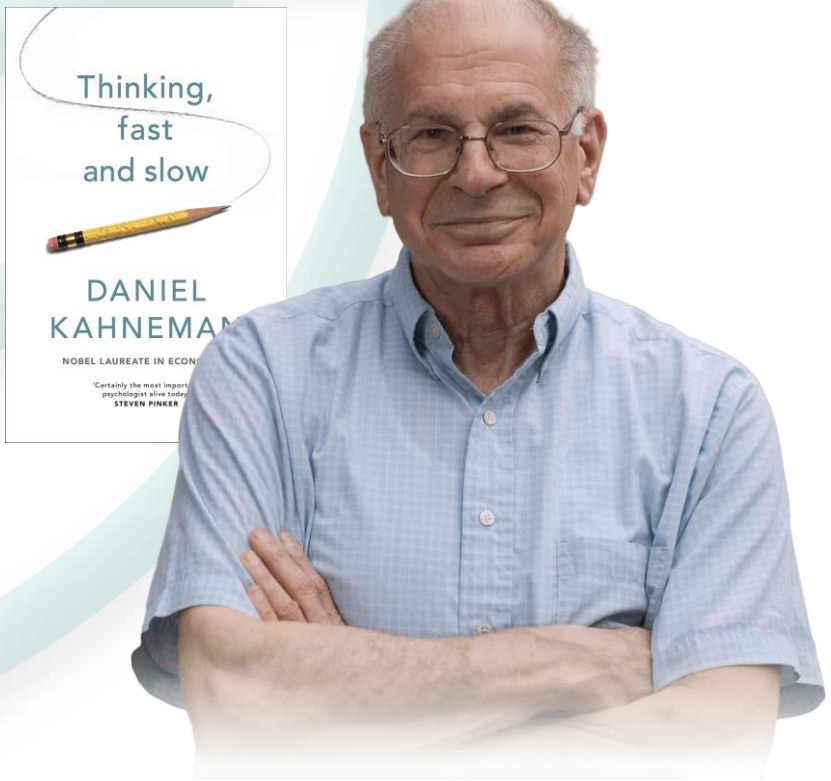
Implicit

Effortless

Associative

Difficult to control or modify

No self-awareness



System 2

Slow

Serial

Explicit

Effortful

Logical & skeptical

Deliberately controlled

With self-awareness

"System 1 runs the show, that's the one you want to move."

"System 1 is gullible and biased to believe, System 2 is in charge of doubting and unbelieving, but System 2 is sometimes busy, and often lazy"

Thinking, fast and slow
- Daniel Kahneman

What is behavioural economics?

- Economics meets psychology
- Explores alternatives to perfect rationality
- Seeks to provide micro-foundations for our choices

Econs

- Super-smart
- Rational
- Well defined preferences
- Self-interested/selfish
- Utility maximisers

Humans

- Flawed
- Biases in behaviour
- Social animals
- Not driven purely by the need to maximise their welfare

We will look at

- Flawed
- Biases in behaviour
- Social animals
- Not driven purely by the need to maximise their welfare

Classic Economics
Consumers are rational
Supply & Demand

Psychology/Advertising
Humans are emotional:
Persuasion

Behavioural Economics
Humans are predictably irrational

Constant flaws in decision-making

Empirically validated and true for a significant majority

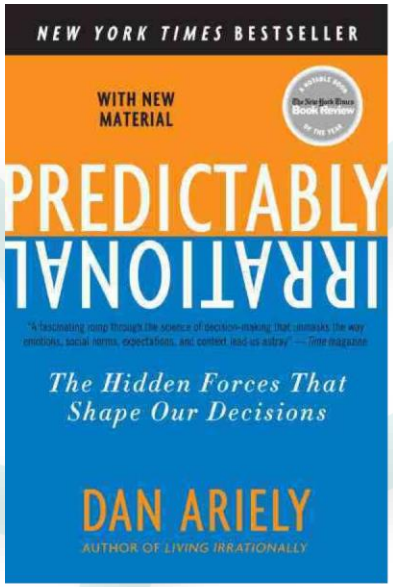
Split-second decision

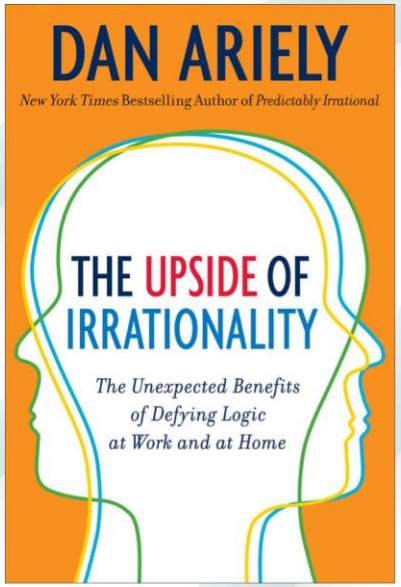
With 10,000 decision a day,

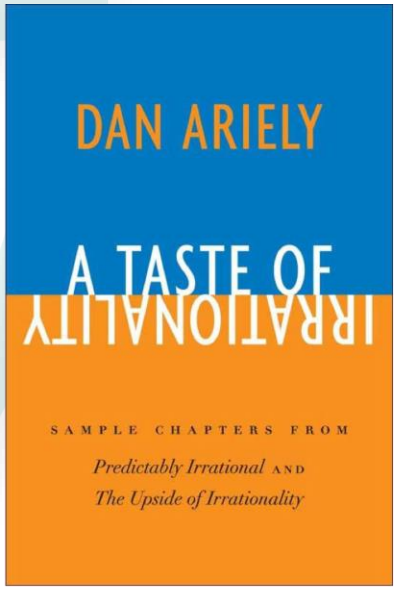
95% Of our decisions are based on intuition and "what feels right" of "is good enough"

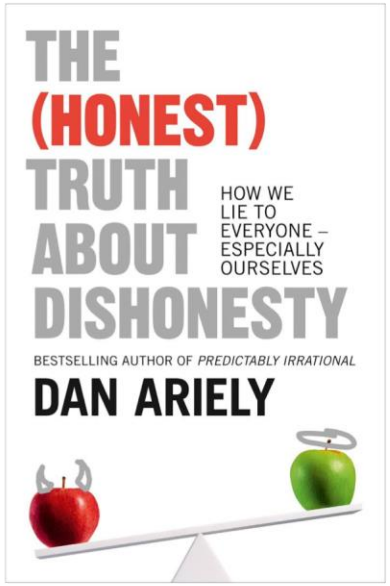
79-93% Of our decisions are guided by instinct and past behaviour

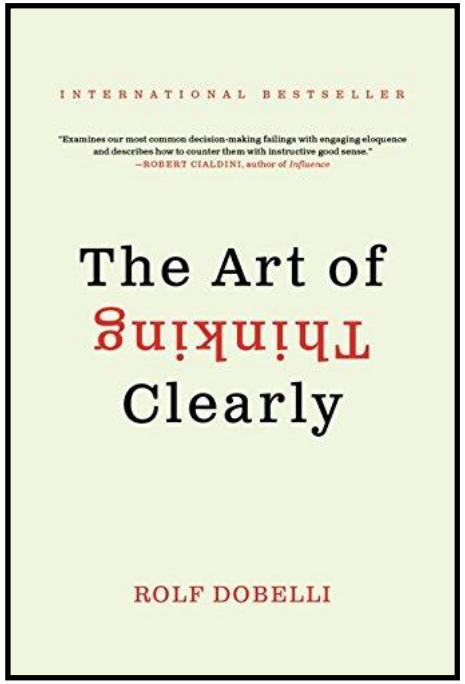
18-35% is based on intention

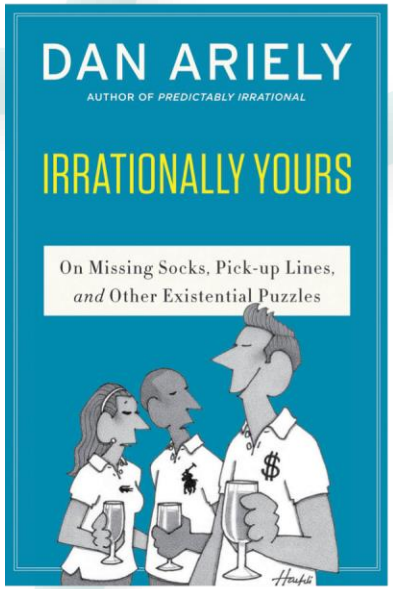

NEW YORK TIMES BESTSELLER
WITH NEW MATERIAL
PREDICTABLY IRRATIONAL
The Hidden Forces That Shape Our Decisions
DAN ARIELY
AUTHOR OF LIVING IRRATIONALLY

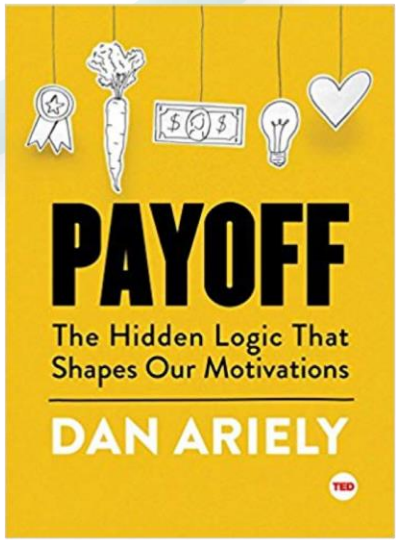

DAN ARIELY
New York Times Bestselling Author of Predictably Irrational
THE UPSIDE OF IRRATIONALITY
The Unexpected Benefits of Defying Logic at Work and at Home

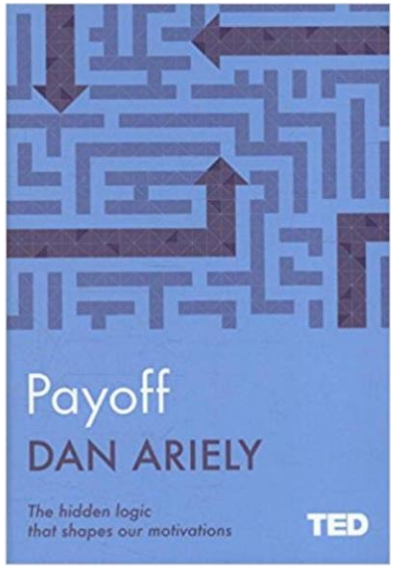

DAN ARIELY
A TASTE OF IRRATIONALITY
SAMPLE CHAPTERS FROM
Predictably Irrational AND
The Upside of Irrationality

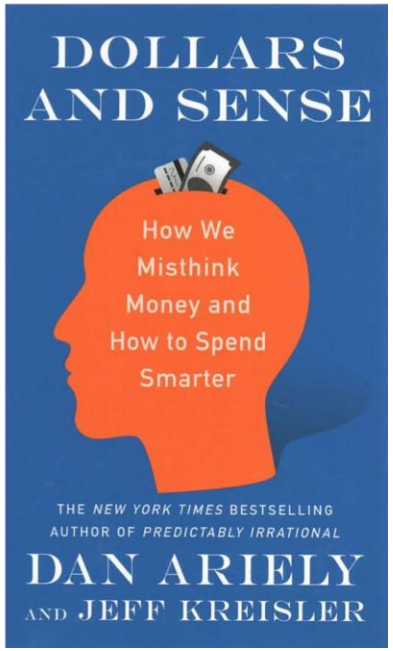

THE (HONEST) TRUTH ABOUT DISHONESTY
HOW WE LIE TO EVERYONE – ESPECIALLY OURSELVES
BESTSELLING AUTHOR OF PREDICTABLY IRRATIONAL
DAN ARIELY


INTERNATIONAL BESTSELLER
"Examines our most common decision-making failings with engaging eloquence and describes how to counter them with instructive good sense."
—ROBERT CIALDINI, author of Influence
The Art of Thinking Clearly
ROLF DOBELLI


DAN ARIELY
AUTHOR OF PREDICTABLY IRRATIONAL
IRRATIONALLY YOURS
On Missing Socks, Pick-up Lines, and Other Existential Puzzles

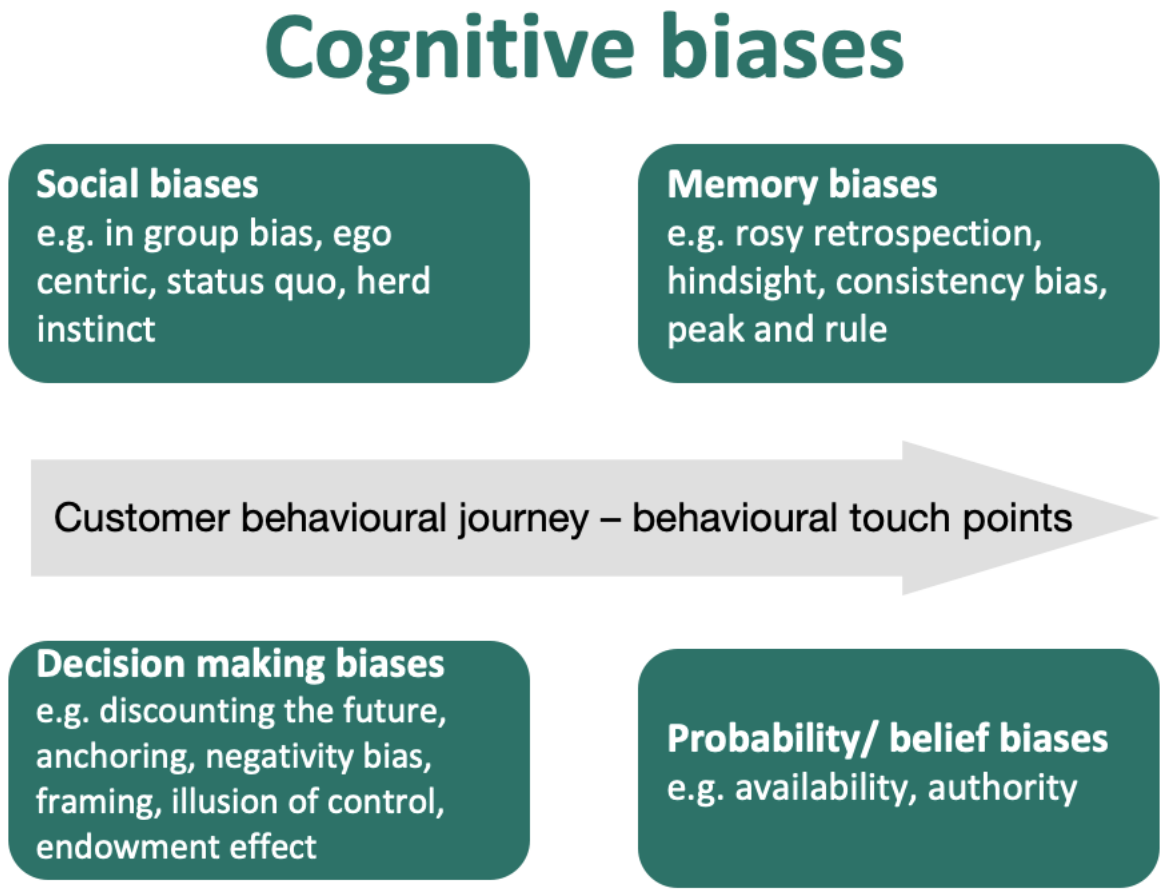

PAYOFF
The Hidden Logic That Shapes Our Motivations
DAN ARIELY
TED


Payoff
DAN ARIELY
The hidden logic that shapes our motivations
TED


DOLLARS AND SENSE
How We Misthink Money and How to Spend Smarter
THE NEW YORK TIMES BESTSELLING AUTHOR OF PREDICTABLY IRRATIONAL
DAN ARIELY AND JEFF KREISLER

Some behaviour (Cognitive) biases

- Loss aversion and Endowment effect
- Confirmation bias
- Anchoring effects
- Social (Herd) behaviour
- Status quo bias / fear of change
- Availability heuristic
- Framing effects
- The zero price bias



https://www.slideshare.net/MHickman1/behavioural-economics-customer-touchpoints

Loss aversion

- 2฿ discount vs pay 2฿ for a plastic bag
- Saving account vs invest in stock
- Get 1,000 ≠ lose 1,000

Situation:

A: This treatment has a 10% risk of death.

B: This treatment has a 90% surviving rate.

Get 😀

Lose 😭 😭

Loss aversion

Endowment effect

Home cooked

Cramer, L. and Antonides, G., 2011. Endowment effects for hedonic and utilitarian food products. *Food quality and preference*, *22*(1), pp.3-10.

Present-Biased

- The human tendency is to overemphasize immediate benefits relative to delayed benefits.
- The immediate benefits of indulging in a high-calorie snack are more salient than the long-term potential for negative effects. Moreover, people tend to be willing to impose greater self-control on their future selves, but once the future becomes the present, people again lack the self-control to stick to their long-term goals.


Photo by Jonathan Borba on Unsplash

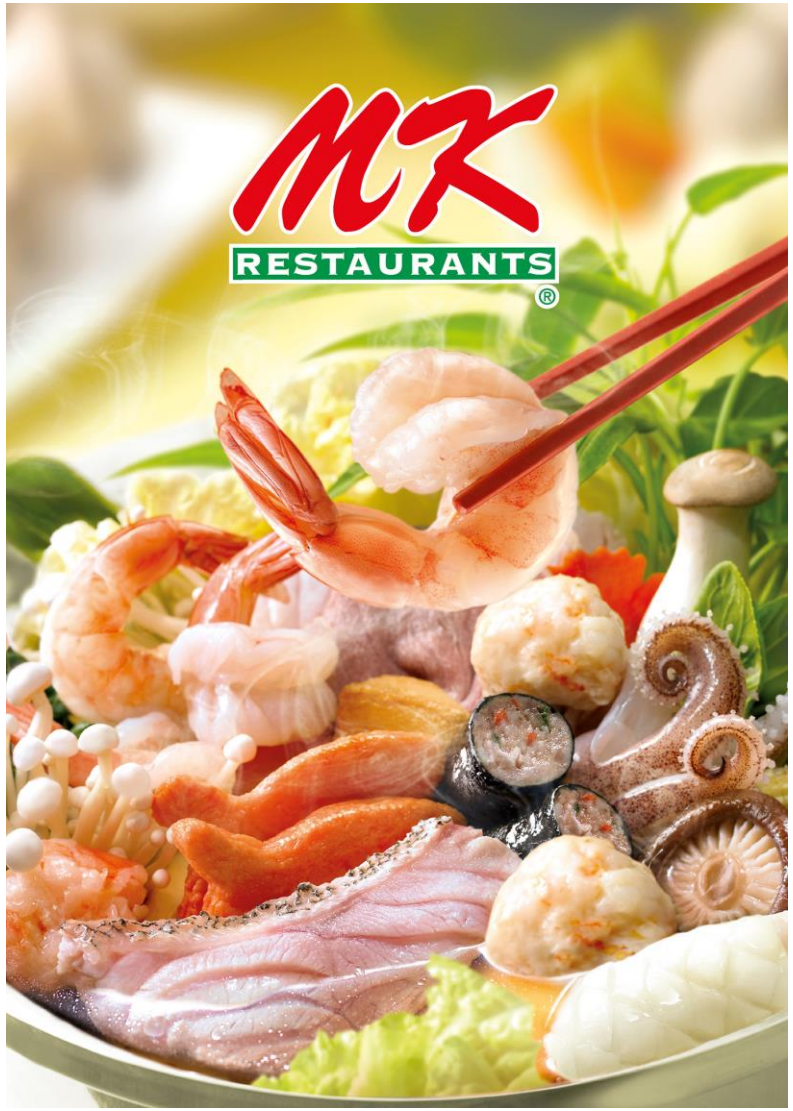

Photo by Janice Lin on Unsplash

- Liu, P.J., Wisdom, J., Roberto, C.A., Liu, L.J. and Ubel, P.A., 2014. Using behavioral economics to design more effective food policies to address obesity. *Applied Economic Perspectives and Policy*, *36*(1), pp.6-24.
- Glanz, K., M. Basil, E. Maibach, J. Goldberg, and D. Snyder. 1998. Why Americans Eat What They Do: Taste, Nutrition, Cost, Convenience, and Weight Control Concerns as Influences on Food Consumption. *Journal of the American Dietetic Association* 98 (10): 1118–1126.

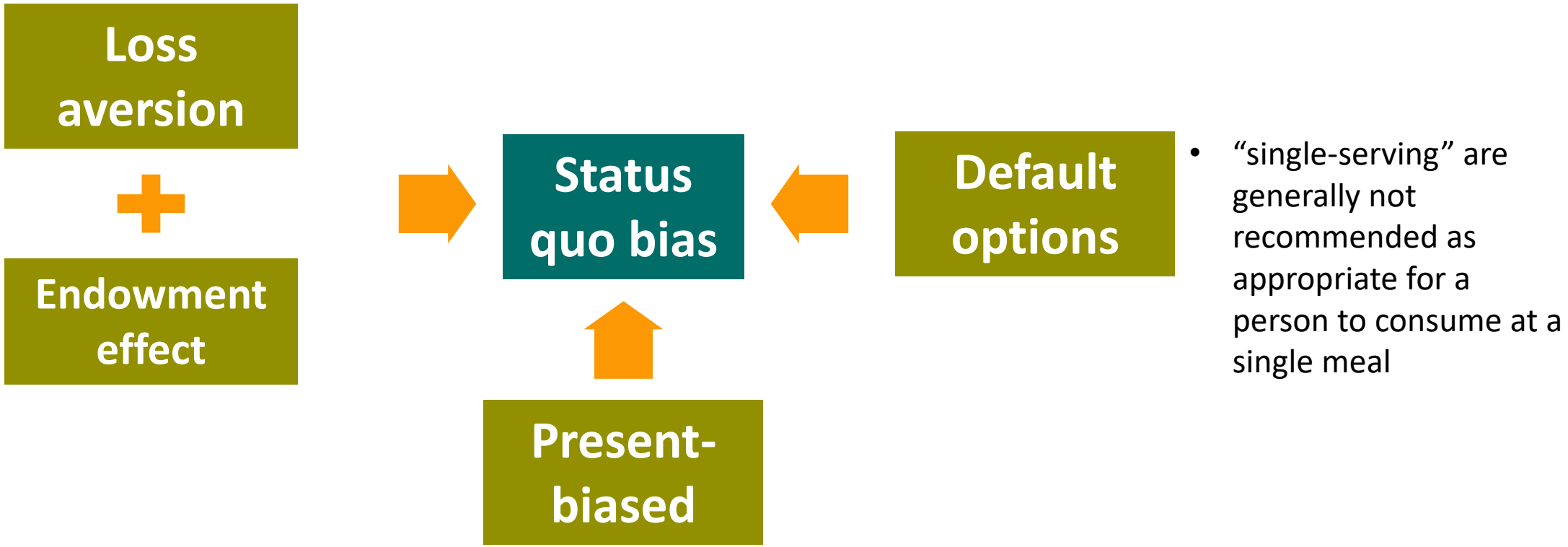
Status quo bias + Default options

- Liu, P.J., Wisdom, J., Roberto, C.A., Liu, L.J. and Ubel, P.A., 2014. Using behavioral economics to design more effective food policies to address obesity. *Applied Economic Perspectives and Policy*, *36*(1), pp.6-24.

Abstract *Many policy interventions that address rising obesity levels in the United States have been designed to provide consumers with more nutrition information, with the goal of encouraging consumers to decrease their caloric intake. We discuss existing information-provision measures and suggest that they are likely to have little-to-modest impact on encouraging lower caloric intake, because making use of such information requires understanding and/or motivation, which many consumers lack, as well as self-control, which is a limited resource. We highlight several phenomena from the behavioral economics literature (present-biased preferences, visceral factors, and status quo bias) and explain how awareness of these behavioral phenomena can inform both more effective information-provision policies and additional policies for regulating restaurants and public school cafeterias that move beyond information to nudge people towards healthier food choices.*



Status quo bias + Default options



- "single-serving" are generally not recommended as appropriate for a person to consume at a single meal

- Samuelson, W. and Zeckhauser, R., 1988. Status quo bias in decision making. *Journal of risk and uncertainty*, *1*(1), pp.7-59.
- Karl, F.M., Holle, R., Schwettmann, L., Peters, A. and Laxy, M., 2019. Status quo bias and health behavior: findings from a cross-sectional study. *European Journal of Public Health*, *29*(5), pp.992-997.

Availability heuristics

- Nazlan, N.H., Tanford, S. and Montgomery, R., 2018. The effect of availability heuristics in online consumer reviews. *Journal of Consumer Behaviour*, *17*(5), pp.449-460.

Availability heuristic cues

- Salience
- Primacy –recency
- Vividness
- Negativity bias

Behavioural outcomes

- Evaluations
- Intentions
- Expectations

Fig. Framework illustrating relationship between variables

Dual process theory, Availability bias, primacy-recency and Negative bias

- **H1** Restaurant (a) evaluations, (b) likelihood to choose, (c) intention to recommend, and (d) expectations will be lower when negative reviews appear first, compared with when positive reviews appear first.

Social proof and Vividness

- **H2** The effect of reviews on (a) restaurant evaluations, (b) likelihood to choose, (c) intention to recommend, and (d) expectations will be higher for descriptions and star ratings compared with either cue alone.
- **H3** The effect of ratings on (a) menu item evaluation, (b) likelihood to choose, and (c) item choice will be higher when presented in star versus numerical format.
- **H4** A picture accompanying a positive review will increase (a) menu item evaluation, (b) likelihood to choose, and (c) item choice, compared with no picture.
- **H5** A picture accompanying a negative review will not influence (a) menu item evaluation, (b) likelihood to choose, or (c) item choice.

Availability heuristics

STARTER

1	Mixed Starter *(For 2 Persons)* (Prawn Toast X 2, Spare Ribs X 2, Spring Rolls X 2, Chicken Skewers X 2 & Crispy Seaweed)	£7.60
2	Mixed Hors D'oeuvres *(For 2 Persons)* (Spring Rolls X 2, Chicken Wings X 2, Fried Won Ton X 2, Prawn Toast X 2 & Crispy Seaweed)	£7.60
5	Pancake Roll *(1)*	£2.50
6	Cantonese Spring Rolls *(2)*	£2.50
7	Crispy Vegetarian Spring Rolls *(8)*	£2.50
8	Deep Fried Seaweed	£3.70
9	Crab Claws *(5)*	£4.40
10	Sesame King Prawn on Toast *(6)*	£4.30
11	Fried Won Ton *(8)*	£4.30
12	Chicken Satay on Skewers *(4)*	£5.00
13	Chilli, Salt & Pepper Chicken Wings *(6)*	£4.20
14	Barbecue Chicken Wings *(6)*	£4.20
15	Peking Chicken Wings *(6)*	£4.20
16	Chilli, Salt & Pepper Chips	£3.00
17	Mongolian Crispy Lamb (with Pancakes & Garnish)	£8.30
18	Aromatic Crispy Duck (with Pancakes & Garnish)	*Quarter* £8.40 *Half* £15.60

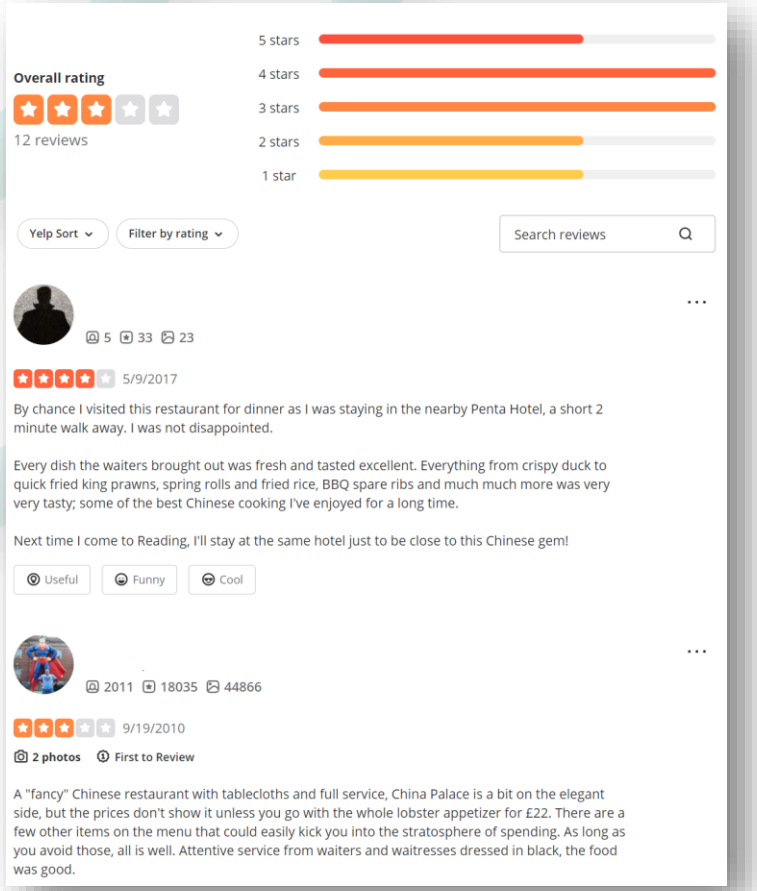
FRIED RICE DISHES

27	House Special Fried Rice (Mixed Meat & King Prawn Cooked with Vegetable on Fried Rice with Sauce)	£6.20
28	Special Fried Rice *(Dry)* (BBQ Pork, Chicken & King Prawn on Fried Rice)	£6.20
29	Yung Chow Fried Rice	£5.40
30	Malaysian Fried Rice (Cooked with Chicken, Pineapple, Chilli & Peas)	£5.80
31	King Prawn Fried Rice	£5.90
32	Shrimps Fried Rice	£5.30
33	Roast Duck Fried Rice	£6.00
34	Chinese Roast Duck Fried Rice (Roast Duck served in Fried Rice)	£6.00
35	Roast Pork Fried Rice	£5.30
36	Chinese Roast Pork Fried Rice (Roast Pork served in Fried Rice)	£5.90
37	Chicken Fried Rice	£5.30
38	Beef Fried Rice	£5.30
39	Singapore Style Fried Rice	£5.40
40	Garlic Mushroom Fried Rice	£4.80
41	Chilli Spring Onion Fried Rice	£4.80
42	Mixed Veg Fried Rice	£4.80
43	Pineapple Fried Rice	£4.80

45 King Prawn Chow Mein

SOUP

19	Chicken Mushroom Soup	£2.80
20	Chicken Sweetcorn Soup	£2.80
21	Crab Meat Sweetcorn Soup	£2.80
22	Chicken Noodle Soup	£2.80
25	Hot Sour Soup	£3.00
26	Mixed Vegetables Soup	£2.60



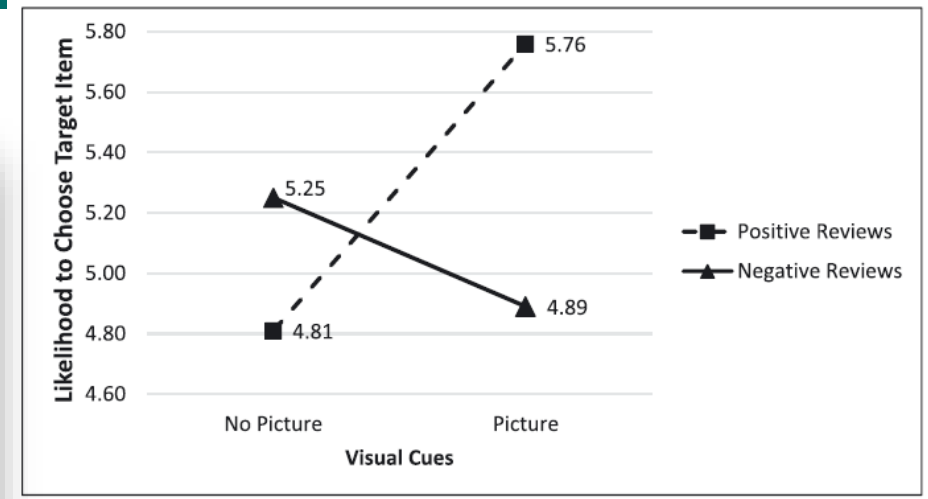


FIGURE 3 Effects of picture on likelihood to choose target item. Dashed line significant at $p < 0.001$; solid line not significant $p = 0.264$

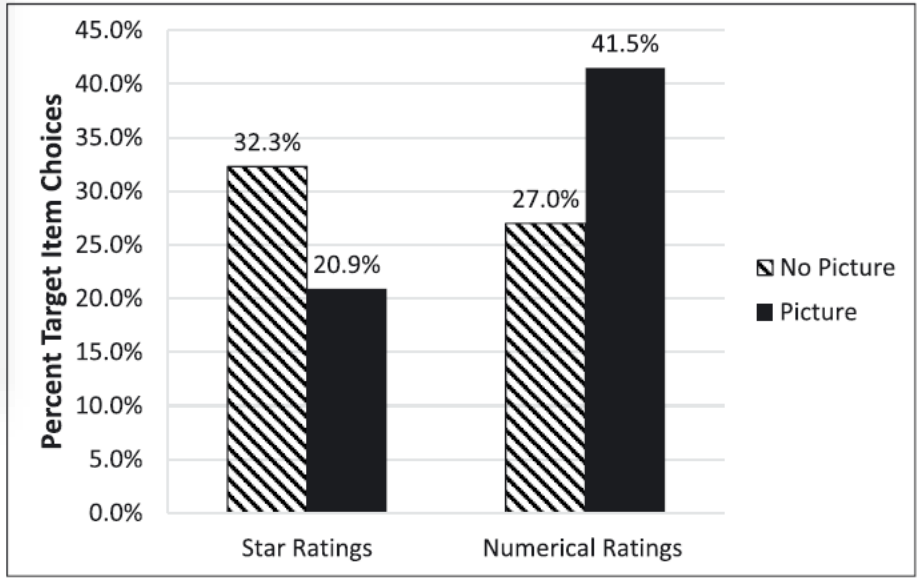


FIGURE 4 Choice of target item

Hot state vs Cold state

How do we order when we feel **hungry**?

Photo by Sander Dalhuisen on Unsplash

- Gilbert, D.T., M.J. Gill, and T.D. Wilson. 2002. The Future is Now: Temporal Correction in Affective Forecasting. *Organizational Behavior and Human Decision Processes* 88 (1): 430–444.
- Nordgren, L.F., F. Van Harreveld, and J. Van Der Pligt. 2009. The Restraint Bias: How the Illusion of Self-restraint Promotes Impulsive Behavior. *Psychological Science* 20 (12): 1523–1528.

Mental accounting

- We have accounts in mind that cause us to interpret the value of things differently.
- We have rules for using money in each account differently.

VS

Street food
80 ฿

Bubble tea
80 ฿

Researchers said that

We are in pain when we pay in cash. Why?

- We are hurt by our thoughts about paying.
- Immediate visibility of cash being handed out.
- The feeling of having to pay for cash is clear and strong.

Image source: Getty Images

Framing bias

People are strongly influenced by the way choices are framed

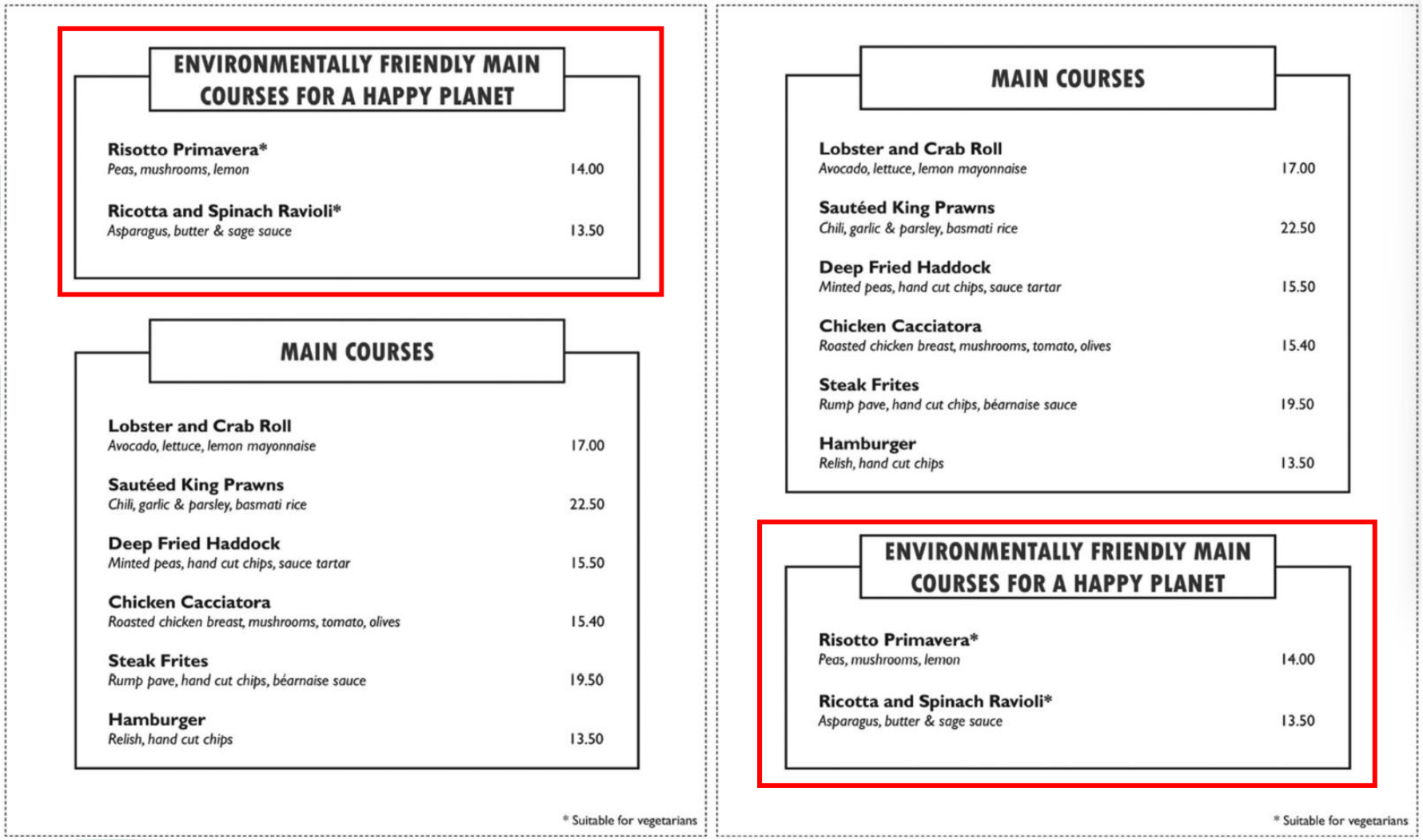
90% lean

VS

10% fat

Framing bias

Krpan, D. and Houtsma, N., 2020. To veg or not to veg? The impact of framing on vegetarian food choice. *Journal of Environmental Psychology*, *67*, p.101391.



ENVIRONMENTALLY FRIENDLY MAIN COURSES FOR A HAPPY PLANET

Risotto Primavera*
Peas, mushrooms, lemon 14.00

Ricotta and Spinach Ravioli*
Asparagus, butter & sage sauce 13.50

MAIN COURSES

Lobster and Crab Roll
Avocado, lettuce, lemon mayonnaise 17.00

Sautéed King Prawns
Chili, garlic & parsley, basmati rice 22.50

Deep Fried Haddock
Minted peas, hand cut chips, sauce tartar 15.50

Chicken Cacciatora
Roasted chicken breast, mushrooms, tomato, olives 15.40

Steak Frites
Rump pave, hand cut chips, béarnaise sauce 19.50

Hamburger
Relish, hand cut chips 13.50

* Suitable for vegetarians

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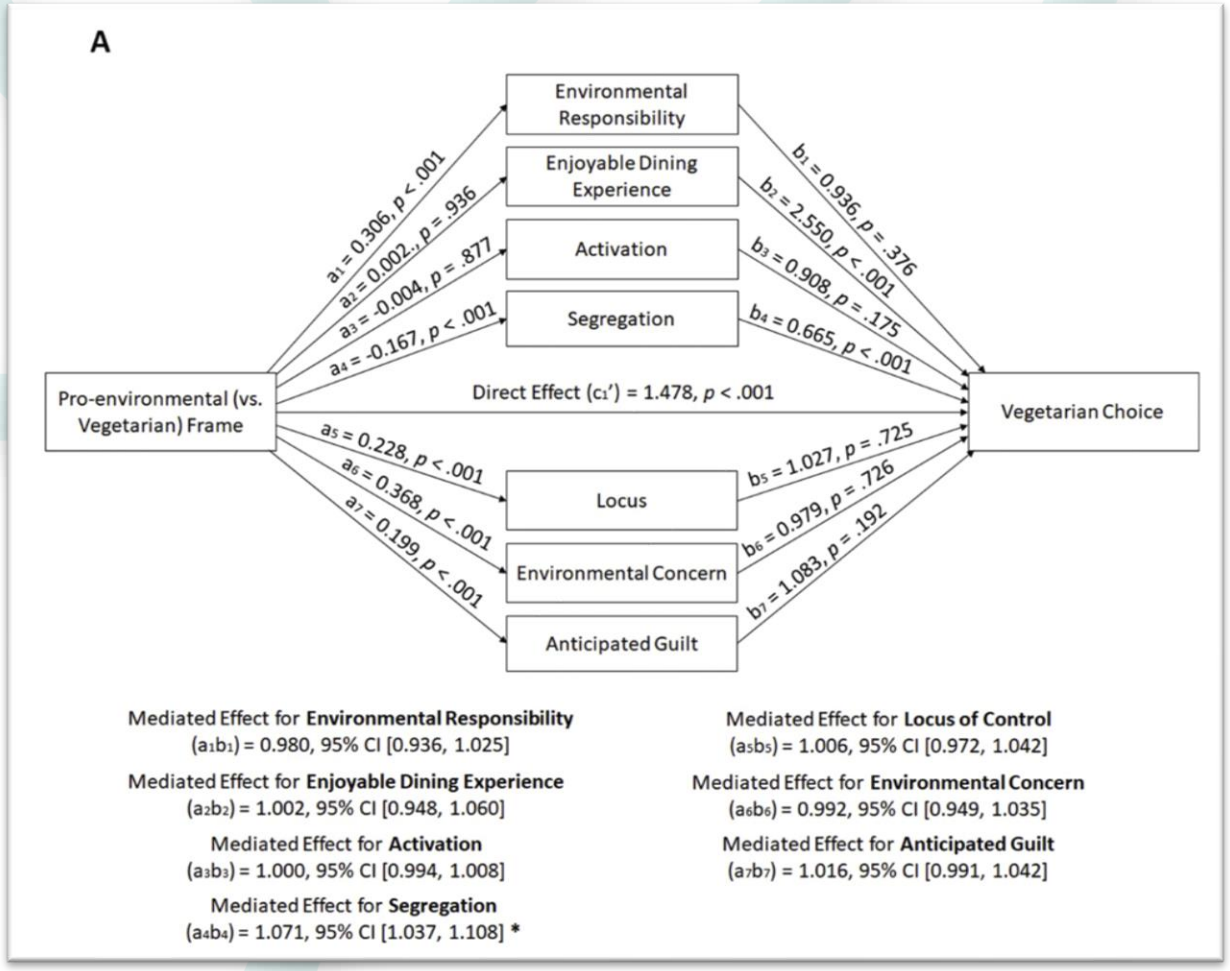
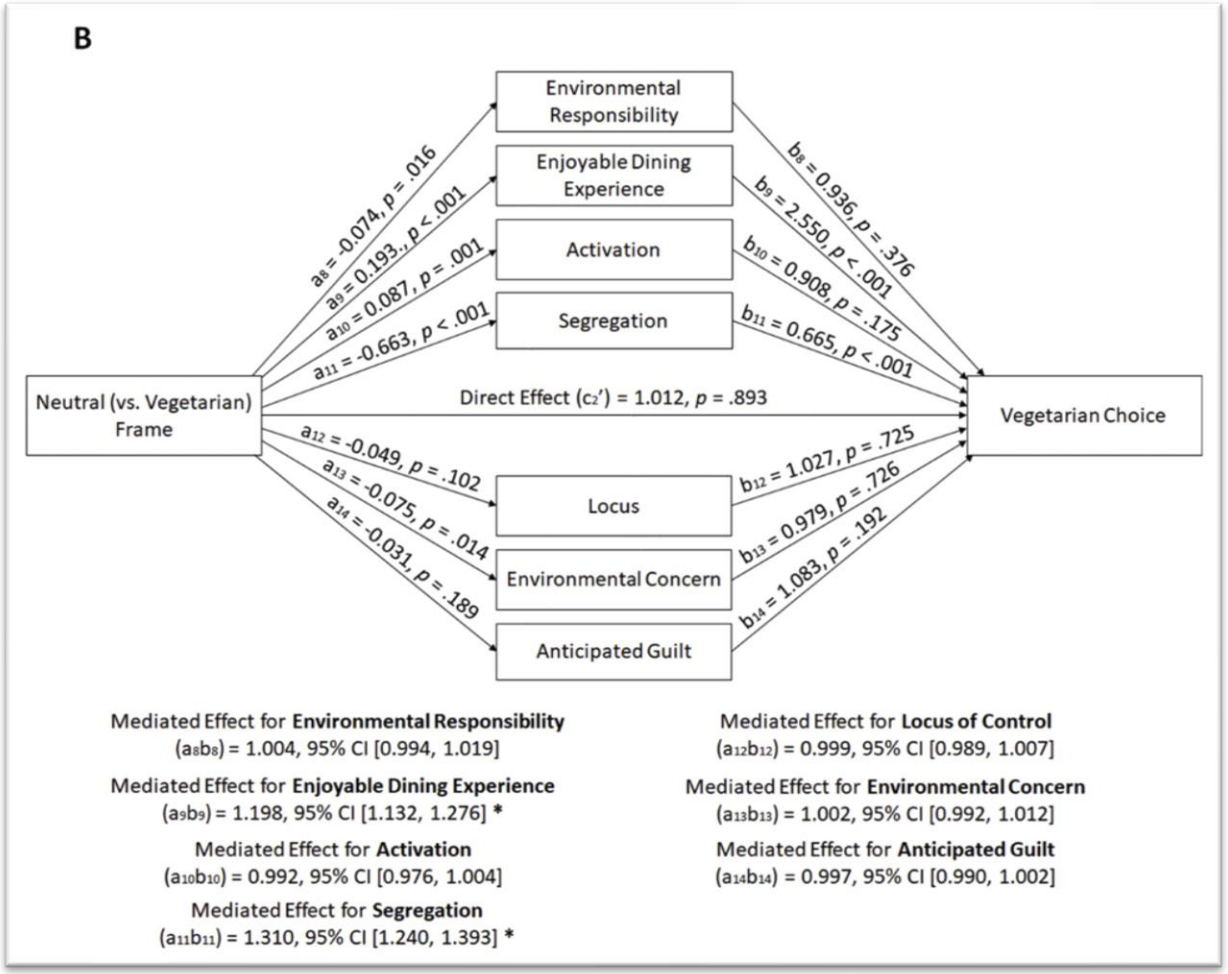
* Suitable for vegetarians

Fig. 1. Two different versions—UP (left) and DOWN (right)—of the menus that were used in the pro-environmental frame condition (Studies 1, 2, and 3)

Framing bias

Krpan and Houtsma (2020) found that people are more likely to order vegetarian dishes when this food category is labelled with names that emphasize its environmental benefits or the social experience of dining, or when vegetarian and non-vegetarian dishes are presented under the same menu section.





The power of surprise

Redick, S., 2013. Surprise is still the most powerful marketing tool. *Harvard Business Review*, pp.05-10.

https://bk.asia-city.com/restaurants/bangkok-restaurant-reviews/omakase-ki-shin

- Surprise is still probably the most powerful marketing tool:
  - Surprise is addictive.
    - Dr. Read Montague, an associate professor of neuroscience at Baylor. “That suggests people are designed to crave the unexpected.”
  - Surprise is cheap.
  - Surprise turbocharges emotions.
  - Surprise fuels passionate relationships.

Mere Exposure Theory

Photo by Brett Jordan on Unsplash

Photo by Hello I'm Nik on Unsplash

Ikea effect

https://www.punpro.com/p/รวมโปรเด็ด-10-ร้านบุฟเฟ่ต

The Paradox of Choices

Iyengar, S.S. and Lepper, M.R., 2000. When choice is demotivating: Can one desire too much of a good thing?. *Journal of personality and social psychology*, *79*(6), p.995.

6 varieties VS 24 varieties

Image by Michal Jarmoluk from Pixabay

Money Illusion or Mispricing

Photo by Maksym Pozniak-Haraburda on Unsplash

Moral Credential Effect

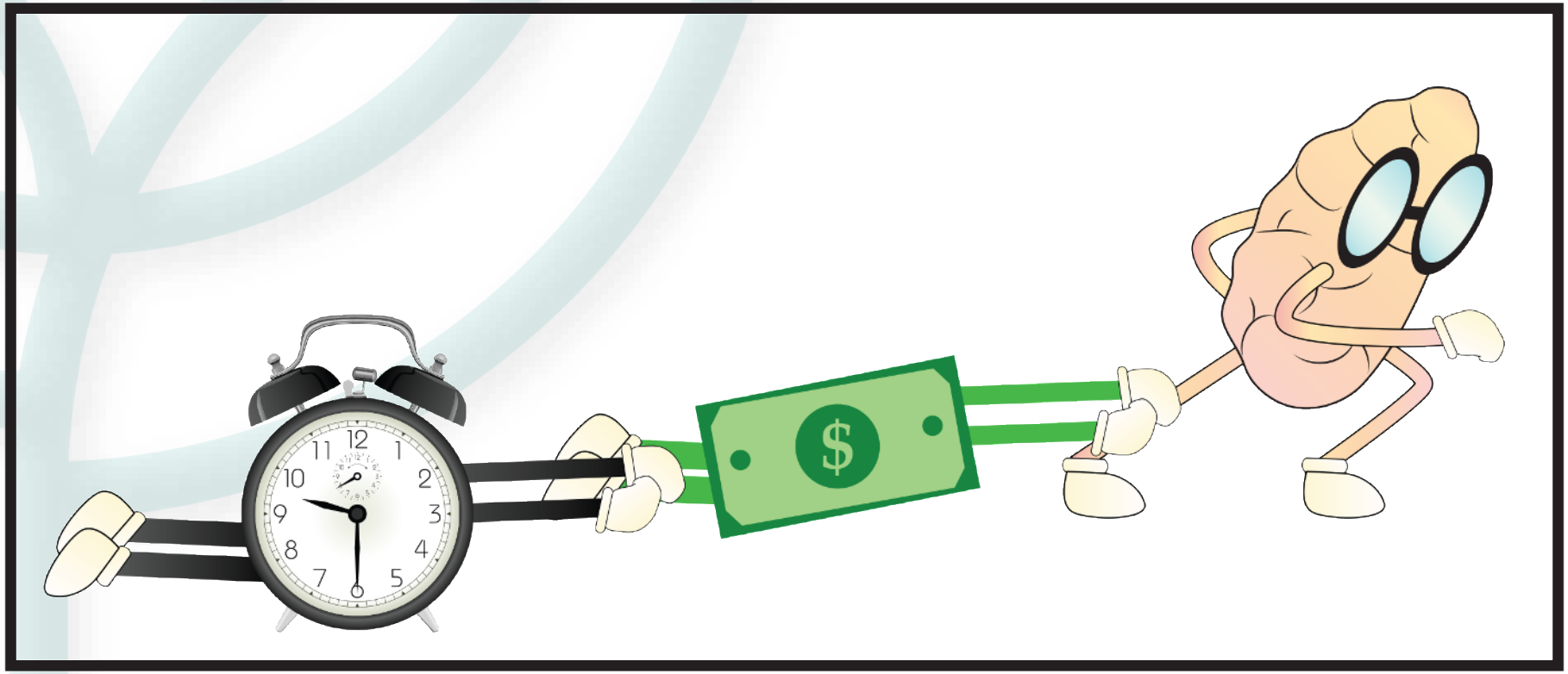
After exercise,

let's enjoy!!!

Photo by Duncan Shaffer on Unsplash

Monin, B. & Miller, D. T. (2001). Moral credentials and the expression of prejudice. *Journal of personality and social psychology,* **81**, 33.

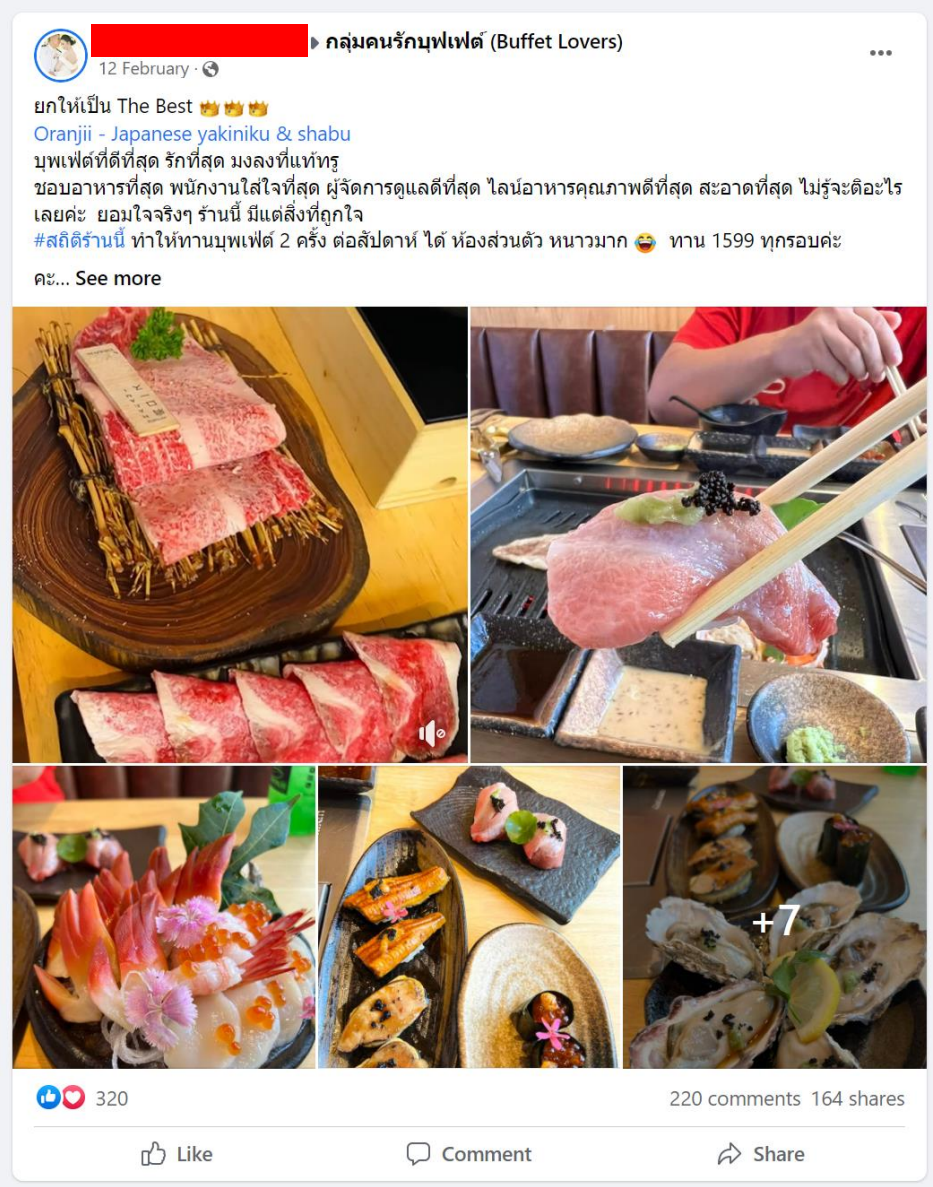
Sunk Cost Fallacy



Negativity Effect

https://www.theguardian.com/lifeandstyle/2019/nov/24/five-ways-to-get-your-children-to-eat-vegetables

Social (heard) behaviour



Social learning

- We often look to others to see how to behaviour e.g., in crises

Expert bias

- We are open to influence from people in authority or people we like

Salmon, S.J., De Vet, E., Adriaanse, M.A., Fennis, B.M., Veltkamp, M. and De Ridder, D.T., 2015. Social proof in the supermarket: Promoting healthy choices under low self-control conditions. *Food Quality and Preference*, *45*, pp.113-120.

The Decoy Effect

Scarcity bias

https://quasa.io/media/how-to-use-scarcity-marketing-without-leaving-your-customer-feel-manipulated

Optimistic bias

da Cunha, D.T., Stedefeldt, E. and de Rosso, V.V., 2014. He is worse than I am: The positive outlook of food handlers about foodborne disease. *Food Quality and Preference*, 35, pp.95-97.

- Question 1 – "What is the consumers' likelihood of presenting abdominal pain and/or vomiting (foodborne disease) after eating a meal or food in a restaurant (other than the one where you are working)?".
- Question 2 – "What is the consumers' likelihood of present abdominal pain and/or vomiting (foodborne disease) after eating a meal or food prepared by you?".
- Question 3 – "What is the consumers' likelihood of present abdominal pain and/or vomiting (foodborne disease) after eating a meal or food in another food service that is not a restaurant (like hospitals, beach kiosks, street food kiosk or school meal services)?".
- Question 4 – "What is the likelihood of your friends and family members present abdominal pain and/or vomiting (foodborne disease) after eating a meal or food prepared by you?"
- Question 5 – "What is the likelihood of your friends and family members present abdominal pain and/or vomiting (foodborne disease) after eating a meal or food prepared by a food handler other than you?"

Table 1
Perceived risk scores for the five constructs of optimistic bias among food businesses.

Risk assessment	Street food kiosks (n = 38)		Beach kiosks (n = 36)		Restaurants (n = 41)		Hospitals (n = 14)		School meal services (n = 47)	
	MD	p	MD	p	MD	p	MD	p	MD	p
1. Optimistic bias about consumer's risk	3.10	**<0.01**	2.97	**<0.01**	2.9	**<0.01**	3.15	**<0.01**	2.06	**<0.01**
2. Optimistic bias about friends and family's risk	1.60	**0.03**	3.42	**<0.01**	3.49	**<0.01**	3.75	**<0.01**	3.16	**<0.01**
3. Optimistic bias about risk of food businesses other than yours	0.11	0.80	1.21	0.06	2.4	**<0.01**	4.43	**<0.01**	3.46	**<0.01**
4. Optimistic bias about other food businesses' risk and own risk	3.22	**<0.01**	4.19	**<0.01**	5.31	**<0.01**	7.58	**<0.01**	5.49	**<0.01**
5. Optimistic bias about friends' and family's risk compared with consumer's risk	1.00	**0.03**	0.25	0.27	0.65	0.22	0.37	0.05	0.54	0.16

MD = mean difference. Bold values indicate significant differences ($p < 0.05$).

Example of Behavioural economics implementation

In 2012, the UK introduced automatic entry into the pension program. If employees do not want to enter the program, they can sign documents to leave the program. In this way, it can increase program participation from 61% to 83% and increase the number of people entering the program by more than 400,000.

In the UK, the next absentee patient results in huge health costs. They changed the process by asking the patient to write the date and time of the appointment by himself instead of the staff writing. It helps patients feel that they have an obligation to follow up on appointments. This resulted in an 18% reduction in the number of absentees and an estimated $180 million in associated costs savings from minimal procedure changes.

In the Philippines, there was an experiment allowing people to collect more money. They allowed participants to open the “commitment account” that could be withdrawn from this account only when the amount reached a certain value (participants set that value by themselves). The research found that after a year, the participants in the “contract account” group had 82% of their savings, while the control group in the normal account had only 12%.

Since behavioural science is based on experiments, you don’t have to take the findings on faith alone. The methodologies used to test each bias are openly available and you can repeat them to ensure they work for your brand.

The choice factory
By Richard Shotton (2018: p4)