

ScienceDirect



Check for

Sustainable food choices as an impression management strategy

Michał Folwarczny¹, Tobias Otterbring^{2,3} and Gastón Ares⁴

Although living standards in certain parts of the world have improved significantly in recent decades, these improvements have often been accompanied by environmental degradation that poses health risks to millions of people. Sustainable food choices play a critical role in addressing these environmental challenges. The current review summarizes how sustainable food choices are used as an impression management action aimed at projecting a desirable image of oneself to others. We show how three distinct factors — status striving, group cooperation, and the desire to attract a partner — influence the use of sustainable food as an impression management tactic. The review concludes by highlighting several future research directions based on recent research on related topics.

Addresses

¹ Department of Business Administration, Reykjavik University, Iceland

² Department of Management, University of Agder, Norway

³ Institute of Retail Economics, Sweden

⁴ Instituto Polo Tecnológico de Pando, Facultad de Química, Universidad de la República, Uruguay

Corresponding author: Otterbring, Tobias (tobias.otterbring@uia.no)

Current Opinion in Food Science 2023, 49:100969

This review comes from a themed issue on **Sensory Science &** Consumer Perception

Edited by Edgar Rojas-Rivas and Facundo Cuffia

For complete overview of the section, please refer to the article collection, "Sensory Science & Consumer Perception 2023"

Available online 24 November 2022

https://doi.org/10.1016/j.cofs.2022.100969

2214–7993/© 2022 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY license (http:// creativecommons.org/licenses/by/4.0/).

Introduction

Living standards in most parts of the world have steadily improved decade by decade. This increase in affluence has led to increased use of natural resources and pollutant emissions, posing alarming threats to natural and societal systems [1]. Without considerable changes in consumption patterns, the Sustainable Development Goals will not be achieved [2]. Society-led changes have been identified as a cornerstone for limiting climate change and environmental degradation [3]. The United Nations has emphasized the role of consumer behavior within the sustainable development agenda [4].

Considering that food production is a major contributor to climate change, shifts in consumer food choices are critical for sustainable development [5]. Consumers have the potential for making food systems more sustainable by choosing more environmentally friendly food products, rejecting less sustainable alternatives, and reducing food waste [6]. With consumer and planetary health in mind, the Lancet Commission recommends reducing consumption of animal products, especially meat from ruminants, and increasing consumption of plant-based foods such as whole grains, legumes, nuts, fruits, and vegetables [7]. In addition, consumers can reduce the environmental footprint of their food choices by avoiding ultraprocessed foods, wasting less food, and making their menus more diverse by buying local products that do not have to be transported long distances [8].

However, these recommendations for making diets more sustainable are complex to implement due to the characteristics of modern food systems as well as individual factors [9]. Human beings are evolutionarily predisposed to prefer (less sustainable) energy-dense and animalbased products over (more sustainable) plant-based alternatives and food options with fewer calories [10–13]. Beyond sensory experiences with food, consumers also use food choices as a means to express values, attitudes, and social identities [14,15].

Determinants of sustainable food choices are diverse and include both individual and social factors [16]. So far, attitudes, values, and cognitions related to the environmental impact of consumption have been the main factors highlighted in the literature [17]. This review contributes to the literature by summarizing recent advances in studying sustainable food choices as an impression management strategy. We first describe impression management, which is a central construct in this review. Next, we delineate how three distinct factors influence sustainable food choices as an impression management tactic. Here, we focus on status striving, group cooperation, and the desire to attract mates. The review concludes by pinpointing implications and several potentially fruitful avenues for future research.

Impression management in the domain of sustainable food choices

Social interactions are never-ending theatrical performances in which people sometimes flaunt their possessions and adjust their behavior to impress others [18]. Impression management is the activity whereby a sender strategically tries to control which information to send out to a receiver, such that the latter interprets the former in a certain way regarding attributes, traits, and key characteristics [19]. People are particularly prone to engage in impression management activities when (a) they are motivated to do so (e.g. when there is a discrepancy between their desired and current social image), and (b) the selected strategy can aid in conveying a desirable impression (i.e. when a given action can meet or exceed certain expectations and communicate values that present the sender in a positive light) [20]. What, where, and how to eat is part of a wide range of impression management tactics [21].

Factors underlying sustainable food choices as an impression management strategy

Status striving

The pursuit of status is a fundamental human motive, with relative position in a social hierarchy (hereafter referred to as 'status') influencing self-esteem, well-being, and various health outcomes [22]. Whereas conspicuous consumption of expensive goods and services has traditionally been a widespread status signal, consumers today are increasingly turning to inconspicuous and authenticity-based goods that have emerged as contemporary status signals [23]. Indeed, recent research has found proenvironmentalism to be positively associated with subjective and objective socioeconomic status [24].

Sustainable products, including food, tend to be more expensive and may be inferior to conventional alternatives in specific characteristics, but are more likely to benefit society at large rather than individual consumers, thus meeting common criteria for status signals [25]. Supporting this notion, previous research has found that the motivation to gain status increases consumer preferences for sustainable products, especially when those products cost more than their conventional alternatives and when the consumption takes place publicly (e.g. shopping at a mall) rather than privately (e.g. shopping in front of a PC at home) [26]. Indeed, people who choose 'green' products are perceived as having higher status than those who choose conventional alternatives, with this effect being mediated by their assumed higher prosociality and wealth [27]. Qualitative research further indicates that Canadians use their food-related behaviors to signal status [28], whereas South Koreans perceive the organic food market to be similar to luxury fashion [29]. In fact, South Korean consumers associate organic food with price premiums and star status, considering that many high-status celebrities, who often display their luxurious lifestyles, frequently consume such goods [29]. All in all, the extant literature suggests that impression management strategies aimed at signaling status may motivate consumers to choose sustainable foods, especially when other consumers are present during the food selection process [26].

Group cooperation

Maintaining complex social networks requires at least some degree of cooperation. Cooperative behavior often brings benefits to individuals in the form of improved access to valuable resources [30]. People who wish to benefit from cooperation with others must not only be cooperative themselves, but also be perceived as such [31].

Engaging in sustainable eating habits may be seen as a way of caring for the future of society. Thus, sustainable food consumption can communicate cooperativeness. People who are described as more (vs. less) pro-environmental are preferred as interaction partners, elicit more cooperative behaviors from others, and are seen as more cooperative in the public goods game [32]. Moreover, being observed by a prospective interaction partner leads people to donate more to environmentally friendly organizations than when they make a donation decision anonymously [33••]. Interestingly, participants who behave in a very environmentally conscious manner do not engage in more cooperative actions than those who behave in a less environmentally conscious manner [32].

However, consuming sustainable foods may also have negative consequences for those wishing to convey a cooperative image. Although organic consumption makes people appear more altruistic, consumers who buy organic (vs. conventional) products are also perceived as having a stronger impression management motivation [34••]. Supporting this notion, people who follow relatively sustainable diets (i.e. vegans and vegetarians) are perceived as more moral, but also more moralistic and eccentric than their omnivore counterparts [35]. Finally, the presence of others sometimes leads to unsustainable behaviors related to eating, such as overconsumption of energy when eating with friends and family members, which is often explained through the lens of social facilitation effects [36]. In sum, sustainable food consumption is a double-edged sword when used as an impression management strategy to promote cooperation. Whereas buying 'green' produce can convey cooperativeness, such food choices can also make consumers appear shallow and motivated to impress others, with the mere presence of other consumers even resulting in unsustainable eating behaviors at times.

Mate attraction

The desire to attract a mate is vital for survival and reproduction, thus representing a fundamental human motive [37]. When applied to food settings, several studies indicate that contextual cues related to mate attraction can change consumers' preference patterns and choice behavior, either toward or away from sustainable foods.

Because men and women have faced different challenges in our evolutionary past, the impression management tactics used to appear desirable and attract mates are sometimes sex-specific [38–40]. Men more than women prioritize beauty in a potential mate, whereas women more than men prefer a potential mate with good financial prospects [41]. Accordingly, when striving to attract a potential partner, men may be more prone to prefer meat, given the established relationship between meat, masculinity, and status [42], whereas women may manage to convey femininity and beauty by means of more sustainable food choices, such as vegetarian or vegan meat substitutes [43–45].

Although sustainable consumption is often associated with femininity, which could help to explain why men sometimes avoid purchasing products that signal sustainability, male consumers may also benefit from displaying their commitment to environmental protection, beyond the status gains associated with buying green products. In fact, several studies indicate that sustainable consumption, such as purchasing environmentally friendly foods, is interpreted as an act of altruism and generosity as well as a signal of high partner commitment, particularly in long-term romantic relationships [46••,47••]. However, it remains debated whether such forms of conspicuous conservation are always honest signals of partner commitment or rather reflect a 'cheap' way of appearing attractive on the mating market. Borau and colleagues [46••] found that men who were in a committed relationship reported being more environmentally friendly than single men by means of green consumption but not regarding their perceived green self-identity, whereas Palomo-V'elez and colleagues [47••] did not find any difference in preferences for sustainable products between participants (both men and women) who were exposed to attractive opposite-sex faces (vs. neutral control stimuli), thus indicating a possible actor-observer discrepancy. In other words, observers tend to think positively about individuals who are described as purchasing sustainable products in mating contexts, but whether such inferences are congruent with the actual traits and behaviors of people who engage in green consumption remains inconclusive.

Conclusion and future research

This review summarizes recent research on how people use sustainable food choices as an impression management strategy. We elaborated on three factors (i.e. status striving, group cooperation, and mate attraction) that can explain why, when, and how people use sustainable food choices as a means of portraying themselves in a favorable fashion. However, these factors have not yet been exploited to promote more sustainable food choices. Thus, the inclusion of references to impression management strategies as part of communication campaigns and interventions can contribute to encouraging changes in eating habits.

Considering that the topic has not received much attention in the literature yet, some fruitful future research directions deserve special consideration. First, although (conspicuous) sustainable food consumption is recognized as a status-signaling strategy $[27 \bullet -29 \bullet]$, it is not known exactly how sustainable food consumption signals status. There are two main status-signaling strategies: dominance, which involves the use of fear and intimidation to force compliance, and prestige, which involves demonstrating skills that are valued by others so that they voluntarily comply [48]. Future work should test whether sustainable food consumption primarily conveys dominance, prestige, or both. Second, people who consume sustainable foods are seen as more cooperative, although their behavior is not more cooperative than the behavior of people who do not engage in such consumption [32,34••,35]. Thus, it is possible that some people strategically use green consumption as a way to camouflage their other noncooperative practices, thus mimicking the 'green washing' strategies that some companies unethically engage in [49]. Further studies, preferably those that examine human behavior longitudinally, should test this possibility. Relatedly, to disentangle whether green consumers show a genuine care for the planet or simply want to visibly display such prosocial tendencies in public places, it would be interesting to test whether consumers' scores on the scale capturing green consumption values [50] correlate with the Marlowe---Crowne Social Desirability Scale or the BIDR Impression Management Scale [51]. Finally, whereas the current review focused on three important contextual factors underlying consumers' sustainability-related decisions, there are multiple traits and individual difference factors, ranging from birth order [52•], personality [53], and attachment style [54•] to gender and sex [42] that have also been shown to predict sustainable shopping. Future studies, preferably using metaanalytic techniques, should optimally test the strength of association between green consumption and a series of (a) situation-specific states and (b) stable traits.

In closing, it is worth mentioning that the current review is largely based on studies from Western, educated, industrialized, rich, and democratic (WEIRD) societies [55]. As a result, cultural variability in the direction and strength of the reported effects remains to be examined. Moreover, people differ substantially in their values even within WEIRD and non-WEIRD countries [56], thus highlighting the need to also consider social stratification and regional fluctuations on top of cross-cultural variation in future research on sustainable food choices as an impression management strategy [57].

Conflict of interest statement

The authors do not have any conflicts of interests to disclose.

Data availability

No data were used for the research described in the article.

References and recommended reading

Papers of particular interest, published within the period of review, have been highlighted as:

- of special interest
- •• of outstanding interest
- Wiedmann T, Lenzen M, Keyßer LT, Steinberger JK: Scientists' warning 1. on affluence. Nat Commun 2020, 11:1-10, https://doi.org/10.1038 41467-020-16941-
- Bengtsson M, Alfredsson E, Cohen M, Lorek S, Schroeder P: 2. Transforming systems of consumption and production for achieving the sustainable development goals: moving beyond efficiency. Sustain Sci 2018, 13:1533-1547, https://doi.org/10.1007/s11625-018-0582-
- Alfredsson E, Bengtsson M, Brown HS, Isenhour C, Lorek S, Stevis D, 3. Vergragt P: Why achieving the Paris Agreement requires reduced overall consumption and production. Sustain: Sci Pract Policy 2018, 14:1-5. https://d 733 2018 1458815 ni ora/10 10
- 4. UN: Resolution adopted by the General Assembly on 6 July 2017. 2017. Available from: (http://www.com.com/ undocs.org/A/RES/
- Vermeulen SJ, Campbell BM, Ingram JS, et al.: Climate change and food systems. Annu Rev Environ Resour 2012, 37:195-222, https://doi. 5. 46/annurev-environ-020411-130608
- Aschemann-Witzel J, Ares G, Thøgersen J, Monteleone E: A sense of 6. sustainability? - How sensory consumer science can contribute to sustainable development of the food sector. Trends Food Sci Technol 2019, 90:180-186, https://doi.org/10.1016/j.tifs.2019.02
- Willett W, Rockström J, Loken B, Springmann M, Lang T, Vermeulen S, Garnett T, Tilman D, DeClerck F, Wood A, *et al.*: Food in the 7. Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. Lancet 2019, 393:447-492, https://doi.org/ 10.1016/S01 (18)31788-4
- Aschemann-Witzel J: Consumer perception and trends about health and sustainability: trade-offs and synergies of two pivotal issues. Curr Opin Food Sci 2015, 3:6-10, https://doi.org/10.1016/j.cofs.2014 08.002
- Swinburn BA, Kraak VI, Allender S, Atkins VJ, Baker PI, Bogard JR, Brinsden H, Calvillo A, De Schutter O, Devarajan R, *et al.*: **The global syndemic of obesity, undernutrition, and climate change: the Lancet** 9. Commission report. Lancet 2019, 393:791-846, https:// 1016/S0140-67
- 10. Folwarczny M, Otterbring T, Sigurdsson V, Tan LK, Li NP: Old minds, new marketplaces: how evolved psychological mechanisms trigger mismatched food preferences. Evolut Behav Sci 2022, https://doi.org 10.1037
- Folwarczny M, Christensen JD, Li NP, Sigurdsson V, Otterbring T: Crisis communication, anticipated food scarcity, and food preferences: preregistered evidence of the insurance hypothesis. Food Qual Prefer 2021, 91:104213, https://doi.org/10.1016/j.foodgual.2021 104213

In this paper, the insurance hypothesis is empirically tested. This hypothesis was put forward to partially explain why people find it difficult to make sustainable and healthy food choices.

12. Folwarczny M, Otterbring T, Sigurdsson V, Gasiorowska A: Seasonal • cues to food scarcity and calorie cravings: winter cues elicit preferences for energy-dense foods. Food Qual Prefer 2022, 96:104379, https://doi.org/10.1016/j.foodqual.2021.104

Here, the authors show that even subtle visual cues, such as watching winter rather than summer landscapes, can increase preferences for un-healthy and less sustainable foods

- 13. Tuorila H, Hartmann C: Consumer responses to novel and unfamiliar foods. Curr Opin Food Sci 2020, 33:1-8, https://doi.org/10.1016/j.cofs 2019 09 00
- 14. Nezlek JB, Forestell CA: Vegetarianism as a social identity. Curr Opin

Food Sci 2020, 33:45-51, https://doi.org/10.1016/j.cofs.2019.12.005.
 This article highlights the relationship between dietary preferences (i.e. vegetarianism) and social identities (e.g. beliefs, attitudes), thus showing that food preferences are not merely a result of gustatory sensations.

- Stelick A, Dando R: Thinking outside the booth—The eating environment, context and ecological validity in sensory and consumer research. Curr Opin Food Sci 2018, 21:26-31, https://doi. ora/10 1016/i cofs 2018 05 005
- Zhang X, Dong F: Why do consumers make green purchase decisions? Insights from a systematic review. Int J Environ Res Public Health 2020, 17:6607, https://doi.org/10.3390/ijerph1718660
- 17. Habib R, White K, Hardisty DJ, Zhao J: Shifting consumer behavior to address climate change. Curr Opin Psychol 2021, 42:108-113, https:// doi.org/10.1016/i.copsvc.2021.04.007
- 18. Goffman E: The Presentation of Self in Everyday Life. Anchor Books; 1959
- Schlenker BR: Self-presentation. In Handbook of Self and Identity. Edited by Leary MR, Tangney JP. The Guilford Press; 2012:542-570.
- 20. Leary MR, Kowalski RM: Impression management: a literature review and two-component model. Psychol Bull 1990, 107:34-47, https://doi org/10.1037/0033-2909.107.1.34
- 21. Gopnik A: The Table Comes First: Family, France, and the Meaning of Food. Quercus; 2011.
- 22. Anderson C. Hildreth JAD. Howland L: Is the desire for status a fundamental human motive? A review of the empirical literature. Psychol Bull 2015, 141:57410.1037/a0.
- 23. Eckhardt GM, Bardhi F: New dynamics of social status and distinction. Mark Theory 2020, 20:85-102, https://doi.org/10.1177/
- 24. Grandin A, Guillou L, Sater RA, Foucault M, Chevallier C: Socioeconomic status, time preferences and proenvironmentalism. J Environ Psychol 2022, 79:101720, https://doi.org/ 10.1016/j.jenvp.2021.101720
- 25. Athwal N, Wells VK, Carrigan M, Henninger CE: Sustainable luxury marketing: a synthesis and research agenda. Int J Manag Rev 2019, 21:405-426. https://doi.org/10.1111/jimr.12195
- 26. Griskevicius V, Tybur JM, Van den Bergh B: Going green to be seen: status, reputation, and conspicuous conservation. J Personal Soc Psychol 2010, 98:392, https://doi.org/10.1037/a0017346
- Kohlova MB, Urban J: Buy green, gain prestige and social status. J
 Environ Psychol 2020, 69:101416, https://doi.org/10.1016/j.jenvp.2020. 01416.

The authors of this article show how environmentally friendly consumption can lead to an increase in inferred social status. Therefore, 'going green' can be a viable impression management strategy for presenting oneself as high in the social hierarchy.

- 28. Beagan BL, Power EM, Chapman GE: "Eating isn't just swallowing food": food practices in the context of social class trajectory. Can Food Stud/La Rev Can Des'etudes Sur l'alimentation 2015, 2:75-98, https://doi.org/10.15353/cfs-rcea.v2i1.50
- 29. Fifita IM, Seo Y, Ko E, Conroy D, Hong D: Fashioning organics: wellbeing, sustainability, and status consumption practices. J Bus Res 2020, **117**:664-671, https://doi.org/10.1016/j.jbusres.2019.01.005. This article, based on in-depth interviews, shows that consumers often en-

gage in organic food consumption to signal social status, meaning that the purchase motives resemble those of luxury fashion.

30. Tomasello M, Vaish A: Origins of human cooperation and morality. Annu Rev Psychol 2013, 64:231-255, https://doi.org/10.1146/annure psych-113011-143812

- Balliet D: Communication and cooperation in social dilemmas: a meta-analytic review. J Confl Resolut 2010, 54:39-57, https://doi.org/ 10.1177/00220027093524
- Vesely S, Kl'ockner CA, Brick C: Pro-environmental behavior as a signal of cooperativeness: evidence from a social dilemma experiment. *J Environ Psychol* 2020, 67:101362, https://doi.org/10. 1016/i.jenvp.2019.101362
- Barclay P, Barker JL: Greener than thou: people who protect the environment are more cooperative, compete to be environmental, and benefit from reputation. *J Environ Psychol* 2020, **72**:101441, https://doi.org/10.1016/j.ienyp.2020.101441.

This paper demonstrates that people who buy 'green' products are deemed as more cooperative than those who do not purchase such pro-environmental goods. As a result, other consumers trust them more.

van de Grint LT, Evans AM, Stavrova O: Good eats, bad intentions?
 Reputational costs of organic consumption. *J Environ Psychol* 2021, 75:101622. https://doi.org/10.1016/j.ienvp.2021.101622.

The authors found that organic consumption can be a double-edged sword when used as an impression management strategy: consumers who buy 'green' produce are perceived as moralistic rather than moral, resulting in negative person perceptions at times.

- De Groeve B, Hudders L, Bleys B: Moral rebels and dietary deviants: how moral minority stereotypes predict the social attractiveness of veg*ns. Appetite 2021, 164:105284, https://doi.org/10.1016/j.appet. 2021.105284
- Ruddock HK, Brunstrom JM, Higgs S: The social facilitation of eating: why does the mere presence of others cause an increase in energy intake? *Physiol Behav* 2021, 240:113539, https://doi.org/10.1016/j. physbeh.2021.113539
- Kenrick DT, Griskevicius V, Neuberg SL, Schaller M: Renovating the pyramid of needs: contemporary extensions built upon ancient foundations. Perspect Psychol Sci 2010, 5:292-314, https://doi.org/10. 1177/1745691610369469
- Griskevicius V, Tybur JM, Sundie JM, Cialdini RB, Miller GF, Kenrick DT: Blatant benevolence and conspicuous consumption: when romantic motives elicit strategic costly signals. J Personal Soc Psychol 2007, 93:85, https://doi.org/10.1037/0022-3514.93.1.85
- Otterbring T, Ringler C, Sirianni NJ, Gustafsson A: The Abercrombie & Fitch effect: the impact of physical dominance on male customers' status-signaling consumption. J Mark Res 2018, 55:69-79, https://doi. org/10.1509/jmr.15.0247
- Otterbring T: Appetite for destruction: counterintuitive effects of attractive faces on people's food choices. *Psychol Mark* 2020, 37:1451-1464, https://doi.org/10.1002/mar.21257
- Walter KV, Conroy-Beam D, Buss DM, Asao K, Sorokowska A, Sorokowski P, Aavik T, Akello G, Alhabahba MM, Alm C, et al.: Sex differences in mate preferences across 45 countries: a large-scale replication. *Psychol Sci* 2020, 31:408-423, https://doi.org/10.1177/ 0956797620904154
- Rodrigues H, Goméz-Corona C, Valentin D: Femininities & masculinities: sex, gender, and stereotypes in food studies. *Curr Opin Food Sci* 2020, 33:156-164, https://doi.org/10.1016/j.cofs.2020. 05.002
- Brough AR, Wilkie JE, Ma J, Isaac MS, Gal D: Is eco-friendly unmanly? The green-feminine stereotype and its effect on sustainable consumption. J Consum Res 2016, 43:567-582, https://doi.org/10. 1093/jcr/ucw044
- Otterbring T: Healthy or wealthy? Attractive individuals induce sexspecific food preferences. Food Qual Prefer 2018, 70:11-20, https:// doi.org/10.1016/j.foodqual.2017.02.014

- Young ME, Mizzau M, Mai NT, Sirisegaram A, Wilson M: Food for thought. What you eat depends on your sex and eating companions. *Appetite* 2009, 53:268-271, https://doi.org/10.1016/j.appet.2009.07.021
- 46. Borau S, Elgaaied-Gambier L, Barbarossa C: The green mate appeal:
 men's pro-environmental consumption is an honest signal of
- men's pro-environmental consumption is an nonest signal of commitment to their partner. Psychol Mark 2021, 38:266-285, https:// doi.org/10.1002/mar.21321.

This paper shows that men can 'go green' to signal partner commitment in long-term romantic relationships. Therefore, men can use pro-environmental consumption as an impression management tactic to present themselves as more desirable on the mating market.

 47. Palomo-Vélez G, Tybur JM, van Vugt M: Is green the new sexy?
 Romantic of conspicuous conservation. J Environ Psychol 2021, 73:101530, https://doi.org/10.1016/j.jenvp.2020.101530.

Here, the authors found that buying pro-environmental goods increases people's value on the mating market, with such consumption having a more pronounced positive impact in long-term (e.g. marriage) rather than shortterm (e.g. date) mating contexts.

- Cheng JT: Dominance, prestige, and the role of leveling in human social hierarchy and equality. *Curr Opin Psychol* 2020, 33:238-244, https://doi.org/10.1016/j.copsyc.2019.10.004
- Marcatajo G: Green claims, green washing and consumer protection in the European Union. J Financ Crime 2021, https://doi.org/10.1108/ JFC-11-2021-0240
- Haws KL, Winterich KP, Naylor RW: Seeing the world through GREENtinted glasses: green consumption values and responses to environmentally friendly products. J Consum Psychol 2014, 24:336-354, https://doi.org/10.1016/j.jcps.2013.11.002
- Lambert CE, Arbuckle SA, Holden RR: The Marlowe–Crowne social desirability scale outperforms the BIDR impression management scale for identifying fakers. J Res Personal 2016, 61:80-86, https://doi. org/10.1016/j.tp.2016.02.004
- Otterbring T, Folwarczny M: Firstborns buy better for the greater
 good: birth order differences in green consumption values. *Personal Individ Differ* 2022, 186:111353, https://doi.org/10.1016/j.paid.2021. 111353.

The authors found that firstborns are more prone to express green consumption values than laterborns, thus showing that birth order may play a role in shaping sustainable shopping.

- Luchs MG, Mooradian TA: Sex, personality, and sustainable consumer behaviour: elucidating the gender effect. J Consum Policy 2012, 35:127-144, https://doi.org/10.1007/s10603-011-9179-0
- Folwarczny M, Otterbring T: Secure and sustainable but not as prominent among the ambivalent: attachment style and proenvironmental consumption. Personal Individ Differ 2021, 183:111154, https://doi.org/10.1016/j.paid.2021.111154.

This paper argues that attachment style, which develops in early childhood and remains relatively stable over the life course, is predictive of pro-environmental consumption tendencies.

- Henrich J, Heine SJ, Norenzayan A: Most people are not WEIRD. Nature 2010, 466:29.
- Muthukrishna M, Bell AV, Henrich J, Curtin CM, Gedranovich A, McInerney J, Thue B: Beyond Western, Educated, Industrial, Rich, and Democratic (WEIRD) psychology: measuring and mapping scales of cultural and psychological distance. *Psychol Sci* 2020, 31:678-701, https://doi.org/10.1177/0956797620916782
- Jeong S, Lee J: Effects of cultural background on consumer perception and acceptability of foods and drinks: a review of latest cross-cultural studies. Curr Opin Food Sci 2021, 42:248-256, https:// doi.org/10.1016/j.cofs.2021.07.004