“Awww, That’s Such a Cute Lemon!” The Effect of Whimsical Priming on Willingness-to-Pay for Imperfect Produce

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A Thesis
in
John Molson School of Business

Presented in Partial Fulfillment of the Requirements
for the Degree of Masters of Science in Administration (Marketing) at
Concordia University
Montreal Quebec, Canada

December 2019

CONCORDIA UNIVERSITY

School of Graduate Studies

This is to certify that the thesis prepared

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Entitled: "Awww, That's Such a Cute Lemon!" The Effect of Whimsical Cuteness on Willingness-to-Pay for Imperfect Produce

and submitted in partial fulfillment of the requirements for the degree of

Master of Science (Marketing)

complies with the regulation of the University and meets the accepted standards with respect to the originality and quality.

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ABSTRACT

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Many consumers prefer to buy "perfect" produce (e.g., a shiny apple) while avoiding imperfect ones that may be dull in colour and/or odd in shape. In my thesis, I wanted to paint a portrait of this type of consumer. To do so, I looked at various demographic, psychographic and behavioural variables, and found that consumers avoid buying imperfect produce and have negative taste, health and effort perceptions. Further, this type of consumer does not connect the purchase of imperfect produce to food waste and/or environmental issues. Given the impact of food waste on environmental and societal well-being, I then examined a way to encourage consumers to purchase imperfect produce (and at more reasonable prices): more specifically, I tested whether "whimsical cuteness" might influence how much consumers are willing-to-pay for imperfect produce based on prior research showing that whimsicality results in greater usage, and consumption, of whimsical objects (Nenkov and Scott, 2014). I also tested whether this type of priming works through curiosity (Wang and Huang, 2018). Across two experiments, I found that when consumers were shown an advertisement for an oddly shaped lemon with (versus without) a characteristic related to whimsical cuteness (i.e., googly eyes), they were later willing-to-pay more for oddly shaped lemons. This effect remained even when I increased the time between purchase and consumption. The mediating role of curiosity, however, was unclear and should be re-considered in future research.

ACKNOWLEDGEMENTS

First of all, I would like to sincerely thank my thesis supervisor Darlene Walsh for your patience, your guidance and your incredible positive energy and mindset. Despite not being a researcher, I truly enjoyed conducting this project as a part of team, and I can surely say this is mostly thanks to you. Also, I would like to thank Dr. MichèlePaulin and Dr. Caroline Roux, members of my thesis committee, for your advice and support. To all my friends in Canada, my Beaufs and others, because they have become my family here and made such an amazing environment for me to pursue my graduate studies, thank you from the bottom of my heart. And eventually, I feel really grateful for my parents having my back during this time and to everyone who stayed on the other side of the Atlantic, but have remained by my side during those two years, I truly appreciate you all.

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INTRODUCTION

In 2014, Intermarché, a grocery store in France, launched a promotional campaign called "Ugly Fruits and Vegetables"(Dabi-Schwebel, 2014). Ugly, or imperfect produce, can be defined as fresh fruits and vegetables that do not meet the aesthetic standards that consumers are used to seeing, in either marketing campaigns or physically in grocery stores. For instance, a tomato must be red, shiny, round and surely must not present any bruises(Bilow, 2014). The goal of Intermarché's campaign was to change consumers' perception about "ugly" produce (that is, to raise awareness about the actual quality of imperfect produce) and to re-introduce them in their stores. They did this by turning "ugly" apples and weirdly-shaped carrots into the "stars" of their promotions: that is, imperfect produce became the focus of their advertisements rather than the usual "perfect" produce. Intermarché also reminded consumers in their campaign that by not buying imperfect produce we are contributing to the food waste problem. In fact, across the Atlantic, here in Canada, it is estimated that 4.82 million tonnes of food is thrown away each year, which is more than half of its annual production (Janus, 2019). This number represents a huge amount of energy, from production to landfill. Given the impact that the purchase of imperfect produce may have on the environment, my first research goal was to tackle this problem by first creating a portrait of consumers who buy imperfect produce, as well as a portrait of those who do not, based on their demographic, psychographic and behavioural data. I wanted to uncover the reasons of avoidance as a way to help me figure out what type of priming could be used to improve attitudes (and ultimately, consumer willingness-to-pay) toward imperfect produce.

Next, I wondered how marketers could encourage consumers who usually do not purchase imperfect produce to do so, and at a more reasonable price. Intermarché's "Ugly Fruits and Vegetables" campaign emphasized beauty in imperfect produce, though they are not the only company to encourage consumers to change their perceptions of imperfect produce. In fact, Misfits.com, an imperfect produce online store in the USA, took a slightly different approach by showing pictures of imperfect produce with funny, googly eyes. What impact might "googly eyes" have on consumers? Perhaps googly eyes can be seen as "whimsical." This would be interesting since Nenkov and Scott (2014) show that "whimsically cute" cookies makes consumers more likely to indulge in the consumption of unhealthy food afterwards. Is it plausible then that whimsically cute imperfect produce could make consumers more likely to consume it? Thus, my second research goal was to study

whether presenting imperfect produce in a whimsical manner can improve consumers' attitudes towards it.

Third, I wanted to study the underlying effect that whimsical cuteness has on consumer behaviour. For example, the effect of surprise, which is related to the concept of whimsicality, has been shown to trigger curiosity (Reio & Wiswell, 2000). On this subject, Wiggin et al. (2019) showed that consumers who were primed with curiosity indulged in eating more candies relative to when curiosity was satiated. Thus, it is possible that whimsical priming influences attitude's through curiosity.

Finally, when consumers think about willingness-to-pay for food, they are likely to also consider expiration dates, and the time between purchase and consumption. Amezcua (2015) showed that for non-hedonic products, consumers spent more when consumption was in the distance, presumably because consumption becomes more abstract in the consumers mind. Building on Amezcua's (2015) work, if we increase temporal distance between the purchase of imperfect produce and consumption, it is possible that consumers focus on fun and positive environmental behaviour. This may translate into consumers spending more for such produce. Thus, my last research objective is to investigate whether the effects remain when increasing temporal distance.

The rest of my thesis is organized in the following way: I will first present an overview of recent literature on the effects of whimsical cuteness on consumer behaviour which will lead to the formulation of my first hypothesis. Then, I will deal with the concept of curiosity and how it interacts with whimsicality, allowing me to propose my second and third hypotheses. Third, I will present an overview of the concept of temporal distance and present my fourth hypothesis. Following the theoretical background, I will present the results of a survey I conducted in order to learn more about buyers, and non-buyers, of imperfect produce, while also justifying that whimsical cuteness could indeed be one way to increase WTP (towards imperfect produce). Then, I will present the results of two experiments that were designed to test my four hypotheses. Finally, I discuss the findings of these experiments, their theoretical and managerial implications, and offer future research directions.

THEORETICAL BACKGROUND

Unglamorous image of unaesthetic food

Food is at the center of human being's preoccupation. At the basis of Maslow's pyramid, it represents a Darwinian issue for survival (Saad, 2007). It might explain why especially in westernized countries, we tend to be so cautious with our food (Alpha, 2007). In the case of fresh fruits and vegetables, the aesthetic aspect can be perceived as a guarantee of freshness. For example, Grewal et al. (2019) draw the conclusion that consumers tend to prefer prototypical produce as they seem to be perceived as beautiful and therefore healthy. Also, such prototypical products are not associated with risks related to taste or health (Tsiros & Heilman, 2005). It is not surprising then that "perfect" produce tend to be overrepresented in marketing campaigns and found on groceries stores shelves.

Imperfect produce, on the other hand, are very unpopular among consumers. Some research has found the consumers associate ugly produce with their "self"(Grewal, Hmurovic, Lamberton, & Walker, 2019). Therefore, imperfect produce reflects a negative image of themselves and the more abnormal looking the produce are, the less likely consumers are to buy them (Loebnitz, Schuitema, & Grunert, 2015). Another reason why consumers seem to avoid purchasing imperfect produce may be related to time. That is, consumers may not be willing to take time to prepare food that is oddly-shaped, especially in the fast-paced society we are living in today (Reddy, 2016). For these reasons (and likely others), imperfect produce are often either discarded or steeply discounted. What makes this rather interesting is that as a society, we know that food waste is a subject that is highly linked to environmental issues (Quora, 2018), yet consumers are not fully ready to change their habits for the cause (Québec, 2016).

A few institutions, however, have promoted such produce. In 2014, Intermarché® in France launched a marketing campaign about "Ugly produces" in which it emphasized the bright cosmetic appearance of imperfect produce. In the USA, Giant Eagle offered customers "Produce with Personality" at a reduced price in comparison to regular fresh produce (Giant Eagle launches Produce with personality, 2016). Here the marketing strategy lies in the anthropomorphism of imperfect produce. In fact it is commonly expected that ugly people have a great personality. Based on the same strategy, Walmart ran a "I'm Perfect" campaign in 2016 in which bags of imperfect apples were promoted as perfect, however, the campaign ended in the beginning of 2019 (Choi & McFetridge, 2019). A related example can be seen

on Misfits.com, where they actually use whimsical cuteness by adding googly eyes to their produce on their website. Knowing about Nenkov and Scott's (2014) research, I started wondering how effective some of these promotional strategies may be in changing behaviours, especially those that use cuteness. That is, can cuteness actually change how much consumers are willing to pay for imperfect produce? And if so, why?

Cuteness, whimsicality and technical attractiveness

Hellén and Sääksjärvi, in 2013, define cuteness through the four types of features by which it can be characterized: sweetness, sympathy, simplicity and smallness. Cuteness is thought to make an object attractive to socially interact with, with is consistent with how the Oxford dictionary (Definition of Cuteness in English, 2019) defines cuteness: "quality of being attractive in a pretty or endearing way". Whimsicality is a type of cuteness that has been captured by Nenkov and Scott (2014) as "the character of something or someone to be out of expectations in a funny way", by opposition to kindenschema cuteness, which is related to baby features, such as roundness and smallness. For instance, in their research, Nenkov and Scott (2014) use a stapler that is shaped as a green crocodile (i.e., a whimsical stapler). The shape and colour add an element of surprise, which in turn seems to attract consumers (in comparison to a neutral stapler). By measuring participant's likelihood to use the stapler in different contexts, these researchers found that participants were more likely to use the whimsical stapler than the neutral one in indulgent situations. Similarly, Geke et al. (2008) show that the element of surprise makes a product more interesting and leads consumers to interact with the product. This phenomenon, paired with kindenschema cuteness, is used massively in Japan and is one of the reasons for the huge success of their products abroad (Hiroshi, Fukushima, Yano, & Moriya, 2012). For instance, Pokémon cards and video games, that include colourful, cute and unusual creatures, has been a worldwide success since 1995.

Given that Nenkov and Scott (2014) have shown that whimsical cuteness causes an urge to interact with objects, and that willingness-to-pay reflects consumers' attitude toward the product, we expect that if we make imperfect produce more "whimsical," consumers may be more willing to spend more money on purchasing it. Formally,

H1: Presenting imperfect produce with whimsically cute features (vs. without whimsically cute features) will later increase consumers' willingness-to-pay for imperfect produce.

Curiosity

In 2005, Litman defined curiosity as a desire to know, to see or to experience exploratory behaviour directed towards the acquisition of new information. A discrepancy within the environment (between the expectation of the object and the object itself) induces a mental conflict or an information gap. This then manifests as an urge to obtain the missing information (Wiggin, Reimann, & Jain, 2019; Wang & Huang, 2018) and an urge to obtain knowledge or a learning reward (Wang & Huang, 2018). Grubber et al. (2014) conducted FMRI experiments that showed that curiosity even activated the extrinsic reward motivation circuit. The expectation of this reward tempts indulgence in use (Wiggin, Reimann, & Jain, 2019) and we are more likely to interact with the object of curiosity to solve the conceptual conflict (Reio & Wiswell, 2000). Curiosity therefore can overcome a gradual loss of interest in an ordinary or feared objects. Through curiosity, consumers are likely to become more interesting to interact with (Geke, Schifferstein, & Hekkert, 2007).

Curiosity is a trait that has rarely been measured in research. In 2017, Kashdan et al. (2017) created a scale based on five different types of curiosity: joyous exploration, deprivation sensitivity, stress tolerance, social curiosity and thrill seeking. According to these researchers, joyous exploration and stress tolerance are the dimensions of curiosity that stimulate exploration and discovery of things one does not know about. And imperfect produce, as they are often either discarded or discounted, are potentially avoided and feared by consumers.

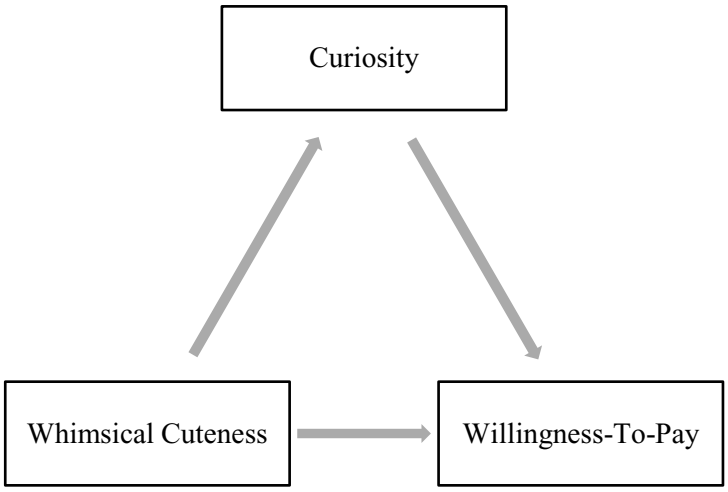
So, on the one hand, I have imperfect produce that might inspire a lack of knowledge and avoidance. On the other hand, whimsicality and fun are features associated with positive attitude. Thus, I expect a lack of congruency when imperfect produce is then associated with whimsically: in other words, seeing a whimsically cute imperfect lemon may trigger a gap between expectation (ugly features) and reality (whimsical features), and this gap to be linked to a state of curiosity. Formally,

H2: Consumers shown an imperfect produce with whimsically cute features (vs. without whimsically cute features) will be in a more curious state of mind with respect tojoyous exploration and stress tolerance.

As I noted earlier, curiosity is the urge we feel when we are eager to get information in order to close the information gap (Litman, 2005). In fact, Reio and Wiswell (2000) have shown that curiosity, in professional context,induces a temporary motivational state that promptspeople to engage in information and knowledge seeking behaviours.In a different domain, Ludden et al. (2008)describe design strategies used by designers and marketers to create an incongruity between expectations and reality. Such surprising designs have been successful because the incongruity makes them "more interesting to interact with." For instance, Victor and Rolf launched a grenade-shaped perfume bottle. It was successful because of the incongruity between the image of flower/perfume and the grenade-shaped bottle, which made consumers willing to try it. Curiosity encourages us to interact technically in the case of objects. If imperfect produce associated with whimsical features indeed triggers a state of curiosity,this heightened level of curiosity may in turn cause consumers to be more willing to interact with the object (in my case, imperfect produce). Therefore, I expect curiosity may increase consumers' willingness-to-pay, which in turn will mediate the effect of priming on WTP (see figure 1 for a graphical depiction of my complete theoretical model). Thus, this research predicts,

H3: Curiosity will influence consumers to pay more for imperfect produce, which in turn, will mediate the effect of whimsical priming on WTP.

Figure 1: Theoretical model



Temporal distance

Based on Kim et al. (2009)'s work, temporal distance is defined as the amount of time between the moment of purchase and the moment of consumption (e.g., paying today and using the purchased item right away, or paying today and deciding to use the purchase next week). Temporal distance is a part of Construal Level Theory (CLT). According to CLT, people tend to see future actions more abstractly relative to actions that are happening now (Kim & McGill, 2018). The aforementioned authors came to the conclusion that when considering a distant purchasing event, consumers focus on the desirability of the object and,because of abstraction, wipe others features out, such as feasibility.Considering consumption that occurs in the short-term, consumers tend to focus on the feasibility of the product. And because of their shape, it is understandable that imperfect produce can be seen as a produce with low feasibility. On the other hand, when considering consumption in the distant future, consumers tend to focus on the desirability of the product.

Research has also found that the further the event, the more abstract a purchase is, and the more indulgent the consumer is(Liberman, Trope, & Wakslak, 2007). Amescza (2015) studied hedonic products and came to the conclusion that consumers were willing to pay more for cause-related hedonic products when the purchase was far in temporal distance. Linking to Kim et al. (2009), hedonic products are highly desirable by nature and the relation to a cause can make them even more desirable.Based on this, I predict that associating whimsically cute features to imperfect produce will increases its desirability, even when the consumption is said to occur in the distant future.Therefore, I predict that following,

H4: Presenting imperfect produce with whimsically cute features (vs. without whimsically cute features) will increase curiosity, and consumers' willingness-to-pay, even in conditions in which the consumption experience is expected to occur in the distant future.

SURVEY: WHO BUYS (AND WHO AVOIDS) IMPERFECT PRODUCE

This survey presented2 main goals. First, I wanted to draw a portrait of consumers who tend to buy imperfect produce. Therefore, my participants were asked a series of demographic and psychographic questions. Since many behaviours toward food are

transmitted through parental patterns (Brown & Ogden, 2004), I included variables such as education and growing environment. Also, it has been proven that women are more environmentally conscious, and closer to nature, than men (Shaw Hughner, McDonagh, Prothero, Shultz, & Stanton, 2007), so it made sense to include gender in my survey.Second, I wanted to understand why consumers are avoiding imperfect produce in order to help me select the appropriate primein my experiments. Thus, participants were also asked a series of questions regarding avoidance, cooking effort, health perception, taste perception and food waste.

Method

Participants

One hundred participants (70% women; M_{age}= 37.04, SD = 11.11) from Amazon Mechanical Turk (MTurk) were recruited to answer my survey in exchange for monetary compensation (1.30 USD).

Procedure

The study consisted of a series of fourtasks. The instructions and stimuli were presented using Qualtrics. All questions within each of the fourtasks were randomized to avoid order effects. For the first task, "Food Behaviour Study," participants were asked four questions that assessed their composting behaviour, bulk purchasing, organic produce purchasing and their importance of being environmentally-friendly (Appendix A, Task1). For the second task, "Imperfect Fruits and Vegetables," participants were shown a matrix of 11 statements for which they had to indicate the extent to which they agree with them on a scale from "strongly disagree" to "strongly agree" (Appendix A,Task 2). The statements were related to purchase and avoidance of imperfect produce, health perception, taste perception, effort perception, environmental practices, perception and cooking habits.The third task, "Scenarios," consisted of twoscenarios randomly presented. In one of the scenarios, participants were shown an imperfect strawberry andwere asked their willingness to purchase using a sliding scale, as well as their purchase likelihood on a scale from "1/definitely no" to "7/definitely yes". In the second scenario, participants were asked the same two questions but were shown an imperfect carrot instead of an imperfect strawberry (Appendix A, Task 3). In

the final task, “Final Questions,” participants were asked a serieseight questions regarding their age, gender, domain of studies, level of studies, growing environment regarding proximity to nature, working area (Appendix 1,Task 4).

Results and Discussion

Data exclusion criteria

Participants were removed prior to data analysis based on two criteria. First, participants were removed if they reported buying imperfect vegetables but not imperfect fruits (or vice-versa). Thus,three participants were removed because the variance between buying imperfect fruits and buying imperfect vegetables was extreme (i.e.,variance > 8.0). Second, I removed twoparticipants whoreported a willingness-to-pay that was 3standard deviations above the mean (for either the strawberry or the carrot). Together, I removed five participants (i.e., 5% of the initial sample), leaving me with a sample of 95 participants (72% female; M_{age} = 37.07, SD = 11.29).

A demographic portrait

Gender, education level, education field, education level working area and proximity to nature during childhood were coded as dummy variables. I then created a variable called “purchase imperfect produce” by averaging participants’ means of “purchasing imperfect fruits” and “purchasing imperfect vegetables” (r=.92, p<.01).A correlation analysis was then conducted between purchasing imperfect produce, age, gender, education level, education field, working area, proximity to a city during childhood and green contact (table 1). It appears there is no significant positive correlation (all ps>.05) except between the domain of studies and the working area (p < .01)and between green contact during childhood and the proximity with a city (p<.01). It makes sense that one works in the domain in which one has studied. Also, it is acceptable that the farther one grows from the city the closer to nature one will also feel.Though, it was surprising that I did not get any positive correlations between gender and attitude toward imperfect produce (buying imperfect produce, likelihood to purchase or WTP). In fact, women have been more associated with environmental behaviours than men (Loebnitz, Schuitema, & Grunert, 2015). Also environmentally friendly features are dissociated from strength which is a manly-associated characteristic (Bodur, Tofighi, &

Grohmann, 2016). Thus, it is hard to draw a demographic portrait of consumers who tend to buy imperfect produce based on the variables Imeasured in my survey. Same can be said for willingness-to-pay: WTP did not correlate with any demographic criteria as all correlations are non-significant (all *p*s> .05).

Table 1: Correlations between purchasing imperfect produce and demographic variables (survey)

	Purchase imperfect produce	Average WTP	Purchase likelihood	Age	Gender	Level of education	Field of study	Working field	Proximity to a city during childhood
Age	.020 *p* = .85	.065 *p* =.53	.037 *p* =.71	1					
Gender	.125 *p* = .23	.053 *p* =.62	-.074 *p* =.48	-.228 *p* = .03*	1				
Level of education	.014 *p* = .90	.093 *p*=.37	.052 *p* =.62	.030 *p* = .77	-.080 *p* = .45	1			
Field of study	-.001 *p* = .99	.107 *p* =.30	-.015 *p* =.87	.016 *p* = .88	.164 *p* = .12	.159 *p* = .13	1		
Working field	-.147 *p* = .16	-.015 *p* =.88	-.116 *p* =.27	.033 *p* = .75	.041 *p* = .70	.028 *p* = .79	.481 *p*<.01**	1	
Proximity to a city during childhood	-.047 *p* = .65	-.137 *p* =.19	-.089 *p* =.39	.025 *p* = .81	.015 *p* = .89	.109 *p* = .30	.085 *p* = .41	.014 *p* = .89	1
Green contact during childhood	.014 *p* = .89	.037 *p* =.72	.028 *p* =.79	.125 *p* = .23	.033 *p* = .75	.092 *p* = .38	.079 *p* = .44	-.141 *p* = .17	.441 *p*<.01**

A psychographic portrait

Next, I ran a series of correlations between theimportance of having an environmental goal, various environmental behaviours (composting, buying bulk and buying organic),WTP and the purchaseof imperfect produce (table2). It appears that composting is not significantly correlated with purchasing imperfect produce (r = .01, p = .93). It can be thought that composting is also a civic act and therefore relates less to imperfect produce purchasing, which may be considered a more personal act. However, we observe thatthe importance of being environmentally friendly, buying bulk and buying organic,are all significantly correlated with imperfect produce purchasing.Regarding WTP, I found a significant correlation between environmental behaviours, such as buying bulk, buying organic and environmental engagement, and willingness to pay for the imperfect carrot and strawberry. We can deduce that consumers who purchase imperfect produce also tend to buy organic produce, bulk produce and try to be environmentally engaged(and tend to buy them at a better price). It is as not surprising, however, as those items all relate to personal consumption choices and not to choices that have implications for the collective civic. Also, lack of packaging in bulk purchasingand low pesticides organic growth are more likely to damage produce and make them imperfect. For instance, bulk conditioning offers less individual protection for fruits and vegetables. As a consequence, they can present bruises or broken parts. Organic growth leaves produce dependable on environmental factors. For instance, a carrot is more likely to encounter a rock while growing and to be separated in two parts. Therefore, it is likely that consumers who buy organic and bulk produce are accustomedto engaging withproduce of odd shapes.

Table 2: Correlations between purchasing imperfect produce and psychographic variables (survey)

	Purchase imperfect produce	Purchase likelihood	Average WTP
Average WTP	.402 $p < .01$**	.528 $p < .01$**	1
Composting	.01 $p = .93$	.232 $p = .02$*	.160 $p = .12$
Buying bulk	.222 $p = .03$*	.278 $p = .01$*	.166 $p = .11$
Buying organic	.197 $p = .06$	.339 $p < .01$**	.264 $p = .01$*
Environment goal importance	.197 $p = .06$	.301 $p < .01$**	.197 $p = .06$

Reasons of avoidance

Finally, we ran a correlation analysis between WTP, purchasing imperfect produce, purchase likelihood, appeal, fear of sickness, effort perception, taste perception, health perception, food waste conscience, fun/likeability, avoidance and learning will in order to understand why some consumers avoid imperfect produce, while other consumer purchase them(table3). Purchasing habits is positively correlated with the impression of appeal, the perception of equal taste and awareness of the fact that this behaviour is one way to reduce food waste. It is easily understandable that consumers who find imperfect produce appealing, and know that the taste will be the same as "normal-looking" produce, will be more likely to purchase. Also, the act of buying imperfect produce is negatively correlated with avoidance, the perception of effort and the fear that imperfect produce will make the consumer sick. Again, it is logical that consumers who tend to avoid imperfect produce in a grocery store, and tend to think that such produce require too much effort to be cooked because of their imperfections, are very not likely to purchase them in the end. Moreover, if a consumer tends to think that an imperfect produce might make them sick, then they are less likely to eat it or to buy it. It seems that imperfect produce being considered healthier than normal looking produce does not correlate with any other statement (all *p*s> .10), however this may have

been the case given the way in which we framed the question. In fact,participants might think that imperfect produce are as healthy as normal-looking produce (but not healthier, as I asked them).

The results yielded a positive significant correlation between purchasing imperfect produce and the price participants were willing-to-pay for the imperfect produce, whether it was an imperfect strawberry (r = .95, p<.01) or an imperfect carrot (r = .77, p<.01). Similarly, participants who reported that they bought imperfect produce, were also more likely to purchase the imperfect produce presented in the scenario (r=.58, p<.01).I found similar significant correlations with willingness-to-pay with the psychological mechanisms. Hence, consumers who are paying less for imperfect produce also avoid them based on the appeal of the produce, the fear of getting sick, the effort, taste perception, their conscience of the relationship between food waste and imperfect produce purchasing and their will to learn how to cook those produce (all ps< .03).However, purchase likelihood is positively correlated with WTP: that is, the more people are willing to pay for imperfect produce, the more likely they are to purchase those produce (r = .58,p< .01).Also, WTP and purchasing imperfect produce are correlated (r = .40,p< .01 indicating that the consumers who are buying imperfect produce are also the ones willing to pay more for them. In the experiments that follow, I will only measure WTP as an indicator of attitude for imperfect produce.

Based on the results of this survey, I now have a better understanding of the consumers who do not buy imperfect produce. It seems, in fact, that their avoidance of imperfect produce is mostly linked to fear, whether it is fear of quality of the product or the effort it will require to prepare. Therefore, a concept that reduces distrust, such as curiosity, seems to be a reasonable way to increase attitudes, and willingness-to-pay, for imperfect produce.

Table 3: Correlations between purchasing imperfect produce, WTP and avoidance mechanisms (survey)

	Purchase imperfect produce	WTP	Purchase likelihood	Appeal	Fear of sickness	Effort perception	Taste perception	Health perception	Food waste conscience	Fun/likeability	Avoidance
WTP	.402 *p*< .01	1									
Purchase likelihood	.528 *p*< .01	.575 *p*<.01	1								
Appeal	.466 *p*<.01**	.34 *p* <.01**	.594 *p* <.01**	1							
Fear of sickness	-.488 *p*<.01**	-.415 *p* <.01**	-.525 *p* <.01**	-.256 *p* =.01*	1						
Effort perception	-.554 *p* < .01**	-.43 *p* < .01**	-.483 *p* <.01**	-.307 *p* <.01**	.610 *p* <.01**	1					
Taste perception	.376 *p* < .01**	.433 *p* <.01**	.478 *p* <.01**	.318 *p* <.01**	-.550 *p* <.01**	-.592 *p* <.01**	1				
Health perception	.138 *p* = .18	.150 *p* =.15	.211 *p* =.04*	.375 *p* <.01**	.044 *p* =.67	.045 *p* =.66	-.108 *p* =.30	1			
Food waste conscience	.347 *p* < .01**	.224 *p* =.03*	.397 *p* <.01**	.123 *p* =.23	-.550 *p* <.01**	-.355 *p* <.01**	.496 *p* <.01**	-.083 *p* =.42	1		
Fun/ likeability	.226 *p* = .03*	.120 *p* =.25	.331 *p* <.01**	.223 *p* =.03*	-.298 *p* <.01**	-.352 *p* <.01**	.430 *p* <.01**	.264 *p* =.01*	.503 *p* <.01**	1	
Avoidance	-.564 *p* < .01**	-.386 *p* <.01**	-.697 *p* <.01**	-4.70 *p* <.01**	.611 *p* <.01**	.678 *p* <.01**	-.582 *p* <.01**	-.114 *p* =.22	-.288 *p* =.01*	-.389 *p* <.01**	1
Learning will	.257 *p* = .01*	.245 *p* =.02*	.305 *p* <.01**	.313 *p* <.01**	-.322 *p* <.01**	-.160 *p* =.12	.221 *p* =.03*	.211 *p* =.04*	.354 *p* <.01**	.401 *p* <.01**	-.215* *p* =.04*

PRETEST: WHICH IMPERFECT PRODUCE SHOULD I USE?

The purpose of the pre-testis to assess the whimsicality of the priming. To fulfill this goal, the participants were shown a picture of an imperfect produce with whimsical primingor without, and then indicated their opinion regarding several items related to different types of "cuteness": whimsical, kindenschema, sweetness, likeability (Nenkov & Scott, 2014). As aforementioned, whimsicality refers to a type of cuteness associated with fun and playfulness.Baby features is the definition of kindenschema cuteness, which is associated with vulnerability and naiveté.Sweetness is the characteristic of being cute in an adorable or endearing way. And likeability captures the positive attitude that consumers hold towards cute features. Also, kindenschema cuteness is linked to caretaking behaviours in adults in response to infantsCaretaking behaviours is then associated with less indulgence and therefore no positive attitude and even distrust toward unusual products(Nenkov & Scott, 2014).

Through this experiment, we want to choose a stimuliin which the priming increaseswhimsicality and sweetness, but does not trigger cuteness related to kindenschema. Following the work of Nenkovand Scott (2014), kindenschematriggers caretaking and rationalization, which is the opposite reaction of indulgence and we did not want our results to be attributed to this type of cuteness.Similarly, we don't want the whimsical priming to increase likeability, since likeability is very likely to increase attitude and WTP on its own(Nguyen, Yuksel, Lyndon, & Melewar, 2015). Thus, it would be difficult to assess that whimsicality is the factor responsible for improving WTP if there is also a difference in likeability.

Method

Participants and design

Two hundred and forty two participants (36% female; M_{age} = 35.19, SD = 10.07) from the USA participated in a 4(imperfect produce: lemon vs. carrot vs. pepper vs. strawberry) × 2 (priming: no prime vs. whimsical prime) between-subjectsexperiment on Amazon Mechanical Turk (MTurk) in exchange for monetary compensation (.50 USD).

Procedure

The experiment consisted in a single task, and the instructions and experimental stimuli were all presented using Qualtrics. Participants were first shown a picture of an imperfect produce (either a lemon, carrot, pepper or strawberry, depending on condition). Then, they were required to rate the produce oneight items.Based on prior research (Nenkov & Scott, 2014), the items reflected whimsical cuteness (whimsical, playful, fun), kindenschema cuteness (vulnerable, naïve, caretaking), sweet cuteness (cute, adorable, endearing) and likeability (likeable, attractive); see appendix B for the experimental stimuli and ratings used. Participants were then asked standard demographic questions(age, gender), as well as questions that assessed their English proficiency, whether they experienced any technical issues, whether they allowed the researcher to use their data, and to write (in a few sentences) what they thought the purpose of the study was. Finally, they were thanked for their participation.

Results

Data exclusion criteria

Participants were removed prior to data analysis using the following fivecriteria. First,participants were removed if they indicated that they did not want the researcher to use their data; however, all participants consented to us using their data. Second, participants were removed if they reported an English proficiency below 3 on a 7-point scale (where 1 = “pretty bad” and 7 = “fluent) as it could interfere with the comprehension of the items. Based on this criteria, I removed four participants. Third, participants were removed if they reported experiencing technical issues; however, no participant in this study reported such issues. Fourth, participants were removed ifthey presented extreme outliers (i.e., 3 standard deviations from a condition mean) for statistical reasons. Based on this criteria, three participants were removedbecause of their responses to the “likeability” variable.Finally, participants were removed if they guessed the true purpose of the study. However, no one was able to correctly guess the purpose of the study, thus no participants were removed based

on this criteria. Taken together, I removed15 participants, 6.2% of the initial sample, leaving me with a sample of 227 participants (37% female; M_{age} = 35.25, SD =10.05).

How cute is the priming

We first created four variables to represent likeable, kindenschema, sweet and whimsical ratings. The "likeable" rating was created by averaging attractive and likeable (r=.74, p<.01), "kindenschema" was created by averaging vulnerable, naïve and caretaking (Cronbach'sα=.75), "sweet" was created by averaging cute, adorable and endearing (Cronbach'sα=.91) and "whimsical" was created by averaging fun, whimsical and playful (Cronbach'sα=.87). Then, we ran an ANOVA with one factor on SPSS to compare the scores of the different types of cuteness in the eight conditions (table 4). The analysis revealed that the lemon and pepper had significant differences in whimsical and sweet ratings between the twopriming conditions. On the other hand, the difference between the two priming conditions for kindenschema and likeability was not significant for both produce(and below 4).

Table 4:Types of cuteness of the different priming (pre-test)

	N	Likeable rating	Kindenschema rating	Sweet rating	Whimsical rating
Condition 1: Pepper (29% female; M_{age}=32.9, SD=8.10)	59				
No Priming (34% female; M_{age}=33.10, SD=8.39)	29	3.05 (1.82)	3.24 (1.76)	2.77 (1.87)	2.91 (1.95)
Whimsical (23% female; M_{age}=32.80, SD=7.93)	30	3.70 (1.95)	3.20 (1.69)	3.83 (2.06)	4.47 (1.93)
		$t(227) = 1.44$, $p=.15$	$t(227)=.10$, $p=.92$	$t(227)=2.34$, $p=.02$*	$t(57)=3.08$, $p<.01$**
Condition 2: Strawberry (30% female; M_{age}= 35.52, SD=11.14)	50				
No Priming (38% female;M_{age} = 35.14, SD=12.54)	21	3.04 (1.76)	2.43 (1.42)	2.90 (1.61)	3.81 (1.38)
Whimsical (24% females; M_{age} = 35.79, SD=10.22)	29	4.38 (1.59)	3.15 (1.51)	4.72 (1.45)	5.14 (1.34)
		$t(227)=2.68$, $p=.01$*	$t(227)=1.65$, $p=.10$	$t(227)=3.63$, $p<.01$**	$t(43)=3.37$, $p<.01$**
Condition 3: Lemon (45% female; M_{age}=35.33, SD=9.17)	64				
No Priming (38% female; M_{age} = 33.86, SD=10.37)	29	3.36 (1.97)	3.15 (1.62)	3.01 (1.94)	3.49 (1.91)
Whimsical (51% female; M_{age} = 36.54, SD=7.99)	35	4.00 (1.66)	2.86 (1.39)	4.21 (1.53)	4.73 (1.36)
		$t(227)=1.46$,$p=.14$	$t(227)=.76$, $p=.45$	$t(227)=2.73$, $p=.01$*	$t(49)=2.93$, $p=.01$*
Condition 4: Carrot (40% female; M_{age}=37.00, SD=11.27)	62				
No Priming (43% female;M_{age} = 36.87, SD=10.78)	30	3.43 (1.62)	2.84 (1.28)	3.48 (1.69)	4.01 (1.36)
Whimsical (38% female;M_{age} = 37.13, SD=11.89)	32	4.05 (1.49)	3.59 (1.47)	4.35 (1.74)	4.82 (1.59)
		$t(227) = 1.39$, $p=.17$	$t(227)=1.93$, $p=.06$*	$t(227)=1.97$, $p=.05$*	$t(60)=2.54$, $p=.01$*

Discussion

The analysis suggests that both the lemon and the pepper showed significant results for cuteness and whimsicality, but not kindenschema nor likeability. Given that the difference in whimsicality between the whimsical priming condition and the no primingcondition is slightly bigger for the lemon than the pepper, as well as an analyses of the standard deviations,I decided to use the lemon with googly eyes as a whimsical in the two experiments that follow.

One may wonder why neither the carrot nor the strawberry "worked".The strawberry was considered to be likeable, whereas the carrot was not considered cute enough in the whimsical condition in comparison to the no priming condition. Yes, if one re-examines the stimuli, both of them were presenting particular shapes (even in the absence of the whimsical prime). A few comments from participants depicted the carrot as a foot, or as if it had hair, and some said that the strawberry looks like it was "hugging" them. That could have induced an anthropomorphizing of the produce.

STUDY 1: WHIMSICAL CUTENESS AND WTP

The goal of my first study is to examine whether presenting an imperfect produce with whimsical features will increase WTP for a similar imperfect produce (H1).To achieve this goal,participants will be first presented with an advertisement that has an imperfect lemon on it. Depending on condition, the imperfect lemon will be presented with, or without, whimsically cute features (e.g., google eyes). Later, they will be asked to imagine being in a shopping scenario, where I will measure their willingness-to-pay for imperfect lemons.

I also want to test my second and third hypotheses, where I propose that imperfect produce presented with whimsical features will increase participant curiosity (H2) and that curiosity, in turn, will increase WTP (H3). To do so, I will measure two aspects of curiosity defined by Kashdan et al. (2017): joyous exploration and stress to unknown experiences. As noted earlier, these two dimensions of curiosity are the ones most closely linked to technical interaction. These measures of curiosity will be assessed after the whimsical priming manipulation, but before I ask participants to report their WTP for the imperfect lemons.

Method

Participants and design

One hundred and fifty one participants (40% female; M_{age} = 35.68, SD = 10.26) from the USA participated in the between-subjects experiment on MTurk in exchange for monetary compensation (1.50 USD). Participants were randomly assigned to one of the two priming conditions (priming: no priming vs. whimsical priming).

Procedure

The study consisted offive different tasks. Based on Nenkovand Scott(2014) and the results of the preliminary study, I presented a first task called "Insights." In this task, participants were asked to indicate how much they like lemonade, their current level of hunger and thirst, their perceived importance of engaging in environmentally-friendly behaviour, and their level of consideration of effort in cooking in order to test for covariate. They were asked to rate each of the aforementioned variables on a 7-point Likert scale among a set of 11 unrelated questions (Appendix C, Task1).

For the second task, "Advertising critic," participants were shown an ad that had an imperfect lemon on it, and were asked to critic it. In the whimsical priming condition, the imperfect lemon had googly eyes on it. In the no priming condition, the imperfect lemon was presented as is. Participants were then asked five questions regarding unrelated issues such as the font or the color of the message. Each question was timed, without participants' knowledge, in order to ensure that the participants were indeed being exposed to the prime (Appendix C, Task 2).

The third task was entitled "A little about you." In this task, participants were asked to rate two positive items (pleased, very pleasant) and three negative items (in a bad mood, depressed, unhappy) to measure their mood.Then, adapted from Keshdan et al. (2017), curiosity was measured through rating eight items. Five items were related to joyous exploration of unknown situation, and the other three items were related to the stress of unknown or unconventional situations(Appendix C,Task 3).

The finaltask, "Grocery shopping case,"provided the participants with a shopping scenario(Appendix C,Task 4). Participants were asked to imagine a scenario in which, because of the heat, they wanted to make lemonade today using a simple recipe they found on

the internet. The recipe was given to them, and they were told that they needed to buy two of the ingredients: sugar and lemons. They were then shown a picture of an imperfect lemon and asked to indicate their willingness to pay for the lemons similar to the ones shown in the picture using a sliding scale between 0 and 10 USD.The imperfect lemon shown was similar from the priming one, but had no whimsical features so that it matches what consumers would find in a typical grocery shopping experience. They were also told that a bag of normal-looking lemons would cost 5 USD. We also asked similar questions about abag of sugar to add realism to the cover story.

Similar to the pretest, we ended our study by asking participants some demographic questions (age, gender), as well the four questions that were used as possible exclusion criteria (i.e., English proficiency, technical issues, whether I am allowed to use their data, and the purpose of the study). They were then thanked for their participation.

Results

Data exclusion criteria

Participants wereremoved prior to data analysis using the same criteria described in the pretest. First, I removed noparticipants because they indicated that they did not want the researcher to use their data. Second, I removed oneparticipant whose self-reported English proficiency rating was below three. Third, noparticipants reported technical issue, so no one was removed for this criteria. Fourth, three participants presented extreme outliers (i.e., 3 standard deviations from a condition mean) on the mood measure, and one participant presented extreme ratings on WTP. Thus, these four participants were removed. Fifth, participants were removed if they guessed the true purpose of the study. Similar to the pretest, no participant was able to correctly guess the purpose of the study.

In addition to these criteria, we also looked at the amount of time participants spent looking at the ad in the "Advertising critic" task. We decided, in advance, that if a participant spent less than 10 seconds answering the questions in the tasks, we would remove them from our data (arguing that they were probably not paying attention to the task). Based on this criteria, we removed one participant. Taken together, thirteen participants, 8.61% of the initial sample, were excluded from the analysis, leaving me with a sample of 138 participants (42% female; M_{age} = 35.60, SD = 10.38).

Effect of priming on mood

Two variables were created to assess participants' positive and negative moods. The first variable was calculated by averaging their answersto the positively framed adjectives (pleased, pleasant; Cronbach's α = .90). The second variable was calculated by averaging participants' responses to the three negatively-framed ones (unhappy, depressed, in a bad mood; Cronbach's α = .95). Next, I tested whether the average positive or negative mood measures changed as a function of the priming manipulation.

As expected, the average positive mood measure among participants assigned to the no primingcondition (M = 5.18, SD = 1.14) and those assigned to the whimsical priming condition (M=5.33, SD = 1.45) were not significantly different from each other (F(1,137) = .44, p = .51). Similarly, there was no significant difference between the average negative mood rating across conditions ($M_{\text{no priming}}$ = 2.69, SD = 1.59; $M_{\text{whimsical priming}}$ = 2.73, SD = 1.38; F(1,137) = .142, p = .71).

Testing for covariates

I tested for potential covariates following a three-step process. First, I checked for the correlation between the variable and WTP. If it was significant, I proceeded to the second step where I tested the homogeneity of variance between WTP and the variable. Third, I looked at whether the variable also passed the assumption of homogeneity of regression. If both assumptions were passed, the variable was included as a covariate in the main analysis.

Likeability of lemonade. First, I tested whether likeability of lemonade should be controlled for in my analyses. The correlation between likeability of lemonade and WTP was not significant (r = .04, p = .61), thus, it was not included as a covariate in further analysis.

Hunger and thirst. The correlation between thirst and WTP was not significant (r=.05, p=.60), nor was the correlation between hunger and WTP (r = -.01, p = .90). Thus, neither variable will be included as a covariate in further analysis.

Goal importance. Next I tested whether the importance of engaging in environmentally-friendly behaviours might impact the WTP for imperfect lemons; the correlation was not significant (r = .15, p = .08). I then examined whether participants knowledgeof reducing food waste correlated with their willingness-to-pay, but again found

no significant relationship (r = .04, p = .66). Thus, neither measure will be included in further analyses.

How effortful cooking is.There was nosignificant correlation between the perception of how effortful cooking is and willingness to pay for imperfect lemons (r = .00, p = .99). This variable will not be considered for further analysis.

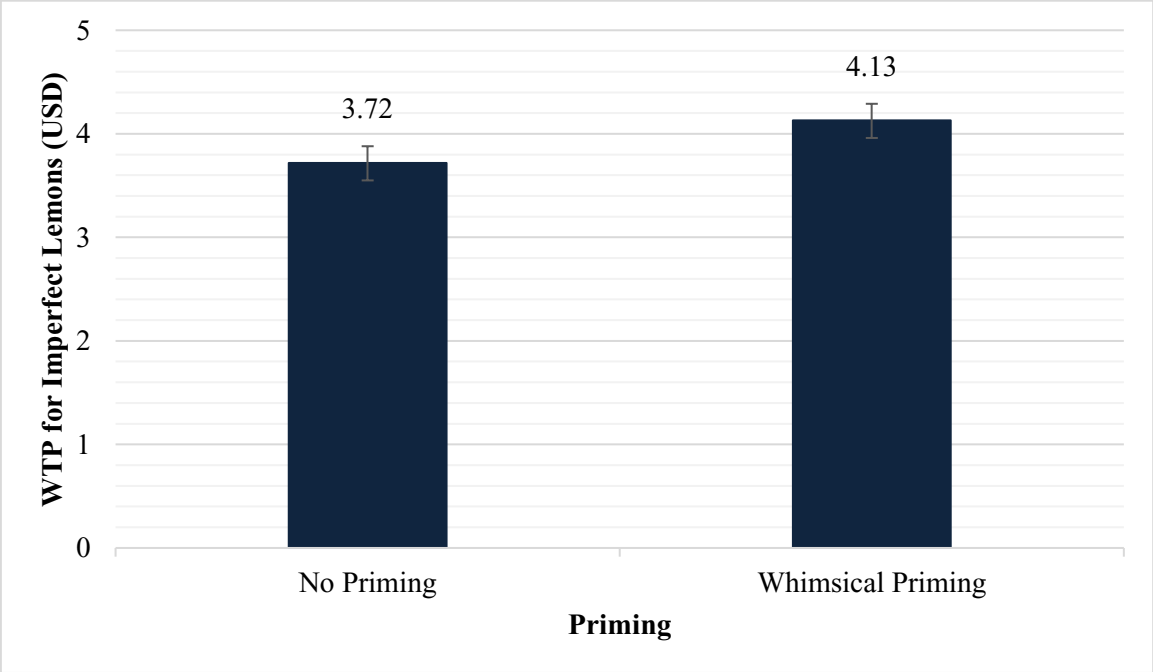
Gender.There is no significant correlation between gender and willingness to pay for imperfect lemons (r = -.04, p =.66). Gender will not be considered as a covariate for further analyses.

Age. There is a significant correlation between age and willingness to pay (r =-.154, p =.05). Therefore, I first tested the assumption of homogeneity of variance. The results of the one-way ANOVA yielded a non-significant effect of priming condition on age (F(1,136) = 2.14, p = .12). A second ANOVA showed no significant priming × age interaction on willingness-to-pay (F(1,136) =.94, p = .33). Therefore, age also passes the assumption of homogeneity of regression. Thus, this variable must be considered as a covariate.

Effect of whimsicality on willingness to pay

The analysis of the difference in participants' willingness-to-spend was conducted using a one-way ANCOVA. Priming was entered as the independent variable, willingness-to-pay was entered as the dependent variable, and age was entered as a covariate. Controlling for age, the results indicated a marginally significant effect of priming on WTP (b = -.41, t(135) = -1.80, p= .074);figure2. Specifically, participants were willing to pay more for imperfect lemons in the whimsical priming condition (M = 4.13, SE = .16) compared to those in the no priming condition (M = 3.72, SE =.17); Although not significant at the typical .05-level, this finding lends preliminary support to H1, such that priming whimsical cutenessincreases consumers' willingness-to-pay for imperfect produce.

Figure 2:Effect of priming on willingness-to-pay for imperfect lemons

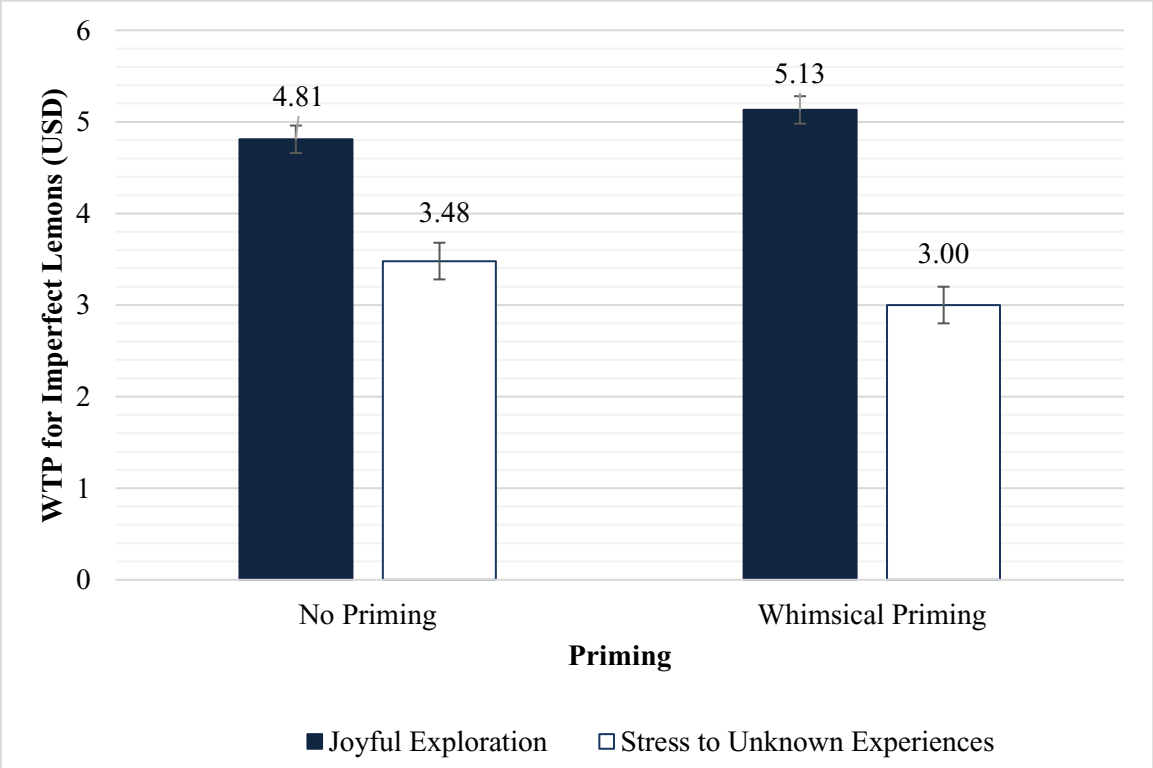


Note: Estimates are based on setting the covariate to its mean: age = 35.60

Effect of whimsicality onjoyous exploration and stress to unknown experiences

After calculating "joyous exploration" (Cronbach's α = .84), I tested whether there was a difference in this variable (as a function of whimsicality) using a one-way ANCOVA. Priming was entered as the independent variable, joyous exploration was entered as the dependent variable, and age was entered as a covariate. The results of the ANCOVA yielded a non-significant effect of priming on curiosity (b =-.31, t(135) =-1.56, p= .12): that is, participants in the whimsical priming condition did not report experiencing higher levels of joyous exploration (M =5.12, SE =.15) compared to those in the no priming condition (M = 4.81, SE =.14). We obtain a similar pattern of results when we looked at the "stress to unknown experiences" variable (Cronbach's α = .88,$M_{\text{no priming}}$ =3.48, SE =.19, $M_{\text{whimsical priming}}$ =3.03, SE =.21; b = .47, t(135) =1.67, p =.10); figure 3. Unfortunately, this finding does not lend support to H2 for now.

Figure 3: Effect of whimsical priming on curiosity



Effect of curiosity on WTP

Next, I tested whether "joyous exploration" and "stress to unknown experiences" predicted willingness-to-pay for imperfect produce. However, I was not able to find evidence for this. That is, the relationship between "joyous exploration" and WTP (where joyful exploration was the independent variable, WTP was the dependent variable, and age was included as a covariate) yielded a non-significant effect (b = .15, SE = .10; $t(135) = 1.54$, p = .12). Similarly, the relationship between "stress to unknown experiences" and WTP (where stress to unknown experiences was the independent variable, WTP was the dependent variable, and age was included as a covariate) also yielded a non-significant effect (b =-.03, SE = .07; $t(135) = .22$, p = .71).

Mediation analyses

Though the non-significant effects described above were not as expected, I continued testing the mediating effect of both measures of curiosity to ensure the completeness of my

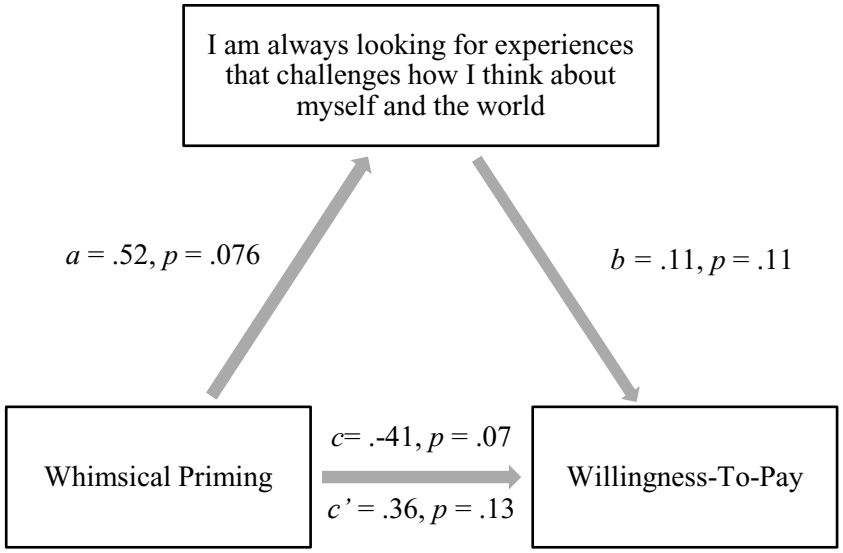
analyses (please see the two top rows of table5).I then decided to conduct mediational analyses on each item of both measures of curiosity to test if at least one specific item of curiosity could act as a mediator.

Among all the items that I tested (see the remaining rows in table 5), "I seek out situations where it is likely that I will have to think in depth about something" decreased the direct effect of whimsical priming on WTP (c=.35,t(135) = 1.53,p=.12) compared to without mediation (c' = -.41, t(135) = -1.80, p= .074). Moreover, whimsical priming seems to have a marginally significant direct effect on this particular item of curiosity (a=.52, t(135) = 1.82,p=.07) and this measure of curiosity has amarginally significant effect on WTP (b=.11, p=.10). This item led support to H2 and a facet of curiosity marginally mediates the effect of whimsical priming on willingness to pay (figure 4). Whimsical priming by creating the element of fun and surprise might change the way consumers have to think about imperfect produce. Therefore they have to reconsider it and "think in depth" about their vision of imperfect produce.

Table 5: Mediation analyses of different curiosity items (experiment 1)

Type of curiosity	Effect of whimsical priming oncuriosity	Direct effect of whimsical priming on WTP	Effect of curiosity on WTP
Joyous exploration	a =.31, t(135)= 1.56, p = .12	b = .10, t(135)= 1.06, p = .29	c = .10, t(135)=1.64, p=.10
Stress to unknown experiences	a =-.47,t(135)= -1.67, p = .10	b = -.43, t(135)= -.62, p = .54	c = .39, t(135)= 1.69, p= .09
I view unusual situations as an opportunity to grow and learn	a=.04,t(135)= .15, p= .88	b = .08, t(135)= 1.2, p = .25	c = .41, t(135)= 1.78, p= .08
I am always looking for experiences that challenge how I think about myself and the world	a = .49,t(135)= 1.79, p = .08	b = .03, t(135)= .37, p = .71	c = .40, t(135)= 1.72, p=.09
I seek out situation where it is likely that I will have to think in depth about something	a = .52,t(135)= 1.83, p = .07	b = .11, t(135)= 1.60, p = .11	c = .36, t(135)= 1.54, p = .13
I enjoy learning about subject that are unfamiliar to me	a = .33, t(135)= 1.44, p = .15	b = .59, t(135) = .40, p = .59	c = .40, t(135)= 1.71, p= .09
I find fascinating to learn new information	a = .18, t(135)= .81, p = .41	b = .03, t(135)= .30, p = .76	c = .41, t(135)= 1.77, p= .08
The smallest doubt can stop me from seeking out new experiences	a = -.40, t(135) = -1.27, p = .21	b = .06, t(135)= .90,p = .37	c = .44, t(135)= 1.88, p= .06
I cannot handle the stress that comes from entering uncertain buying experiences	a = -.60, t(135)= -1.95, p = .05	b = -.05, t(135)= -.76, p = .45	c = .39, t(135)= 1.65, p= .10
I cannot function well if I am unsure whether a new experience is safe	a = -.23, t(135)= -.73, p = .47	b = -.01, t(135)= -.20,p = .84	c = .41, t(135)= 1.78, p= .08

Figure 4: Mediation effect of curiosity on the effect of whimsical priming on WTP



Discussion

Study 1 lends support to H1 and shows that consumers are more willing to pay for an imperfect lemon when they have previously seen it with whimsical features than when they have not. Even if the results are marginally significant, consumers reported being ready to pay .41 USD more for imperfect lemon when they were whimsically presented: this corresponds to an 11.02% increase.However, the results do not offer support to H2. Among the items of curiosity, only "seeking for situation in which it is likely that one has to think on depth about something" presents a marginally significant mediation, reducing the direct effect of whimsical priming on WTP. However, the mediating effect is very weak and it is hard to conclude it actually acts as a mediator.

STUDY2: THE EFFECT OF TIME

Since perishable foods raises the question of timing between purchase and consumption, I conducted a similar experiment to experiment 1 but this timeincreased the temporal distance between the purchase of the imperfect produce and its consumption. More specifically, participants were shown the same tasks as in study 1, but in the shopping scenario, participants in the current study wereinstead asked to imagine that they are buying

the lemons (and sugar) for a lemonade that they will make in the future (five daysfrom now.)In doing so, I was able to test my fourth hypothesis, which proposes that including whimsically cute features to imperfect produce will increases its desirability, even when the consumption experience is expected to occur in the distant future.

Method

Participants and design

One hundred and seventy participants (42% female; M_{age} = 35.92, SD = 10.53) from the USA participated in the between-subjects experiment on MTurk in exchange for monetary compensation (1.50 USD). Participants were randomly assigned to one of the two priming conditions (priming: no priming vs. whimsical priming).

Procedure

This study is identical to study 1 with one exception: in the fourth task, "Shopping case scenario", participants were asked to imagine they wanted to make lemonade on Saturday due to the expected hot weather in the forecast (AppendixD,Study 2).The survey was given to participants on Monday in order to create an actual temporal distance of 5 days between purchase and consumption. All other tasks and debriefing questions were identical to those used in study 1.

Results

Data exclusion criteria

Participants were removed prior to data analysis using the same criteria described in the pretest and study 1. First, I did not remove any participants because they indicated that they did not want the researcher to use their data. Second, I removed no participant based on their English level. Third, no participant reported having technical issues. Fourth, six participants presented extreme outliers (i.e., 3 standard deviations from a condition mean) on the mood measure, and four participants presented extreme ratings on WTP. Thus, ten participants were removed. Fifth,participants were removed if they guessed the true purpose of the study or if they presented incoherent debriefing messages. No participant was able to

correctly guess the purpose of the study and twoparticipants presented incoherent comments. In addition to these criteria, we also looked at the amount of time participants spent looking at the ad. Same as study 1, we decided, in advance, that if a participant spent less than 10 seconds on the ad, we would remove them from our data (arguing that they were probably not paying attention to the task). Based on this criteria, we removed one participant. Taken together, 13 participants (7.65% of the sample) were removed. The remaining 157 participants (44%female; M_{age} = 35.99, SD = 10.69) were used in the analyses below.

Effect of priming on mood

Similar to Study 1, we first created two mood variables. The first variable was calculated by averaging participants'answers to the positively framed adjectives (pleased, pleasant; Cronbach's α = .81). The second variable was calculated by averaging participants' responses to the three negatively-framed ones (unhappy, depressed, in a bad mood; Cronbach's α = .95). Next, I tested whether the average positive or negative mood measure changed as a function of the priming manipulation. As expected, the difference between the average positive mood measure among participants assigned to no priming condition (M = 2.75, SD = 1.55) and those among participants in the whimsical priming condition (M =2.87, SD = 1.45) was not significant ($F(1,156) = .26$, $p = .61$). Similarly, there was no significant difference between the average negative mood rating across conditions ($M_{\text{no priming}}$= 5.33, SD = 1.35; $M_{\text{whimsical}}$ = 5.33, SD = 1.27; $F(1,156) = .00$, $p = .98$).

Testing for covariates

Likeability of lemonade. First, I tested whether likeability of lemonade should be controlled for in my analyses. The correlation between likeability of lemonade and WTP was not significant ($r = .08$, $p = .30$), thus, it was not included as a covariate in further analysis.

Hunger. Second, I needed to know if thirst should be controlled for in further analysis on WTP for lemons. The correlation between thirst and WTP was not significant (r=.13, p=.10), thus this variable will not be included as a covariate in further analysis.

Thirst. Thirst presented a significant correlation with willingness-to-pay ($r = .19$, p = .02), therefore I ran an ANOVA between whimsical priming and thirst. The results yielded a non-significant effect of priming on thirst (b=.05, $t(157)$ =.19, p = .85), passing the

assumption of homogeneity of variance across priming conditions. Then I ran an ANCOVA with WTP as the output, whimsical priming as the input and thirst as a covariate in order to test for the interaction effect of priming ×thirst on WTP. The interaction term's effect was non-significant (b = -.18, t(157) = -1.19, p = .23), meaning that thirst also passes the homogeneity of regression assumption. Therefore, it will be included as a covariate for further analysis.

Goal importance.Next I tested whether the importance of engaging in environmentally-friendly behaviours might impact WTP for imperfect lemons; the correlation was not significant (r =.07, p =.36). I then examined whether participants importance of reducing food waste correlated with willingness-to-pay for imperfect lemons, but again found no significant relationship (r =.11, p =.16). Thus, neither measure will be included in further analyses.

How effortful cooking is. Perception of cooking effort is significantly correlated with WTP (r = .19, p = .02). Moreover, it passes the assumption of homogeneity of variance: that is, an ANOVA between whimsical priming and cooking effort perception yielded a non-significant effect of priming on effort (b = -.27,t(157) = -.98, p = .33). I also ran an ANCOVA with WTP as the output, whimsical priming as the input and cooking effort as a covariate to test the interaction effect of priming ×cooking effort on WTP. The effect was non-significant (b=.07, t(157) =.50, p = .62), thereforepassing the homogeneity of regression assumption. Cooking effort was accounted for as a covariate in further analyses.

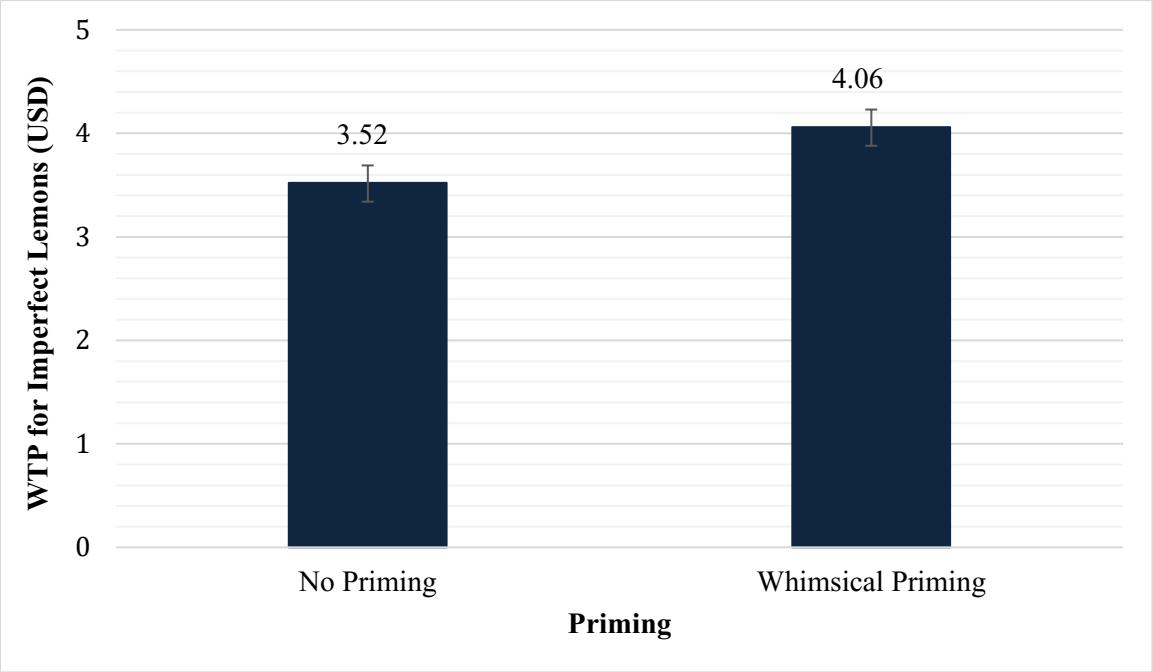
Age and gender. Again, there is no significant correlation between gender and willingness to pay for imperfect lemons (r = -.04, p =.66). Similarly, a non-significant correlation was yielded for age and WTP. Thus neither of those variable will be considered as a covariate for further analyses.

Effect of whimsical priming on willingness-to-pay

The analysis of the difference in participants' willingness-to-spend was conducted using a one-way ANCOVA. Priming was entered as the independent variable, willingness-to-pay was entered as the dependent variable, and effort perception and thirst were entered as covariates. As expected, the results indicated a significant effect of priming on WTP (b = -.53, t(157) = -2.13, p= .04). Controlling for thirst and effort perception, the results showed

that with a temporal distance of five days, participants were willing to pay more for imperfect lemons after seeing the whimsical advertising (M = 4.06, SE = .17) compared to those in the no priming condition (M = 3.52, SE =.18; figure 5). This finding lends support to H3, such that the effect of the priming remains even when increasing the temporal distance between purchase and consumption.

Figure5: Effect of whimsical priming on WTP when increasing temporal distance of consumption



Note: Estimates are based on setting the covariate to its mean: thirst = 3.43 and coking effort = 3.73xx.xx

Effect of whimsicality on curiosity

As I did in study 1, I first examined the difference in participants' joyous exploration curiosity (as a function of whimsicality) using a one-way ANCOVA. Priming was entered as the independent variable, joyous exploration was entered as the dependent variable, and effort perception and thirst were entered as covariates. The results of the ANOVA yielded a non-significant effect of priming on joyous exploration (b = -.03, t(157) = -.15, p= .88).I conducted the same analysis with stress to unknown experiencesinstead of joyous exploration. Here again, the ANCOVA yielded a non-significant effect of whimsical priming

on stress to unknown experiences (b = .067, t(157) = .27, p= .79). Therefore, I cannot draw any conclusion regarding the effect of whimsical priming oneither type of curiosity.

Effect of whimsical priming on "seeking out situations where it is likely that I have to think in depth about something*"*

In study 1, the only item of curiosity thatshowed significant effects was "seeking out situations where it is likely that I have to think in depth about something." In order to test whether the effects of study 1 remain with temporal distance, I decided to study the same item. Thus, I ran an ANCOVA with this item of curiosity as a dependant variable, priming as the independent variable and thirst and effort as covariates. The ANCOVA yielded a non-significant result(b = .104, t(157) = .36, p = .72). Regarding this analysis, the effect of priming on curiosity does not seem to apply when the fruit is to be consumed 5 days after purchase.

Effect of curiosity on WTP

I also checked the effect of curiosity on WTP. I ran three separate ANCOVAs, with "joyous exploration", "stress to unknown experiences" and "seeking out situations where it is likely that I have to think in depth about something" as independent variables. For each of the three analyses, WTP was entered as the dependent variable and thirst and effort perception were entered as covariates. For each analysis, the result was non-significant (table6).

Mediation analysis: effect of whimsicality on curiosity items

In study 1, I demonstrated that "seeking situations where it is likely that I have think in depth about something" was likely to be the best mediator of the effect of whimsical priming on WTP. Can I obtain the same result when there is a 5-day delay between purchase and consumption? I ran a mediation analysis using PROCESS (Hayes, 2007) to assess the direct effects of whimsical priming on WTP and of whimsical priming on curiosity. I entered WTP as the "Y" variable, whimsical priming as the "X" variable, and curiosityas the "M" (mediator) variable; thirst and effort perception were also included as covariates. The analyses yielded non-significant results for each item of curiosity (table6). Even more, it seems that adding curiosity as a mediator in the model increases the direct effect of whimsical priming on WTP. With a delay of five days between purchase and consumption,

the effect of curiosity did not hold and only the direct effect of whimsical priming on WTP remained.

Table 6: Comparison of mediating effect of different curiosity items (experiment 2)

	Joyous exploration	**Stress to unknown experiences**	**Seeking out situations where it is likely that Ihave to think in depth about something**
Mediation effect	*a* =.03, *t*(157)= .15, *p*=.88	*a* =-0.07,*t*(157)= -.27, *p*=.78	*a* =-.10, *t*(157)=-.36, *p*=.65
	b=.24, *t*(157)=2.32, *p*=.02	*b*=.18, *t*(157)=2.22, *p*=.03	*b* =.06, *t*(157)=.80, *p*=.42
	c'=.53, *t*(157)=2.13, *p*=.04	*c'*=.55, *t*(157)=2.21, *p*=.03	*c'*=.53, *t*(157)= 2.15, *p*=.03

Discussion

Study 2 leads support for H4 as it demonstrates that the effect of whimsical priming holds when we increase temporal distance between date of purchase and date of consumption. When compared to Study 1, consumers are willing to pay .54USD more for imperfect produce that have been prior presented with whimsical feature than when they have not. It represents 15.34% more. Also, curiosity does not seems to be a mediator either. Even more, the effect of "seeking for situations in which it is likely that one's have to think in depth about something" did not have any significant effect in the model.

GENERAL DISCUSSION

Implications of this work

Theoretical Contributions

First, this research contributes to the literature by adding to whimsical and cute priming research. It extends the cuteness research as it goes in a different direction than the usual kinderschema cuteness that has been studied. This type of cuteness is relative to infant traits such as big forehead, big eyes, small nose and round face (Hildebrandt Karraker & Stern, 1990). It seems to enhance positive feeling and emotions. Two theories stipulate that it either comes from a desire of caring (Koyoma, 2006)or is linked to a biological response for social interactions which is essential in baby mammal development. Here, this research completes Nenkovand Scott's (2014) work regarding whimsical priming. I demonstrate here that whimsicalityhas a marginal potential to improve the attitude and WTP of the consumer regarding unaestheticproducts. More, this research could have addedto literature on how curiosity may be used as a marketing and awareness tool. If I had found significant results on curiosity, I could have said that triggering curiosity by an effect of surprise can be used as a marketing tool for consumers to get interested in produce they do not normally consider.Finally, this research adds to ethical consumer identification as it tries to draw a portrait of the category of buyers that is not ready to change their consumption habits and understand their reasons of avoidance of imperfect produce. This can lead to the identification of other factors to improve their attitude toward such produce.

Managerial

First, my thesis provides an understanding of the average non-buyer of imperfect produce. By knowing the origin of avoidance of imperfect produce, marketers will more easily target this segment and offer products that can appeal to them, or adapt their marketing campaign in order to sell imperfect produce. For instance, by adding googly eyes to the pictures of imperfect produce, Misfits (https://www.misfitsmarket.com/) recreates whimsical figures as promotional tools. Also, my works provides insights about the efficiency of the marketing campaign based on whimsical priming. Building on Nenkovand Scott (2014), it seems that whimsical priming is an efficient tool that improves consumers' attitude toward a specific product. Here it even happens to marginally increase consumers' willingness to pay. Therefore, this thesis also offers an insight about the price reduction that can be set for imperfect produce when discounted.

Ethical

This work's purpose was based on finding a marketing way to promote unaesthetic produce that usually end up in trash, which in turn would decrease food waste. I chose to go to the micro scale, directly at the interaction between consumers and local groceries or farmers in finding a type of campaign that could change consumers' mind and attitude. In the case of a significantly efficient prime, grocery stores will be able to use it in order to sell their imperfect produce. This means that grocery store managers may bewilling to buy more of them from the producer, and then the producer, in turn, could lower their price because a part of the production that had vocation to be discarded could be sold eventually. A good priming can also be used at a macro scale as an education tool. If whimsicality was a significantly efficient prime, itcould have been used as to bring positive emotions toward imperfect produce and help in understanding them, and not fearing them. It would then be possible to encouragea local distribution channel and local productions that produce more imperfect produce than industrial production. Also, the ultimate way of valorizing imperfect produce would be to set government regulation to prevent it. For example, French supermarket must give their unsold food to associations and charities.On the other hand, a valorization of imperfect produce can be made at the meso-scale in order to decrease food waste. At the industrial level, partnership are already established in order to use produce that are destined

to landfill. For instance Loop Fruits® uses imperfect produce to make juices and smoothies (https://loopmission.com/).

Finally, this work raises the question of unaesthetic products in a general matter. Because of climate change, price and overconsumption, consumers tend to engage in second-hand purchases, especially for books, furniture and clothing(Halin, 2018). However second-hand products are not usually perfect because of their history. How can we make "ugly products" beautiful or encourage their purchase when they are not brand new or even a bit damaged?

Limitations and Future Research

This works suffers from a few limitations. First of all, I question a part of the validity of my findings. In fact, I based my work on whimsical cuteness as a prime by adding googly eyes to imperfect produce. However, adding eyes is also a way to make objects more human: this is called anthropomorphism. Anthropomorphismis also likely toincrease social interaction by considering the object of anthropomorphism as a part of the social circle (Zickfield, Kunst, & Moyner, 2017)and by reducing uncertainty (Hildebrandt Karraker & Stern, 1990). For this reason, anthropomorphism has been used as a marketing tool in digital avatars, for example, to increase credibility. Yet, we did not control for the anthropomorphism of the produce. Therefore we do not know if the effect is due to whimsicality only or anthropomorphism of the features. In future research, it would be interesting to test for anthropomorphism of the prime in a pre-test. Even more, it could be interesting to study anthropomorphism instead of whimsicality in future work.

For another reason, I question the legitimacy of curiosity as a mediator. The measure of this variable is based on work by Kashdan and colleagues (Kashdan, Stiksma, Disabato, & Mcknight, 2018) which was designed to measure general curiosity as a character trait and not an ephemeral state of mind. I do not know, however, if I was measuring the curiosity of participants because they were primed by an incongruent object, or it was simply a measure of their curiosity in general. Because of the weak effect of whimsicality on curiosity, it seems plausible that latter is more likely.Therefore, curiosity should be tested in another way to better capture the effect of the whimsically cute priming manipulation. For instance, Wiggin et al. (2019) measure curiosity by simple questions regarding how participants are craving to know the information. Here I would ask questions regarding the surprise effect, how they

want to know more about the produce, and if the image/priming for the produce fits their expectations.Also, I based my hypothesis on the fact that the priming was fun and offered and discrepancy between expectation and reality. Several other variables could act as a mediators such as desirability, trust or indulgence. In fact, Nenkovand Scott (2014) explain that consumers tend to engage in indulgent consumption when whimsically primed. On the other hand,Theotokis et al. (2005) draw out trust as a mediator in attitude reduction toward brands that are practicing expiration date pricing. And because of their unconventional shape, imperfect produce might be perceived similar to close to expiration date produce.Finally, raising the issue of temporal distance in imperfect produce consumption might require researchers to add desirability/feasibility as a mediator. In fact Amezcua (2015) recalls that feasibility weights when considering short-term consumption and desirability weights more when considering distant consumption as I tested here.

Also, I used willingness-to-pay as a measure of purchasing and attitude, assuming that people will purchase imperfect produce. In reality, when choosing between imperfect and normal looking produce, I do not know if consumers would pick imperfect produce even if they are cheaper and presented as whimsical. Therefore it would be interesting to report another measure of attitude, such as the likelihood to purchase for imperfect produce, or even choice of produce between imperfect and normal looking produce. Also, I could measure likelihood to purchase imperfect produces at a discounted price when also facing normal looking produce at a non-discounted price.

Lastly, I question a part of the generalizability of my findings. Based on the result of the pretest, I used the imperfect lemons as a priming instead of the pepper. However, I think that lemon is fruits whose consumption is not that much affected by the shape of the fruit, like any other citrus fruits. Once you peel it, you obtain without any difficulties the same juice. It then questions few reasons of avoidance of imperfect produce for this one in particular. Lemon from Menton are even praised for its unconventional shape and sweet taste. Therefore it would be interesting to replicate my studies using other produce such as the pepper,or even totally different products not related to food. Even better, it could be interesting to define the segment on which the priming is working better. Another issue is related to temporal distance. The choice of temporal distance was initially based on the results of the preliminary study, however time is a tricky concept regarding perishable goods. First, my study did not provide any clues regarding the opposition effect between how time decreases desirability of fresh products in comparison to how whimsicality increases it. Also,

in our day, because of the ease of transportation, access to groceries or the uberization of life, we tend to buy food for no more than a few days ahead. The choice of temporal distance is then limited. It could be interesting to control for the desirability of the produce with temporal distance as it could act as a covariate.

Conclusion

The current research contributes to understanding priming that is already used: whimsicality, and how it can be used on campaigns that can increase ethical consumption. Also this research attempted to draw a portrait of a segment of imperfect produce non-buyers in order to better target them, and understand their reasonsfor avoidance. Although I cannot draw a demographic portrait of such a segment, I can affirm that their reasons of avoidance are the perception of effort, the perception of taste, the perception of health and the non-visible relationship to environmental issues and food waste (preliminary study). I also demonstrate that whimsical priming is an effective way to increase attitude of consumers toward imperfect produce (study 1) and that this effect remains when increasing time between purchase and consumption (study 2). However, I fail to support the mediating effect of curiosity in the process. Additional research is needed in order to better capture the mediation of curiosity, the generalization of the priming on imperfect produces and the final choice of consumers between normal looking produce and normal looking produce. However, my thesis does show evince that priming (whimsical cuteness) may be one way to promote imperfect produce. This is a first step in changing the way we think about imperfect produce, which can hopefully translate into less food waste in the future.

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APPENDICES

APPENDIX A: SURVEY

Task 1: Food Purchasing Behaviour

Below are the questions used in task 1 (randomly presented):

In the last month, how often did you engage in food composting?

1 = Never 2 3 4 = Sometimes 5 6 7 = All the time

In the last month, how often have you bought fresh unpackaged food (e.g., unpackaged fruits and vegetables, unprocessed and unpackaged meat from the butcher, etc.)?

1 = Never 2 3 4 = Sometimes 5 6 7 = All the time

In the last month, how often have you purchased organic produce (e.g., produce from a farming system striving for sustainability, soil fertility and prohibiting synthetic pesticides, antibiotics, fertilizers, etc.)?

1 = Never 2 3 4 = Sometimes 5 6 7 = All the time

How important is it for you to engage in behaviours that are "environmentally-friendly"?

1 = Not at all 2 3 4 = Somewhat 5 6 7 = Very important

Go back tosurvey

Task 2: Imperfect Fruits and Vegetables

Below are the pictures of imperfect produce that were shown:

And, these are the questions used in task 2 (all statements were randomized).

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I have never purchase imperfect fruits	O	O	O	O	O	O	O
I have never purchased vegetables that are imperfect	O	O	O	O	O	O	O
I would describe imperfect produce as “appealing”	O	O	O	O	O	O	O
It takes too much effort to prepare imperfect produce	O	O	O	O	O	O	O
All produce taste the same with or without “imperfections”	O	O	O	O	O	O	O
Imperfect produce will make me sick	O	O	O	O	O	O	O
Imperfect produce are healthier than “normal-looking” produce	O	O	O	O	O	O	O
I like to have fun in the kitchen	O	O	O	O	O	O	O
I want to learn	O	O	O	O	O	O	O

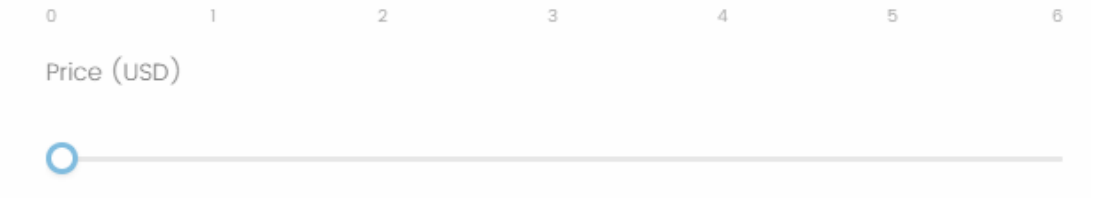
more “tips and tricks on cooking imperfect produce							
Buying imperfect produce is one way to reduce food waste	O	O	O	O	O	O	O
When grocery shopping, I tend to avoid the imperfect produce section	O	O	O	O	O	O	O

Go back tosurvey

Task 3: Scenarios

Imperfect carrot(questions below were randomly presented)**:**

Imagine that you are shopping at a grocery store and you find a package of fresh carrots. The average price for a one-pound package of carrots is USD 3.00. Using the sliding scale below, indicate how much you would be willing to spend on a one-pound package of carrots that contain carrots that look like the one pictured above?

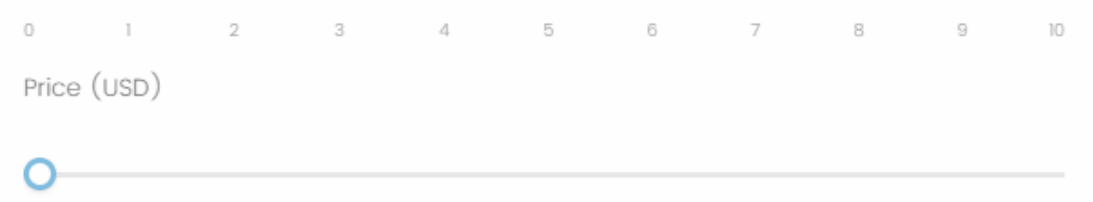


What would be the likelihood that you purchase a one-pound package of carrots containing carrots that look like the one pictured above?

1= Definitely no 2 3 4 = Maybe 5 6 7 = Definitely yes

Imperfect strawberry (questions below were randomly presented):

Imagine that you are shopping at a grocery store and you find a package of fresh strawberries. The average price for a one-pound package of strawberries is USD5.00. Using the sliding scale below, indicate how much you would be willing to spend on a one-pound package of strawberries that contain strawberries that look like the one pictured above?



What would be the likelihood that you purchase a one-pound package of strawberries containing strawberries that look like the one pictured above?

1= Definitely no 2 3 4 = Maybe 5 6 7 = Definitely yes

Go back to survey

Task 4: Final Questions

Pease write your age in the space below:

Please check your gender

- Male
- Female
- Other
- I prefer not to specify

What is the highest level of study that you have attained?

- Elementary School/Primary School
- High School/Secondary School
- College
- Bachelors (University)
- Masters (University)
- Ph.D. (University)

In what domain(s) did you study/are you studying?

- Business, Management and Administration
- Education
- Arts
- Sciences, Engineering, Technology, Mathematics
- Social Sciences
- Other: _____

If you are working what domain are you currently working in?

- Business, Management and Administration
- Education
- Arts
- Sciences, Engineering, Technology, Mathematics
- Social Sciences
- Other: _____

Which of the following statements below best describes the area in which you grew up:

- I grew up in the city
- I grew up in the suburbs
- I grew up in the countryside

Which statement describes best the distance to a green environment you had at home?

- I had no backyard and no plants at home
- I had plants in the house/apartment
- I had a green backyard

Go back to survey

APPENDIX B: PRE-TEST

Priming stimuli

	No Priming	Whimsical Priming
Carrot		
Strawberry		
Pepper		
Lemon		

Rating criteria

Please rate the [lemon/pepper/strawberry/carrot] show above using the criteria below (all ratings were randomly presented)

	1 = Not at all	2	3	4 = Somewhat	5	6	7 = Very much
Likeable	O	O	O	O	O	O	O
Fun	O	O	O	O	O	O	O
Cute	O	O	O	O	O	O	O
Naive	O	O	O	O	O	O	O
Vulnerable	O	O	O	O	O	O	O
Adorable	O	O	O	O	O	O	O
Playful	O	O	O	O	O	O	O
Caretaking	O	O	O	O	O	O	O
Endearing	O	O	O	O	O	O	O
Attractive	O	O	O	O	O	O	O
Whimsical	O	O	O	O	O	O	O

Go back to pre-test

APPENDIX C: EXPERIMENT 1

Task 1: Checking for covariates

All questions were offered to be answered on a 7-pointLikert scale

How thirsty are you feeling at the moment?

1= “Not at all”; 4 = “Somewhat thirsty,” and 7 = “Very thirsty”

How hungry are you feeling at the moment?

1= “Not at all”; 4 = “Somewhat hungry,” and 7 = “Very hungry”

How important is it for you to engage in behaviours that are environmentally friendly?

1= “Not at all”; 4 = “Somewhat important,” and 7 = “Very important”

How important is it for you to reduce food waste?

1= “Not at all”; 4 = “Somewhat,” and 7 = “Very much”

How much do you like lemonade?

1= “Not at all”; 4 = “Somewhat,” and 7 = “Very much”

How effortful is cooking for you?

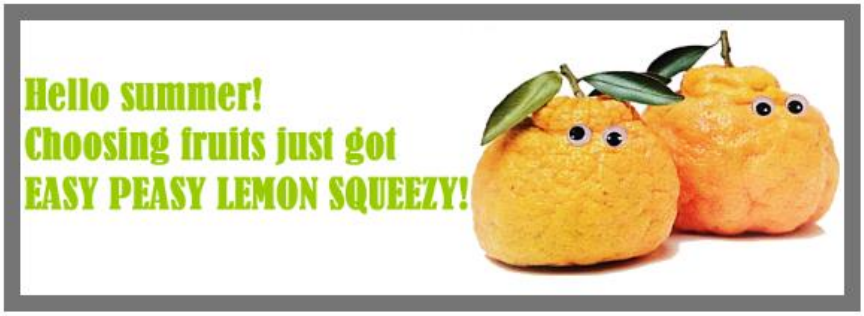
1= “Not at all”; 4 = “Somewhat effortful,” and 7 = “Very effortful

Go back to experiment 1

Task 2: Priming

No Priming

Whimsical Priming



Go back to experiment 1

Task 3: Mood and curiosity measures

Questions to assess mood:

Questions to assess curiosity:

Please read each statement carefully. Then, click on the number that best represents how much you relate to each statement.

	1 = Not at all	2	3	4 = Somewhat	5	6	7 = Very much
I cannot handle the stress that comes from entering uncertain buying experience.	○	○	○	○	○	○	○
I view unusual situations as an opportunity to grow and learn.	○	○	○	○	○	○	○
I enjoy learning about subjects that are unfamiliar to me.	○	○	○	○	○	○	○
I find it fascinating to learn new information.	○	○	○	○	○	○	○
The smallest doubt can stop me from seeking out new experiences.	○	○	○	○	○	○	○
I cannot function well if I am unsure whether a new experience is safe.	○	○	○	○	○	○	○
I am always looking for experiences that challenges how I think about myself and the world.	○	○	○	○	○	○	○
I seek out situations where it is likely that I will have to think in depth about something.	○	○	○	○	○	○	○

Go back to experiment 1

Task 4: Shopping case scenario

Imagine that you are shopping in your usual grocery store. As you are walking around the store, you get a weather notification from a weather app on your phone. It's already really hot outside and it looks like it will stay this way all day!

Seeing that temperatures are going to stay hot all day makes you think that you should make some ice-cold homemade lemonade when you get home.

Since you are already at the grocery store, you decide to look up a recipe on your smartphone. Here is what you find:

You already have water at home, but you will need to buy the other two ingredients.

In the fruits and vegetables section of the grocery store, you find a bin of imperfect lemons that look like this:

The average price for ten (10) "normal-looking" lemons is $5USD.

Using the sliding scale below, please indicate how much you would be willing to spend on ten (10) lemons that instead look like the one above?

0 1 2 3 4 5 6 7 8 9 10

Price (USD)

Go back to experiment 1

APPENDIX D: EXPERIMENT2

Lemonade shopping scenario for a time distance of 5 days

Imagine you are shopping in your usual grocery store. As you are walking around the store, you get a weather notification from a weather app on your phone. It looks like it'll be a hot weekend coming up!

Seeing that temperatures are going to rise during the weekend makes you think that you should make some ice-cold homemade lemonade on Saturday.

Since you are already at the grocery store, you decide to look up a recipe on your smartphone. Here is what you find:

You already have water at home, but you will need to buy the other two ingredients.

Go back to experiment 2