

Predictors of Liking Pineapple on Pizza: Implications for Food Choices

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Abstract

The following investigation explores the reasons for individual food choices. Specifically, we investigate the perceptions of adults regarding pineapple as a pizza topping. Study 1 analysed interview transcripts of faculty's and staff's responses to whether they like pineapple on pizza and identified themes in their responses, including social relationships, Canadian identity, and creativity. These themes were then used to create a questionnaire to look into this food choice more granularly in the same population (Study 2). Results showed that gender and age were the two primary predictors for the pizza on pineapple choice in questionnaire responses, with a tendency for younger females to prefer pineapple on pizza and older males to dislike it (though the relationship with age was not linear). These findings are interpreted in relation to the mechanisms involved in food-related decisions and health behaviours.

Keywords: food choice, personality, preference, pineapple, creativity

Anecdotally, few people appear to be neutral about whether pineapple is an acceptable topping for pizza. Even Justin Trudeau, Prime Minister of Canada, and Iceland's president Gudni Thorlacius Johannesson weighed in on the issue, with polarized views (Johannesson, 2017; Trudeau, 2017). Divisive topics such as pineapple on pizza can be used by political groups to plant the seeds of discord and unrest in the United States, and the Cybersecurity and Infrastructure Security Agency (CISA) even used this very topic to illustrate how this can be done (U. S. Department of Homeland Security, 2019). So, we wondered, can this divisive food choice be used to better understand how people make food-related decisions?

Some scholars have argued that food availability (cultural, geographic, economic, etc.) is the single most important factor in determining the foods we eat; after all, you cannot eat it if it's not available (Rozin, 2006). However, there are many other factors (some of which are related to availability) that influence our selection of food. Researchers have identified a plethora of determinants of food choices: practical reasons such as price and convenience, temporary reasons such as current mood, sensory preferences such as taste and texture, and other personal reasons such as health, weight concerns, social factors, media and advertising, pleasure, ideological reasons, and ethical concerns such as for the environment, animal welfare, or free-trade, etc. (Bell & Meiselman, 1995; Eertmans et al., 2001; Eertmans et al., 2005; Furst et al., 1996; Letarte et al., 1997; Lindeman & Stark, 1999; Parraga, 1990; Rozin, 1996; Rozin & Tuorila, 1993; Steptoe et al., 1995; Wardle, 1993). After price consideration, physical characteristics of the food are the most influential in determining food choice (Costell et al., 2010; Drewnowski, 1997; Scheibehenne et al., 2007; Steptoe et al., 1995).

Humans have a fairly consistent process for sensing food flavours, combining gustatory and olfactory input, however there is variability in individuals' sensitivity to the taste and smell molecules they ingest (Tuorila, 2007), including the individual's detection threshold for sweetness (Garcia-Bailo et al., 2009). Additionally, individuals vary so that not all people perceive the same taste in the same way. Although this appears to be somewhat genetically determined (such as our innate preference for sweet tastes over bitter ones (Drewnowski, 1997) and for foods high in sugar and fat (Capaldi, 1996; Cooke & Wardle, 2005; Drewnowski, 1997)), it is also influenced by maturation, such that this preference declines with age (Vabø & Hansen, 2014). Twin studies

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comparing the food preferences of monozygotic and dizygotic twins have shown that preferences for different types of foods (meats, desserts, fruits, and vegetables) are all at least moderately heritable (Breen et al., 2006). Additionally, an understanding of food choices cannot be understood without considering social and other contexts (Rozin 1996; Rozin, 2006). For example, when nutrition information is available during the ordering process when eating outside the home, people tend to make healthier food choices (Hochradel, 2007).

Other researchers (e.g., Birch, 1999; Yeomans, 2006; Yeomans, 2007) have argued that many food preferences (and resulting food choices) develop as a result of various forms of learning. For example, mere exposure (i.e., familiarity) is a type of learning that occurs through repeated exposure to a food, resulting in an increased liking for that food (Hausner et al., 2012; Mela, 1999; Yeomans, 2006). Additionally, foods that are associated with the recovery of an illness and those paired with a flavour which is already liked (evaluative conditioning) are both more likely to become preferred (Birch, 1999; Capaldi, 1996; Vabø & Hansen, 2014; Yeomans, 2007).

Because most of our eating occurs with others (Vabø & Hansen, 2014), social contexts such as family and other social environments greatly affect which foods we like (Tuorila, 2007). Therefore, a type of learning known as modelling also affects our perception of various foods, especially eaten by our friends and parents, which we often consider to be models (Ludy & Mattes, 2012; Mela, 1999).

In some cases, people may not be aware of their internal motives for making particular food choices, while other times they may be able (and willing) to state them explicitly. However, it seems likely that, given the divisive nature of the particular food of interest here (pineapple on pizza), most people have previously been in a position where they needed to articulate their position on this food, or at the very least give some thought to it. As such, they may be in a better position to explain their rationale for the inclusion or exclusion of pineapple on pizza.

The Present Study

In the present paper, we explore food choice using a very specific food item: pineapple on pizza. In Study 1, we investigated what participants reported influenced their decisions about this food. We did this using interviews which had already been conducted for a different purpose (as a social initiative by one of the authors so that colleagues could keep in touch with each other during the pandemic) and analysed responses using a content analysis to identify themes. In Study 2, we used these themes to guide the construction of a questionnaire where we explicitly asked participants about their preference for pineapple on pizza as well as other variables as identified in Study 1. Understanding the factors that contribute to the appeal of certain food combinations in greater detail and how they relate to individual food choices will help to better understand food-related behaviour. This, in turn, might help to better support individuals who struggle with making good food choices and/or struggle with their weight (e.g., obesity, anorexia, bingeing, stress eating, etc.).

Study 1

In this study, we explored the themes related to the endorsement or rejection of pineapple as an appropriate topping for pizza using a content analysis (conducted on secondary interview data). We wondered whether there were any common themes in participants' responses and whether that could help us to better understand food choices. To this end, we undertook this content analysis with the goal of preparing for a more focused investigation of the factors affecting participants' feelings towards pineapple on pizza (Study 2).

Methods

Participants

Faculty and staff in the School of Interdisciplinary Studies participated in a voluntary team-building video chat with one of the authors, their colleague. This was intended to bring the department closer together and allow us to "catch up" as we returned from our summer holidays to a fully online work environment. Questions in the semi-structured interview asked about what colleagues missed and didn't miss about coming to campus for work (i.e., what has been good about the COVID-19 pandemic), celebrity crushes, and what they had been up to more

generally. The question of interest to us, however, was whether they considered pineapple to be an appropriate pizza topping. The exact question asked during the interview was: “Pineapple on pizza. Yes or no?”.

Of the 47 interviewees, 41 (87.23%) consented to their responses being used in this research project. No demographic data were collected about the participants as these variables were unrelated to any predictions we had, however the sample included both men and women, younger and older employees, and included a good representation of various roles within the department (staff, administrators, full-time, and contract faculty).

Materials and Procedure

After obtaining approval from the Research Ethics Board to use these data for this secondary analysis research project, participants’ answers to the question about whether they liked pineapple on pizza were transcribed verbatim by the 3 researchers. Because two of the researchers also participated in the interviews, and following the recommendations of Neuendorf (2002), the other researcher transcribed and coded those interviews.

Results and Discussion

The transcriptions produced a total of 7,259 words, which were based on 67 minutes of video (3998 seconds), for an average of 97.51 seconds per participant (Median = 86 seconds). While transcribing the videos, the three researchers were able to identify many codes individually, and then collaborated to form a comprehensive list of codes before undertaking the coding of the transcripts. Each transcript was manually coded by one of the three researchers using a common set of codes. These included family, culture, contamination, and others’ feelings (see Table 1 for a comprehensive list of codes and themes used). The number of responses which included that theme as well as the corresponding percentage are also in Table 1.

To assess inter-rater reliability, 6 participants’ transcripts (selected at random using an online number generator) were coded by a second researcher (14.6% of the transcripts). In this case, because there were 3 coders, each coder re-coded two other transcripts (one from each of the other coders). This is in excess of the minimum required coding overlap of 10% suggested by Riffe et al. (1998). By examining the percent agreement for these overlapping transcripts, we determined an overall inter-rater reliability of 84.61% which supports that our coding is reliable, exceeding the minimum recommended threshold of 70-80% (Frey et al., 2000; Watt & van den Burg, 1995). Inter-rater reliability for each pair of coders also exceeded this threshold as the agreement for each pair were 88.89%, 77.78%, and 87.50%. As a more unbiased measure of inter-rater reliability, we also calculated Cohen’s (1960) Kappa for each pair of raters. Even our lowest value ($k = .793$) still showed substantial inter-rater reliability agreement (Cohen, 1960; Fleiss, 1971; Landis & Koch, 1977; McHugh, 2012).

Examining the data, slightly more people liked pineapple as a pizza topping compared to disliked it, with slightly fewer being neutral. Although our respondents were split almost equally between liking and disliking pineapple on pizza, this question was polarizing and resulted in some light-hearted but somewhat divisive discussions.

We also identified a number of frequently endorsed codes. Many respondents pointed to dietary restriction (e.g., an allergy) or preference for their choice or family. Although nearly a quarter of respondents reported that they would never order it themselves, many followed up that statement with the idea that, even with pineapple, pizza is still pizza and they would still eat it and enjoy pizza with any topping.

Combining these codes into themes, elements of liking pineapple on pizza (i.e., explicitly stating they like it, acknowledging that all pizza was delicious, evoking the sweet and salty combination or a balance of flavours) was included by more than half of respondents, while elements of disliking it, and being neutral or indifferent were also identified, which may point to individual traits related to personality variables. Other common themes were related to social relationships, dietary patterns/restrictions, Canadian identity, and creativity.

Table 1

Summary of themes, codes and examples for each as well as the raw number of respondents whose statement related to that theme and the corresponding percentage.

THEMES	CODES INCLUDED	EXAMPLES (quotes)	N	%
Personal dietary patterns	Allergy Vegan/vegetarian Dietary preference Other restrictions (e.g., GF)	I get a little bit of allergy with that. I don't eat piggies anymore and I don't eat cheese. ...absolutely no cheese. That's what matters on pizza. Due to dietary restrictions.	19	46.34
Relationships	Family Social (party, meetings) Interviewer's feelings Fight Other colleagues' feelings	Everybody else in my house loves pineapple on pizza. If I'm at a party or something and there's a Hawaiian pizza.... I know how important that 'no' category is to you (interviewer). So it starts a fight in our family on a regular basis. I can't say anything against our colleagues who voted yes.	24	58.54
Canadian identity/values	Canadian inventor Polite Sorry Hawaiian Food waste/environment Inclusive Multicultural	The whole concept of a Hawaiian pizza is Canadian. Yeah, I want to be polite. I'm sorry, it's a definite no. I'm really craving Hawaiian ...if there was pineapple on pizza and it was going to go into the garbage I would, I would eat it. Why discriminate against pineapple? Put 12 fried eggs on it and make an Australian pizza.	18	43.90
Like	Yes (I like it) Any pizza is delicious Balance Salty/sweet (good)	And absolutely, absolutely, I'm a pineapple on pizza. ...because it's still pizza, at the end of the day, I love pizza. I think for me it's a balance of flavours. ...you've got like the savory flavours of the sauce and the cheese and then you mate that with the sweet of the pineapple and it's just a perfect, a perfect match.	24	58.54

Dislike	No (I don't like it) Unnatural Contaminate Gross Doesn't belong Salty/sweet (bad)	Hard pass. It's just so unnatural. ...if you try to pick pineapple off a pizza, it still tastes like pineapple. Yeah, it's so gross. I absolutely think it doesn't belong to pizza. It's sweet and savory at the same time, you don't do that	19	46.34
Neutral	Neutral/unsure It has changed Would never order it	I went with Switzerland on this. And now, due to dietary restrictions, my pizza is really sad. I would never order it on my own.	18	43.90
Creativity in response	New/novelty Story-telling element	I may have a small slice for the novelty. Where we live we have a lot of wineries and they have wood fire ovens and you go for a glass of wine and a pizza and what not. So, when COVID hit we knew that we weren't going to be able to do that, so we actually went and bought our own fire oven. So, we have a pizza oven for our backyard and every pizza that goes, every time we cook a pizza or two, there's always pineapple on there	15	36.59

Figure 1 shows the clusters and proposed relationships between the codes and themes we identified. Specifically, neutral participants tended to identify elements from both the liking and disliking themes, which may be related to differing personality traits. Responses with dietary restrictions tended to elaborate and explain with a story (as did those who liked pineapple on pizza). Finally, maintaining social relationships is in line with Canadian values and appears to support the idea of being a multicultural and inclusive society.

We also examined some of these data quantitatively (frequency of yes and no words in participants' responses; number of words in each response). When coding, we observed that participants who did not like pineapple on their pizza appeared to use the word "no" (or its derivatives like nope) much more frequently than their counterparts used the word "yes" (and its derivatives like yup). Similarly, it seemed as though participants who enjoyed pineapple on their pizza engaged in much more story-telling or included more creative elements in their response than those who did not appreciate pineapple on their pizza. We counted the number of uses of "yes" and "no" (and their derivatives) for participants who liked and disliked pineapple on their pizza (respectively). Our observation was confirmed: those who did not like pineapple on their pizza used "no" significantly more times ($M = 3.60$, $SD = 2.26$) than those who did enjoy pineapple on their pizza ($M = 1.88$, $SD = 1.69$; $t(26) = 2.41$, $p < .05$). This is in spite of the "no" respondents having shorter answers both in terms of time (68 seconds vs. 132 seconds) and number of words (154.94 words vs 200.60 words), though this difference in length did not reach significance ($t(28) = 1.50$, $p = .07$). We then examined whether more of the "yes" participants had creative or story-telling responses and found that many more "yes" respondents told stories (47.06%) compared to the "no" respondents (13.33%). This difference was significant ($X^2(1, N = 32) = 4.22$, $p < .05$).

The differences identified in terms of creativity, length of response and the various common themes point to a real difference in some potentially important ways between those who do and those who do not like pineapple on pizza. Our primary focus in Study 1 was to identify themes related to whether people like pineapple on pizza. The major themes we identified, and which were used to develop a more detailed questionnaire to investigate in Study 2, were related to personal preferences and personality, relationships, Canadian identity, and creativity.

Study 2

Based on the themes identified in Study 1, our goal was to better understand food choices (and specifically pineapple on pizza) by exploring the extent to which the following factors (identified in Study 1) related to it: personality, creativity, Canadian identity, and social relationships. Although primarily exploratory in nature (since, to our knowledge, no descriptive study of this sort has been conducted in the past), we hypothesized that people who endorse the inclusion of pineapple on pizza might be different in some important ways on these variables. Additionally, another goal of the study was to explore whether, as is the case with young children's preference for sweets and avoidance of bitter-tasting foods (Desor et al., 1975; Desor et al., 1977; Mennella et al., 2003), there could be an evolutionary basis for this food choice, such that underweight or younger individuals might be more likely to seek out the sweet taste of pineapples. These questions guided this second study. In order to provide some additional empirical background on the areas identified in Study 1, the possible influence of personality, relationships, identity, and creativity on food choice will be outlined.

Personality

The way someone consistently thinks, acts, feels, and perceives the world is their personality (Jordan, 2011; Shiner & Caspi, 2003). It includes their mood, opinion, motivation, as well as the way they think, speak, and act (DeYoung, 2010). The Big Five is the most common trait taxonomy of personality (Larsen & Buss, 2010) and has been shown to be consistent in over 50 cultures, rendering it a universal classification of personality traits (McCrae et al., 2005). It includes five dimensions (or factors) which have been only slightly modified since their initial inception in the 1980s (Costa & McCrae, 1985; McCrae & Costa 2008; McCrae & John, 1992). The five dimensions are: Extraversion, Agreeableness, Openness (to Experience), Emotional Stability (formerly Neuroticism), and Conscientiousness (Costa & McCrae, 1985). The Big Five personality traits are typically described with common adjectives. Someone scoring high on the dimension of Extraversion (E) is enthusiastic, outgoing, and talkative; a high score on Agreeableness (A) indicates the traits of forgiving, trusting, appreciative; for Conscientiousness (C) the defining traits are being reliable, responsible, and planning; scoring low on Emotional Stability means a high

Table 2

Summary of survey responses, showing the percent of respondents selecting that response, rounded to the nearest whole number

	1 (Not at all)	2	3	4	5 (Very much)	Yes	No	Unsure
Do you ever eat pineapple on pizza?						73%	22%	
Do you like pineapple on your pizza?	22%	17%		24%	37%			
If you were purchasing a slice a pizza for yourself, would you ever order a slice with pineapple on it?						44%	51%	5%
How appropriate of a topping is pineapple on a pizza?	14%	15%	12%	14%	46%			
How strongly do you feel about your opinion of whether pineapple is an appropriate pizza topping?	2%	3%	20%	12%	61%			
	I liked it at some point, but no longer do	I used to not like it, but now I do	I didn't like it in the past and still don't	I have liked it in the past and still do	Other			
Which of the following is most accurate about your like or dislike of pineapple on pizza during your lifetime?	2%	5%	34%	56%	3%			
How appealing are pineapples to you as a fruit alone?	5%	7%	12%	20%	56%			
How appealing are pineapples to you in other sweet dishes (like pineapple upside down cake or a fruit salad)?	14%	5%	14%	22%	46%			

How appealing are pineapples to you in savoury dishes like sweet and sour chicken or stirfry ?	17%	8%	24%	14%	37%	
How much do you approve of other sweet/savoury combinations such as a donut burger (hamburger with donuts instead of hamburger buns)?	37%	27%	19%	12%	5%	
Would you ever be willing to ever try peaches or another sweet fruit on your pizza if it was a local specialty (e.g., while travelling to a new country)?						59% 22% 19%
	1 (Alone)	2	3	4	5 (with a group of people)	
When eating pizza, do you prefer to eat it:	2%	2%	71%	5%	20%	
Does your family have an influence on whether pineapple is added to the pizza you order (e.g., it's a topic of family discussion)?	40%	10%	14%	14%	22%	
Do your friends influence the toppings on your pizza?	42%	20%	22%	12%	3%	
Do your colleagues have an influence on whether you eat pineapple on pizza?	69%	2%	3%	15%	80%	
If multiple options of pizza were available (e.g., at a meeting or party), how likely are you to consume a slice of pizza with pineapple on it (e.g., Hawaiian)?	36%	14%	7%	10%	34%	

	<i>It's disgusting and they should keep it away from me</i>		<i>Neutral: their food, their choice</i>		<i>It's great and I wish they would share some with me</i>		
How do you feel about OTHER people eating pineapples on their pizza?	0%		76%		24%		
	2-3	4-5	6-7	8-9	10-11	12-13	14
Agreeableness	0%	2%	0%	31%	24%	32%	12%
Conscientiousness	0%	0%	2%	17%	15%	31%	36%
Emotional Stability	0%	3%	12%	24%	34%	17%	10%
Extraversion	3%	10%	22%	19%	22%	20%	3%
Openness to Experience	0%	0%	2%	25%	34%	31%	8%
Did you know that Hawaiian pizza was a Canadian invention?						53%	46%
	<i>Makes it MORE appealing</i>		<i>Makes it LESS appealing</i>		<i>DOES NOT CHANGE its appeal</i>		
Does knowing that Hawaiian pizza is Canadian change its appeal?	17%		0%		83%		
How strongly do you hold being Canadian as part of your identity?	3%	3%	12%	27%	54%		
In general, do you consider yourself to be a polite person	0%	2%	3%	15%	80%		
Would you eat a piece of pizza that included toppings you didn't particularly like in order to be polite?	10%	15%	19%	32%	24%		
Would you eat a slice of pizza that included toppings you didn't particularly like in order to prevent it from being wasted/thrown in the garbage?	19%	14%	20%	24%	24%		

Do you consider yourself to be creative person in general?	2%	10%	20%	41%	27%	
How creative are you feeling right now?	10%	8%	37%	27%	17%	
Do you consider adding pineapple to pizza to be a novel/creative topping choice?	36%	25%	24%	15%	0%	
Do you like to try new and/or novel food combinations (e.g., deep fried peanut butter-stuffed pickles)	12%	25%	29%	22%	12%	

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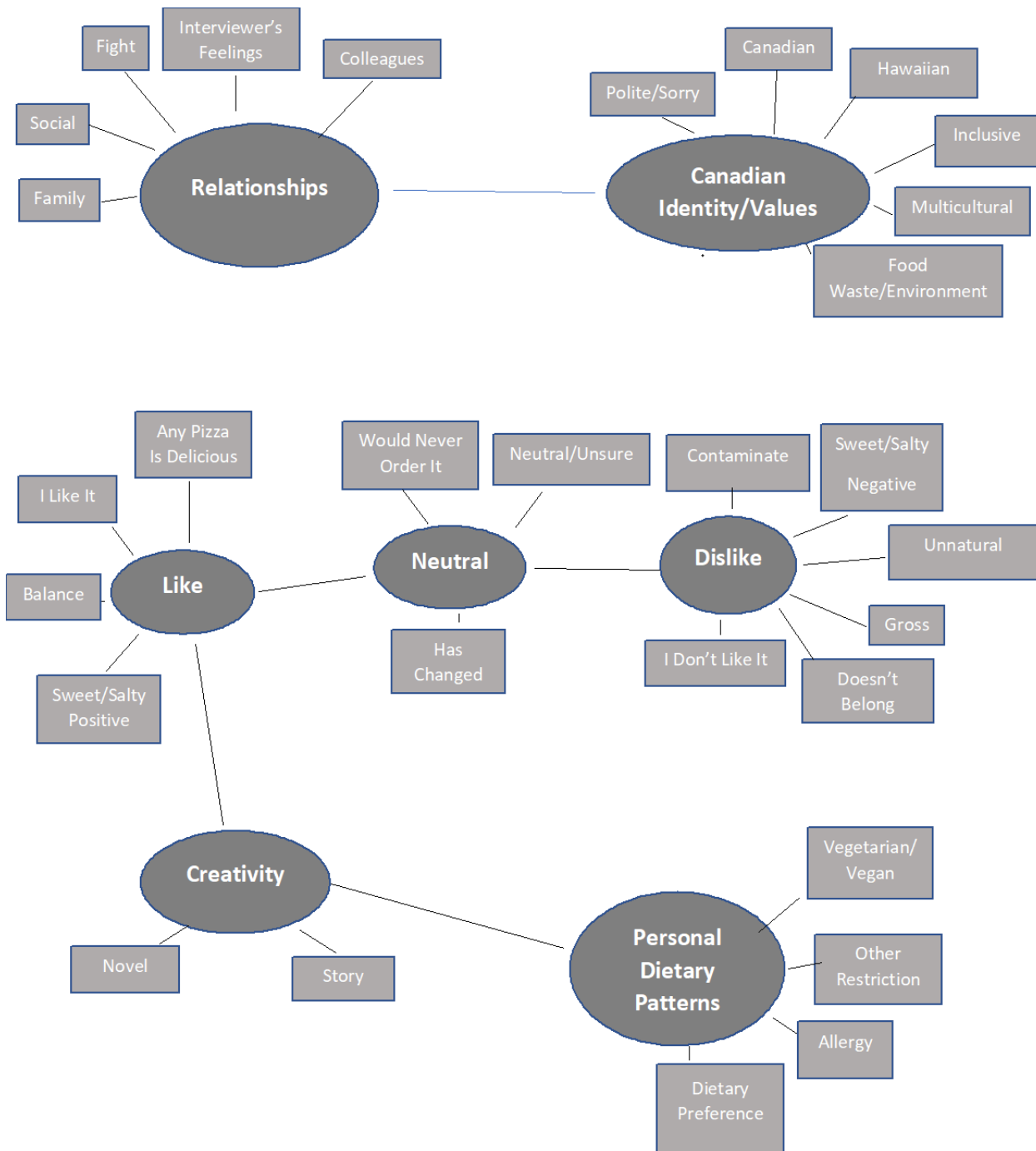


Figure 1. A visual representation of the themes and codes from our participants' transcripts.

score on the formerly named Neuroticism dimension (N), which is described as anxious, self pitying, unstable; finally, a high score on Openness (O) describes people who are curious, imaginative, and original (McCrea & John, 1992).

Jean Anthelme Brillat-Savarin, a French gastronome of the 19th Century, once said: "Dis-moi ce que tu manges, je te dirai ce que tu es." (Translation: "Tell me what you eat and I will tell you what you are.") (Brillat-

Savarin, 1825, p.13). Who you are (i.e., your personality) is not independent from your food choices. Because food choices reflect one's personality, personality may be able to help predict the food we are likely to eat (Shipman et al., 2016) and personality has been shown to be related to a number of health and food behaviours.

Social Relationships

Social psychologists have reported that the decisions we make are affected by the (physical or psychological) presence of others, including family, friends, and colleagues and strangers (Brandstetter et al., 2014; Seitchik et al., 2017; Zajonc, 1965). Family cultural celebrations include special dishes prepared by loved ones with common group memories attached to certain recipes offered. When meeting friends socially, gentle pressure for less healthy options or multiple beverage intake can occur. Within group settings, the influence of the group can determine choices that would not normally be made by an individual alone (e.g., risk-taking behaviours (Chou & Nordgren, 2016; Previte et al., 2015)).

Meetings with colleagues may involve food being ordered by the employer to share within the group and consequently, these food choices may be outside of an individual's control. In group settings, it is possible for people to choose certain foods to signal their social identity to others (perhaps encouraging social relationships) or simply to follow the culturally prescribed social norms of their social group (Hackel et al., 2018; Weber & Morris, 2010). Social-facilitation research has demonstrated that people tend to eat more in larger groups than when eating alone (de Castro & Brewer, 1992; Herman, 2015), whereas the impression-management literature indicates that people can use their eating behaviour to convey a particular impression of themselves to others (Vartanian et al., 2015).

Perhaps one of the most powerful social influences on food choice and food intake is modeling, which has shown that people adjust their food intake to that of their eating companions (Vartanian et al., 2015). According to Higgs & Thomas (2016), when participants saw themselves belonging to the same social group as a prevalent model, and strongly identified with the group they were eating with, modelling was enhanced. When the prevalent model was seen enjoying a food choice, the rest of the group were more likely to choose as well. Thus, while eating in a group situation, during an office meeting for example, it is possible one may choose to eat a pizza with pineapple in that context when they would not make that topping choice had they been dining alone.

Creativity

Creativity has been defined as “the tendency to generate or recognize ideas, alternatives, or possibilities that may be useful in solving problems, communicating with others, and entertaining ourselves and others” (Franken, 1993, p.393). Creative thinking is one of the competitive advantages the human species has over machines and other animal species. Humans are not as big, strong, or fast as other animals but humans can employ imagination in ways that lead to mental flexibility that, through trial and error, can lead to novel solutions (Roth & Dicke, 2005). Puccio et al. (2018) gives two reasons that novelty is so important in creativity. The first is that individuals discover and grow by continuously experimenting with novel ideas. The second is that novel experiences can serve to stimulate breakthrough ideas.

In 1962, Satellite Diner owner Sotirios “Sam” Panopoulos placed ham and pineapple on a standard cheese pizza in Chatham, Ontario Canada, and the “Hawaiian” pizza was born (Carman, 2019). At the time, the addition of ham and pineapple to a standard cheese pizza was an example of ‘little c’ creativity. Puccio describes ‘little c’ creativity as everyday creativity. Specifically, he proposes that ‘little c’ refers to the small ways that individuals demonstrate creativity on a daily basis during problem-solving tasks at work, home, or play. In this way, every human has the innate capacity to be creative (Puccio et al., 2018).

The Hawaiian pizza is certainly a breakthrough idea that has become quite popular on its journey in becoming mainstream in North American culture (Neustaeter, 2020). Gvion and Trostler (2008) found that, in the 1960s and 1970s, many ethnic restaurants took a similar ‘little c’ creative approach to generate meal ideas in much the same way as Panopoulos did with his pineapple and ham on pizza creation. Restaurants with “strange” ethnic foods adapted their menus to make their dishes more familiar (and thus more appealing) to their American patrons (Gvion & Trostler, 2008).

Personal Identity

Various types of identity play important roles in many of our daily choices. For example, cultural identity and clothing choice (Chattalas & Harper, 2016); ethnic identity and language use (Hazen, 2002); religious identity and purchasing behaviours (Benjamin et al., 2016); and both personal (Nezlek & Forestell, 2020) and social (Rosenfeld et al., 2020) identities and vegetarianism.

Hawaiian pizza is a Canadian creation (Scoble, 2016). Recent figures show that Canadians' acceptance of pineapple on their pizza is on the rise, now at 73%, demonstrating a 7% increase from 2019 to 2021 (Research Co., 2021).

Hackel et al. (2018) have shown that those who identified as Southerners expected traditional Southern food to taste better (Study 1) and that when primed with their Southern identity (but not their personal identity), they also expected Southern food to taste better (Study 2). Additionally, when Canadians were primed with their Canadian identity (but not their personal identity), they reported maple syrup as tasting better than honey in a taste test. Therefore, the fact that adding pineapple to pizza originated in Canada means that it may now be part of participants' Canadian identity and predict this food choice.

Hypotheses

Although this work is primarily explorative (since nothing of this sort has been previously undertaken), we expect to find differences among those who like pineapple on pizza and those who do not in several areas. First, we hypothesized that those with stronger Canadian identity would have more positive perception of pineapple on pizza as it is a Canadian creation. Second, we expected social groups to be related to someone's choice of topping so that those who eat pizza with others and/or whose toppings are more easily influenced by others would be more likely to include pineapple on their pizza. Third, more creative people may be less traditional in their thinking and may therefore be more likely to endorse pineapple as a (novel and/or creative) pizza topping. Fourth, in terms of the predictor variable of personality, one might expect that individuals scoring high on openness to experience to be more likely to try new things, including pineapple on pizza, and may therefore be more likely to enjoy it. On the other side, one might expect more conscientious individuals to be more rule-driven and traditional and therefore be less likely to enjoy pineapple on pizza. Finally, we expect to find evidence to support some biological underpinnings of this food choice, where underweight participants might prefer pineapple on pizza because their biological programming would motivate them seek out sweeter tastes in order to increase their chances of survival.

Methods

Participants

Faculty, staff, and administrative personnel were invited to participate. Of the 60 respondents, 63.8% were female, and 62.67% were between the ages of 30 and 49. When asked about their weight, 68.33% reported being of average weight and 26.67% reported being overweight, though none reported being underweight. Most (78.3%) reported having a healthy diet in general.

Materials and Procedure

Participants were recruited by sending an invitation through the department email group. Participants were fully informed prior to completing the survey. The information displayed explained that we were interested in examining a number of variables in relation to their choice to include or not include pineapple on their pizza. If they consented to participating in the research project, they were asked to answer questions in an anonymous online survey which took less than 10 minutes to complete. It asked participants about their liking of pizza, pineapple, various combinations of food (sweet, salty, savory) as well as the themes we identified in Study 1, notably personality, social relationships, Canadian identity, and creativity. These questions are included in Appendix A. We also asked about personality characteristics using the Ten-Item Personality Inventory (TIPI), a very brief measure which has been shown to have adequate validity and test-retest reliability ($r = .72$) to measure the Big Five domains

(Gosling et al., 2003). Interested readers can refer to Gosling et al. (2003) for detailed psychometric properties of the TIPI. Due to our small sample size relative to the numerous sections of the questionnaire and our evaluation that any potential effects which could occur as a result of not counter-balancing the questions (practice effects, respondent fatigue, order effects) would be unlikely to affect the quality of the respondents' data, the presentation order of the survey questions were presented in the same order for all participants. The order of presentation is reflected in Appendix A.

Results and Discussion

For 89.93% of respondents, whether they liked pineapple on their pizza has remained stable; they have either always liked it and still do or have never liked it and still don't. Approximately half knew that Hawaiian pizza was invented in Canada, a fact which made it more appealing to a small portion of the sample but did not change its appeal for the majority of respondents.

On a 5-point scale, all 60 respondents said that they liked pizza ($M = 4.80$), but one person identified that they had never tried pineapple on their pizza, so they were removed prior to data analyses ($N = 59$). We asked respondents to list their favourite pizza toppings. The most frequently reported pizza toppings were pepperoni (listed by 45% of respondents), mushrooms (43%), peppers (39%), pineapples (32%), and bacon (29%). Only 5% of respondents left this question blank. Frequencies for the survey responses are shown in Table 2.

We first examined whether there were difference in self-reported purchasing behaviour ("If purchasing a piece of pizza for yourself, would it have pineapple on it?") and comparing those categorical responses to participants' ratings of how appropriate pineapple is as a topping for pizza showed a significant difference ($F(2,56) = 29.949, p < .05, \eta^2 = 0.517$) with Tukey's post-hoc analyses showing that those who would not purchase pineapple on their pizza rated the appropriateness of pineapple on pizza significantly differently (lower) from the other two groups of respondents (yes $p < .05$, unsure, $p < .05$). Stated differently, compared to those who would not order pineapple on pizza ($M = 2.57, SD = 1.38$), ratings were higher for both the unsure ($M = 4.33, SD = 1.16$) and those who would order it ($M = 4.77, SD = .51$), where higher scores indicate more liking of pineapple.

More than half of respondents indicated that they would be willing to try another sweet fruit (e.g., peaches) on their pizza. Breaking this down for those who liked pineapple on their pizza versus those who did not, those who liked pineapple were more likely to also respond that they would try peaches (65.22%; 19.59 were unsure if they would try peaches, and 15.22% would not try peaches). In the group of respondents who indicated that they did not like pineapple on their pizza, the results were more equally split across the yes (38.46%) and no (40.00%) responses, with the remainder (15.22%) being unsure. The pattern of responses for the "yes" and "no" groups differed significantly ($X^2(2, N = 58) = 15.24, p < .05$). It could be that those who are more likely to approve of pineapple on their pizza are also more likely to be adventurous with their food choices. Although this was not found to be the case when comparing the pro-pineapple and anti-pineapple on pizza groups on openness to experience ($X^2(1, N = 59) = 0.0003, p = .985$), participants self-reported how adventurous they were in their food choices more generally ("Do you like to try new and/or novel food combinations (e.g., deep fried peanut butter-stuffed pickles)?") and this also did not point to a difference between the groups: people who liked pineapple on their pizza were no more likely to report that they liked to try new food combinations than those who did not like pineapple on their pizza ($X^2(4, N = 59) = 7.22, p = .125$).

The questions related to social relationships were uninteresting as social aspects did not appear to have any impact on this food choice. Participants had no preference for eating pizza alone or with others (most responded neutrally), and family, friends, and colleagues don't appear to have an impact on participants' choice of toppings: many participants responded that they were "not at all" influenced by family, slightly more were "not at all" influenced by friends, and nearly three-quarters were "not at all" influenced by colleagues. It is intuitive that colleagues would have the least influence and that family would be the most influential in food choices given the psychological closeness of each group. This could indicate that adult food choices have a very weak relationship with these social aspects, or at the very least, it could indicate that individuals' perceptions of the relationships that may exist between their own food choices and their relationship with others are minimal. Similarly, we thought that Canadian identity (or, the degree to which people held being Canadian as part of their identity) might be related to their food choice of Hawaiian pizza since it is a Canadian creation. Previous research

has shown that when food is congruent with one's identity, it is expected to taste better and rated as better tasting in a taste test (Hackel et al., 2018). But this expectation was not found in the data. For example, participants were no more or less likely to like pineapple on their pizza based on their self-rated Canadian identity scores ($X^2(1, N = 59) = 0.039, p = .843$).

There were both sex and age differences in whether participants endorsed pineapple on their pizza. For sex specifically, whether a participant liked pineapple on pizza differed by sex ($X^2(3, N = 58) = 8.025, p < .05$), with a higher proportion of females indicating that they "very much" like pineapple on their pizza ($n = 19$ vs males $n = 2$), whereas for those who did not like pineapple on their pizza (those responding "not at all"), it was more evenly split by sex ($n = 6$ for female; $n = 7$ male). This result was mirrored in participants' intent to purchase, with a higher proportion of males indicating that they would not purchase pizza with pineapple on it (12 no, 2 unsure, 3 yes) compared to females (17 no, 23 yes, 1 unsure), which was significant ($X^2(2, N = 58) = 8.023, p < .05$). Finally, when rating on a scale how appropriate of a topping pineapple is, an ANOVA showed that responses differed by sex ($F(1,56) = 9.64, p < .05, \eta^2 = 0.147$), with females rating pineapples as a more appropriate topping. Previous research has shown that young adult (17-25 years) women are more likely to eat fruits and vegetables than young men of the same age (Conner et al., 2017), so this may contribute to this difference.

Whether a participant eats pineapple on pizza also differed by age ($X^2(3, N = 59) = 15.06, p < .05$), with 30-39 year-olds ($n = 21$, vs no $n = 2$) and 50-59 year-olds ($n = 13$ vs no $n = 0$) being more likely to eat pineapple on their pizza it, while 40-49 ($n = 7$) were equally likely and 60-69 year-olds were almost equally likely ($n = 5$ for yes; $n = 4$ for no). A similar pattern was seen when looking at whether participants reported liking pineapple on their pizza, with 30-39 and 50-59 year-olds showing a greater propensity to liking pineapple on their pizza ($X^2(9, N = 59) = 22.00, p = .009$). Finally, examining participants' ratings of how appropriate of a pizza topping they consider pineapple to be, a significant omnibus difference was found ($F(3,55) = 4.12, p < .05, \eta^2 = 0.18$). Two Tukey's post-hoc tests were marginally significant: for 30-39 compared to 40-49 year-olds ($p = .068$) and for 30-39 compared to 60-69 year-olds ($p = .051$), suggesting that younger participants are driving this effect. However, because the effect of age was not linear it may also speak to generational differences (e.g., age when "exotic" food choices became common in Canada, for example), or younger people may be more likely to seek out sweet foods (as discussed earlier), pointing to an evolutionary basis for liking pineapple on pizza. Specifically, because both biological sex and maturation rates (as measured by age) are genetically determined, there could be an evolutionary advantage to, for example, young, fertile, females preferring sweet foods (more on this in the General Discussion). Since none of our participants reported being underweight, we were unable to fully examine whether this factor was related to this food choice as we had hypothesized. However, the relationships of both age and sex with this food choice could point to a more biological influence, with women preferring the sweetness of pineapple more than men.

When examining whether personality variables affect participants' preference for pineapple on pizza, we found that conscientiousness was related to their purchasing decision where those high on conscientiousness were less likely to purchase pineapple on their pizza, and those who did purchase pineapple on pizza were more divided between high and low conscientiousness scores ($X^2(1, N = 59) = 6.04, p < .05$). When asked about whether they eat pineapple on their pizza the difference in responses for those high and low on conscientiousness was marginal ($X^2(1, N = 59) = 3.57, p = .059$). One might have expected that participants who scored high on openness to experience would have been more likely to include pineapple on their pizza because they are more likely to want to try new things (DeYoung, 2010). The fact that the more diligent, self-disciplined, and efficient (i.e., conscientious) respondents were less likely to purchase pizza with pineapple on it is not directly supported by any literature. However, conscientiousness has previously been reported as being the single most important personality trait in predicting young adults' health behaviours such as smoking and alcohol use (Bogg & Roberts, 2004; Raynor & Levine, 2009; Turiano et al., 2015). Additionally, conscientiousness has previously been shown to affect food choices and eating styles (Heaven et al., 2001; Keller & Siegrist, 2015). Specifically, higher conscientiousness scores related to increased fruit consumption (Conner et al., 2017; Keller & Siegrist, 2015) and reduced the consumption of sweet-savory food combinations (Keller & Siegrist, 2015), so this could help to explain the patterns seen here.

We were particularly interested in whether individuals who consider themselves 'creative' are more likely to choose pineapple as a pizza topping than people who do not view themselves as 'creative'. Creativity did not have any relationship with the choice of pineapple on pizza, with participants' ratings of the appropriateness of pineapple as a topping being no different regardless of self-reported general creativity rating ($F(1,57) = .039, p = 0.844$).

Similarly, participants' creativity at the time of answering the survey did not show any differences in whether they liked pineapple on their pizza or not ($X^2(1, N = 59) = 1.318, p = .251$). Finally, examining whether high- and low-creativity participants differed in their liking of pineapple on pizza, no significant differences were found ($X^2(1, N = 59) = 0.65, p = .422$). People scoring higher on the openness to experience measure did rate themselves as more creative ($r = .624$), but these variables were unrelated to their endorsement of pineapple on pizza. Together, these findings seem to suggest that this food choice is not related to self-reported creativity, whether rating overall creativity or how creative they feel at the time of responding to the questionnaire. Since the idea of pineapple on pizza has existed for over 50 years in Canada (Scoble, 2016), pineapple may no longer be considered a novel or creative pizza topping among Canadians (in fact, more than 50% of our respondents indicated that it was not a very novel or creative pizza topping choice). Pineapple as a pizza topping might be viewed by respondents as a standard topping choice in the same regard as pepperoni or mushrooms.

Finally, we used a binary logistic regression to examine the endorsement of pineapple as a pizza topping (yes/no) using the predictor variables of age, sex, openness to experience, and self-rated creativity. Although conscientiousness was associated with food preference in an earlier analysis, it was not the prediction we made. The model was significant ($X^2(6) = 12.79, p < .05$, Nagelkerke $R^2 = .198$) and correctly predicted 69% of cases. One predictor, age 40-49, was significant (Wald = 5.46, $p = .019$) and two others were marginally significant (age 60-69 Wald = 3.57, $p = .059$; creativity Wald = 2.963, $p = .07$). These results (see Table 3) indicate that the odds were slightly higher that 40-49 year-olds say "no" to pineapple on their pizza compared to the group of 30-39 year-olds. Further, compared to those who liked pineapple on their pizza (the yes group), the no group rated themselves as marginally more creative. Looking at group means, this trend was only present for the 40-49 and 60-69 year old groups. We present these marginal predictors as a point of discussion, which we find relevant especially given our small sample size (Long (1997) and Bujang et al. (2018) both suggest a sample size of 500, while advising that small sample sizes (under 100) such as ours is not ideal.

General Discussion

The present study is unique because it examines food choices in depth using the very particular (and seemingly controversial) food combination of pineapple on pizza in two separate studies: one using a content analysis and the other employing an anonymous survey. In Study 1, we interviewed participants about their feelings towards pineapple on pizza and analyzed their responses. From these, we identified a number of recurring themes including Canadian identity, social influences, creativity, and personality variables. In Study 2, we used these themes to create a questionnaire asking more specific questions about participants' views of pineapple on pizza and assessing their self-reported characteristics related to the themes identified in Study 1. Results showed that most variables had little impact on pineapple preference and that the strongest predictors for this food choice were participant age and sex, with younger women being the most likely to include pineapple on their pizza. Thus, the themes identified during the content analysis of the interviews did not manifest in the survey results when participants were explicitly asked about their food choices. It appears that what was verbalized during a friendly conversation about including pineapple on pizza may be slightly different from their self-reported motivators. The driving force for the food choice reported here appears to be gender and age, and these results were not explicitly predicted. However, digging into the literature further provides some insights and possible explanations.

Women have been reported to eat more fruit compared to men (Beardsworth et al., 2002). Also, individuals under stress are more likely to consume sweet foods (Oliver & Wardle, 1999) and many studies report that women experience more stress than men (American Psychological Association, 2010; Matud, 2004; McDonough & Walters, 2001). However, these facts may not provide a fulsome and satisfactory explanation here. To further probe the sex difference reported for pineapple preference, we expanded our literature search to include non-human research. A study conducted on rats suggests that the female hormone estradiol may bolster a craving for sweet food (Eckel et al., 2004). While human social and environmental factors make it challenging to connect to the results from the rats, Eckel points out that, "Animal studies suggest that the higher rates of obesity in women are related to sex differences in taste preference that could promote overeating. In short-term intake tests, female rats display a greater preference for sweet solutions than male rats" (2004). In addition, Krishnan (2016) found that, "In normal weight healthy women, higher estradiol in the luteal phase is associated with increased craving for sweet-tasting and carbohydrate rich foods. We believe the estradiol-leptin relationship is a defining quality in whether or not women crave sweet-tasting and carbohydrate rich foods" (p. 311). This suggests that the results from the rat study could be extended to human females. Indeed, there is a genetic preference for sweet foods in humans, which is heritable and

Table 3*Binary regression results predicting response to liking pineapple on pizza (yes/no)*

	Estimate	SE	Standardized	OR	z	Wald Test			95% CI	
						Wald's Z	df	p	Lower	Upper
Intercept	-0.202	1.093	1.492	0.817	-0.185	0.034	1	.853	-2.346	1.941
Creativity	0.509	0.296	0.599	1.664	1.721	2.963	1	.085	-0.071	1.089
Openness to Experience (Low)	0.765	0.705	0.765	2.150	1.086	1.179	1	.278	-0.616	2.147
Sex (Male)	-1.031	0.719	-1.031	0.357	-1.434	2.057	1	.152	-2.439	0.378
Age (40-49)	-1.922	0.823	-1.922	0.146	-2.337	5.461	1	.019	-3.534	-0.310
Age (50-59)	-0.965	0.906	-0.965	0.381	-1.066	1.136	1	.287	-2.740	0.810
Age (60-69)	-1.782	0.943	-1.782	0.168	-1.890	3.571	1	.059	-3.630	0.066

Note. “Do you like pineapple on your pizza? Level ‘yes’ coded as class 1. Standardized estimates represent estimates where the continuous predictors are standardized.

the individual variation in sweet food preference is linked to chromosome 16p11.2 (Keskitalo et al. 2007). Women may also make different food choices than men, choosing to focus on health, weight, pleasure, and ideology (Lindeman & Stark, 1999). Since we did not code for the sex of the interviewees in Study 1, it’s possible that the themes which emerged were more applicable to women (e.g., if the respondents were primarily women) and that some more general or male-dominated themes were obscured.

Sugar kept our ancestors alive during times of famine as it helped them gain the necessary fat to survive (Johnson & Andrews, 2015), but in modern times, the human desire for sweetness is due to its relationship with happiness (its consumption releases dopamine in a similar way that many other habit-forming drugs do; DiNicolantonio et al., 2018) and its stress-reducing effects (its consumption has been shown to reduce the stress hormone cortisol; Tyron, et al., 2015). Because women experience higher levels of stress (e.g., American Psychological Association, 2010; Matud, 2004; McDonough & Walters, 2001), the higher appeal of the sweet pineapple as a pizza topping for women over men could reflect these higher stress levels. Further, the combination of sweet and savory being mixed on the pizza could have particular appeal to women: in terms of its chemical properties, salt enhances the sweet taste of food and reduces its bitterness (Breslin & Beauchamp, 1997), so it makes sense that humans (and possibly especially women) have a greater desire for sweet-salty food combinations as these would be perceived as being even more pleasantly sweet than a sweet taste without the accompanying saltiness.

For age differences, one interesting study (Shipman & Durmus, 2016) examined how personality traits affected the intention of Generation X and Generation Y to try new tastes. Using the dates proposed by Gibson et al. (2009), members of Generation X were 41-56 years old at the time of our data collection, and Generation Y were 21-40 years old at the time of data collection. Shipman and Durmus (2016) found that, while Agreeableness was a

strong predictor for both groups (i.e., logical and familiar foods), for Generation X, Openness to Experience was also a strong predictor, while for Generation Y it was Extraversion. That is, these age groups differed in some respect in terms of their food choices. Specifically, Generation X preferred foods that were more varied and creative, but for members of Generation Y, they are more motivated to like foods in a social environment, especially when others identify that the food is good. These generational differences may contribute to explaining the strange pattern we observed in this study, with 30-39 (Generation Y) and 50-59 (Generation X) year-olds being more in favour of pineapple and 40-49 (Generation X) and 60-69 year-olds being more evenly split. Specifically, the 30-39 year-olds (Generation Y) may have social motives for enjoying pineapple on pizza while for the 50-59 year-olds (Generation X) they might have been drawn in by the novelty of pineapple as a topping. However, given that our age ranges do not map onto these generational cut-offs exactly, this is speculative at best. But it is important to consider that there are a variety of both physical and social/contextual changes that happen with age which may affect food-related decisions (Brown, 2006; Lumbers & Raats, 2006).

The fact that the two studies reported here appear disconnected also requires further explanation. It does not appear that the variables identified by participants in the Study 1 interviews have any relationship with their choice to have pineapple on their pizza. Although there were only a few months between data collection in Study 1 and Study 2, it may be the case that, over time, participants' feelings and responses could have become polarized; or respondents could have been more motivated by seeing the interviews in Study 1 to respond to the surveys if they were pro-pineapple on pizza. Psychologists have been aware of attitude polarization for decades (Lord, 1979). The more you think about the subject, the more polarized your attitude becomes (Tesser & Conlee, 1975). Similarly, the more you express your opinion on the subject, the more extreme that opinion becomes (Brauer et al., 1995; Strandberg et al., 2019).

Because this « pineapple on pizza » question had been brought up a few times at various departmental meetings, it could also be the case that people changed their opinion on the survey in order to conform and/or produce more socially desirable effects (more on this possibility in a moment), thus concealing some true differences in the data. But these departmental conversations might also have affected their perception of the dominant opinion of the group to be more pro-pineapple than it is in reality. In a study examining opinions around alcohol use, Miller and Morrison (2009) showed that college students who were more comfortable with their own drinking behavior were more likely to express their opinion on the topic, and especially if they thought their opinion (pro-alcohol) was the dominant one. Because those opinions would be the ones more likely to be expressed publicly, they are the opinion heard by others, making people perceive them as more common than they actually are, which can cause others to erroneously perceive it as the dominant view of the group (Miller & Morrison, 2009).

Publicly shared opinions (Study 1) are not always the same as those privately held by individuals (Study 2) and this discrepancy could have also muddied the waters in the present study (Manfredi et al., 2020). Specifically, when someone expresses their opinion on a topic Manfredi et al. (2020) proposed that they have one of two motives: either to promote group harmony or to affect their own reputation in a positive way. Therefore, these different goals might have obscured some of the themes which should have been present in the interview data, and consequently resulted in an incomplete questionnaire in our subsequent study.

Participants may hold private food motives that differ from the ones they wish to express publicly. Previous research has demonstrated a social desirability bias in self-reported behaviours, both in general as well as specifically related to food intake (Hebert et al., 1995; King et al., 2018; Mensch & Kandel, 1988; Nielsen et al., 2021; Praxedes et al., 2021). In the present study, participants knew their responses would be viewed by their colleagues (Study 1), so they may have identified acceptable or socially desirable themes, while in Study 2 their private responses could have tapped into different, more personal themes, which may not have been asked about by the researchers (because they were not identified by participants in the Study 1 interview). As such, some of the findings here may point to a social desirability effect which came into play during the interview component of the project (Study 1). Additionally, without knowing the opinion of their direct supervisor(s), participants might feel exposed and that they are taking a risk in expressing their true opinion in the video interview (which their supervisor(s) could view) but their responses on the survey were anonymous, so they might have felt more comfortable providing truthful answers there.

Finally, participants might have self-censored in one or both of the studies. Hayes, Glynn and Shanahan (2005) proposed that self-censorship occurs when people withhold their opinion when they are in the presence of

others whom they think hold a different opinion. This could have been the case where participants censored themselves during the interview (because they knew others would listen to it, thus making it public), which led to some themes emerging in Study 1 which did not accurately reflect participants' underlying perceived causes of their choice of pineapple on pizza, but instead reflected their self-censored or socially-desirable responses. As a consequence, these themes did not show the expected relationships in Study 2. We should also consider that only a small portion of the department completed this survey, so electing not to participate in the survey could also be a form of self-censorship, and this could have obscured some true relationships among the variables. This non-participation self-censorship has been previously reported in political research when opinions are polarized (Hayes et al., 2006).

Future Research

As discussed earlier, many food choice motives exist (Bell & Meiselman, 1995; Eertmans et al., 2001; Eertmans et al., 2005; Furst et al., 1996; Letarte et al., 1997; Lindeman & Stark (1999); Parraga, 1990; Rozin, 1996; Rozin & Tuorila, 1993; Steptoe et al., 1995; Wardle, 1993). In the case of the present study, it is possible that, having not measured all of these as they relate to pineapple on pizza, the survey developed missed an important predictor which would have allowed a more fulsome explanation of the results. Future research should include more of these predictor variables in their design.

Future studies should also address some of the limitations of this investigation such as using a larger and broader sample. Previous studies have shown that participants who are more likely to respond to online surveys are conscientious (Rogelberg et al., 2003), agreeable (Marcus & Schutz, 2005; Rogelberg et al., 2003; Tuten & Bosnjak, 2001), and open to experience (Marcus & Schutz, 2005; Tuten & Bosnjak, 2001), so a larger and more heterogeneous sample could help shed some light on the findings reported here, including the pattern of responses found by age. Expanding the study to include younger age groups as well as increasing the granularity of the age data (e.g., asking for birth year or exact age) might clarify some of the proposed explanations discussed herein.

As it relates to creativity, our rationale for using self-reported perceived creativity as a proctor for creativity level (instead of a more robust and psychometrically valid measure of creativity) was to limit the length of the survey and because we were primarily interested in other variables in predicting food choices. One of the most popular measures of creative thinking is the Torrance Tests of Creative Thinking (TTCT) (Puccio et al., 2018). The predominant skills measured by the TTCT are fluency, originality, and elaboration (Puccio et al., 2018). The TTCT is considered a better predictor of adult creativity than the standard IQ test (Puccio et al., 2018). The Torrance Tests of Creativity Thinking (TTCT) have existed since the late 1950s. These tests appear to be reliable in predicting overall lifetime creativity even if assessed as a child (Puccio et al., 2012). Future studies examining food choice could include a validated measure of creativity. Huh et al. (2018) found that, although participants predict that sweet foods will enhance creativity performance, sour foods actually produce an enhancement on a creative (idea-generating) task. So, it might be interesting for future studies to examine whether people would predict that a sweet-and-sour fruit such as pineapple would enhance or hinder performance, and also whether consuming a Hawaiian pizza would actually affect creative behaviour in the predicted direction.

Conclusions

It has been nearly 60 years since pineapple was first placed on a pizza and the controversy of whether the tropical fruit is an appropriate pizza topping. Given the longevity and popularity of the "Hawaiian" pizza, it provides a unique opportunity to study the motives related to this food choice. Combining foods to form new ones and varying our diets also stimulates our appetite and keeps us seeking out more different foods (with varying flavours, tastes, textures, nutrients, and vitamins) which had been beneficial to our survival in the past. In a classic study, Rolls et al. (2015) showed that we get gastronomically bored if we eat too much of the same food and our enjoyment of and desire to consume that food is reduced (but not the desire to consume other foods or the perceived pleasantness of other foods which were not consumed). In this way, seeking out new food combinations are an important part of our evolution, and an enjoyment of pineapple on pizza may simply be one manifestation of that.

The results presented here show that there are several themes which motivate peoples' choices about whether to include pineapple on their pizza (Study 1) but that these themes do not necessarily differentiate or predict

participants' choices, beyond gender and sex (Study 2). The literature on food-related choices is rich and may also provide important information about the mechanisms of choice in general. This information can help inform practice in applied settings as they relate to eating disorders or following health directives, for example. In this way, this research adds to what we know about food choices, including the potentially important role of sex and age, and might nuance the mechanisms at play when examining food motives.

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Appendix

Thank you for agreeing to participate. Please answer the questions below as accurately as possible.

PIZZA SECTION

Have you ever eaten pizza? (Yes/No/Unsure)

(If they answer “No” or “Unsure”, they are brought to the thank you message at the end of the survey)

Have you ever tried pineapple on your pizza? (Yes/No/Unsure)

(If they answer “No” or “Unsure”, they are brought to the thank you message at the end of the survey)

Do you enjoy the taste of pizza? (Likert 1(not at all) – 5 (very much))

If so, what are your favourite pizza toppings? If not, why not? (textbox)

Do you ever eat pineapple on pizza (whether by choosing to order it yourself or you have eaten it because it just happened to be available)? (Yes/No/Unsure)

Do you like pineapple on your pizza? (Likert 1(not at all) – 5 (very much) + other (textbox))

If you were purchasing a slice of pizza for yourself, would you ever order a slice with pineapple on it?

Yes/No/Unsure

How appropriate of a topping is pineapple on a pizza? (Likert 1(not at all) – 5 (very much))

How strongly do you feel about the opinion you gave in the previous question (whether pineapple is an appropriate pizza topping)? (Likert 1(not at all) – 5 (very much))

Which of the following is most accurate about your like or dislike of pineapple on pizza during your lifetime? (I liked it at some point, but no longer do; I used to not like it, but now I do; I didn't like it in the past and still don't; I have liked it in the past and still do; unsure; other (please explain))

SWEET

How appealing are pineapples to you as a fruit alone (Likert 1(not at all) – 5 (very much))

How appealing are pineapples to you in other sweet dishes (like pineapple upside down cake or a fruit salad) (Likert 1(not at all) – 5 (very much))

How appealing are pineapples to you in savoury dishes like sweet and sour chicken or stirfry (Likert 1(not at all) – 5 (very much))

How much do you approve of other sweet/savoury combinations such as a donut burger (hamburger with donuts instead of hamburger buns) (Likert 1(not at all) – 5 (very much))

Would you ever be willing to ever try peaches or another sweet fruit on your pizza if it was a local specialty (e.g., while travelling to a new country)? (Yes/No/Unsure)

SOCIAL

When eating pizza, do you prefer to eat it: (Likert 1(alone) – 5 (with a group of people))

Does your family have an influence on whether pineapple is added to the pizza you order (e.g., it's a topic of family discussion)? (Likert 1(not at all) – 5 (very much))

Do your friends influence the toppings on your pizza? (Likert 1(not at all) – 5 (very much))

Do your colleagues have an influence on whether you eat pineapple on pizza? (Likert 1(not at all) – 5 (very much))

If multiple options of pizza were available (e.g., at a meeting or party), how likely are you to consume a slice of pizza with pineapple on it (e.g., Hawaiian)? (Likert 1(not at all) – 5 (very much))

How do you feel about OTHER people eating pineapples on their pizza? (Likert (1) It's disgusting and they should keep it away from me - (3) Neutral (their food, their choice) - (5) It's great and I wish they would share some with me)

PERSONALITY (TIPI- see Gosling et al., 2003 for questions and scoring)

CANADIAN IDENTITY

Did you know that Hawaiian pizza was a Canadian invention? Yes/No

Does knowing that Hawaiian pizza is Canadian change its appeal? (Knowing that Hawaiian pizza is Canadian makes it MORE appealing/Knowing that Hawaiian pizza is Canadian makes it LESS appealing/Knowing that Hawaiian pizza is Canadian DOES NOT CHANGE its appeal)

How strongly do you hold being Canadian as part of your identity ((Likert 1(not at all) – 5 (very much) + “I am not Canadian”)

In general, do you consider yourself to be a polite person (Likert 1(not at all) – 5 (very much))

Would you eat a piece of pizza that included toppings you didn't particularly like in order to be polite? ((Likert 1(not at all) – 5 (very much))

Would you eat a slice of pizza that included toppings you didn't particularly like in order to prevent it from being wasted/thrown in the garbage? ((Likert 1(not at all) – 5 (very much))

CREATIVITY

Do you consider yourself to be creative person in general (Likert 1(not at all) – 5 (very much))

How creative are you feeling right now? (Likert 1(not at all) – 5 (very much))

Do you consider adding pineapple to pizza to be a novel/creative topping choice? (Likert 1(not at all) – 5 (very much))

Do you like to try new and/or novel food combinations (e.g., deep fried peanut butter-stuffed pickles) (Likert 1(not at all) – 5 (very much))

DEMOGRAPHICS

Sex (male, female, prefer not to answer)

Age range (20-29, 30-39, 40-49, 50-59, 60-69, 70+, prefer not to answer)

Weight (underweight, average, overweight, prefer not to answer)

Do you consider self to have healthy diet, generally-speaking? (Likert 1(not at all) – 5 (very much))