Appetite 168 (2022) 105790

Contents lists available at ScienceDirect

Appetite

journal homepage: www.elsevier.com/locate/appet

Curious to eat insects? Curiosity as a Key Predictor of Willingness to try novel food

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ARTICLE INFO

Keywords:
Curiosity
Entomophagy
Willingness to try
Insects
Novel foods
Consumer behavior

ABSTRACT

Entomophagy – the consumption of insects – is often rejected by Western society despite its benefits over traditional animal-based proteins. While several factors have been identified as potential predictors of people's willingness to try insect foods, this study introduced an under-explored factor: curiosity, which is a powerful motivator of behaviour that can overcome negative emotions and motivate us to seek new experiences. In two experiments (*Ns* = 240 and 248), participants (all UK residents, 99.6% British citizens) rated a number of food dishes, half of which contained insects, on a number of factors including curiosity and willingness to try the dish. Across both studies, curiosity predicted willingness to try both insect and non-insect foods above and beyond other factors. Furthermore, we unexpectedly (but consistently) observed a "curiosity-boosting effect" in which curiosity positively interacted with other predictors, increasing their effect on willingness to try insect foods, but not familiar foods. These findings suggest that curiosity promotes the willingness to try insect food in two different manners: A direct effect (above and beyond other factors) and a boosting effect.

1. Introduction

Traditional animal-derived proteins such as meat, eggs and fish make up approximately 40% of the protein consumed by the global human population and as the population continues to grow this is set to increase (Boland et al., 2013). For some time now, there have been growing concerns that this level of demand is not sustainable, and the increased consumption is contributing to degradation of the environment (Boland et al., 2013; Gahukar, 2011; Thavamani, Sferra, & Sankararaman, 2020; van Huis, 2013). The production of traditional animal-derived protein has several harmful side effects including greenhouse gas and ammonia emissions, high levels of water consumption and an increased demand for grain and livestock feed with high-levels of protein (van Huis, 2013). Therefore, there is a pressing need for more sustainable alternatives.

Entomophagy (the practice of eating insects) is one promising avenue to explore as an alternative to traditional animal-derived proteins. In many cultures (e.g., Australia, Thailand, Mexico, China, Ghana) entomophagy has provided a staple source of protein for centuries (Gahukar, 2011). There are many potential benefits to adopting entomophagy, compared to traditional animal-derived protein. Insect-based foods boast a lower environmental impact in terms of greenhouse gas and ammonia emissions, water consumption, as well as a more efficient use of grain resources. They are often higher in nutritional value than traditional protein sources and are potentially safer to consume in terms of cross-species transmission of diseases (Gahukar, 2011; Lombardi, Vecchio, Borrello, Caracciolo, & Cembalo, 2018; van Huis, 2013).

However, there are also several barriers to adopting insect-based foods, particularly in Western cultures. In fact, previous literature has shown that some factors such as perceived sensory attributes, feelings towards insect foods and lack of awareness of their benefits are associated with consumer's willingness to eat insect foods (Cicatiello, De Rosa, Franco, & Lacetera, 2016; Jensen & Lieberoth, 2019; Woolf, Zhu, Emory, Zhao, & Liu, 2019). The present study extends the existing literature by exploring the role of curiosity - a critical but to date overlooked factor - in promoting consumer willingness to try insect foods.

1.1. Factors influencing consumption of insect foods

Despite the many benefits of adopting entomophagy, it is still considered a food taboo in Western cultures (van Huis, 2013), mainly due to the deeply entrenched views of insects as pests and the associated

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https://doi.org/10.1016/j.appet.2021.105790
Received 30 April 2021; Received in revised form 29 October 2021; Accepted 1 November 2021
Available online 3 November 2021

disgust. Recently there has been a growing body of research dedicated to understanding the factors that predict acceptance of insect-based foods. These factors are discussed below.

1.1.1. Consumers' expectations and attitudes towards insect foods

Consumers' expectations and attitudes associated with insect foods are key factors that influence willingness to try. These expectations tend to be negative, particularly in regard to taste. In a study of people's attitudes towards novel foods, participants tasted burgers that were labelled as containing unusual ingredients (lamb brain, frog meat and mealworms) as well as a beef-only burger (Tan, Fischer, van Trijp, & Stieger, 2016). No novel ingredients were actually used – the patties all contained varying ratios of beef and plant-based material for sensory variation. Importantly, before trying the burgers, participants expected those with novel ingredients including insects to be less tasty than the beef-only burger (see also Tan, Tibboel, & Stieger, 2017). After tasting, participants increased sensory liking of novel burgers to a level similar to the beef-only burger. Along with expectations of taste, appearance is also important for the sensory liking of a product. In an experimental tasting study, participants tasted burgers containing beef, insect and plant-based materials (Caparros Megido et al., 2016). Each burger was presented to participants randomly with only a number for identification. Both appearance and taste were important predictors of overall liking of the burgers. Similarly, Cicatiello et al. (2016) administered a survey with 5 accompanying pictures of insect food dishes to assess potential barriers to entomophagy in Italy. Appearance was suggested to be the most pervasive barrier, with perceived taste also being identified as another barrier. They also found that familiarity with foods from other countries was positively associated with willingness to try insect foods.

The practice of eating insect foods is often met with disgust and revulsion in Western cultures (La Barbera, Verneau, Amato, & Grunert, 2018). Disgust has been shown to be a recurring and pervasive barrier across several studies investigating the potential barriers to eating insect foods (Ruby & Rozin, 2019; Sogari, Bogueva, & Marinova, 2019). La Barbera et al. (2018) investigated the effects of disgust on people's willingness to try a chocolate bar containing crickets. Disgust was found to be the highest contributor of the intention not to eat the chocolate bar. Similarly, Jensen and Lieberoth (2019) found that disgust predicted tasting behaviour of mealworms in a surprise tasting session. However, they also found that disgust was not a consistent predictor of willingness to eat and that the disgust factor may be driven by social norms and the perception of insects being an inappropriate food source. This may explain the discrepancy between participants' intentions and their actions in the tasting session – 27.5% of participants who said they would not eat insects actually tried mealworms when offered. The change in behaviour was explained by a change in perceived social norms during the tasting session.

1.1.2. Appropriateness, experience and familiarity

Perceptions of the appropriateness of an ingredient within a product can affect people's willingness to try novel foods. It has been suggested that novel ingredients are seen as more acceptable for consumption if they are included in a product that is perceived as appropriate to contain novel ingredients. For example, insect-based pasta was perceived as more acceptable than an insect-based chocolate bar (Lombardi et al., 2018). Even after tasting a novel product and overcoming negative sensory expectations, the level of food appropriateness may still remain below that of food made with familiar ingredients (Tan et al., 2016). Food appropriateness has also been linked to familiarity and sensory liking of a product. For example, Tan, Verbaan, and Stieger (2017) presented participants with mealworm products that were considered appropriate (meatball) or inappropriate (dairy drink) - the participants were questioned on aspects of the products before and after the tasting. The study found that meatballs were seen as the more appropriate product and this had a positive effect on sensory liking. Meatballs were also rated higher on familiarity.

Past experience or familiarity with insect foods has been shown to modify people's expectations and attitudes. A recent survey study found that people's reported willingness to consume insects was highly dependent on their familiarity with the concept of insects as a food source (Woolf et al., 2019). Perceptions of both unprocessed (whole insects cooked or used as ingredients) and processed (insects processed to form other products such as cricket flour) insect food products have been found to be more favourable after tasting compared to prior expectations (Sogari, Menozzi, & Mora, 2018). Similarly, Tan et al. (2016) found that after tasting, participants rated the taste of burgers labelled as containing unusual ingredients, including insects, as highly as beef-only burgers, despite low prior expectations. This appears to be a consistent finding across entomophagy research.

Therefore, encouraging individuals to try insect foods may change their perceptions and attitudes, which raises the question: How can this first experience be encouraged? One possibility is that a single positive experience with entomophagy may encourage future consumption. Along this line, Hartmann and Siegrist (2016) found that a tasting experience using processed insects increased willingness to try unprocessed insects. Specifically, study participants were presented with tortilla chips made with either corn flour or cricket flour and were also asked to rate their willingness to eat unprocessed insects accompanied by pictures. Eating the tortilla chips made with cricket flour increased participants' willingness to eat unprocessed insects. Therefore, one potential route to adoption of entomophagy is to find a motivator to foster an initial positive tasting experience and thus increase familiarity. This is what our study aims at achieving.

1.1.3. Perceived benefits of insect foods

Beliefs about the benefits of insect foods have been shown to play a role in people's willingness to pay for insect-based foods. Lombardi et al. (2018) looked at the influence of environmental and health benefits on willingness to pay for different food products containing mealworms (pasta, cookies and a chocolate bar) in comparison to their traditional counterparts. In the first round of testing, participants were given general information regarding the products (such as the type of insect used in the ingredients), while in the second round they were given information either on the health benefits or the environmental benefits. When presented with the benefits of entomophagy, willingness to pay for all products containing insects rose to a similar level to that of their traditional counterparts. Communication of both health and environmental benefits increased the willingness to pay for insect food products, with health benefits showing a slightly larger impact than environmental benefits. Awareness of the health and environmental benefits of insect foods was also found to be an important predictor of willingness to consume insects in a recent survey study (Woolf et al., 2019). Therefore, consumers' beliefs about the health and environmental benefits associated with eating insects are another factor influencing insect food consumption.

1.1.4. Contextual influences

The context in which insect foods are consumed may contribute to people's willingness to eat them. Increased willingness to try insects has been associated with social contexts such as 'in a pub' or 'at a food festival' as well as simply 'being with friends' (Motoki, Ishikawa, Spence, & Velasco, 2020), suggesting that there may be a role for social influence in supporting consumption of insects. Similarly, Jensen and Lieberoth (2019) found that perceived social norms predicted people's likelihood to try mealworms even when they had reported that they would not eat insects. Despite these reported positive social effects, Sogari (2015) found that the majority of participants felt their friends and family would not look upon entomophagy favourably, and this was a potential significant barrier to introducing insect foods to peoples' diets.

1.1.5. Individual differences

Finally, individuals differ in their willingness to eat novel foods more generally. Food neophobia is characterised as an unwillingness to try new foods (Pliner & Hobden, 1992) and is therefore an important factor to consider in the intention to eat novel foods such as insects. La Barbera et al. (2018) found that food neophobia made a significant contribution to the intention to eat along with disgust. Trait-level disgust sensitivity has been shown to be linked to food neophobia, some studies suggest that this is an important predictor of willingness to try some types of insect foods (e.g., chocolates with insects), explaining additional variance in willingness to consume insects on top of food neophobia (Ammann, Hartmann, & Siegrist, 2018). It has been found that disgust sensitivity is positively correlated with food neophobia (Bjorklund & Hursti, 2004). Many other studies have measured individual differences in food neophobia, and the majority found that higher levels of food neophobia significantly reduced an individual's willingness to try novel foods in general (Piha, Pohjanheimo, Lähteenmäki-Uutela, Křečková, & Otterbring, 2018; Sogari et al., 2019; Tan et al., 2016). Alongside food neophobia, food variety seeking tendencies should also be considered. Food variety seeking is another individual difference factor, which has been defined as a tendency to seek variety, motivated by preferences for new experiences resulting in a variation of the types of food consumed (Van Trijp & Steenkamp, 1992). While some see food neophobia and food variety seeking as two sides of the same coin (Steenkamp, 1993), others suggest that these concepts should be considered separately due to the underlying differences in risk preference and motivation (Lenglet, 2018). Lastly, individual differences in food involvement (the level of importance food holds in one's life) may also impact willingness to try new foods (Bell & Marshall, 2003). Not only is higher level of food involvement suggested to increase willingness to try new foods, it is also suggested that these consumers may experience sensory differences more acutely (Bell & Marshall, 2003). Individuals with higher levels of food involvement have been shown to engage in local food culture when visiting destinations as tourists (Kim, Eves, & Scarles, 2013). Overall, this body of research suggests that individual differences on food preference, especially food neophobia, food variety seeking, and food involvement, may play a critical role in explaining people's willingness to try novel foods such as insects.

1.2. Curiosity as a motivator

As mentioned earlier, one previously under-examined factor that has the potential to motivate the first tasting experience is curiosity. Curiosity is an enticing feeling, characterised by awareness of a knowledge gap which can elicit a need to seek information in order to close that gap (Loewenstein, 1994). It is an important driver of novel and exploratory behaviours (Gottlieb, Oudeyer, Lopes, & Baranes, 2013); hence, curiosity is well positioned to motivate the first – novel – experience with insect foods. Decisions to engage in novel behaviours are thought to be driven by the intrinsic reward associated with learning new information about the environment and can kickstart a positive feedback loop of trying new things (Murayama, FitzGibbon, & Sakaki, 2019).

The power of curiosity is such that people are even willing to expose themselves to aversive stimuli. People choose to view negative images over neutral or positive images and will risk electric shocks or unpleasant sounds to satisfy their curiosity (Hsee & Ruan, 2016; Oosterwijk, 2017). This enticing power of curiosity is seen even for information that could be considered trivial. When shown magic tricks, individuals were willing to accept a gamble that could result in an electric shock to see the solution to the trick. Curiosity predicted the decision to accept the gamble above and over the probability of receiving a shock (Lau, Ozono, Kuratomi, Komiya, & Murayama, 2020). FitzGibbon, Komiya, and Murayama (2019) allowed participants to seek information about what they could have won in a risky decision-making task. Across 6 experiments, the study found that individuals would seek this information even if it came at a cost. Importantly, this information was of no value to participants in the future and made them feel worse to receive; nevertheless, participants still chose to seek it. This body of research suggests that curiosity may be of use as a motivator even in expectation of aversive experiences (FitzGibbon, Lau, & Murayama, 2020).

There have been a few studies that examined the role of curiosity in consumer behaviour. For example, Menon and Soman (2002), for example, used varied levels of information in an advertisement for a novel product. They found that higher levels of curiosity resulted in increased information-seeking behaviours and more favourable product evaluations. In a more recent study, Daume and Hüttl-Maack (2020) created information gaps by providing selective information in advertisements and used ambiguous slogans to study the effects of curiosity on attitudes towards products. They showed that these curiosity inductions had a positive impact on participants' attitudes towards the advertised product. What is more, Ruan, Hsee, and Lu (2018) found that this positive influence was evident even after curiosity has been resolved, thus suggesting an enduring power of curiosity to influence attitudes and behaviours even after the initial thirst for knowledge has been quenched. These studies empirically demonstrated curiosity's potential as a motivating factor to facilitate consumer behaviour.

However, the role of curiosity has not been systematically examined in the context of entomophagy. In fact, although some studies report the importance of curiosity, they are either qualitative studies relying on content from participant interviews or tend to capture a general measure of interest towards entomophagy and use this to predict people's intention to try insect foods. For example, a survey of Danish consumers, designed to understand the consumer characteristics of potential adopters of entomophagy, suggested that increased interest in entomophagy may be important in overcoming the barrier of disgust (Videbæk & Grunert, 2020). This is particularly important in terms of the initial motivation to engage with insect foods (e.g., CaparrosMegido et al., 2016; House, 2016). House (2016) conducted interviews with consumers, who had previously purchased insect-food products. They report that the main initial motivation for purchasing is curiosity, followed by insect foods being seen as more sustainable and healthy food options. Similarly, Sogari (2015) also found that curiosity was one of the most important factors, together with social influence from friends and family members, in initiating consumption of insects. This again was self-reported intention using content from open-ended questions. These findings suggest that curiosity has the potential to be the initial trigger for willingness to try, whereas other factors (e.g., social influence) may play a role in maintaining that consumption.

1.3. The present study

Across two studies we examined the role of curiosity predicting willingness to try insect foods in a European sample. To examine the role of curiosity in a systematic manner, the current research has several features that aim to overcome the limitations of the existing literature. First, we assessed and included a number of potential predictive factors (e.g., perceived sensory attributes, attitude, healthiness, sustainability, exoticness, familiarity, and social influence) in the study design so that we can identify the unique effect of curiosity above and beyond these factors in predicting willingness to try insect foods. Such a statistical control would provide us with a more accurate assessment of its predictive utility. Second, we selected a large number of food pictures and descriptions of insect foods to ensure the generalizability of our findings across different types of insect foods. This stimuli-related approach is an improvement compared to previous research, which uses survey questions, taste tests, or a combination of these to examine potential predictors (e.g., Tan et al., 2016; Woolf et al., 2019). Even those that have used visual stimuli have tended to use a very small sample of images (e.g., Cicatiello et al., 2016). Using a large number of diverse images ensures that our findings are not bound to a specific type of insect food. Third, by using a larger number of stimuli, the design also allowed us to examine the "within-person" relationship between curiosity and willingness to try insect foods. Most of the previous non-experimental studies on insect foods examined the factors related to insect foods at a between-person level. However, such a between-person analysis is limited in its ability to address the within-person relationships that we are typically interested in (Murayama et al., 2017). Specifically, while between-person analysis focuses on the relative rank of individuals (i.e. are people who showed higher willigness to try different from other people in terms of factor X?), within-person analysis focuses on the relative rank of foods within a given person — does a person indicate higher willingness to try for the foods that are higher on factor X as well? The current study focused on within-person analysis because our primary research question is the latter. Finally, we compared the results on insect foods with those on familiar foods, with the aim to clarify the factors that are specific to insect foods. To make a reasonable comparison between insect and familiar foods, we attempted to control for visual appearance by using images of familiar foods visually matched to the selected insect food images in Study 1 and identical images with differing descriptions in Study 2. All of these methodological features allow us to comprehensively and rigorously examine the role of curiosity and other factors in predicting the willingness to eat insect foods.

In both studies participants completed an online menu evaluation task, in which they had to rate a series of images on the potential predictors (e.g., curiosity, familiarity, attractiveness). The task presented the images in the style of a restaurant 'specials board' with an accompanying description. Study 1 used images collated from the internet, with half of the images containing insects and the other half visually matched familiar foods. Study 2 used the same images for both insect and familiar foods varying only the descriptions. Images were selected from a pre-existing database (Kawano & Yanai, 2015) and none of the depicted foods actually contained any insect ingredients. Each image had two accompanying descriptions (one containing familiar ingredients and the other containing insect ingredients). Participants were presented with a selection of the images, half with familiar descriptions and half with descriptions containing insects, allowing the visual input to be kept constant.

1.3.1. Hypotheses

Our main hypothesis was that curiosity predicts within-person variation of consumer's willingness to try insect foods, above and beyond other factors (Hypothesis 1). In our exploratory analysis of the first study (Study 1), we also found an interesting phenomenon, namely, that curiosity interacts with other factors in a way that increases the effects of these factors on willingness to try insect foods. Consequently, Study 2 tested this novel "curiosity-boosting effect", in addition to the main hypothesis (Hypothesis 1). More specifically, we hypothesized that curiosity strengthens the association between willingness to try and other predictors of insect food consumption (Hypothesis 2).

2. Study 1

The study aimed to examine whether and how within-person variation of curiosity for insect foods predicts people's willingness to eat them above and beyond other factors identified in the existing literature. In addition, we also examined in an exploratory fashion (1) whether and how curiosity interacts with other factors to predict people's willingness to eat insect foods, and (2) whether individual differences in these effects can be explained by some curiosity-related traits for foods such as neophobia, variety seeking and involvement.

2.1. Method

2.1.1. Participants

Two-hundred and forty participants took part in the study (65% females, Mean Age = 35.24 Age *SD* = 12.80). Recruitment was conducted online using Prolific academic (https://www.prolific.co). Only participants without dietary or allergy restrictions and of Western nationality were eligible to take part in the study. All participants were required to sign an online consent form and were financially rewarded £5 for their time. Of the 250 individuals recruited, 10 were excluded prior to data analysis on the basis of incomplete data due to technical issues. All participants resided in the UK (99.6% British citizens, 0.4% Polish citizens). The recruited sample size was mainly defined by budgetary considerations. Ethical approval was granted by the University of ReadingSchool of Psychology and Clinical Language Science's School Ethical Review Committee.

2.1.2. Stimuli

A database of 42 dishes containing various types of edible insect were collated from the internet. To ensure variety, the images included as many different types of edible insects as possible. A set of 42 images with familiar ingredients were then selected based on visual similarity to the novel foods. The insect food images were run through Google's reverse image search function and the closest match was selected, resulting in 42 pairs of visually matched images of insect and non-insect foods. Menu names and descriptions for each image used are available via the Open Science Framework (https://doi.org/10.17605/OSF.IO/5F9SP). Example stimuli can be seen in Fig. 1.

2.1.3. Questionnaire measures

The Food Neophobia scale (Pliner & Hobden, 1992) was used to measure participants' reluctance to try novel foods. The scale consisted of 10 items, for example (e.g., "If I don't know what a food is, I won't try it"). Five items from the VARSEEK scale (Van Trijp & Steenkamp, 1992) were used to assess variety seeking behaviour in relation to food (e.g., "I think it is fun to try out food items one is not familiar with"); three items of the original scale (items 5, 7 and 8) were excluded due to high levels of similarity with other questionnaire items. One item from the Food Involvement scale (item 8) measured food involvement (e.g., "When I eat out, I don't think or talk much about how the food tastes") (Bell & Marshall, 2003) was also included. All questions were rated on a 5-point Likert scale ranging from "Strongly Disagree" (0) to "Strongly Agree" (4).

2.1.4. Procedure

Participants were asked to take part in a 'Menu Study', in which they were presented with a 'specials board' similar to what one might expect to find in a restaurant. This board contained a picture of a dish including a title and short menu description. For each participant, 22 pairs of images were randomly selected from the stimulus pool and these images were presented in a randomized order as 44 separate dishes. This random selection procedure was used to reduce the potential effect of item specific effects (Murayama, Sakaki, Yan, & Smith, 2014).

Participants rated each dish in response to the following 11 questions: (1) Willingness to try ("How likely would you be to try this food?"); (2) Curiosity ("How curious are you about this food?"); (3) Attitude ("How do you feel about this food?"); (4) Tastiness ("How tasty do you think this food would be?"); (5) Familiarity ("How familiar is this food to you?"); (6) Attractiveness ("How attractive do you think this food looks?"); (7) Healthiness ("How healthy do you think this food is?"); (8) Sustainability ("How sustainable do you think large scale production of this food would be?"), (9) Exoticness ("How exotic do you think this food is?"); (10) Filling ("How filling do you think this food would be?"); (11) Social ("How do you think your friends would feel about you trying this food?"); and (12) Willingness to pay ("How much would you be willing to pay for this food in a restaurant?"). Ratings to the first 10 questions were given using a visual analogue scale with anchors at each end, which allowed us to assess participants' ratings on a continuous scale of 0 (not at all) to 100 (very much), whereas £1-£100 was used for willingness to pay. For each dish, Willingness to try was always presented first to avoid possible priming effects of other questions, and willingness to pay was always presented last; the order of the

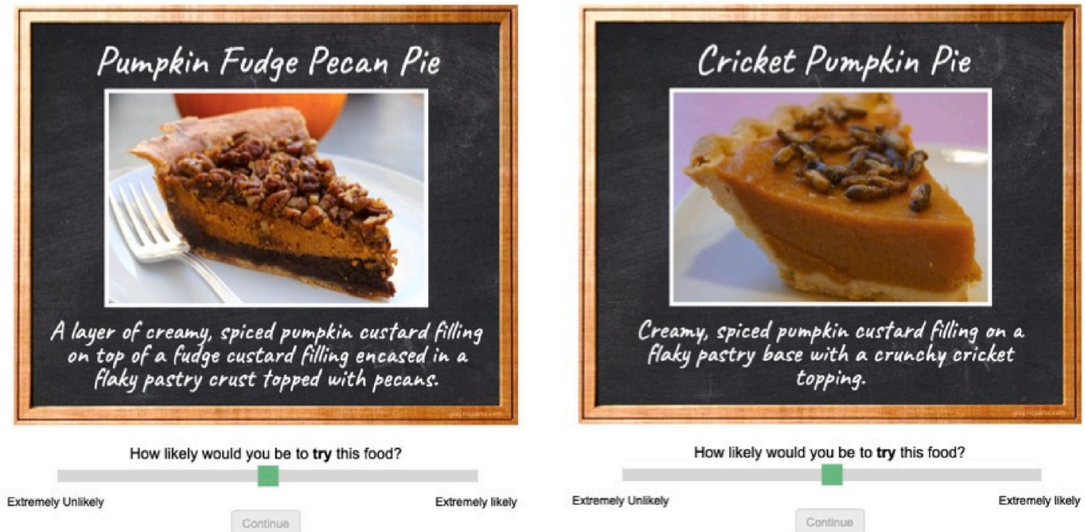

Fig. 1. Example stimuli used in Study 1 (visually matched image pair, titles and descriptions).

remaining questions was randomised across participants so that each participant answered the questions in a fixed order across trials, but the order varied between participants. Once the ratings task was complete, participants were presented with the 44 images they had previously rated and were asked to indicate whether they had "tried the exact dish before", "tried something similar" or "never tried anything like this before". Lastly, participants were asked to complete the Food Neophobia scale followed by the VARSEEK scale and finally the food involvement question.

2.2. Data analysis

Data was analysed in R (R Core Team, 2020) using the lme4 package (Bates, Maechler, Bolker, & Walker, 2015). Linear mixed effects models were estimated to predict willingness to try from the measured predictors for insect foods and non-insect foods separately at the within-person level. The same strategy was applied to examine the effects of the individual difference measures.

2.2.1. Model specification

All predictors were included as fixed effects with random participant slopes. Random intercepts of participants were also included. To resolve convergence and singularity issues models were simplified first by setting all of the random effect covariances to zero. After this, random effect structures were further simplified by removing the minimum number of predictors for the model to converge normally. For models looking at interactions between curiosity and other predictors only the interaction term was included as a random effect and some of the models were restarted from a previous fit increasing the number of iterations to resolve convergence issues. Although this is not a standard way of specifying such a model, recent work has suggested that this strategy can prevent the potential inflation of Type-1 error rate in testing the interaction effect even when the model is very complex (Brauer & Curtin, 2018). A similar strategy was applied to the three-way interaction models looking at the interactions between curiosity, other predictors and insect or non-insect food images. Only the interaction term was included as a random effect and models were restarted from previous fits. The exception to this was the three-way interaction including the predictor 'filling', this model does not include the interaction term as a random effect due to convergence issues. For individual difference measures, only curiosity was included as a random effect, and for some models the number of iterations were increased, and the models restarted from a previous fit.

For the following analyses the predictors were all mean-centred by subject (i.e., centring within clusters) in order to appropriately examine within-person relations by controlling for individual differences in response bias. Before the analysis, all variables were re-scaled from 0100 to 0–10 to aid model fitting. Willingness to pay was removed from the analysis as we discovered that it seemed to simply reflect the price of the dishes/ingredients rather than the motivation to eat the dishes which is of main interest within these studies.

Because some correlation between the predictors would be expected, we checked each model for multicollinearity using the variance inflation factor (VIF). Following Tattar, Ramaiah, and Manjunath (2016), we used a benchmark value of 10 for the VIF as the cut off for problematic levels of multicollinearity. Models with VIF values less than 10 were deemed unproblematic.

2.3. Results

2.3.1. Previous experience

Overall, participants reported not having tried the majority of the insect dishes or anything similar previously. For familiar foods, the proportion of having tried either the exact dish or something similar was much higher.[1] The overall mean percentages for each response are represented in Table 1. Due to technical issues, only 233 participants were able to respond to the previous experience questions.

Table 1
Mean percentages of previous experiences with dishes presented for insect and non-insect foods.

	Insect	Not Insect
Tried the exact dish before	1%	46%
Tried something similar	10%	35%
Never tried anything like this before	89%	19%

[1] Mixed-effects models were conducted using only participants who reported not having tried the insect dishes previously ($N = 204$) for insect and non-insect stimuli. The results for insect foods showed a very similar set of significant predictors to the full sample, the only difference being how filling the food was perceived to be became a significant predictor in this reduced sample analysis. For non-insect foods the significant predictors of willingness to try were identical to the main analysis.

2.3.2. Descriptive statistics

Overall mean ratings for the majority of measures were higher for non-insect food compared to insect foods, indicating that insect foods were generally perceived less favourably than non-insect foods. The mean for Willingness to try also followed this pattern: $M = 1.63$, $SD = 1.83$ for insect foods; $M = 7.41$, $SD = 1.35$ for non-insect foods. Intra-class correlations were conducted to indicate the proportion of between-person variance. The intraclass correlations were higher for insect foods compared to non-insect foods, suggesting there was a larger variance in mean values for insect foods across individuals (see Table 2). A within-person correlation matrix (correlation between the variables after controlling for between-person differences; see Kenny & La Voie, 1985) for both insect and non-insect ratings are included in the supplementary material (Tables S1 and S2).

2.3.3. Curiosity predicts willingness to try

We conducted mixed-effects models for insect and non-insect stimuli separately to examine which variables were significant predictors of the willingness to try for each type of food. Curiosity, the variable of our primary interest, predicted willingness to try both insect foods ($\beta = 0.10$, $p < .001$) and non-insect foods ($\beta = 0.09$, $p < .001$) above and beyond the other factors in the model, thus supporting Hypothesis 1. For insect foods, all factors apart from exoticness, sustainability and how filling the food was perceived to be, were significant predictors of willingness to try. For non-insect foods, the significant predictors were fewer (attitude, tastiness, curious, familiarity, and exoticness). Across both insect and non-insect food models, attitude and tastiness were the two strongest predictors of willingness to try: $\beta = 0.43$ & 0.21, $ps < .001$ for insect foods; $\beta = 0.55$ & 0.40, $ps < .001$ for non-insect foods, with curiosity being the 3rd strongest predictor overall.[2] Both insect ($VIF = 1.02$–1.10) and non-insect ($VIF = 1.05$–1.43) models were checked for multicollinearity and this was not found to be an issue. Model results are shown in Table 3.

Table 2
Mean ratings and Intraclass correlations (ICC) for insect and non-insect dishes in Study 1.

	Insect		Not Insect	
	Mean (*SD*)	ICC	Mean (*SD*)	ICC
Willingness to try	1.63 (1.83)	0.46	7.41 (1.35)	0.16
Curious	3.03 (2.54)	0.59	4.88 (2.01)	0.38
Attitude	1.84 (1.67)	0.48	7.04 (1.23)	0.18
Tasty	2.39 (1.91)	0.48	7.40 (1.18)	0.18
Familiar	1.20 (1.12)	0.34	7.01 (1.27)	0.17
Attractive	2.28 (1.59)	0.30	6.93 (1.15)	0.15
Healthy	4.58 (1.68)	0.31	5.15 (1.10)	0.10
Sustainable	5.17 (2.19)	0.54	6.13 (1.54)	0.36
Exotic	6.48 (2.45)	0.57	3.63 (1.66)	0.32
Filling	4.37 (1.77)	0.35	6.59 (1.07)	0.16
Social	3.91 (2.74)	0.68	5.50 (1.94)	0.51

Note. SD was computed using the entire data points.

2.3.4. Interactions with curiosity

To further examine the potential role of curiosity in willingness to try insect foods, we conducted exploratory analysis in which interactions between curiosity and other predictors were estimated. To reduce model complexity, insect and non-insect data were analysed in separate models and only one interaction effect was tested for each model. Specifically, each model included all predictors and the interaction of interest as fixed effects, and we ran the model for each of 9 (predictors of interest) x 2 (insect food and non-insect food) = 18 combinations.

Interaction effects from each of these models are represented in Table 4. The overall pattern suggests that when there is a significant interaction between curiosity and another predictor, curiosity moderates the relationship in opposite directions for insect and non-insect foods. For insect food it suggests a *boosting* effect: when curiosity is high, the absolute association between the predictor of interest and willingness to try is increased. This effect was observed for five predictors out of the nine variables of interest (i.e., familiarity, attitude, sustainability, tastiness and social), $\beta = 0.01$–0.02, $t = 2.36$–2.81, $ps < .02$. For non-insect foods, there were fewer significant interaction effects, and when they were observed, the overall direction tended to be opposite: when curiosity is high, the absolute association between the predictor of interest and willingness to try was decreased. These effects were found for familiarity, exoticness, attitude and sustainability ($\beta = -0.00$ - 0.01, $t = -3.29$ – 3.36, $ps < .04$). The models were checked for issues with multicollinearity and this was not found to be an issue ($VIF = 1.00$–3.98).

To understand whether the interaction effects found were significantly different between the two types of food (insect and non-insect), we ran further models looking at the three-way interactions between curiosity, each of the other predictors and the type of food image. Each model included all predictors and the interaction effect of interest as fixed effects. Seven of the nine interaction effects were statistically significant ($\beta = 0.00$–0.04, $t = 2.06$–16.25, $ps < .04$), with only healthiness ($p > .50$) and exoticness ($p > .40$) showing no interaction with curiosity and food image type. This suggests that the role of curiosity when interacting with other predictors is different for insect foods compared to familiar foods. All three-way interaction models were checked for multicollinearity, for each model tastiness and attitude had moderate values ($VIF = 5.18$–7.77). As these are under 10 it is suggested that multicollinearity is likely not an issue (Tattar et al., 2016, p. 442). All other parameters were in the low range ($VIF = 1.04$–4.36).

As the “attitude” variable was highly correlated with other predictors (e.g., perceived tastiness; see Tables S1 and S2., a comparable analysis was conducted for the models predicting willingness to try and interactions with curiosity, eliminating the “attitude” variable. The results show a very similar set of predictors across the models, suggesting the robustness of our main findings. The results are shown in the supplementary material (Tables S6, S7 and S8.)

2.3.5. Individual difference measures

Due to technical issues only 234 participants were able to complete the questionnaire section of the study. Each questionnaire measure was grand mean-centred and analysed using a mixed-effects model. Our main interest was whether individual differences of these measures predict the between-person variation of (a) overall willingness to try and (b) the within-person association of curiosity and willingness to try. As such, all predictors were included as fixed effects as well as the interaction between curiosity and the questionnaire measure of interest. Only curiosity was included in the random effect structure.

Food neophobia negatively predicted willingness to try both insect and non-insect foods, suggesting that participants with high food neophobia tend to have lower willingness to try both insect and non-insect foods, $\beta = -1.05$ & -0.75, $ps < .001$. There was a significant negative interaction between food neophobia and curiosity for insect food, $\beta = -0.09$, $p < .001$. Suggesting that those with high food neophobia have a smaller association between curiosity and willing to try insect foods.

[2] At the request of a reviewer, we have also conducted a set of analyses predicting willingness to try from all predictors at between-person level. More specifically, we focused on the ratings for the first image participants were presented (in order to control for any carry-over effect) and conducted multiple regression analyses using the rating scores. The results (Tables S3, S4 and S5) did not replicate the within-person analysis well, although there is some overlap. However, it is important to interpret these results with caution as (1) the between-person analysis does not adequately control for individual differences to infer psychological mechanisms (Murayama et al., 2017), and (2) the analyses focused only on the first-item, meaning that the analyses are based on less reliable observed scores.

Table 3
Mixed-effects modelling predicting willingness to try for insect and non-insect data for Study 1.

	Insect					Not Insect				
	Fixed Effects									
Predictors	Est.	SE	CI	t	p	Est.	SE	CI	t	p
Intercept	1.63	0.12	1.40–1.86	13.79	< **0.001**	7.41	0.09	7.24–7.58	85.25	< **0.001**
Curious	0.10	0.02	0.06–0.13	5.66	< **0.001**	0.09	0.01	0.06–0.11	6.23	< **0.001**
Attitude	0.43	0.03	0.38–0.49	16.57	< **0.001**	0.54	0.02	0.50–0.58	26.26	< **0.001**
Tasty	0.21	0.02	0.17–0.25	9.36	< **0.001**	0.40	0.02	0.36–0.44	19.75	< **0.001**
Familiar	0.06	0.02	0.02–0.09	3.35	**0.001**	0.09	0.01	0.06–0.11	7.18	< **0.001**
Attractive	0.05	0.01	0.03–0.07	4.26	< **0.001**	0.01	0.01	−0.02 – 0.03	0.50	0.615
Exotic	0.00	0.01	−0.01 – 0.02	0.55	0.581	−0.03	0.01	−0.05–−0.01	−2.91	**0.004**
Filling	−0.01	0.01	−0.03 – 0.00	−1.87	0.062	−0.01	0.01	−0.03 – 0.01	−1.05	0.293
Healthy	−0.01	0.01	−0.03–−0.00	−2.18	**0.029**	−0.01	0.01	−0.02 – 0.01	−1.10	0.270
Sustainable	0.01	0.01	−0.00 – 0.03	1.58	0.114	0.01	0.01	−0.01 – 0.04	1.20	0.229
Social	0.03	0.01	0.00–0.05	2.12	**0.034**	−0.02	0.01	−0.04 – 0.01	−1.47	0.141

	Random Effects			
	Variance	*SD*	*Variance*	*SD*
Subject (Intercept)	3.33	1.82	1.75	1.32
Curious | Subject	0.03	0.18	0.02	0.13
Attitude | Subject	0.08	0.28	0.03	0.19
Tasty | Subject	0.06	0.25	0.03	0.16
Familiar | Subject	0.02	0.14	0.01	0.10
Attractive | Subject	0.01	0.10	0.01	0.09
Exotic | Subject	–	–	0.00	0.05
Filling | Subject	0.00	0.03	0.00	0.06
Healthy | Subject	–	–	0.00	0.03
Sustainable | Subject	–	–	0.00	0.07
Social | Subject	0.01	0.09	0.00	0.05

	Model Fit			
R^2	*Marginal* 0.29	*Conditional* 0.86	*Marginal* 0.63	*Conditional* 0.84

p-values computed using Wald-Statistics approximation..
Model equation example (Insect model):.
Willingness to try ~ Attractive + Familiar + Exotic + Attitude + Filling + Healthy + Sustainable + Tasty + Social + Curious + ((1 | subject) + (0 + Attractive | subject) + (0 + Familiar | subject) + (0 + Attitude | subject) + (0 + Filling | subject) + (0 + Tasty | subject) + (0 + Social | subject) + (0 + Curious | subject)).

This interaction effect was not found for non-insect foods ($p > .30$). Food variety seeking also positively predicted willingness to try both types of foods, suggesting that those who are high in variety seeking generally exhibit higher willingness to try insect and non-insect foods, $\beta = 0.94$ & 0.73, *ps* $< .001$. Further, variety seeking showed a significant positive interaction with curiosity for insect food, suggesting that those who reported higher food variety seeking scores showed stronger association between curiosity and willingness to try insect foods, $\beta = 0.06, p = .003$. Similar to food neophobia, this significant interaction effect was not found for non-insect foods, $p > .30$. Food involvement did not show a significant relationship with willingness to try insect foods ($p > .10$). However, for non-insect foods the effect of food involvement was positive and significant ($\beta = 0.09, p = .02$), indicating that food involvement is associated with higher willingness to try for non-insect foods. There were no significant interaction effects for either type of food, *ps* $> .10$. As the food involvement measure was based on a single-item measure, the latter results should be interpreted with caution. The effects of each individual difference factor and their interactions with curiosity are presented in Table 5.

2.4. Discussion

The results from Study 1 confirmed Hypothesis 1, showing that curiosity was the 3rd strongest predictor (in terms of the point estimate of standardized coefficient) of willingness to try insect and non-insect foods, after attitude and perceived tastiness. Our further examination of the relationship between curiosity and the other predictors revealed that curiosity has an additional function for insect foods compared to non-insect foods. Specifically, the findings suggest a *curiosity-boosting* effect on the effects of the additional predictors for insect foods, namely, when curiosity is high the relationship between the predictor and willingness to try becomes stronger. It is possible that when curiosity is high this may invoke attentional resources (Gottlieb, 2012). This may increase awareness of the other predictor, in turn, strengthening the relationship between curiosity and the predictor of interest. This interesting effect, which is uncovered by our study, is investigated further in Study 2.

3. Study 2

Study 1 supported our main hypothesis (Hypothesis 1) that curiosity predicts willingness to try insect foods above and beyond other major factors such as attractiveness, familiarity, healthiness and social influence. Furthermore, in our exploratory analysis, we observed that curiosity had a “boosting effect” for many of the predictors: Curiosity increased the association between willingness to try and attractiveness, familiarity, attitude, sustainability, perceived tastiness and social influence. This boosting effect was observed only for insect foods, but not for ordinary foods. These results were interesting as they suggest that the effect of curiosity may work differently for novel foods compared to familiar foods. As such, Study 2 was conducted in order to confirm this newly generated hypothesis that curiosity increases the association between willingness to try and the other predictors for foods containing insects (Hypothesis 2), in addition to the main hypothesis that curiosity predicts willingness to try insect foods (Hypothesis 1). An additional purpose of Study 2 was to test these hypotheses whilst controlling for the visual input of the stimuli. In Study 1, although we tried to match the visual appearance between insect and non-insect foods, insects were still

Table 4
Interactions between curiosity and the other predictors of willingness to try for insect and non-insect data in Study 1.

	Insect					Not Insect				
	Fixed Effects (for interaction term in each model)									
Interactions	Est.	SE	CI	t	p	Est.	SE	CI	t	p
Curious X Attractive	0.01	0.01	−0.00 – 0.02	1.85	0.065	−0.00	0.00	−0.01 – 0.01	−0.61	0.545
Curious X Familiar	0.02	0.01	0.00–0.03	2.58	**0.010**	0.01	0.00	0.00–0.02	3.36	**0.001**
Curious X Exotic	−0.00	0.00	−0.01 – 0.01	−0.60	0.547	−0.01	0.00	−0.02–−0.00	−3.29	**0.001**
Curious X Attitude	0.02	0.01	0.00–0.03	2.47	**0.014**	−0.01	0.00	−0.02–−0.00	−2.28	**0.023**
Curious X Filling	0.00	0.00	−0.01 – 0.01	0.30	0.768	−0.00	0.00	−0.01 – 0.00	−0.69	0.493
Curious X Healthy	−0.01	0.00	−0.02 – 0.00	−1.93	0.053	0.00	0.00	−0.00 – 0.01	0.72	0.469
Curious X Sustainable	0.01	0.00	0.00–0.02	2.80	**0.005**	−0.01	0.00	−0.02–−0.00	−2.10	**0.036**
Curious X Tasty	0.01	0.01	0.00–0.03	2.36	**0.019**	−0.01	0.00	−0.01 – 0.00	−1.36	0.173
Curious X Social	0.02	0.01	0.00–0.03	2.81	**0.005**	0.00	0.00	−0.00 – 0.01	1.12	0.263

	Random Effects							
	Subject (Intercept)		Interaction | Subject		Subject (Intercept)		Interaction | Subject	
Model	*Variance*	*SD*	*Variance*	*SD*	*Variance*	*SD*	*Variance*	*SD*
Curious X Attractive	3.35	1.83	0.00	0.06	1.74	1.32	0.00	0.03
Curious X Familiar	3.30	1.82	0.00	0.05	1.75	1.32	0.00	0.03
Curious X Exotic	3.31	1.82	0.00	0.02	1.73	1.31	0.00	0.01
Curious X Attitude	3.31	1.82	0.00	0.07	1.74	1.32	0.00	0.04
Curious X Filling	3.31	1.82	0.00	0.02	1.73	1.32	0.00	0.00
Curious X Healthy	3.32	1.82	0.00	0.03	1.73	1.32	0.00	0.02
Curious X Sustainable	3.30	1.82	0.00	0.03	1.74	1.32	0.00	0.02
Curious X Tasty	3.32	1.82	0.00	0.06	1.73	1.32	0.00	0.03
Curious X Social	3.31	1.82	0.00	0.04	1.73	1.32	0.00	0.02

	Model Fit (R^2)			
Model	*Marginal*	*Conditional*	*Marginal*	*Conditional*
Curious X Attractive	0.33	0.82	0.62	0.81
Curious X Familiar	0.33	0.81	0.61	0.80
Curious X Exotic	0.33	0.81	0.62	0.81
Curious X Attitude	0.33	0.82	0.62	0.81
Curious X Filling	0.33	0.81	0.61	0.80
Curious X Healthy	0.33	0.81	0.61	0.81
Curious X Sustainable	0.33	0.81	0.61	0.81
Curious X Tasty	0.34	0.82	0.62	0.81
Curious X Social	0.33	0.82	0.61	0.80

Model equation example (Curious X Attractive).
Willingness to try ~ Familiar + Exotic + Attitude + Filling + Healthy + Sustainable + Tasty + Social + Curious* Attractive + ((1 | subject) + (0 + Attractive:Curious | subject)).
Curious X Sustainable (insect) and Curious X Familiar, Curious X Filling, Curious X Social (not insect) were restarted from a previous fit with an increased number of iterations to enable convergence.

discernible in the insect food pictures. To ensure that our findings were not affected by the negative visual appearances of insect foods (rather than the fact that these foods were made of insects), we used pairs of identical images with alternate descriptions (insect or non-insect). This procedure allowed us to explore the predictors of the willingness to try insect foods and familiar foods with a consistent visual input.

3.1. Method

3.1.1. Participants

Two-hundred and forty-eight participants (66% females, Mean Age = 32.86 Age *SD* = 11.40) were included in the main analysis. The recruitment process and exclusion criteria were identical to that of Study 1. Of the 250 participants recruited, two were excluded prior to analysis due to incomplete data. All participants were people residing in the UK. Similar to Study 1, the recruited sample size was determined by budget considerations.

3.1.2. Stimuli

A total of 84 food images were selected from an available 256 images in the UECFOOD256 database (Kawano & Yanai, 2015). Of the 256 available images, 84 with the most familiarity to Western food culture were selected. For each image, we created two descriptions: one containing edible insect ingredients and the other containing familiar ingredients. Image descriptions created for the rating task are available via the Open Science Framework (https://doi.org/10.17605/OSF.IO/5F9SP). Example stimuli are shown in Fig. 2. None of the images contained any of the insects the descriptions alluded to.

3.1.3. Questionnaire measures

As in Study 1, participants completed the Food Neophobia Scale, the VARSEEK scale, and the Food involvement Scale. In Study 2, however, we used the full VARSEEK scale (8 items) and the Food Involvement scale (12 items), to allow for a more thorough analysis of the relationships of these traits and individuals' willingness to try novel insect foods.

3.1.4. Procedure

The procedure was similar to that of Study 1. Participants were given similar instructions regarding the 'specials board' except that dishes were presented without a title; only an image and description were present. They were also instructed that "some dishes may contain unusual ingredients such as insects". Participants were presented with 44 dishes (22 with an insect description, and 22 with non-insect description), which were randomly selected from the pool of 84 images. Each dish was rated using the same rating scales as in Study 1. Participants rated an image only once, with either an insect or non-insect description. The order of stimulus presentation was randomized across participants. Like Study 1, participants first rated 'willingness to try' and then rated

Table 5
Mixed-effects modelling of individual difference measures and their interactions with curiosity in predicting willingness to try for Study 1.

		Insect					Not Insect				
Model		Fixed Effects									
	ID measures/Interactions	Est.	SE	CI	t	p	Est.	SE	CI	t	p
FNS											
	Intercept	1.65	0.11	1.43–1.86	14.97	**<0.001**	7.41	0.08	7.25–7.57	90.69	**<0.001**
	FNS	−1.05	0.15	−1.35–−0.75	−6.86	**<0.001**	−0.75	0.11	−0.97–−0.53	−6.61	**<0.001**
	Curious X FNS	−0.09	0.02	−0.14–−0.05	−4.14	**<0.001**	0.01	0.02	−0.02 – 0.04	0.86	0.392
VAR											
	Intercept	1.65	0.11	1.43–1.86	14.76	**<0.001**	7.41	0.08	7.25–7.57	90.62	**<0.001**
	VAR	0.94	0.15	0.65–1.24	6.26	**<0.001**	0.73	0.11	0.51–0.94	6.58	**<0.001**
	Curious X VAR	0.06	0.02	0.02–0.11	2.96	**0.003**	−0.02	0.02	−0.05 – 0.01	−1.03	0.302
INV											
	Intercept	1.11	0.39	0.35–1.87	2.87	**0.004**	6.78	0.28	6.22–7.34	23.82	**<0.001**
	INV	0.19	0.13	−0.07 – 0.44	1.44	0.149	0.22	0.09	0.03–0.40	2.32	**0.020**
	Curious X INV	0.02	0.02	−0.01 – 0.06	1.44	0.150	0.02	0.01	−0.01 – 0.04	1.49	0.137

	Random Effects					
	Insect			Not Insect		
Model	*Variance*	*SD*	*Correlation*	*Variance*	*SD*	*Correlation*
FNS						
Subject (Intercept)	2.78	1.67		1.48	1.22	
Curious | Subject	0.04	0.19	0.64	0.01	0.12	−0.45
VAR						
Subject (Intercept)	2.86	1.69		1.48	1.22	
Curious | Subject	0.04	0.19	0.66	0.01	0.12	−0.44
INV						
Subject (Intercept)	3.32	1.82		1.73	1.32	
Curious | Subject	0.04	0.20	0.68	0.01	0.12	−0.47

	Model Fit (R^2)			
Model	*Marginal*	*Conditional*	*Marginal*	*Conditional*
Food Neophobia	0.40	0.83	0.64	0.81
Variety Seeking	0.38	0.83	0.64	0.81
Involvement	0.31	0.83	0.61	0.81

FNS = Food Neophobia scale.
VAR = Variety Seeking scale.
INV = Food Involvement scale.
Model equation example (Curious X Food Neophobia).
Willingness to try ~ Attractive + Familiar + Exotic + Attitude + Filling + Healthy + Sustainable + Tasty + Social + Curious + Curious*Food Neophobia + (1 + Curious | subject).
INVOL (insect) and VAR (not insect) were restarted from a previous fit with an increased number of iterations to enable convergence.

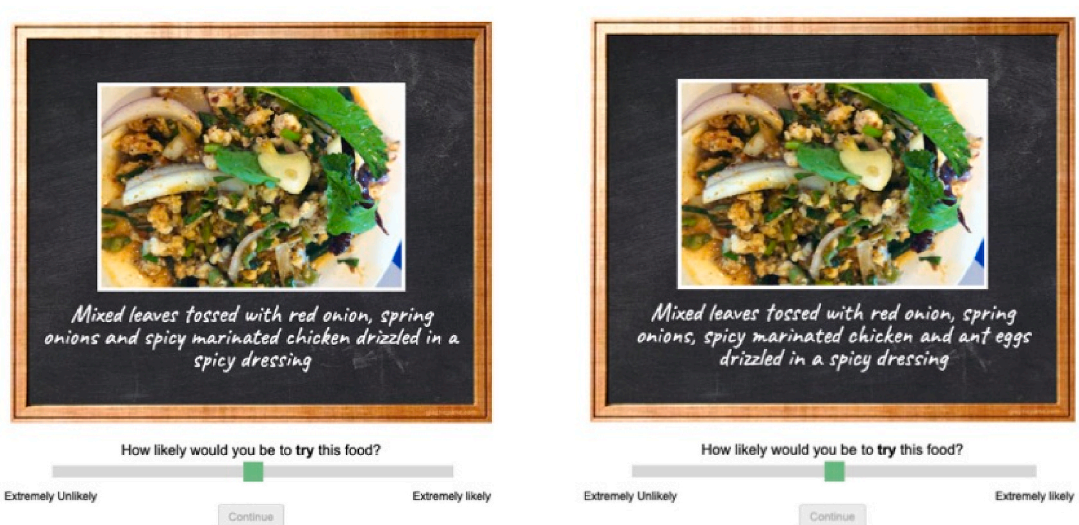

Fig. 2. Example stimuli used in Study 2 (identical images and alternate descriptions).

the other scales which had a fixed order within participants but were randomized between participants. Willingness to pay was removed from the measures in this study but all other measures were used. Once the 44 images were completed, participants were asked to complete the questionnaire measures. Following this, participants were asked whether they had ever tried food containing insects before (yes/no). To ensure the descriptions suggesting the dishes contained insects were plausible, participants were also asked how often they could see the 'insects' in the dish ("none of the time", "some of the time", "most of the time", or "all of the time").

3.2. Data analysis

The data from Study 2 were analysed using the same procedure as in Study 1, including model specification parameters, centring *and* scaling.

3.2.1. Data availability

The data related to both Study 1 and Study 2 are openly available via the Open Science Framework (https://doi.org/10.17605/OSF.IO/5F9SP).

3.3. Results

3.3.1. Previous experience

When asked if they have previously tried insect foods, the majority of participants reported they had not. Only 14.6% of them reported having eaten insects in the past.[3] One participant did not respond to the previous experience question.

3.3.2. Plausibility check

The majority of participants reported they could see insects in the stimuli presented at least "some of the time" (63.01%), 11.38% reported seeing the insects "most of the time" and 2.44% "all of the time". Only 23.17% reported that they were never able to see the insects. This result suggests that the manipulation pairing dishes without insects with descriptions containing insects was effective.

3.3.3. Descriptive statistics

Similar to Study 1, the overall ratings for the majority of measures were higher for non-insect foods compared to insect foods. The majority of intraclass correlations were higher for insect foods compared to non-insect foods. As in Study 1, this suggests larger variance in mean values across individuals (see Table 6).

Table 6
Mean ratings and Intraclass correlations (ICC) for insect and non-insect dishes in Study 2.

	Insect		Not Insect	
	Mean (*SD*)	ICC	Mean (*SD*)	ICC
Willingness to try	3.27 (2.37)	0.47	7.53 (1.43)	0.20
Curious	4.30 (2.29)	0.47	4.76 (2.06)	0.42
Attitude	3.47 (1.97)	0.44	6.99 (1.19)	0.17
Tasty	4.24 (2.08)	0.44	7.40 (1.20)	0.18
Familiar	2.62 (1.61)	0.37	6.93 (1.37)	0.22
Attractive	4.89 (1.62)	0.23	6.64 (1.25)	0.17
Healthy	4.41 (1.35)	0.20	4.63 (1.07)	0.09
Sustainable	5.25 (1.66)	0.38	5.91 (1.36)	0.29
Exotic	5.98 (1.94)	0.43	3.55 (1.55)	0.28
Filling	5.87 (1.51)	0.29	6.96 (1.04)	0.17
Social	4.83 (2.20)	0.53	4.94 (2.16)	0.55

Note. SD was computed using the entire data points.

3.3.4. Curiosity predicts willingness to try

We again conducted mixed-effects models examining the significant predictors of the willingness to try insect foods and non-insect foods separately. Model results are shown in Table 7. Curiosity was again a significant predictor of willingness to try both insect and non-insect foods above many other predictors, $\beta = 0.15$ & 0.12, *ps* $< .001$. The three strongest predictors showed the same pattern as in Study 1, with attitude ($\beta = 0.47$ & 0.47, *ps* $< .001$) and perceived tastiness ($\beta = 0.24$ & 0.41, *ps* $< .001$) being the first and second and curiosity again 3rd overall.[4] The pattern of significant predictors of willingness to try insect and non-insect foods was similar across the two studies. For non-insect foods the significant predictors were identical across Studies 1 and 2 (familiarity, exoticness, attitude, tastiness and curiosity). For insect food there are some differences in the pattern; exoticness was a significant predictor in Study 2 but not in Study 1, and conversely healthiness, attractiveness and social perceptions were not significant predictors in Study 2 whereas they were in Study 1. Sustainability and how filling the food was perceived to be were not significant in either study. Despite the differences in statistical significance, the effect sizes were comparable between Study 1 and Study 2. Multicollinearity was checked for insect (*VIF* = 1.02–1.17) and non-insect (*VIF* = 1.04–1.52) models and was not found to be a concern. A within-person correlation matrix for both insect and non-insect ratings are included in the supplementary material (Table S9 and S10).

3.3.5. Interactions with curiosity

The mixed-effects models used to test the interactions between curiosity and the other predictors followed the same structure as in Study 1. Interaction effects from each of the models are represented in Table 8. The same overall pattern as in Study 1 emerged here too: when curiosity interacted with the other predictors, the effect on willingness to try was different for insect and non-insect foods. Attitude and perceived tastiness showed consistent interactions with curiosity across both studies. For these significant interactions, the same "*boosting*" effect of curiosity is observed for insect foods ($\beta = 0.01$–0.02, $t = 2.33$–3.17, *ps* $< .03$). The pattern for non-insect foods was also generally consistent with Study 1 ($\beta = -0.02$ - 0.01, $t = -4.57$ – 2.80, *ps* $< .04$). Therefore, Hypothesis 2 is supported. Multicollinearity was checked for each model and was found not to be an issue (*VIF* = 1.00–3.57).

The three-way interaction models also follow the same structure as in Study 1, with all models including all predictors and the interaction term of interest as fixed effects. Seven of the nine interactions were statistically significant ($\beta = 0.01$–0.03, $t = 2.25$–11.39, *ps* $< .03$). Of the interactions that were not significant, the predictors of interest were healthiness ($p > .50$) and exoticness ($p > .30$). These significant interactions follow the same pattern as in Study 1, supporting further the finding that curiosity interacts with other predictors in a different way for insect foods and non-insect foods (see Table 8). Again, each model was checked for multicollinearity and no issues were found (*VIF* = 1.01–4.77).

Similar to Study 1, the "attitude" variable was highly correlated with other predictors (e.g., perceived tastiness), see Table S9 and S10. Therefore, analyses were conducted for the models predicting willingness to try and interactions with curiosity, eliminating the "attitude"

[3] Mixed-effects models were conducted predicting willingness to try using only participants who reported not having previously tried insect foods (N = 211). As with the main analysis the models examined insect foods and non-insect foods separately. For both insect and non-insect foods the significant predictors were identical to the main analysis.

[4] We conducted the same between-person analysis as in Study 1 for Study 2. Once again, the results did not replicate the within-person analyses well but there was some overlap. However, the caution on interpretation noted earlier should be taken into account here as well. Model results are presented in the supplementary material (Tables. S11, S12 and S13).

Table 7
Mixed-effects modelling predicting willingness to try for insect and non-insect data for Study 2.

	Insect					Not Insect				
	Fixed Effects									
Predictors	Est.	SE	CI	t	p	Est.	SE	CI	t	p
Intercept	3.27	0.15	2.97–3.56	21.69	< **0.001**	7.53	0.09	7.35–7.71	82.88	< **0.001**
Curious	0.15	0.02	0.12–0.19	9.06	< **0.001**	0.12	0.02	0.09–0.15	8.17	< **0.001**
Attitude	0.47	0.02	0.43–0.52	21.63	< **0.001**	0.47	0.02	0.44–0.50	29.95	< **0.001**
Tasty	0.24	0.02	0.20–0.28	11.8	< **0.001**	0.41	0.02	0.37–0.45	19.64	< **0.001**
Familiar	0.08	0.01	0.05–0.11	5.35	< **0.001**	0.08	0.01	0.05–0.10	6.12	< **0.001**
Attractive	0.02	0.01	−0.00 – 0.03	1.50	0.133	0.00	0.01	−0.02 – 0.03	0.30	0.764
Exotic	−0.04	0.01	−0.06––0.02	−3.65	< **0.001**	−0.04	0.01	−0.06––0.02	−4.20	< **0.001**
Filling	−0.02	0.01	−0.04 – 0.00	−1.54	0.123	−0.01	0.01	−0.03 – 0.01	−0.86	0.391
Healthy	−0.01	0.01	−0.03 – 0.01	−0.84	0.402	−0.01	0.01	−0.02 – 0.01	−0.95	0.342
Sustainable	−0.00	0.01	−0.02 – 0.02	−0.26	0.792	0.02	0.01	−0.01 – 0.04	1.44	0.150
Social	0.03	0.01	−0.00 – 0.06	1.91	0.057	−0.00	0.01	−0.03 – 0.03	−0.04	0.968
	Random Effects									
			Variance		*SD*			*Variance*		*SD*
Subject (Intercept)			5.55		2.36			1.98		1.41
Curious | Subject			0.03		0.17			0.02		0.16
Attitude | Subject			0.05		0.23			–		–
Tasty | Subject			0.05		0.22			0.04		0.20
Familiar | Subject			0.02		0.13			0.01		0.10
Attractive | Subject			0.00		0.06			0.02		0.13
Exotic | Subject			0.01		0.07			0.00		0.03
Filling | Subject			0.01		0.07			0.01		0.09
Healthy | Subject			0.00		0.07			0.00		0.02
Sustainable | Subject			0.00		0.04			0.01		0.09
	Model Fit									
R^2		*Marginal*			*Conditional*			*Marginal*		*Conditional*
		0.32			0.86			0.58		0.82

variable. The results show a similar overall trend to the previous analyses, supporting the "*boosting*" effect of curiosity and also showing a consistent pattern for non-insect foods, even after removing the highest correlated predictor. Model results are shown in the supplementary material (Tables S14, S15 and S16)

3.3.6. *Individual difference measures*

Technical issues meant not all participants were able to complete all of the questionnaire items. Thus, the Food Neophobia Models were estimated using data from 237 participants, whereas the VARSEEK and Food Involvement models used data from 247 participants. As in Study 1, higher scores on the Food Neophobia scale suggested a lower willingness to try both types of food, $\beta = -1.39$ & -0.83, *ps* $< .001$. The interaction between food neophobia and curiosity predicting willingness to try insect foods seen in Study 1 was also present in Study 2, $\beta = -0.06$, $p = .001$, suggesting that the association between curiosity and willingness to try insect foods is weaker for those with high food neophobia. Again, the interaction was not significant for non-insect foods ($p > .10$). For the VARSEEK scale, the pattern of results across Studies 1 and 2 is very similar, with variety seeking positively predicting willingness to try both types of foods ($\beta = 1.64$ & 0.73, *ps* $< .001$) and interacting with curiosity in predicting willingness to try insect foods only ($\beta = 0.07$, $p =$ .001). The interaction effect suggests that the association between curiosity and willingness to try insect food becomes stronger for those with higher variety seeking. As in Study 1, this effect was not statistically significant for non-insect foods, $p > .06$. Finally, the results for the longer Food Involvement scale show the same pattern across both studies. Food involvement was not predictive of willingness to try insect foods ($p > .06$), however, it significantly predicted willingness to try non-insect foods ($\beta = 0.73$, $p < .001$). Non-significant interaction effects were found (*ps* $> .10$), suggesting higher levels of food involvement are only predictive of willingness to try familiar foods. The individual difference measures and interactions with curiosity from each model are shown in Table 9.

3.4. *Discussion*

The results from Study 2 also confirmed Hypothesis 1, curiosity was the 3rd strongest predictor of willingness to try insect and non-insect foods after attitude to the food and perceived tastiness. Consistent with Study 1, the three strongest predictors remained the same. When examining the *curiosity-boosting* effect, we found a similar pattern to that of Study 1. In that, curiosity interacts with other predictors in a way that is unique to insect foods with attitude and perceived tastiness showing consistent interactions with curiosity across both studies (Hypothesis 2).

4. General discussion

Consistent with our prior hypotheses, across two studies we have shown that curiosity is one of the strongest predictors of willingness to try both insect and non-insect foods. In addition, we also discovered a curiosity-boosting effect, in which curiosity interacted with other predictors in a way that increased the effects of these factors on willingness to try. This boosting effect was specific to insect foods and not seen for familiar foods. For familiar foods, when curiosity was high, the association between other relevant factors and willingness to try tended to become weaker. These effects were consistent across the two studies even when different stimuli were used, actual insect foods (Study 1) or simply the allusion of insect ingredients (Study 2). The consistency of our findings demonstrates the robustness of the effects found and the validity of our hypotheses. Thus, we contribute to the existing literature on curiosity in consumer behaviour by unravelling whether and how it influences consumers' willingness to try novel foods. Our findings open new avenues for applying curiosity research to consumer behaviour. Our methodological approach allowed us to examine curiosity alongside other previously suggested predictive factors, across a wide range of stimuli, using a within-person approach. These methodological choices not only enabled us to examine the predictive power of curiosity in a more accurate way but also the psychological processes operating within

Table 8
Interactions between curiosity and the other predictors of willingness to try for insect and non-insect data in Study 2.

	Insect					Not Insect				
	Fixed Effects (for interaction term in each model)									
Interactions	Est.	SE	CI	t	p	Est.	SE	CI	t	p
Curious X Attractive	0.01	0.00	0.00–0.02	2.33	**0.020**	−0.01	0.00	−0.02–−0.00	−2.15	**0.032**
Curious X Familiar	0.01	0.01	−0.00 – 0.02	1.49	0.136	−0.02	0.00	−0.03–−0.01	−3.81	< **0.001**
Curious X Exotic	−0.01	0.00	−0.01 – 0.00	−1.27	0.206	0.01	0.00	0.00–0.02	2.80	**0.005**
Curious X Attitude	0.01	0.01	0.00–0.02	2.51	**0.012**	−0.02	0.01	−0.03–−0.01	−4.57	< **0.001**
Curious X Filling	0.01	0.00	−0.00 – 0.02	1.67	0.095	−0.00	0.01	−0.01 – 0.01	−0.66	0.509
Curious X Healthy	−0.01	0.00	−0.02 – 0.00	−1.95	0.051	0.00	0.00	−0.00 – 0.01	0.56	0.574
Curious X Sustainable	0.01	0.00	−0.00 – 0.02	1.46	0.144	−0.01	0.01	−0.02 – 0.00	−1.53	0.125
Curious X Tasty	0.02	0.01	0.01–0.03	3.17	**0.002**	−0.02	0.00	−0.03–−0.01	−3.53	< **0.001**
Curious X Social	0.01	0.00	−0.00 – 0.01	1.25	0.212	0.00	0.01	−0.01 – 0.01	0.55	0.583

	Random Effects							
	Subject (Intercept)		Interaction | Subject		Subject (Intercept)		interaction | Subject	
Model	*Variance*	*SD*	*Variance*	*SD*	*Variance*	*SD*	*Variance*	*SD*
Curious X Attractive	5.59	2.36	0.00	0.04	1.98	1.41	0.00	0.03
Curious X Familiar	5.56	2.36	0.00	0.04	1.98	1.41	0.00	0.04
Curious X Exotic	5.53	2.35	0.00	0.02	1.97	1.40	0.00	0.03
Curious X Attitude	5.71	2.39	0.00	0.05	1.97	1.40	0.00	0.05
Curious X Filling	5.53	2.35	0.00	0.03	1.98	1.41	0.00	0.05
Curious X Healthy	5.52	2.35	0.00	0.03	1.96	1.40	0.00	0.01
Curious X Sustainable	5.52	2.35	0.00	0.03	1.97	1.40	0.00	0.04
Curious X Tasty	5.67	2.38	0.00	0.05	1.97	1.40	0.00	0.05
Curious X Social	5.53	2.35	0.00	0.03	1.97	1.40	0.00	0.04

	Model Fit (R^2)			
Model	*Marginal*	*Conditional*	*Marginal*	*Conditional*
Curious X Attractive	0.33	0.82	0.56	0.79
Curious X Familiar	0.33	0.82	0.57	0.79
Curious X Exotic	0.33	0.82	0.56	0.79
Curious X Attitude	0.32	0.83	0.57	0.80
Curious X Filling	0.33	0.82	0.57	0.79
Curious X Healthy	0.33	0.82	0.56	0.78
Curious X Sustainable	0.33	0.82	0.56	0.79
Curious X Tasty	0.32	0.83	0.57	0.80
Curious X Social	0.33	0.82	0.56	0.79

Curious X Filling (insect) and Curious X Attractive, Curious X Attitude and Curious X Healthy (not insect) were restarted from a previous with an increased number of iterations to enable convergence.

individuals.

4.1. Curiosity as a predictor

Our findings from both studies supported the hypothesis that curiosity is an important predictor of the willingness to try both insect and non-insect foods. This finding is in line with previous qualitative and survey research positing a role for curiosity in determining consumption of insects (e.g., CaparrosMegido et al., 2016; Sogari, 2015; Videbæk & Grunert, 2020). Our findings demonstrate the powerful effect of curiosity to overcome negative expectations (FitzGibbon et al., 2020). Previously, curiosity has been shown to increase positive affect towards products, increase risky decision-making and encourage people to seek information that is of no value and makes them feel worse (Daume & Hüttl-Maack, 2020; FitzGibbon et al., 2019; Ruan et al., 2018). We add to this literature by showing that curiosity also predicts willingness to try novel foods that are frequently perceived negatively.

Not only was curiosity found to be an important predictor, but this was true even after controlling for other previously identified factors (e.g., perceived tastiness). This may suggest that curiosity has a direct effect on exploratory eating behaviour, as it is not mediated by other factors. This could result from an interesting property of curiosity – that it has incentive salience (FitzGibbon et al., 2020). Incentive salience is a motivational urge, in this case for information, in the absence of expected liking of that information (Litman, 2005). Our results suggest that curiosity may tap into this feeling of incentive salience so that even for foods that may not seem appealing, such as those containing insects. If curiosity is high, people may still be motivated to seek information and so be willing to try the food.

Furthermore, we uncovered a distinctive effect of curiosity when interacting with other relevant predictors, which differed notably across insect and familiar foods. Specifically for insect foods, we found the '*curiosity-boosting* effect' - high curiosity strengthens the relationship between willingness to try and other predictive factors. One possible explanation for this effect is that curiosity recruits attentional processes (Gottlieb, 2012). Gottlieb (2012) suggests this selective attention process to novel/interesting stimuli is activated when engaging in exploratory behaviour and in determining the value of information. It is possible that high curiosity increased awareness of the other predictive factors measured, selective attention would increase focus on these factors and thus strengthen the relationship between curiosity and other factors in predicting willingness to try. Given the far-reaching effects of curiosity, the idea that it would also impact the other predictive factors is consistent with the existing literature. House (2016) found that the initial motivation for consumers to purchase insect foods was curiosity, followed by health and sustainability benefits and it is suggested that none of these factors are mutually exclusive, rather they work in combination with one another to influence consumption. This could be an example of the *curiosity-boosting* effect, where initial curiosity towards the product is high and this strengthens the relationship between willingness to try and other predictive factors (e.g., healthiness and sustainability).

Table 9
Mixed-effects modelling of individual difference measures and their interactions with curiosity in predicting willingness to try for Study 2.

Model		Insect					Not Insect				
		Fixed Effects									
	ID measures/Interactions	Est.	SE	CI	t	p	Est.	SE	CI	t	p
FNS											
	Intercept	3.23	0.14	2.96–3.50	23.29	**<0.001**	7.53	0.08	7.36–7.69	90.00	**<0.001**
	FNS	−1.39	0.18	−1.74–−1.05	−7.94	**<0.001**	−0.83	0.11	−1.04–−0.62	−7.83	**<0.001**
	Curious X FNS	−0.06	0.02	−0.09–−0.02	−3.26	**0.001**	0.02	0.02	−0.01 – 0.06	1.46	0.144
VAR											
	Intercept	3.27	0.13	3.01–3.53	24.72	**<0.001**	7.53	0.09	7.36–7.69	88.23	**<0.001**
	VAR	1.64	0.19	1.28–2.01	8.73	**<0.001**	0.73	0.12	0.49–0.97	5.99	**<0.001**
	Curious X VAR	0.07	0.02	0.03–0.10	3.38	**0.001**	−0.03	0.02	−0.07 – 0.00	−1.82	0.069
INV											
	Intercept	3.27	0.15	2.97–3.56	21.74	**<0.001**	7.53	0.09	7.36–7.70	86.17	**<0.001**
	INV	0.48	0.26	−0.04 – 1.00	1.83	0.068	0.73	0.15	0.43–1.03	4.79	**<0.001**
	Curious X INV	0.01	0.02	−0.04 – 0.06	0.37	0.713	−0.03	0.02	−0.08 – 0.01	−1.49	0.135

	Random Effects					
	Insect			Not Insect		
Model	*Variance*	*SD*	*Correlation*	*Variance*	*SD*	*Correlation*
FNS						
Subject (Intercept)	4.47	2.11		1.57	1.26	
Curious | Subject	0.02	0.15	0.43	0.02	0.15	−0.53
VAR						
Subject (Intercept)	4.23	2.06		1.72	1.31	
Curious | Subject	0.02	0.15	0.45	0.02	0.14	−0.53
INV						
Subject (Intercept)	5.50	2.34		1.80	1.34	
Curious | Subject	0.02	0.15	0.52	0.02	0.15	−0.53

	Model Fit (R^2)			
Model	*Marginal*	*Conditional*	*Marginal*	*Conditional*
Food Neophobia	0.43	0.83	0.61	0.80
Variety Seeking	0.44	0.83	0.59	0.79
Involvement	0.33	0.83	0.57	0.79

FNS (not insect) was restarted from a previous fit with an increased number of iterations to enable convergence.

4.2. Other factors influencing willingness to try

The effects of the additional factors considered in our models show some consistency with other previously identified key factors in encouraging entomophagy. Across both studies familiarity, perceived taste and attitude consistently predicted willingness to try insect foods, and these have all been previously identified as key factors in encouraging entomophagy (Cicatiello et al., 2016; van Huis, 2013; Woolf et al., 2019). Other factors had less predictive value. For example, social influence, had a consistently small effect on willingness to try, and was only a significant predictor in Study 1, as might have been expected from previous research (Jensen & Lieberoth, 2019; Sogari, 2015). Sogari (2015) argues that while social influence is important for integration of insect-based diets into our lifestyle, it is possible that some predictors are more conducive to encouraging the ‘first try’ and others are important for maintaining that consumption as part of our everyday dietary decision-making. Our findings suggest that if social factors are playing a role, this is more likely to be with long-term change rather than initiation of insect eating behaviour.

Interestingly, across both studies sustainability and how filling the food was perceived to be were not significant predictors of willingness to try insect foods. This is somewhat inconsistent with previous research, particularly for sustainability. The positive environmental benefits of entomophagy have been shown to be of large importance in the decision to eat insect foods (Lombardi et al., 2018; Woolf et al., 2019). However, what both of these previous studies suggest is that one must be aware of the benefits for the issues of sustainability to increase willingness to try or pay for insect foods. As we did not provide participants any information of the benefits of entomophagy, it may be that participants were unable to base their decision to try on these critical factors.

Healthiness had a small but consistent negative effect on willingness to try insect foods and was a significant predictor in Study 1 only. The negative effect of healthiness suggests that people were more willing to eat less healthy insect foods. One explanation is that through the menu style rating task many of the dishes presented to participants contained other ingredients or cooking practices that are not necessarily considered healthy (e.g., fried foods). This may have affected the healthiness ratings in two ways, firstly, certain dishes may have been awarded lower ratings even when containing insect foods as other ingredients or cooking practices in the dish were perceived as unhealthy. Secondly, a pre-conceived notion that unhealthy foods may taste better or be more enjoyable may explain the negative relationship found in Study 1. It is also worth noting that the constraints of being aware of the benefits discussed in relation to the sustainability ratings also apply to healthiness. One must be aware that insects contain higher levels of vitamins and minerals compared to traditional animal-derived proteins in order for this to affect the healthiness rating.

It is important to note that we included various factors (including curiosity) as simultaneous predictors in the regression model, treating them as exogeneous variables. However, it is very likely that these predictors have causal relationship with each other. For example, novelty is often described as the determinant of the feeling of curiosity (Berlyne, 1960). Perceived tastiness is likely to be a consequence of other predictors such as exoticness. As we do not have a precise causal model among these predictors, we rather decided to include all the predictors together in the model. However, this means that our parameter estimates are likely not accurate causal estimates. It is also possible that there are other omitted variables that we are not aware of. As such, it is best to see our parameter estimates in terms of predictions rather than causation.

One final consideration is that the effect of some predictors may be seen more clearly at the between-person level. Particularly for predictors such as sustainability and healthiness where the impact of these relies on each individuals' knowledge of the benefits. In fact, intraclass correlation of the insect food ratings generally showed much larger levels of variance between participants (as opposed to within participants) compared to familiar foods. It is also worth noting that repeated measurements of predictors could create a carry-over effect, however as we were interested in the within-person process this was necessary to address the aim of this study.

4.3. Individual differences

As well as identifying the properties of food dishes that predict willingness to try the dish, we were also able to identify factors at the level of the individual participants that predict their willingness to try insect foods. Studies 1 and 2 show that food neophobia and food variety seeking tendencies were both predictive of willingness to try insect and non-insect foods, showing consistency with previous findings (Pliner & Hobden, 1992; Van Trijp & Steenkamp, 1992). Interestingly, our findings show, for both concepts, a significant interaction with curiosity that occurs only for insect foods. This finding was replicated across both studies using a wide variety of stimuli. This suggests that when individuals have higher variety seeking tendencies and low food neophobia, the more curious they are the more willing they are to try insect foods.

In contrast to Bell and Marshall (2003), who advance the notion that individuals with higher levels of food involvement may be more inclined to try new food flavours and may be more receptive to novel food experiences, our studies did not find a significant effect of food involvement for insect foods. We did, however, find a significant effect of food involvement on the willingness to try familiar foods. This is consistent with the proposal that food involvement is related to food choice behaviours. Given the significant effects for non-insect foods, as well as the consistent results for insect foods across both studies, which also used two different measures of food involvement, it is likely that involvement does not play a significant role in predicting willingness to try insect foods. This would suggest that those who report that food plays an important role in their lives are no more willing to try insect foods than individuals who feel that food is not of importance. Our findings suggest that curiosity is more important than food involvement when engaging in exploratory food behaviours, a notion in line with the argument that curiosity is an important driver of novel behaviours in general (Gottlieb et al., 2013) and that the motivational power of curiosity can be stronger than other decision-making factors (FitzGibbon et al., 2019).

4.4. Practical implications

Our findings that curiosity is an important predictor of people's willingness to try insect foods have some practical implications. Given its motivational power, curiosity can be used as a powerful marketing tool to positively influence beliefs, attitudes, and behaviours towards novel products. For example, using curiosity in advertising messages can lead to the formation of positive attitudes towards the promoted brands and increase willingness to try them (see Ruan et al., 2018) The boosting effect of curiosity also suggests that the effectiveness of such campaigns may be increased significantly by targeted consumers who are more receptive to unfamiliar foods (i.e., low on food neophobia) and who exhibit variety seeking tendencies. Attitudinal and behavioural changes, in turn, could have a positive impact on the environment through decreased consumption of traditional animal-derived proteins (Boland et al., 2013; van Huis, 2013).

4.5. Limitations and future research

There are some limitations to the present studies. Firstly, we only assessed the intention to try insect foods and not the actual behaviour. While our study suggests potential ways to increase that intention, whether this affects the actual behaviour of trying insect foods and whether it impacts incorporating entomophagy into one's diet in the long-term should be examined in future research. For example, future studies could examine ways to increase intention to try followed by a tasting session to assess actual behaviour. Relating to this, we would like to note that our wording choice to assess intention (willingness to try) was the word 'likely' instead of 'willing'. It could be argued that 'likely' and 'willing' assess slightly different intentions. However, given that willingness is the preparedness to perform an action and likelihood is the probability of an event occurring, we argue that our question "how likely would you be to try this food?" asks participants to estimate the probability of the situation occurring alongside whether they would try the food if presented with it, rather than whether they would be prepared to try if the situation presented itself.

Secondly, this research provides a contribution to a set of factors that influence willingness to try insect foods. However, this is not exhaustive in terms of both potentially relevant factors and different types of insect foods. In this study, we collected demographic information on age, sex nationality and country of residence. It is possible that other demographic factors such as SES could also influence willingness to try insect foods. This should be examined further in order to contribute to the intricacies of a consumer decision such as this. Many other factors and individual differences may contribute to an individual's willingness to try insect foods, for example, participants in this study were UK residents and attitudes towards willingness to try insect foods may not be comparable in other Western societies. Also, there may be differences in willingness to try depending on the type of edible insect (e.g., mealworm vs. cricket). Future research should investigate this further using a larger set of insect food stimuli.

Finally, while these studies consider a set of relevant factors that influence consumption, the question regarding how to use curiosity to initiate consumption still needs research attention. Our results indicate that curiosity is well placed to encourage a positive first tasting experience. Future studies should focus on manipulating aspects of curiosity to see if this increases willingness to try insect foods. For example, future studies could focus on manipulating curiosity through increasing uncertainty (Loewenstein, 1994), in order to reduce uncertainty and satisfy their curiosity participants may be more willing to try insect foods.

5. Conclusion

The current two studies have confirmed the role of curiosity as an important predictor of willingness to try insect foods. What is more, our findings demonstrate the unique contribution of curiosity above and beyond other relevant predictors. Finally, we demonstrate how curiosity can interact with other predictors, thus revealing a mechanism for increasing willingness to try novel foods, such as insect foods.

Funding

This research was supported by JSPS KAKENHI (Grant Numbers 18H01102; 18K18696), the Leverhulme Trust (Grant Number RL-2016-030), and Jacobs Foundation Advanced Fellowship.

CRediT author contributions statement

Hannah Stone: Conceptualization, Methodology, Software, Formal analysis, Investigation, Writing – Original Draft, Writing – Review & Editing, Project administration.; **Lily FitzGibbon:** Conceptualization, Methodology, Software, Formal analysis, Writing – Review & Editing, Supervision, Project administration.; **Elena Millan:** Conceptualization, Writing – Review & Editing, Supervision.; **Kou Murayama:** Conceptualization, Methodology, Formal analysis, Writing – Review & Editing, Supervision, Funding acquisition.

Declaration of competing interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.appet.2021.105790.

Ethical statement

Curious to Eat Insects? Curiosity as a Key Predictor of Willingness to Try Novel Food.

Stone, FitzGibbon, Millan and Murayama.

Ethical approval was granted by the University of Reading School of Psychology and Clinical Language Science's School Ethical Review Committee (2016-109-KM). Participants gave informed consent before taking part.

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