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The effect of a fictitious peer on young children's choice of familiar *v.* unfamiliar low- and high-energy-dense foods

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Abstract

The present experimental study was the first to investigate the impact of a remote (non-existent) peer on children's food choice of familiar *v.* unfamiliar low- and high-energy-dense food products. In a computer task, children (*n* 316; 50·3 % boys; mean age 7·13 (SD 0·75) years) were asked to choose between pictures of familiar and unfamiliar foods in four different choice blocks using the following pairs: (1) familiar *v.* unfamiliar low-energy-dense foods (fruits and vegetables), (2) familiar *v.* unfamiliar high-energy-dense foods (high sugar, salt and/or fat content), (3) familiar low-energy-dense *v.* unfamiliar high-energy-dense foods and (4) unfamiliar low-energy-dense *v.* familiar high-energy-dense foods. Participants who were not in the control group were exposed to the food choices (either always the familiar or always the unfamiliar food product) of a same-sex and same-age fictitious peer who was supposedly completing the same task at another school. The present study provided insights into children's choices between (un)familiar low- and high-energy-dense foods in an everyday situation. The findings revealed that the use of fictitious peers increased children's willingness to try unfamiliar foods, although children tended to choose high-energy-dense foods over low-energy-dense foods. Intervention programmes that use peer influence to focus on improving children's choice of healthy foods should take into account children's strong aversion to unfamiliar low-energy-dense foods as well as their general preference for familiar and unfamiliar high-energy-dense foods.

Key words: **Food choice: Peer influence: Social modelling: Children: Food neophobia**

In the presence of others, people consume more or less food than when eating alone[1,2] and are influenced to make particular food choices or purchases[3,4]. It is argued that social modelling behaviour in food choice and intake originates from people's need to conform to a social norm, to impress or to avoid others' judgement[5,6]. Moreover, an important part of children's development is to learn through social modelling behaviour, with their parents or guardians as role models; gradually, other people in the children's environment gain influence, such as peers at school[7,8]. Social modelling experiments in food choice have examined whether a person adapts to the behaviour of real instructed peers or to information about fictitious peers (remote confederates). In adolescents, social modelling of food intake was found to have similar effects regardless of whether peers are real or fictitious[9], which illustrates the strong impact of others on people's consumption behaviour. Therefore, social modelling might be an effective mechanism through which children's food choices can be influenced. The present study focused on the influence of peers on young children's choices of (un)familiar low- and high-energy-dense foods.

One aspect of people's food choices relies on evolutionary predispositions that originate from the need to discover by trial and error what is safe to eat. Therefore, people feel cautious or anxious to try unfamiliar foods, and most people have an aversion to bitter or sour tastes that can be traced back to toxic foods found in nature[10,11]. Furthermore, people have an innate preference for sweet tastes[10,11]. In contrast, a preference for high-fat or salty foods is said to be learned during infancy and childhood. Individuals develop food preferences by experiencing (sensory) pleasure or 'food reward' from the combination of smell, taste and texture of high-fat sweet or salty foods[12–14]. In addition, food preferences and aversions can change based on good or bad experiences (e.g. through illness after eating spoiled food)[11]. Although evolutionarily explainable, the preference for high-fat sweet and salty food products and/or high levels of unwillingness to try unfamiliar food products can lead to low variety in

Abbreviations: B1_FL-UL, familiar *v.* unfamiliar low energy-dense foods (fruits and vegetables); B2_FH-UH, familiar *v.* unfamiliar high energy-dense foods (salty and sweet snacks); B3_FL-UH, familiar low energy-dense *v.* unfamiliar high energy-dense foods; B4_FH-UL, familiar high energy-dense *v.* unfamiliar low energy-dense foods.

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children's diet and a higher intake of energy-dense foods. This might result in being overweight or obese during childhood and later in life[15–17].

Studies have demonstrated children's general preference for high- *v.* low-energy-dense foods[15] as well as their preference for higher-energy-dense (or sweet) foods within 'healthy' fruits and vegetables (i.e. children preferred the relatively high-energy-dense banana, potato or apple to low-energy-dense cabbage, courgette or melon)[18]. Furthermore, young children, in particular, are found to be 'picky' with regard to the intake of (un)familiar foods or to feel anxious about trying unfamiliar food products[19–21]. This has been explained by environmental predispositions (e.g. the negative response of others to unfamiliar or appalling foods), as well as by evolutionary factors. Studies have shown that others can encourage or discourage people to try unfamiliar food products, depending on people's food choice or information provided about the taste or nutritive value of the food[22–24]. Research has provided evidence for the influence of parents on their children's willingness to eat (un)familiar food products; children have been given access to various food products at home and parents have acted as discouraging or encouraging role models based on the parents' own food preferences and food intake[25–30]. In addition to demonstrating the influence of parents on children's food choices, experimental social modelling studies have also shown that children are willing to try unfamiliar food products if they use pre-instructed teachers or peers as role models (confederates)[31–34]. Confederates who verbally expressed their liking for a food before food intake were more influential in food acceptance than silent confederates. Peers were also found to have a stronger effect on food acceptance than teachers[33,34].

Reasonably, this research area[32–34] as well as intervention programmes (e.g. taste lessons at school[35] or parent education programmes at home[27]) have focused primarily on the encouragement of low-energy-dense foods (e.g. fruits or vegetables) to improve children's willingness to eat 'healthy' (un)familiar foods. However, none has focused on familiar *v.* unfamiliar low- and high-energy-dense food choices even though children choose between these different types of foods every day in, for example, school cafeterias. The present experimental study broadened the existing research scope by investigating the impact of a fictitious peer (remote confederate) on children's food choices when they are offered familiar *v.* unfamiliar low- or high-energy-dense foods. Based on previous literature, it was hypothesised that with a choice between a familiar and an unfamiliar food, children would follow a remote peer in choosing unfamiliar foods (1) when both products were high in energy density and (2) when an unfamiliar high-energy-dense product was paired with a familiar low-energy-dense product. Furthermore, it was expected that children would follow a remote peer in choosing familiar foods (3) when both products were low in energy density and (4) when a familiar high-energy-dense food product was paired with an unfamiliar low-energy-dense food product.

Experimental methods

Participants

A total of 346 children from twelve urban and suburban schools in The Netherlands secured written informed consent from their parents to participate. The final research sample consisted of 316 children; thirty children did not participate because they took sick leave or did not complete the computer task. The mean age of the sample (50·3 % boys) in grade 1 (*n* 139) was 6·6 (SD 0·59) years and in grade 2 (*n* 177), it was 7·6 (SD 0·54) years. Most participants (83·2 %) were normal weight, 15·2 % were overweight and 1·6 % were underweight. Participants were randomly divided into three groups: two experimental groups and one control group. In a pilot study, twenty-seven children from similar grades were recruited and used in preliminary testing to verify children's familiarity with the food products employed in the experimental tasks.

The present study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human subjects were approved by the ethics committee of the Faculty of Social Sciences, Radboud University Nijmegen. Written informed consent was obtained from all carers.

Study design

The study involved a computer choice task with food pictures. We used both a between-participants design (two experimental conditions and a control condition) and a within-participants design (four choice blocks). The participants were randomly assigned to one of the three experimental conditions, i.e. the control condition (without confederate), the 'confederate – familiar food' condition or the 'confederate – unfamiliar food' condition, in which the confederate always chose the familiar or the unfamiliar food products. Within each condition, participants were asked to choose between two (familiar *v.* unfamiliar) food pictures that appeared on the screen in twelve predetermined pairs per four choice blocks. Thus, each participant had to make a total of forty-eight choices (see Appendix A for the product list). Table 1 illustrates the four choice blocks of food pictures using the following pairs: (1) familiar *v.* unfamiliar low-energy-dense foods (fruits and vegetables; B1_FL-UL), (2) familiar *v.* unfamiliar high-energy-dense foods (salty and sweet snacks; B2_FH-UH), (3) familiar low-energy-dense *v.* unfamiliar high-energy-dense foods (B3_FL-UH) and (4) familiar high-energy-dense *v.* unfamiliar low-energy-dense foods (B4_FH-UL). The four choice blocks as well as the twelve food pairs appeared in randomised order on the computer screen. In addition, each food picture of the pairs (familiar *v.* unfamiliar)

Table 1. Four choice blocks in energy density

Choice blocks*	Familiar food	Unfamiliar food
B1_FL-UL	Low	Low
B2_FH-UH	High	High
B3_FL-UH	Low	High
B4_FH-UL	High	Low

*For details of the choice blocks, see the study design section.

was presented in randomised order on the left or right side of the screen. Each time a food picture appeared, the participant heard a voice that revealed the name of the food product. Therefore, each participant had the same understanding of the food picture. The computer program did not allow children to answer before clarification of the food picture or to skip to the next food picture choice.

Setting and procedure

In January 2010, twelve primary schools granted permission to conduct the experiments at school with the cooperation of teachers. Subsequently, the teachers distributed the detailed consent forms to the parents of the school children in grades 1 and 2. Data collection took place from February through April 2010 between 08.30 and 15.30 hours. Participants were seated individually at a table with a laptop and a headphone and were instructed to play a computer game. The participants were asked to pick one of the two pictures on the computer screen after they had heard a voice clarifying which food products were displayed.

The participants in the two experimental confederate conditions were told that there was a peer playing the same game at another school. The participants were subtly made aware that the peer was of the same sex and age and named either 'Sofie' or 'Daan' for girls or boys (common Dutch names), respectively. The participants were told that Sofie or Daan had started a few moments earlier. Therefore, the participants could see the preference of the peer via a third smaller picture between the two main food pictures that appeared after the participant heard the clarification of the food pictures (for example, see Fig. 1). After the instruction, the experimenter left the room but returned as soon as the participants had completed the computer task. The participants' height and weight were measured and a short questionnaire was administered by the experimenter.

Measures

Body weight. The experimenter measured height and body weight individually according to standard procedures (without shoes but fully clothed). Height was measured to the nearest 0·5 cm using a stadiometer (Seca 206; Seca GmbH & Company) and weight was measured to the nearest 0·1 kg using a digital scale (Seca Bella 840; Seca GmbH & Company). The BMI for each child was calculated using the formula: weight (kg)/height^2 (m^2). BMI (*z*-score) was determined by means of internationally based cut-off points for boys and girls[36–38]. These cut-off points are representative of current *z*-BMI standards for Dutch children.

Food-choice computer task. The food choice in the computer task was expressed in the number of familiar food pictures chosen, ranging from 0 to 12 (each choice block consisted of twelve food pairs). The present study did not concentrate on taste differences between sweet, bitter, sour or salty food products. Therefore, a mixture of pictures displaying fruits and vegetables or (sweet and salty) snacks was used as low- or high-energy-dense food products, respectively.

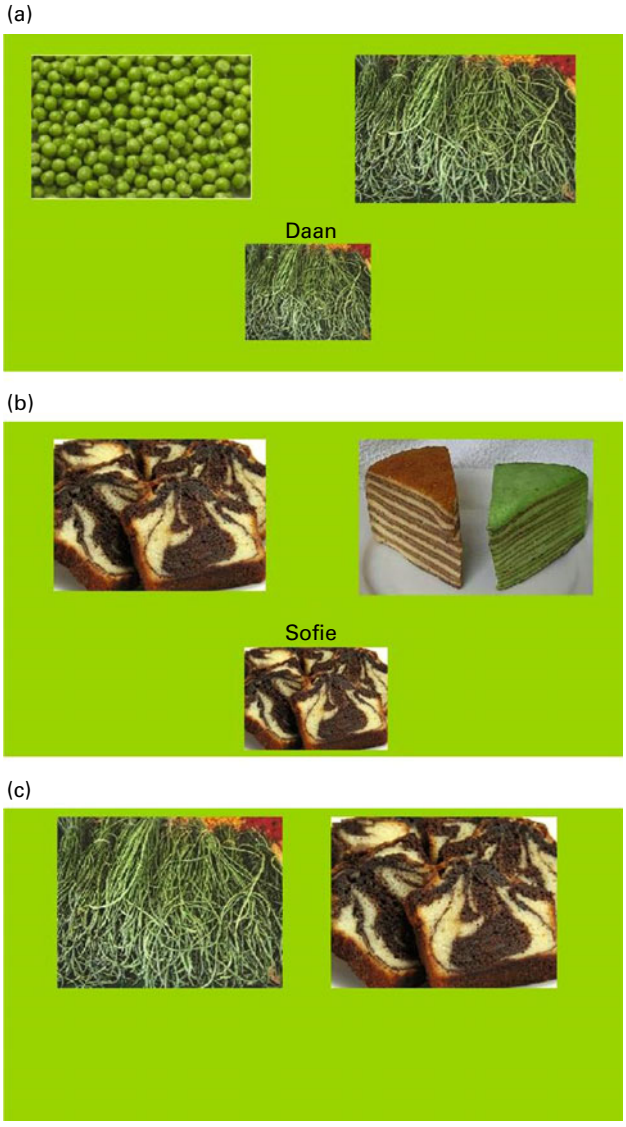

Fig. 1. Choices on screen during the computer task. (a) B1_familiar low energy-dense *v.* unfamiliar low-energy-dense in confederate – unfamiliar food condition for boys. (b) B2_familiar high energy-dense *v.* unfamiliar high-energy-dense in confederate – familiar food condition for girls. (c) B4_familiar high energy-dense *v.* unfamiliar low-energy-dense in control condition (a colour version of this figure can be found online at journals.cambridge.org/bjn).

Questionnaire measures

Hunger. The state of hunger might influence a participant's food choice. After the experiment, participants had to indicate their state of hunger on a visual analogue scale (0 mm = 'not hungry at all'; 150 mm = 'very hungry'). Visual analogue scale have proven to be as reliable as Likert scales, and in the past, they have been used in samples with young children[39].

Liking of the task. To measure the extent to which the participants liked the task, we used a visual analogue scale (0 mm = 'do not like at all'; 150 mm = 'like it a lot') (KE Bevelander, DJ Anschütz and RCME Engels, unpublished results).

Analytical strategy. Data were analysed using SPSS for Windows (version 17.0, 2008; SPSS, Inc.). α was set at $P < 0{\cdot}05$. For the computer task, we used a 3×4 two-way mixed ANCOVA

British Journal of Nutrition

Table 2. Variable grade, BMI (*z*-score), sex, liking of the computer task and state of hunger measured by condition (Number of participants, mean values and standard deviations)

	Control group (*n* 106)		Confederate – familiar food (*n* 106)		Confederate – unfamiliar food (*n* 104)		
Variables	Mean	SD	Mean	SD	Mean	SD	*P**
Grade							0·282
1 (*n*)	40		50		49		
2 (*n*)	66		56		55		
BMI (*z*-score)	0·27	1·18	0·56	1·19	0·41	0·95	0·182
Sex							0·817
Boys (*n*)	56		52		51		
Girls (*n*)	50		54		53		
Liking of the task†	12·79	2·42	13·14	1·92	13·12	1·83	0·393
Hunger†	5·26	4·64	5·29	4·46	5·23	4·75	0·994

* *P* value reflects the differences in total means between choice conditions by one-factor ANOVA or Pearson's χ^2 test.
† cm on the visual analogue scale.

with the between-subjects factor condition (familiar, unfamiliar and control) and the within-subjects factor choice blocks (B1_FL-UL, B2_FH-UH, B3_FL-UH and B4_FH-UL). Cohen's f^2 effect size was calculated to assess the effect size over the three conditions[39]. Cohen's f^2 is used for three or more groups and effect sizes 0·02, 0·15 and 0·35 are termed small, medium and large, respectively. Pairwise comparisons with Bonferroni correction were carried out to measure the different significance levels between the control and experimental conditions. Effect sizes between different conditions were calculated with Hedges' *g*, which takes into account sample size and adjusts to the overall effect size[40]. Effect sizes 0·20, 0·50 and 0·80 are termed small, medium and large, respectively.

Results

Randomisation checks

To check whether there were differences between the control and experimental conditions on BMI (*z*-score), hunger and liking of the task, one-factor ANOVA were performed. Pearson's χ^2 tests were performed to check whether there were differences in school grade or sex. Table 2 summarises the means for all variables across each condition. No differences ($P>0·10$) were found between the conditions, which indicated that randomisation was successful.

Food-choice computer task

Pearson's correlations were performed for the model variables of grade, sex, liking of the task and hunger on the total number of familiar food choices in the computer task. Weight status was related to the fourth choice block (familiar high-energy-dense *v.* unfamiliar low-energy-dense foods; $r -0·12$, $P<0·05$) in the computer task. Therefore, BMI (*z*-score) was entered in the model as a covariate in the present analyses.

Main analyses

No significant interaction was found between the experimental conditions and the four choice blocks ($P=0·41$). Among the four choice blocks, no differences in children's choices were influenced by the confederate. In general, there was a significant main effect of experimental condition ($F_{2,312}=13·06$, $P<0·001$, Cohen's $f^2=0·28$) on the number of chosen familiar food products. Bonferroni *post hoc* tests showed that the number of choices for familiar products in the confederate – unfamiliar food condition was significantly lower (8·2 (SEM 0·2)) than in both the control (9·3 (SEM 0·2), $P=0·002$, $g=0·48$) and confederate – familiar food condition (9·7 (SEM0·2), $P<0·001$, $g=0·69$). The choice of familiar products between the control and confederate – familiar food conditions did not differ significantly ($P=0·40$, $g=0·21$). Fig. 2 illustrates the mean differences in familiar food products chosen between the conditions. Hence, the participants in the

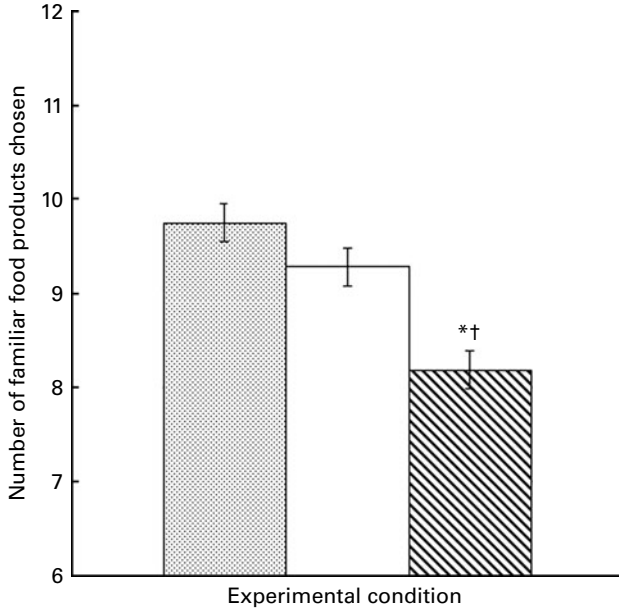

Fig. 2. Choices for familiar food products. ⚄, Confederate – familiar food; □, control condition; ▨, confederate – unfamiliar food. Values are means, with standard errors, represented by vertical bars. *Mean value was significantly different from that of the control condition ($P<0·001$). †Mean value was significantly different from that of the familiar food condition ($P=0·002$).

Table 3. Number of familiar food choices for the different choice blocks in the computer task
(Mean values with their standard errors)

Choice blocks*	Mean	SEM
B1_FL-UL	9·48[a]	0·15
B2_FH-UH	8·94[b]	0·15
B3_FL-UH	8·23[c]	0·15
B4_FH-UL	9·63[a]	0·17

[a,b,c] Mean values within a column with unlike superscript letters were significantly different ($P<0·001$).
* For details of the choice blocks, see the study design section.

confederate – familiar food condition did not choose significantly more familiar food products than participants without a confederate in the control condition. Overall, the participants preferred familiar food products but were more inclined to choose unfamiliar food products when the confederate chose unfamiliar food products.

In addition to the effect of condition, there was a significant main effect of choice blocks ($F_{3,936} = 38·35$, $P<0·001$, Cohen's $f^2 = 0·60$) on the number of chosen (un)familiar food products. Table 3 shows Bonferroni-corrected *post hoc* tests for the four choice blocks. Except for B1_FL-UL and B4_FH-UL ($P>1$), all blocks differed significantly ($P<0·001$) from each other. The participants chose the least for unfamiliar low-energy-dense foods when this type of food was paired with familiar foods low in energy density (B1_FL-UL) as well as familiar foods high in energy density (B4_FH-UL). Participants were most likely to choose unfamiliar foods when high in energy density and paired with familiar low-energy-dense foods (B3_FL-UH) or when both foods were high in energy density (B2_FH-UH).

Finally, there was a significant main effect of the covariate BMI (*z*-score) on the number of chosen familiar food products ($F_{2,312} = 4·16$, $P=0·04$, Cohen's $f^2 = 0·10$). The higher the weight status, the more familiar food products were chosen.

Discussion

The present study was the first experimental study to investigate the influence of a fictitious peer on children's food choice in (un)familiar low- or high-energy-dense foods. The findings showed that a fictitious peer did have a general influence on food choice, but this influence did not differ among various combinations of familiar and unfamiliar high- or low-energy-dense foods. Although the children had a strong preference for familiar foods in general, those who were exposed to a fictitious peer choosing unfamiliar foods more often chose unfamiliar foods themselves. Furthermore, children were found to be most averse to unfamiliar low-energy-dense food products regardless of whether they were displayed alongside familiar low- or high-energy-dense food products. However, they were inclined to choose an unfamiliar product when both (unfamiliar and familiar) products displayed were high in energy density, and, in particular, when the products were displayed alongside familiar low-energy-dense foods. In addition, a higher weight status was related to a higher number of familiar food products chosen.

Consistent with previous research, the present study underlined children's natural and strong preference for familiar food products[11]. The findings showed that children who were paired with a peer who chose familiar foods did not choose more familiar products than children who were not paired with a peer. This supports findings of previous studies indicating children's evolutionary preference for familiar foods and their anxiety towards trying unfamiliar foods (also known as food neophobia)[11,41]. Food neophobia is an individual trait that peaks when children are between 2 and 6 years old[21]; it generally declines over time due to exposure to various foods throughout life[42,43]. In addition, some children are characterised as 'picky' eaters because they reject unfamiliar as well as some familiar foods[21]. The reluctance to try unfamiliar foods by both neophobic and picky eaters can lead to a higher intake of energy-dense (mostly high-fat) foods and less food variety in their diets compared with children without food neophobia[16,44]. A higher intake of energy-dense foods is associated with a higher weight status in children[17]. This might be in line with the findings of the present study which showed that a higher weight status was related to a higher preference for familiar food products. Nevertheless, there is no hard evidence for a direct relationship between food neophobia and being overweight.

The present study revealed the impact of a fictitious peer on unfamiliar food choice; children were inclined to choose more unfamiliar foods when paired with a fictitious peer who always chose unfamiliar foods compared with children who were not exposed to the peer's choice or were paired with a peer who always chose familiar foods. The peer exposure used in the present study might be described as fairly simple; however, it might have implications for studies that use a more profound exposure to fictitious peer influence (e.g. long-term encouragement through text messages by phone or interactive conversations in chat rooms on the Internet). Previous studies have found that different kinds of live peer models also have a different impact on food choice in children. For example, children paired with familiar peers ate more palatable food than those paired with strangers[45] and peers had a stronger effect on food acceptance than teachers[34]. Due to extensive (social media) access by children and their peers, it would be interesting to investigate the impact of a fictitious peer (instead of a live peer) about whom the children assume familiarity or a particular status.

Contrary to all our hypotheses, the fictitious peer had no different impact on children's food choices in the combinations of familiar *v.* unfamiliar low- or high-energy-dense foods. In general, children were reluctant to try unfamiliar low-energy-dense foods but were inclined to choose (un) familiar high-energy-dense foods. This preference for high-energy-dense foods in a choice situation between high- *v.* low-energy-dense foods has also been seen in adolescents. A study by Pliner & Mann[46], in which information about the food choice (between high- or low-energy-dense snacks) of several fictitious peers was provided, showed that fictitious peers did not have an impact on participants' food choice; nearly all adolescents chose the high-energy-dense snacks. To date, research studies predominantly have examined

the influence of peers on unfamiliar low-energy-dense food intake, e.g. children were encouraged by a peer to try unfamiliar vegetables or fruits but without the presence of other food products such as snacks[32,33]. The findings of the present study might imply that when children have a choice between low- and high-energy-dense food products (e.g. vegetables *v.* snacks in school cafeterias), they will mainly choose high-energy-dense food products, regardless of what their peers choose. It might be wise to not focus on encouraging only the intake of low-energy-dense 'healthy' foods. Peer influence might be more effective when the rejection of high-energy-dense 'unhealthy' foods is also included. For example, a behaviour change programme of the Department of Health in the UK developed exciting DVD adventures of 'Food Dudes' (heroic cartoon characters) as part of its programme to encourage children to get acquainted with and eat (un)familiar fruits and vegetables[47]. The Food Dudes battle against the evil 'Junk Punks'. This approach was based on a study that found that children inhibited their food intake when paired with peers who made negative comments and did not eat the test food[24]. However, further research is needed to investigate positive as well as negative peer influence on food choice when different kinds of food are offered.

The present study was not without limitations. First, the study did not include a scale that measured the reluctance to eat (un)familiar foods. It is highly recommended to include a food neophobia scale in future research to, for example, investigate whether food neophobia interferes with peer influence. Second, the present study did not test the actual food intake of children. Previous literature showed that food preferences are a predictor of dietary intake[15,48] and the present study provided new insights into children's willingness to try a food product based on its name and appearance. Nevertheless, it would be interesting to replicate the present study and test actual food intake in a real-life setting. Third, the study sample consisted of mostly normal-weight participants. It would be interesting to replicate the present study to examine the impact of a fictitious peer on low- and high-energy-dense food choice in conjunction with weight status (i.e. normal weight *v.* overweight). Fourth, the confederate always chose either familiar or unfamiliar food products. Although real-life choices made by others might not be as uniform, children encounter 'role models' who are carrying out a rather one-sided health message (e.g. encouragement to eat 'healthy' fruits and vegetables) and they can choose to follow that person or not. The children's reaction to the confederate and his/her choices represent a realistic reflection of a real-life (health promotion) situation. Finally, hunger status was measured after the computer task. Children exposed to food pictures might have become hungrier during the experiment which might have affected their hunger rating. Although it is common in social modelling studies to measure hunger status after the experiment to conceal the actual purpose of the study to avoid demand characteristics[39,49], future studies should reconsider whether it is necessary to measure hunger status after the experiment when using this type of design.

In conclusion, the present study extended previous research by combining familiar and unfamiliar food choices with low- and high-energy-dense products. Although children have a natural tendency to choose familiar products, fictitious peers can influence them to choose unfamiliar food products. However, children are more willing to try high-energy-dense foods. The research area related to peer influence should broaden its scope to pay more attention to the negative as well as the positive impact of remote peers. Intervention programmes might profit from the use of long-term messages from remote peers to increase children's willingness to try (un) familiar healthy food products and reject (un)familiar unhealthy food products.

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British Journal of Nutrition

Appendix A.

Trials	Familiar	Unfamiliar
Block 1	Low-energy-dense	Low-energy-dense
1	Peas	Catjang peas
2	Cucumber	Fennel
3	Strawberry	Pomegranate
4	Peach	Pear-shaped guava
5	Red cabbage	Rhubarb
6	Red onion	'Schorseneren'
7	Maize	Bamboo sticks
8	Lettuce	Artichoke
9	Tangerine	Khaki
10	Apple	Indian fig
11	Pear	Passion fruit/maracuja
12	Cauliflower	Parsnip
Block 2	High-energy-dense	High-energy-dense
13	Almond paste cake	Scone
14	Doughnut	Churros
15	Filled 'speculaas'	Alfajores
16	Peanuts	Macadamia nuts
17	Cocktail nuts	Wasabi nuts
18	Chocolate-coated peanuts	Jelly beans
19	Marble cake	Indonesian cake ('spekkoek')
20	Noga	Turrón
21	Bitterbal	Empanada
22	Apple turnover	Baklava
23	Candy cane	Liquorice root
24	Chips	Cassava chips
Block 3	Low-energy-dense	High-energy-dense
25	Peas	Wasabi nuts
26	Cucumber	Churros
27	Strawberry	Jelly beans
28	Peach	Alfajores
29	Red cabbage	Cassava chips
30	Red onion	Turrón
31	Maize	Empanada
32	Lettuce	Baklava
33	Tangerine	Spekkoek
34	Apple	Macadamia nuts
35	Pear	Liquorice root
36	Cauliflower	Scone
Block 4	High-energy-dense	Low-energy-dense
37	Almond paste cake	Parsnip
38	Doughnut	Artichoke
39	Filled 'speculaas'	Rhubarb
40	Peanuts	Khaki
41	Cocktail nuts	Cactus fruit
42	Chocolate-coated peanuts	Passion fruit/maracuja
43	Marble cake	Catjang peas
44	Noga	Schorseneren
45	Bitterbal	Pear-shaped guava
46	Apple turnover	Fennel
47	Candy cane	Pomegranate
48	Chips	Bamboo sticks

British Journal of Nutrition