Situational appropriateness of beer is influenced by product familiarity

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ARTICLE INFO

ABSTRACT

Explicit account of contextual variables can enhance the ability to understand and predict consumers' food-related behavior. One aspect that has hitherto received little attention is whether context equally affects familiar and unfamiliar food products. The matter is investigated in four consumer studies ($N = 76$, $N = 97$, $N = 93$, and $N = 145$), using beer images varying in familiarity as test stimuli. Using the situational appropriateness framework, we derived a quantitative characterization of product – context associations, revealing major differences between beers. The data analysis showed a two-dimensional product space that separated beers according to familiarity and beer styles. Familiar beers were primarily considered appropriate for refreshments and while attending sport events, while novel ones were perceived as more self-indulgent and appropriate for dining events and special occasions. These associations were robust across studies, suggesting that contextual evaluations are important in this product category. The level of familiarity strongly correlated with usage versatility, and significantly affected the perceived appropriateness for specific usage-contexts, possibly acting as a cue to infer product quality and performance.

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Introduction

Situational appropriateness and food-related consumer behavior

Consumer research has long maintained that explicit account of contextual variables can enhance the ability to understand and predict behavior (Belk, 1974, 1975; Sandell, 1968). Specifically within food-oriented consumer research (Meiselman, 2008), a growing number of studies have demonstrated that both preference and choice of food and beverages are affected by a variety of contextual influences, including social influences (Ariely & Levav, 2000; de Castro, 1991), environmental factors (Bell & Meiselman, 1995; Bell, Meiselman, Pierson, & Reeve, 1994; de Graaf et al., 2005; Edwards, Meiselman, Edwards, & Lesher, 2003; Meiselman, Johnson, Reeve, & Crouch, 2000), temporal aspects (Kramer, Rock, & Engell, 1992; Rozin & Tuorila, 1993), and accompanying meal items (Hersleth, Mevik, Næs, & Guinard, 2003; Moskowitz & Klarman, 1977). Awareness that consumers behave differently in different situations have prompted the development of a number of methodological approaches based on contextual segmentation, i.e., on identification of perceived product benefits across different situations (Dubow, 1992; Jaeger, Bava, Worch, Dawson, & Marshall, 2011; Jaeger, Marshall, & Dawson, 2009; Köster & Mojet, 2006). Of particular relevance within this stream of research is the approach based on judgments of situational appropriateness originally proposed by Schutz (Cardello & Schutz, 1996; Schutz, 1988, 1994), who adapted a basic anthropological technique (Stefflre, 1971) for application in food studies. Briefly, consumers evaluate products and usage situations simultaneously, essentially being asked how well a product (or a set of products) would fit each of the given usage contexts (varying in e.g., time of the day, location, presence of others, etc.). The appropriateness framework has been utilized over the years with a variety of product categories, to study the effect of different intrinsic and extrinsic aspects of foods – such as different sensory intensity levels, nutritional and label information, packaging and processing (e.g., Bruhn & Schutz, 1986; Jack, Piggott, & Paterson, 1994; Jaeger, 2000; Lähteenmäki & Tuorila, 1997; Resurreccion, 1986; Schutz, Cardello, & Winterhalter, 2005) – and established itself as a simple methodology to investigate perceptions of food products as defined by usage contexts.

The role of product familiarity

In spite of the growing attention given to the effects of contexts in food research, there is still need of research addressing some

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unexplored aspects. With regards to situational appropriateness, one aspect that has received little attention to date is how such judgments are influenced by consumer's degree of familiarity with food products, in spite of suggestive evidence in this direction. For example, in a study comparing consumers' perceptions of familiar versus novel fruits, Jaeger, Rossiter, and Lau (2005) observed that consumers could not readily think of situations in which they would use novel fruits, and suggested that choice of fruit may be driven by product familiarity. King and colleagues (King, Meiselman, Hottenstein, Work, & Cronk, 2007) explicitly suggest that future attention be given, among other things, at what foods are more likely to be susceptible to contextual influences and whether this is related to initial level of product familiarity.

Product familiarity can be defined as the evaluative judgment that a consumer makes regarding his/her subjective knowledge about a product (Park & Lessig, 1981; Raju, 1977). Familiarity is related to the amount of previous exposure with the focal product, and has been found to be strongly related to product typicality, i.e., the degree to which a product is representative of its overall category concept (Schwanenflugel & Rey, 1986). In general, consumers tend to be somewhat reluctant to try very novel and unfamiliar products. This reluctance stems from lack of understanding of the product's value and potential usage, and from aversion to the learning costs associated with effectively using a new product (Mukherjee & Hoyer, 2001; Shugan, 1980). While for familiar products, a consumer can easily retrieve relevant characteristics and determine whether that product is appropriate for an intended use more or less irrespective of context and external elements (Goodman, Broniarczyk, Griffin, & McAlisher, 2013), the same task is more difficult for unfamiliar products. For unfamiliar products, contextual elements can provide a frame of reference with regards to possible usages, for example, by orienting consumers' attention towards particular features that may be of salience in relation to usages in a given context (Herr, 1989; Hoeffler, 2003; Ratneshwar & Shocker, 1991; Veryzer, 1998; Warlop & Ratneshwar, 1993). Accordingly, extant literature in consumer research suggests that contextual influences might be more relevant for consumers' choice of novel/unfamiliar products, particularly because contexts have been shown to facilitate consumers' cognitive categorization of unfamiliar items. Evidence for this argument emerged also in the field of food choice and acceptance. For example, Tuorila, Meiselman, Cardello, and Lesher (1994), and Mielby and Frøst (2010) demonstrated that providing verbal information (as part of a context manipulation) increased the acceptability of unfamiliar food dishes. Conversely, other authors have suggested that acceptance and choice of familiar and well-liked foods might be relatively less influenced by specific consumption contexts (King, Weber, Meiselman, & Lv, 2004; King et al., 2007).

Aims of the research

There is hitherto little understanding of the role of product familiarity plays in consumers' judgments of situational appropriateness of food and beverages. Gaining such knowledge would be beneficial both from a theoretical standpoint – i.e., furthering the concept of situational appropriateness by including another product-relevant dimension – and from a practical standpoint – i.e., aiding food companies with the positioning of new food products, since judgments of situational appropriateness influence how consumers form consideration sets (Johnson & Lehmann, 1997; Ratneshwar & Shocker, 1991).

The present research starts to fill this gap by focusing on a case study: situational appropriateness of beers varying in degree of familiarity, evaluated by New Zealand consumers. Beer lends itself very well as a case study; past research has established that a number of contextual influences have an impact on hedonic appreciation

and choice of this popular beverage (Allison & Uhl, 1964; Caporale & Monteleone, 2004; Coquillat et al., 2009; Hajdu, Major, & Lakner, 2007; Lee, Frederick, & Ariely, 2006; Mohr et al., 2001; Sester et al., 2013). Further, beer is a very traditional product in New Zealand (it accounts for 63% of all available alcohol for sale (Carroll, 2011), and is therefore particularly suited for exploring consumers' product use evaluations (Caporale & Monteleone, 2004; Sester, Dacremont, Deroy, & Valentin, 2013). Finally, the need for further studies investigating the role of familiarity in shaping consumers' contextual evaluations of beer has been recently brought to attention (Giacalone, Duerlund, Bøegh-Petersen, Bredie, & Frøst, 2014; Sester et al., 2013).

The specific objectives of this research were:

Obj. 1: To explore contextual evaluations of beers varying in familiarity. It is anticipated that different beers will be associated with different usage contexts, and that these associations can be harnessed by the situational appropriateness approach in a reliable (i.e., repeatable across studies) way.

Obj. 2: To study the role of product familiarity as a moderating factor for these associations. Because familiar products are encountered more easily by consumers, we expect familiarity to be linked to *versatility*, defined as the total number of usage contexts for which a given beer will be perceived as appropriate (Ratneshwar & Shocker, 1991). On the other hand, different contexts may trigger a different degree of novelty seeking, so we expect familiar and unfamiliar beers to be associated to different usages.

Materials and methods

These objectives were investigated across four consumer studies, all of which were similarly structured.

In order to facilitate a quantitative characterization of product–contexts associations, a questionnaire was designed using beer images and names as stimuli. Vision is the most important sensory modality at the point of purchase, suggesting that product appearance is a significant cue for assessing the perceived usage appropriateness of products (Creusen & Schoormans, 2005; Fenko, Schifferstein, & Hekkert, 2010; Mugge & Schoormans, 2012a). Further, this stimulus format has been employed effectively in extant research on the same topic (e.g., Jaeger et al., 2005; Raats & Shepherd, 1992; Sester et al., 2013), and is known to enhance external validity of consumers' evaluations in product categories that depend strongly on visual inspection (Jaeger, Hedderley, & MacFie, 2001; Vriens, Loosschilder, Rosbergen, & Wittink, 1998). For each beer image shown, consumers evaluated appropriateness for different contexts and perceived familiarity, and the information was related via correlational measures. Relevant usage contexts were chosen according to existing classifications of situational variables affecting food choice and acceptance (Bisogni, Winter Falk, & Madore, 2007; Blake, Bisogni, Sobal, Devine, & Jastran, 2007; Meiselman, 2008): *locations* – including the general location (e.g., at home, at a restaurant, etc.), and the specific place within the location (e.g., at home in front of the TV), *occasions* (e.g., at a rugby match, at a concert), *social surroundings* (e.g., for guests, to impress someone), *physiological processes* (e.g., as a thirst-quencher) and *mental processes* (e.g., as a treat for myself).

Study 1

Participants

Participants were a convenience sample of consumers from the general population in Auckland (N = 76, 50% women, aged 18–60), recruited based on their availability and willingness to participate.

Fig. 1. Product images used as stimuli in Study 1. Product codes used throughout the paper are indicated into brackets. Additional product information reported (beer style, alcohol by volume and price) was not visible to consumers during the study.

Choice of stimuli

Images of nine commercially available NZ beers were selected as stimuli (Fig. 1). Stimulus elements included a picture of the beer (11 × 4 cm high-quality color photograph), the name of the product and the name of the producer. The nine beers were chosen to represent three different levels of familiarity – low, medium and high – pre-assessed based on pilot test results (N = 12). All selected beers were produced in New Zealand, in order to control for possible biases due to diverse meanings associations related to the country of origin (Donadini & Fumi, 2010; Luomala, 2007).

Data collection

Relevant usage contexts were identified based on previous studies (Belk, 1975; Dubow, 1992; Hajdu et al., 2007; Marshall & Bell, 2003; Nantachai, Petty, & Scriven, 1991–1992; Schutz, 1988), and used either verbatim or with some modifications aimed to better capture the local (viz., New Zealand) context. Pre-testing (N = 12) of the questionnaire was carried out to assess the layout and the wording of the context items. Subjects who helped with piloting the ballot were also asked to state whether they felt some relevant usage contexts were missing and whether some of the existing ones were redundant or never appropriate for beer, and their suggestions helped shaping the final ballot. The following 15 usage contexts were included in Study 1: *As a gift for someone* (Gift),[2] *As a treat for myself* (Treat), *At a BBQ with friends* (BBQ), *As a thirst-quencher* (Thirst-quench.), *At a fine-dining restaurant* (Fine dining), *At a music concert* (Concert), *At a party* (Party), *At a public house* (bars, pub, etc.) (Pub House), *At a rugby match* (Rugby), *At work for Friday drinks* (Work), *On a camping or fishing trip* (Camping/fishing), *To celebrate an achievement* (Achievement), *To serve to guests* (Guests), *Watching TV at home* (TV), *With a snack* (Snack).

Appropriateness evaluation were elicited with a checklist task in which consumers were asked to look at a beer image, and tick all the usages they perceived that beer to be appropriate for. Note that this format differs from earlier applications of the item-by-use appropriateness, in which consumers rate the perceived appropriateness on category scales (usually, 7 points scales anchored at 1 = "never appropriate" and 7 = "always appropriate"). The *rationale* for adopting a check-all-that-apply (CATA) format owed to (1) CATA questions being quicker to administer and less cognitively burdensome for the respondents (Krosnick, 1991, 1999; Sudman & Bradburn, 1992), and to (2) recent methodological research suggesting that this method produces (at an aggregate level) results that are to a high extent equivalent to rating techniques (Bruzzone, Ares, & Gimenez, 2012; Reinbach, Giacalone, Ribeiro, Bredie, & Frøst, 2014).

Presentation order of the beers was randomized across participants. The order of the usage contexts on the ballot was also randomized, in order to minimize primacy and order biases (Ares & Jaeger, 2013). For practical reasons, randomization was carried out only *between* (but not *within*) subjects. Additionally, participants rated the perceived product familiarity of each beer on a 5-pts scale with end-points anchors (1 = *not at all familiar*, 5 = *extremely familiar*, as in Raju, 1977). At the end of the ballot, they answered some background questions regarding their demographic information and their beer consumption patterns.

Studies 2A and 2B

A second set of two experiments was designed to replicate the results of the Study 1 and increase their independence from the

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[2] Abbreviation used in tables and figures.

experimental conditions. The goal of these two studies, both of which maintained the same methodological approach used in Study 1, was to verify whether the same patterns of product–context association could be observed with a different product set and a different wording of the usage contexts (Schuman & Presser, 1981). Additionally, in Study 2B, we restricted the stimuli set to beers with homogeneous profiles in order to better separate the "true" familiarity effect from potentially distracting elements such as expectations about price, taste and availability, as well as personal preferences for certain beer styles.

Participants

Participants (N_{2A} = 97, 66% women; N_{2B} = 93; 60% women) were recruited in Auckland New Zealand and received cash compensation for their time. They were aged 18–60 years old and self-identified as Caucasian. They completed the questionnaire as an add-on to a central location test (CLT) that investigated consumers' responses to a range of foods and beverages.

Choice of stimuli

As in Study 1, pilot work was conducted to ensure that the selected stimuli sufficiently spanned a range between familiar and unfamiliar beers. The set of beer images used in the second study is reported below (Figs. 2A and 2B).

In Study 2A (as in Study 1) beers varied over beer styles and included both craft beers and standard lagers. In contrast, all beers included in Study 2B were pale lagers, with an alcohol by volume between 4% and 5%, a price ranging from 0.38 to 0.66 NZD per 100 ml. All were brewed by the three largest breweries in New Zealand, and were commercially available in major NZ retail outlets at the time of the study.

Data collection

The data were collected in a sensory laboratory facility designed in accordance with ISO 8589 (1988). The questionnaire format was identical to Study 1. The following contexts were included: *As an alternative to wine* (Altern. Wine), *As a drink for women* (Women), *Anytime* (Anytime), *At a casual dining restaurant* (Casual dining), *At a pub* (Pub), *At a sport event* (Sport event), *At home* (Home), *At parties* (Parties), *For a special occasion* (Special occasion), *To drink alone* (Alone), *To impress someone* (Impress), *When I want something different* (Different), *When I want something refreshing* (Refreshing), *When I want to relax* (Relax).

Study 3

Although the variation in stimuli sets and context wording across the studies added robustness to the findings, all formats used verbal description to convey contexts to the participants. As highlighted by Jaeger et al. (2001), the extent to which substantive conclusions can be drawn from consumers' judgments may be dependent on presentation format and, in particular, on whether verbal description or images are presented during the task. While the former are generally more prone to be interpreted differently by different consumers, the latter are expected to increase the realism of the task and the ecological validity of the elicited judgments. Accordingly, it was considered prudent to conduct a study using pictorial images to evoke contexts, to explore whether the results would differ from those based on verbal descriptions (Jaeger et al., 2001; Vriens et al., 1998).

Participants

Participants (N = 145, 56% women) were recruited by a marketing research provider and received cash compensation for

Fig. 2a. Product images used as stimuli in Study 2A. Product codes used throughout the paper are indicated into brackets. Additional product information reported (beer style, alcohol by volume and price) was not visible to consumers during the study.

Fig. 2b. Product images used as stimuli in Study 2B. Product codes used throughout the paper are indicated into brackets. Additional product information reported (beer style, alcohol by volume and price) was not visible to consumers during the study.

their time. All of them lived in Auckland, New Zealand, were self-identified as Caucasian, and were aged 18–60. As in Studies 2A and 2B, they completed the questionnaire as an add-on to a CLT sensory study focused on sensory acuity and food acceptability.

Choice of stimuli

In order to facilitate comparisons with the previous studies, a subset of previously used beer images were used as stimuli. H1 (used in Studies 1, 2A and 2B), H5 (2A) and H6 (2B) were selected in the familiar category. M1 (1 and 2A), M2 (1) and M8 (2B) were included as the moderately familiar beers. Finally, L1 (1 and 2A), L6 (2B) and L8 (2B) represented the unfamiliar product category.

Data collection

Except for the use of pictorial images, data collection procedures were identical to the previous studies. Nine usage contexts were depicted: *A BBQ in the summer* (Summer BBQ), *As a drink for women* (Women), *As an alternative to wine for dinner* (Alt. Wine), *Having a drink at a pub* (Pub), *Having dinner at a casual restaurant* (Casual dining), *On a camping trip* (Camping trip), *Rugby fans having a beer before the game* (Rugby fans), *Watching a rugby game on TV at home* (Rugby on Tv), *While relaxing on a hammock* (Hammock). A sample of the images used is shown in Fig. 3 (the remaining images are given in the Appendix to the online version). As shown in Fig. 3, verbal descriptions of usage contexts were supplied under each image to facilitate consumers' understanding of the elicited contexts. Correspondence between the chosen images and the respective descriptions was previously assessed during pilot work.

As an alternative to wine for dinner

Watching a rugby game on TV at home

Fig. 3. Sample images used for visual elicitation of contexts in Study 3.

Data analysis

The same set of data analytical procedures was carried out for each of the three studies. All analyses were performed within the R environment for statistical computing (R Development Core Team, 2010).

Manipulation checks for variation in product familiarity of beer stimuli

To assess whether the intended variation in product familiarity was achieved, an analysis of variance (ANOVA) on mean product and brand familiarity ratings was conducted using the following model:

$$Y_{in} = \mu + P_i + \alpha_n + \varepsilon_{in}$$

where Y_{in} is the (in)th observation of familiarity rating, μ is the general mean, P_i is the main product effect ($i = 1,\ldots,9$), α_n is the random effect of consumers, and ε_{in} is the error term. Pairwise mean comparisons were performed following ANOVA by Tukey's HSD test, to uncover which pairs of products differed from each other. Results showed that the beers were clearly differentiated in familiarity (Study 1: $F_{(8,600)} = 101.04$; $p < 0.001$; Study 2A: $F_{(8,768)} = 230.4$; $p < 0.001$; Study 2B: $F_{(8,735)} = 106.3$; $p < 0.001$; Study 3: $F_{(8,1296)} = 135.8$; $p < 0.001$). As intended, three groups of products with different degree of familiarity were identified (Table 1): a high familiarity group (H1,...,H6), a medium-familiarity (M1,...,M8), and a low familiarity group (L1,..., L8).

Analyses pertaining to Obj. 1: product–contexts associations

The first set of analyses aimed at investigating how consumers classified beers according to perceived appropriateness in given usage contexts (Obj. 1). To this end, consumers' responses to the usage contexts were coded as binary (1 = presence, 0 = absence) and organized in a matrix crossing consumers, products and context. Frequency of use of each usage context was determined by counting the number of consumers that checked that context as appropriate for that product. The data were then rendered into cross tabulation matrices displaying the frequency distribution of each beer in the usage contexts listed in the ballot. Correspondence analysis (CA, Greenacre, 1993) was applied to this matrix to extract and visualize the main data structure into a lower dimensional subspace. Mean ratings of product familiarity were used as supplementary variable in the model. This analysis allowed us to visualize the main patterns of product–contexts association on the correspondence map.

CA is an exploratory technique not suitable for statistical testing. Thus, Cochran's Q test (Manoukian, 1986) was carried out separately on an unfolded matrix crossing consumers and contexts, in order to identify significant differences between products for each of the usage contexts included. Briefly, Cochran's Q test is a non-parametric statistical test used when the response variable can take only two possible outcomes (0/1), in order to verify whether k treatments have identical effect. Its test statistic Q is defined as follows:

$$Q = k(k-1)\frac{\sum_{j=1}^{k}\left(X_j - \frac{N}{k}\right)^2}{\sum_{i=1}^{b}X_i(k-X_i)}$$

where k is the number of products, X_j is the column total for the jth product, b is the number of consumers, X_i is the row total for the ith consumer, and N is the grand total. This test was carried out on an context-by-context basis. Where significant differences were found, pairwise multiple comparisons were made by applying Cochran's Q test for all possible product combinations.

Analyses pertaining to Obj. 2: relationships between familiarity and appropriateness

The second data-analytical step concerned the relationships between product familiarity and appropriateness (Obj. 2). To investigate the expected link between familiarity and versatility, it was suitable to model the number of appropriate contexts (rendered as an additional column with a count of how many usage contexts a consumer had checked per each beer) given the product familiarity rating. Due to both the nature of the response variable (counts) and evidence of a multi-modal distribution in the data, ordinary fitting with the least squares approach was unviable. A common way to deal with this distributional problem is to use Poisson regression. However, because of a large number of 0s in the response variable, negative binomial regression (a generalization of Poisson regression that has an extra parameter to model over-dispersion – see Greene, 2003) was used.

Finally, we were interested in relating the degree of familiarity with the situational appropriateness of *specific* usage contexts. As customary when modeling binary dependent variables, we used logistic regression for each of the contexts:

$$\text{logit } p = \alpha + \beta x_i \quad \text{for } x_i = 1, 2, \ldots, n$$

where logit p (which is equal to $[\log(p/(1-p)]$ is the link function that transform the linear regression output into a form suitable for probability estimation, α is the intercept, β the regression coefficient, x_i is the familiarity rating, and n is the number of consumers.

Logistic regression was used to estimate the probability of a usage context to be selected given the product familiarity. For each usage context, the resulting odds ratios (O.R. – the exponential function of the b coefficient of the respective logistic regression model) can therefore be interpreted as follow (Hailpern & Visintainer, 2003):

O.R. = 1   Familiarity is *unrelated* to the odds of this context being selected.
O.R. > 1   Familiarity is associated with *higher* odds of this context being selected.
O.R. < 1   Familiarity is associated with *lower* odds of this context being selected.

Table 1
Means and standard deviations of product familiarity ratings (1 = not at all familiar, 5 = extremely familiar) across the four studies. Products appear in descending order of rated familiarity. Means not sharing superscript letters are significantly different (Tukey $p \leqslant 0.05$). Refer to Figs. 1, 2A and 2B for product names.

Study 1 (N = 76)		Study 2A (N = 97)		Study 2B (N = 93)		Study 3 (N = 145)	
Beer	Familiarity	Beer	Familiarity	Beer	Familiarity	Beer	Familiarity
H1[a]	4.3 ± 0.9	H4[a]	4.2 ± 1.0	H1[a]	3.8 ± 1.2	H1[a]	4.4 ± 0.9
H3[a]	4.3 ± 1.0	H5[a]	4.1 ± 1.1	H6[a]	3.7 ± 1.3	H6[a]	4.2 ± 1.0
H2[a]	4.1 ± 1.2	H1[a]	4.0 ± 1.0	H4[a]	3.1 ± 1.5	H5[a]	4.0 ± 1.3
M1[b]	3.2 ± 1.5	M5[b]	2.8 ± 1.3	M8[b]	2.6 ± 1.2	M8[b]	2.9 ± 1.4
M2[b]	3.0 ± 1.5	M1[b]	2.8 ± 1.2	M6[b,c]	2.3 ± 1.3	M1[b,c]	2.8 ± 1.4
M3[b]	2.7 ± 1.6	M4[c]	2.2 ± 1.2	M7[b,c]	2.3 ± 1.3	M2[b,c]	2.7 ± 1.4
L3[c]	1.7 ± 1.3	L1[d]	1.6 ± 1.3	L6[c]	1.9 ± 1.2	L6[c]	2.5 ± 1.5
L2[c]	1.7 ± 1.3	L5[d]	1.2 ± 0.6	L7[d]	1.3 ± 0.7	L8[d]	1.3 ± 0.8
L1[c]	1.5 ± 1.1	L4[d]	1.1 ± 0.5	L8[d]	1.1 ± 0.5	L1[d]	1.1 ± 0.6

Results

Contextual evaluations of novel and familiar beers (Obj. 1)

Correspondence analysis applied to the cross tabulation matrices (containing situational appropriateness judgments) was used to address the first objective of this research, i.e., to illustrate consumers' associations between products and usage contexts (Figs. 4A–4D).

The scree plot for eigenvalues suggested that, in all four studies, a bi-dimensional solution optimally described the perceptual dimensions common to most people. All models achieved a very high cumulative retention of the original variance within the first two CA dimensions (Study 1: 93%, Study 2A: 92.7%, Study 2B: 83%, Study 3: 93.5%). This indicated a strong underlying variance structure, implying that different beers were clearly associated with different contexts. Accordingly, Cochran's Q test uncovered significant differences between the beers for all the contexts ($p < 0.05$), with the exception of the context *To drink alone* in Study 2B (detailed results can be found in the online Appendix to this paper).

Visual inspection of the CA plots revealed that, in all studies, the beers appeared to be ranked by familiarity along the first CA dimension, with the high familiarity beer cluster (i.e., "H" beers) in the left quadrants, the moderate familiarity cluster (i.e., "M" beers) towards the center of the plot, and the low familiarity cluster (i.e., "L" beers) in the right quadrants. This was confirmed by the vector direction of the supplementary variable *Product familiarity*.

Concerning the most important contextual associations, the primary association with familiar beers was that they are appropriate for sport events. This is possibly as a result of the respective breweries' active involvement in major New Zealand sports team (e.g., Steinlager's long standing sponsorship of the *All Blacks* Rugby Union team). Familiar beers were also considered as appropriate for usages such as at parties, concerts, while watching TV and for camping trips. The context *anytime*, included in two studies, was also associated with this cluster of beers (cf. Figs. 4B and 4C).

Unfamiliar beers tended to be associated to contexts such as *to impress someone*, *for special occasions*, *as an alternative to wine*, *for restaurant dining*, and *for women*. Results across studies are summarized in Table 2.

The second CA dimension, although much less discriminating than the first, highlighted product–context associations beyond the familiar-novel separation, mostly related to various extrinsic factors. For example, in Study 2A, the second dimension

discriminated beers with regard to their thirst-quenching character, in line with the general association of green bottle color with the expected refreshing character of beverages (Zellner & Durlach, 2003). In Studies 2B and 3, the second dimension captured variation in appropriateness as a drink for women. In Study 2B the direction was driven by product L7, which is designed to resemble a soft-drink. In Study 3 this was due to product M2, a dark lager called "Black beer", being rated as significantly less appropriate for women as the rest, possibly because of culturally-determined associations of black with masculinity (e.g., Ellis & Ficek, 2001).

A further aim of Obj. 1 was to evaluate the robustness of product–context associations evaluated by the situational appropriateness constructs. Table 2 summarizes the factorial structure obtained in the four studies. Elements of consistency across the studies were evident, particularly with regards to contexts that were correlated with the first component. In Table 2, this can be quite readily assessed by comparison of Studies 2A and 2B. Furthermore, two products (H1 and H4) were purposefully included in these studies to enable a diagnostic check. As the exact same ballot was used, a quantitative assessment of whether these two products would have the same context associations in both studies was carried out by Fisher's exact test. Out of 30 comparisons, the only significant difference between the two studies was observed for product H4 and the usage *As an alternative to wine* ($p = 0.034$). Overall, the results indicate an inherent robustness of these product–context associations.

Relationships between situational appropriateness and product familiarity (Obj. 2)

The second aim of this research (Obj. 2) looked more specifically at the relationships between familiarity and perceived appropriateness. First, we considered the link between familiarity and product versatility, operationalized as the total number of checked contexts per beers. On average, consumers checked 5.3 (±4) usage contexts in Study 1, 4.9 (±3.6) in Study 2A, 4.9 (±3.5) in Study 2B, and 5.4 (±2.3) in Study 3. Across all studies, negative binomial regression revealed that product familiarity significantly predicted the number of usage contexts perceived as appropriate by consumers (Study 1: $b = 0.18$, $z_{(683)} = 10.6$, $p < 0.001$; Study 2A: $b = 0.17$, $z_{(872)} = 10.6$, $p < 0.001$; Study 2B: $b = 0.12$, $z_{(835)} = 7.4$, $p < 0.001$; Study 3: $b = 0.06$, $z_{(1304)} = 8.8$, $p < 0.001$). Although effect sizes were small (Maximum Likelihood Pseudo $R^2_{(Study\ 1)} = 0.14$; $R^2_{(Study\ 2A)} = 0.11$; $R^2_{(Study\ 2B)} = 0.07$; $R^2_{(Study\ 3)} = 0.06$), these results clearly support the expected link between familiarity and usage versatility for beers.

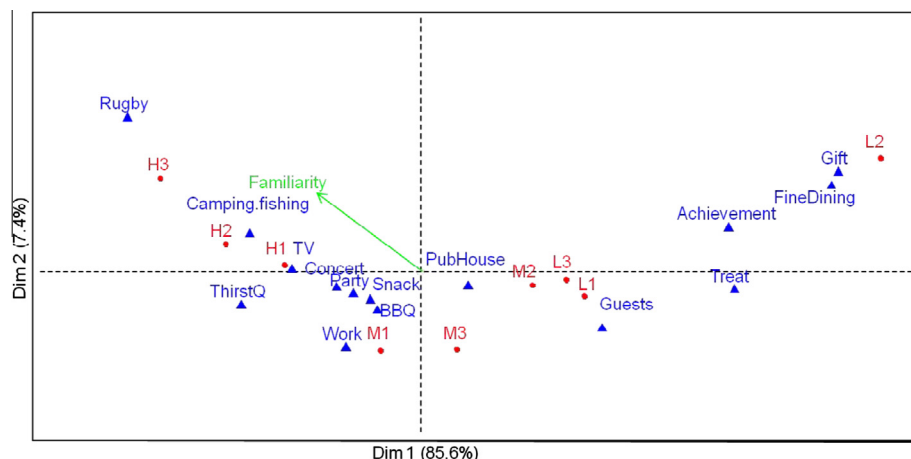**Fig. 4a.** First two dimensions of the correspondence analysis showing associations between products and usage contexts (Study 1).
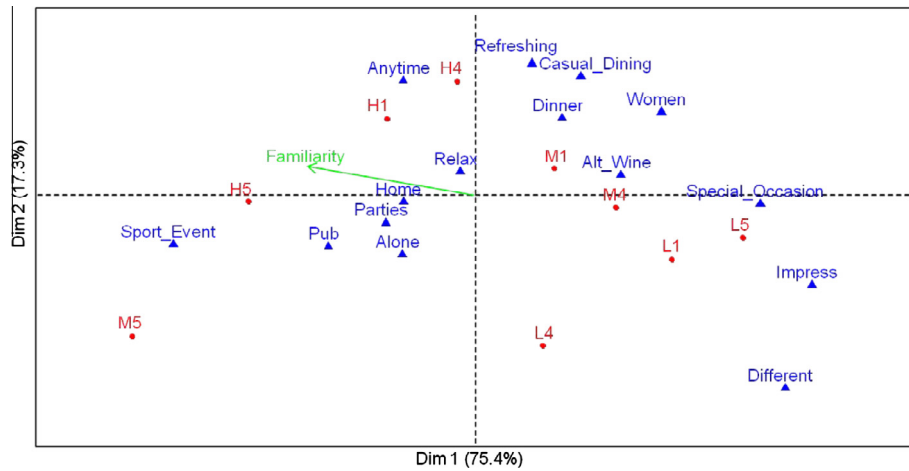
Fig. 4b. First two dimensions of the correspondence analysis showing associations between products and usage contexts (Study 2A).
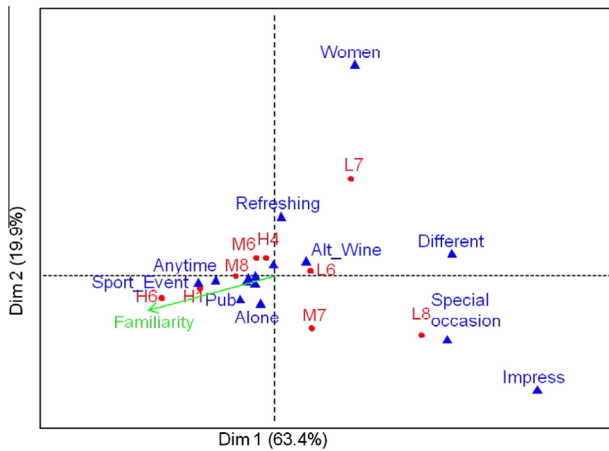

Fig. 4c. First two dimensions of the correspondence analysis showing associations between products and usage contexts (Study 2B). Labels for four variables have been omitted to increase legibility.
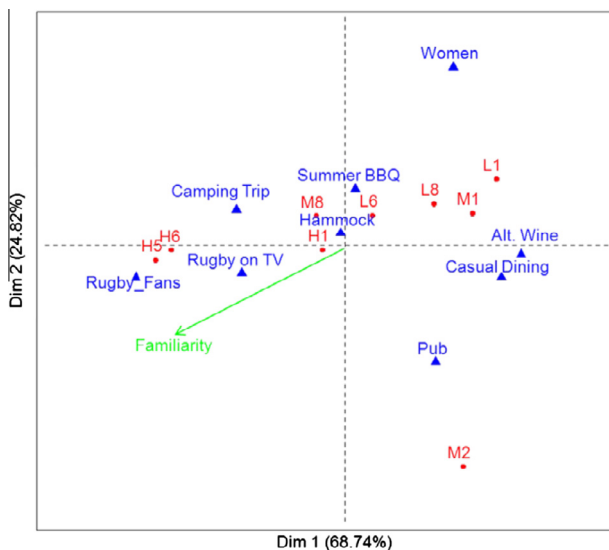

Fig. 4d. First two dimensions of the correspondence analysis showing associations between products and usage contexts (Study 3).

Table 2
Rank order of factor loadings for the five highest weighted usage contexts across on the first two CA dimensions. The correlation of the product familiarity vector with the CA dimension is also reported.

Study 1			
Dimension 1 (85.6%) Prod. familiarity (−0.18)		Dimension 2 (7.4%) Prod. familiarity (0.12)	
Positive	Negative	Positive	Negative
As a gift	Rugby match	Rugby match	Work
Fine dining	Thirst-quenching	As a gift	BBQ
Treat	Camping/fishing	Fine dining	With a snack
Achievement	TV	Achievement	Treat
Guests	Concert	Camping/fishing	Party
Study 2A			
Dimension 1 (75.4%) Prod. familiarity (−0.27)		Dimension 2 (17.3%) Prod. familiarity (0.05)	
Positive	Negative	Positive	Negative
Impress	Sport event	Refreshing	Different
Different	Pub	Casual dining	Alone
Special occasion	At parties	Anytime	Impress
Alternative to wine	Alone	Women	Pub
Women	Anytime	Dinner	Sport event
Study 2B			
Dimension 1 (63.4%) Prod. familiarity (−0.27)		Dimension 2 (19.9%) Prod. familiarity (−0.09)	
Positive	Negative	Positive	Negative
Impress	Sport event	Women	Impress
Different	Anytime	Refreshing	Special occasion
Special occasion	At home	Different	Alone
Women	Pub	Alterative to wine	Pub
Alternative to wine	Dinner	Casual dining	Relax
Study 3			
Dimension 1 (68.7%) Prod. familiarity (−0.21)		Dimension 2 (24.8%) Prod. familiarity (−0.16)	
Positive	Negative	Positive	Negative
Alternative to wine	Rugby Fans	Women	Pub
Casual dining	Camping trip	Summer BBQ	Rugby on TV
Women	Rugby on TV	Camping trip	Rugby fans
Pub	On a hammock	On a hammock	Casual dining

Relationships between product familiarity and appropriateness in specific situations were studied by logistic regression; results from all studies are reported in Table 3. Recall that this analysis essentially models the probability that a consumer would select any given context as appropriate for each value of product familiarity. Inspecting Table 3 confirm the patterns so far observed, showing that familiar beers are more likely to be perceived appropriate in many situations (13 out of 15 usage contexts in Study 1, 12 out of 15 in Studies 2A and 2B, and 8 out of 9 in Study 3). Of these, sport-related events emerged across all studies as the situation were a familiar beer would be most appropriate, (almost 2 times more likely for every 1-point increase in familiarity). Using beer as a refreshment/thirst-quencher was also quite strongly associated with product familiarity (Study 1, to a lesser extent in Studies 2A and 2B), and so was a range of away-from-home locations, in particular at a camping or fishing trip (Studies 1 and 3) and during parties (Studies 1, 2A and 2B). Importantly, familiarity also increased the likelihood of a beer being appropriate as a multi-purpose beverage (cf. the usage *Anytime* in Studies 2A and 2B), indirectly supporting the results of the negative binomial regression. Conversely, unfamiliar beers were (slightly) more likely to be perceived as appropriate in only a few situations – *At a fine dining restaurant*, *As a Gift* (Study 1), *To impress someone*, *When I want something different*, and *For a special occasion* (Studies 2A and 2B) – possibly indicating that those situations might trigger a variety seeking behavior and a desire for product novelty.

A last remark concerning Table 3 is that, although many significant effects were established, the relatively narrow range of odds ratios ($0.77 \leqslant O.R. \leqslant 1.94$) suggests that the level of product familiarity *per se* (i.e., without co-variation with other product characteristics) has a limited effect on perceived appropriateness.

General discussion

The first aim of this work was the application of the situational appropriateness framework to explore consumers' associations between products and contexts (Obj. 1). Results of all four studies indicate that consumers perceived the beers as significantly different in appropriateness across different usage contexts, supporting the notion that beer choice and consumption decisions may be context-dependent (Hajdu et al., 2007).

In all studies, the main opposition was between beers appropriate especially for consumption at sports events and outdoor activities versus those associated with more formal social occasions. These two poles corresponded summarily to a divide between products that consumers were familiar with versus novel ones. In general, the results indicated that the product appearance strongly direct the situational appropriateness for specific usages (e.g., the color green enhanced appropriateness as thirst-quencher). An interesting result was that, in a study where differences in product category were controlled for (Study 2B), the resulting factorial structure was very similar to the other studies. This indicates that product appearance provides substantial opportunities for product differentiation, and that even beers of the same type have the potential to deliver on rather different usage contexts.

Generally, the contextual evaluations appeared to be stable and robust (*viz.* repeatable across studies). This result is important for two reasons. First, it confirms that the situational appropriateness is a workable approach for eliciting *substantive* product–context associations from consumers. Secondly, it means that these associations are widely held by consumers (particularly since a between-subject design was employed), which makes them relevant from a marketer perspective. A product appearance that clearly communicates perceived usages can be expected to simplify consumers' information processing and direct consumers' choices in the market place. Additionally, advertising strategies consistent with existing consumer perceptions could be also identified based on product–context associations.

A major focus of this research was the importance of familiarity in structuring product–context associations (Obj. 2). Our expectations were that familiar products would be more often cited as appropriate in the majority of usage contexts, and that familiar and novel products would be associated to different usage contexts. In line with these expectations, an opposition between familiar vs. unfamiliar beers arose in all studies, highlighting both quantitative and qualitative differences between these two product groupings.

A significant effect of familiarity on usage versatility was observed across all studies. Consumers perceived familiar beers to be appropriate for most uses and probably less context-dependent overall (see e.g., the use of the context "anytime" in Studies 2A and 2B), while unfamiliar beers were more specifically tied to

Table 3
Logistic regression results (Studies 1, 2A, 2B and 3) for individual usage contexts, ranked by odd ratio size (O.R. are obtained by raising *e* to the power of the logistic regression coefficient).

Context	Study 1 (N = 76) O. R.	Context	Study 2A (N = 97) O. R.	Context	Study 2B (N = 93) O. R.	Context	Study 3 (N = 145) O. R.
Effect of product familiarity on perceived appropriateness for each context: odd ratios from logistic regression							
Rugby	1.72[***]	Sport event	1.94[***]	Sport event	1.60[**]	Rugby fans	1.55[***]
Thirst-quench	1.63[***]	Anytime	1.66[***]	Anytime	1.42[***]	Rugby on TV	1.45[***]
Camping/fish	1.63[***]	Pub	1.65[***]	Parties	1.40[***]	Camping trip	1.33[***]
TV	1.51[***]	Parties	1.61[***]	Alone	1.39[**]	Hammock	1.18[***]
Snack	1.51[***]	Home	1.46[***]	Relax	1.37[***]	Summer BBQ	1.18[***]
Concert	1.49[***]	Refreshing	1.40[***]	Dinner	1.36[***]	Women	1.10[**]
Work	1.44[***]	Relax	1.35[***]	Home	1.36[***]	Altern. to wine	1.10[n.s.]
Party	1.40[***]	Casual dining	1.32[***]	Pub	1.32[***]	Pub	1.10[n.s.]
BBQ	1.40[***]	Dinner	1.27[***]	Refreshing	1.18[***]	Casual dining	1.00[n.s.]
Public house	1.22[***]	Alone	1.24[***]	Women	1.17[*]		
Guests	1.16[***]	Women	1.20[**]	Casual dining	1.16[**]		
Treat	1.08[n.s.]	Altern. to wine	1.17[***]	Altern. to wine	1.10[***]		
Achievement	1.04[n.s.]	Special occasion	0.99[n.s.]	Special occasion	0.94[n.s.]		
Fine dining	0.98[n.s.]	Impress	0.86[**]	Impress	0.79[**]		
Gift	0.94[n.s.]	Different	0.78[***]	Different	0.77[***]		

[n.s.] Non significant.
[*] $p < 0.05$.
[**] $p < 0.01$.
[***] $p < 0.001$.

(fewer) specific usages. This suggests that consumers may prefer familiar beers in most situations, or when they make "generic" food provisioning decisions (e.g., stocking up on beers with no specific usage occasion in mind). Conversely, they may choose an unfamiliar beer as a response to the constraints of a more specific usage (e.g., to make a gift, as an alternative to wine for dinner, etc.). In both cases, the final judgment about a beer's situational appropriateness depends on the degree to which that beer seems to fulfill the goals associated with particular usage contexts. This view is consistent with most motivational perspectives on consumer decision making (see e.g., Gutman, 1982; Olson, 1989). The reasons behind the observed pattern (*viz.*, familiar beers are versatile/unfamiliar beers associated to specific situations), remains unclear. A possible explanation is that cognitive processing underlying appropriateness judgments are slightly different for familiar and unfamiliar products. For a familiar product, appropriateness judgments may be more likely driven by a controlled search of memory for past experiences with the product (or with others perceived to be substitutes), and then retrieving situations associated to the consumption of this product, arguably also overlapping with those appropriate for the overall category. Conversely, for unfamiliar products it is the stimulus directly (i.e., not mediated by a controlled search of memory) that acts as a cue towards potential usages. Further, evaluating unfamiliar products in relation to a context may facilitate the appraisal of the former by focusing the consumer's attention to specific context-relevant features. In this case, the features that will catch most attention are the ones that will be most relevant for the perceived situational appropriateness (e.g., L7's soft-drink-like appearance made it perceived like a beer for women, etc.).

However, it is not clear whether *all* results align well with this interpretation. For example, the small odd ratios sizes obtained from logistic regression do not quite support the notion that cognitive processes are very different. Competing explanations relate for example to the different sensory expectations generated by the products (either by the stimulus itself or based on previous consumption experiences). For example, all the familiar beer samples were pale lager types high in drinkability, whereas many of the unfamiliar ones were darker ales with very different sensory profiles and higher in flavor strength. This aspect should be investigated in future studies, especially since results from blind taste evaluations have shown that different sensory profiles of beers affect contextual evaluations (Gains & Thomson, 1990). On a related note, we should add one caveat: evaluating appropriateness of beers based on product appearance is very likely to yields different results than if the consumers had rated appropriateness after tasting the samples. In the latter case, it is likely that appropriateness would have been heavily influenced by their hedonic response – with the exception of culturally unacceptable situations (e.g., beer for breakfast), liking is known to be a strong predictor of appropriateness (Lähteenmäki & Tuorila, 1997) – as well as by specific sensory properties (Gains & Thomson, 1990).

Additional differences were also observed pertaining to the contextual associations between familiar and novel products. The former group of beers was associated mostly to serving physiological needs (e.g., as a thirst-quencher), consumption at specific locations (e.g., at a rugby match, at a concert) and specific occasions (e.g., at a party, at a camping trip). In contrast, usages associated with unfamiliar beer referred to feelings and mental processes (e.g., to celebrate an achievement, as a treat for myself), or to signaling social status (e.g., at a fine dining restaurant, to serve to guests). Within the limited range of our product set, it would seem that consumers' associated an atypical appearance to prestige and exclusiveness. These results would fit well with past research into other real-life domains showing that consumers associate a novel/unfamiliar design to superior product quality (Creusen &

Schoormans, 2005; Mugge & Schoormans, 2012a, 2012b). The results are further in accordance with previous research showing that less familiar beers were considered more self-indulgent, whilst ordinary ones were considered more appropriate for refreshment (Gains & Thomson, 1990). An unfamiliar appearance may therefore be effective when a product seeks to differentiate itself from other products in a category with many competing alternatives – as the case of product L8 demonstrated for the pale lager sub-category. Nevertheless, some observed exceptions (e.g., L4) suggest that familiarity is best understood as a moderator of the overall product appearance, meaning that interaction with other design factors will always be paramount. Additionally, pre-existing personal preferences (e.g., for different beers and beer styles), and inter-individual differences in novelty seeking behavior will likely be important in ultimately determining judgment of appropriateness.

Conclusions

This research has investigated situational appropriateness for beers with varying degrees of familiarity.

The results of four studies present consistent, converging evidence that there are wide differences in degree of perceived appropriateness for beers depending on usage contexts. The current study thus suggests that perceived match with usage contexts may play an important role in consumer's choice within this product category. The robustness of the results across studies indicates that product–context associations can be reliably explored within the situational appropriateness framework.

In assessing the role of familiarity as a moderating factor for these associations, a significant link between product familiarity and usage versatility was consistently uncovered, meaning that familiar beers were perceived as appropriate in a broader range of situations, and/or that consumers could not readily think of usage situations for products they were not familiar with. A possible explanation for this result was that consumers evaluated familiar products based on pre-existing knowledge structures related to previous experiences and/or to the overall product category. Evaluations of unfamiliar beers, on the other hand, appeared to be more stimulus-driven, and thus associated to specific situations. Further, it was found that familiarity significantly affects perceived appropriateness in specific contexts. There were some indications that consumers considered the beers they were not familiar with to be of higher quality than the familiar ones, although this appeared conditional to interaction with specific product design features. Cross-product studies are warranted to verify the generalizability of these findings to other food and beverages categories.

Author contributions

The study was conceived by D.G., M.B.F., W.L.P.B., B.P. and S.R.J. D.G. analyzed the data and wrote the paper with S.R.J. All other authors contributed to data collection.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.foodqual.2014.06.012.

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