COFFEE OR MARGARITA: IMPACT OF AMBIENCES ON BEVERAGE CHOICES IN A BAR.

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Abstract

Two approaches are classically used to perform consumer tests: “central location” tests favouring experimental condition control or “at home” tests favouring ecological validity. We describe an alternative approach (based on immersion combining both approaches) which was implemented to study beverage consumption in bars. In a cultural manifestation, two pub-like ambiances were created with a few pieces of furniture: A traditional pub ambiance with raw wood furniture and yellow lights and a modern ambience with blue translucent furniture. In both ambiances, five video clips evoking different warmth levels were displayed successively and participants had to choose what they would like to drink among a drink list. Hot drinks were predominantly chosen when watching a clip depicting icebergs; Mexican drinks were predominantly chosen when watching a clip depicting a desert, probably because of the South-American style music that accompanied it. The three abstract clips (red, white and blue on a black background) also impacted the drink choices but in a less extent.

Keywords: consumer test, context, drink choice, bar

1. INTRODUCTION

Hedonic tests are widely used in the food industry to get insight into consumers’ preferences and identify the products that will perform best on the market. However, consumer tests still need further developments. The difficulty of consumers’ testing originates from an inherent contradiction: the objective is to gain information regarding the products whereas their appreciation is context dependant by nature. Food behaviour is determine or influence by numerous factors related to 1) consumers (physiologic, socio-economic or cultural factors), 2) intrinsic properties (organoleptic characteristics) as well as extrinsic properties (origin, nutritional claims, convenience, price, etc.) of products, and 3) contexts of consumption (Rozin & Tuorila, 1993). For instance, the same food product will be more appreciated in a restaurant than in a student cafeteria (Meiselman, Johnson, Reeve, & Crouch, 2000). Food acceptability is related to food accessibility, time of consumption, eating location, social interactions, and ambience (for a review, see Stroebele & de Castro, 2006). However, the actual impact of these factors is not completely elicited and the effect of a given factor on a specific food is still difficult to predict (King et al., 2007).
For consumers testing, two approaches are classically used: central location tests (CLT) and at home tests (ATH). CLT are run in a sensory room to standardise the contextual parameters; the experimental conditions are strictly controlled to insure that all products are evaluated in comparable ways. ATH favour ecological validity by allowing consumers to use or consume products as usual. But then, experiential conditions may vary considerably from one product to another decreasing the validity of products comparison. The few studies comparing CLT and ATH did not demonstrate any superiority of one approach over the other (Boutrolle, Arranz, Rogeaux, & Delarue, 2005; Bouterolle et al., 2007). An alternative approach to carry consumers’ tests would consist in evoking a contextual situation in a controlled set up as suggested by Köster (2003, 2009). This would combine advantages of both CLT and ATH by insuring ecological validity of the tests through the evocation of a situation but still insure comparison among products by controlling testing conditions. However, an efficient evocation may not be easy to implement. Petit and Sieffermann (2007) set up a sensory room with some contextual element such as pictures, odour, and music to evoke a “warm ambiance.” But, the appreciation of drinks tested in this situation was not different from appreciation of drinks tested in a classic sensory room. This lack of effect may come from the fact that a situation is not only a set of elements, but rather reflects the meaning that consumers associate to the overall set up (Köster, 2009). A situation of consumption is related to a specific pattern of elements including the food, the time of the day, the location, the social environment, the activities in which consumers are involved, the mental processes (emotions) and the recurrence of the episode (Bisogni et al., 2007). All these elements have to be taken into account to evoke efficiently a situation of consumption.

The objective of the present study was to explore whether a consumption situation could be evoked using contextual elements. We implemented this idea to study beverage consumption in bars. We carried out the experiment during a cultural manifestation to match the appropriate activities (going out with friends), the time of the day (evening), and the recurrence (special occasion) of the situation. Two bars were materialised using a few pieces of furniture. We manipulated the ambiance of the bars (traditional vs. modern) through the furniture material (wood vs. plastic) and the lights (orange vs. blue). In each bar the warmth of the ambiance was modified through short video-clips projected in the room. People were allowed to participate with their friends and settle down at the same table. They received a drink list offering a large choice of drinks comparable to what can be found in bars and their task was to indicate which drink they feel like to drink for each ambiance. We hypothesised that modification of the ambiance would lead to different choices from the participants.

2. MATERIAL AND METHODS

2.1 Participants

Individuals who attended a cultural manifestation dedicated to beer on the campus at the University of Bourgogne took part in this experiment. They were allowed to attend both or
only one of the two experimental bars; a majority of them attended both bars. Overall 92 and 82 participants completed the questionnaires in the traditional and modern bars respectively.

2.2 Material

Five video-clips combining video and music were specifically designed for this experiment. Two figurative videos were chosen to evoke two contrasted ambiences: icebergs slowly drifting in the sea and a road in a desert landscape. Three abstract videos pictured moving coloured shapes on a black background. These videos were selected from a set of 20 videos on the basis of their perceived warmth assessed by a group of about 30 students on a 10-point scale anchored with cold at the left end and warm at the right end. The three selected videos were white, blue, and red coloured leading to different levels of warmth from the coldest (white) to the warmest (red). The same approach was adopted to select music from an array of specifically composed tunes. Videos-clips combined videos and music according to their warmth level and their tempo, especially for abstract videos were shapes move at a specific pace. The duration of video-clips was from 1.5 to 2 min each.

2.3 Experimental setup

Two bars were settled in two adjacent rooms. In each room, one wall was white and was used as a screen to project video-clips. The other walls were draped with black curtains and the room was kept in dim light. A few pieces of furniture: three tables each surrounded by three bar stools and a small counter, were dispatched in the room to evoke a bar. In one room, the bar and tables were made from raw wood. Orange lights displayed on each table and on the counter created a “traditional” ambience. In the other room, the bar and tables were made from a white translucent plastic material retro-lighted with blue light providing a rather “modern” ambience. The five video-clips associating video and music were displayed in loop in the bar in a fix and predetermined sequence: blue, desert, white, iceberg, and red.

Participants who entered one of the bars where welcomed by an attendant, who explained the task, provided them with the questionnaire and settled them down at a table. Participants were also offered a drink to drink during their stay in the bar. This was aimed at enhancing the situation by reproducing actual activity in a bar (i.e., having a drink). Participants were offered either a glass of orange juice or of non-alcoholic beer, as they wished.

Participants were instructed to wait for the beginning of the next video clip, to take a moment to enjoy the ambiance and then fill out the questionnaire. First, they were asked to choose among a drink list (Figure 1) what they would like to drink at the moment. Second, they were asked to assess the ambiance of the bar on 10-point scales regarding overall appreciation (from disagreeable to agreeable), warmth (from cold to warm), arousal (from calm/relaxed to excited/stressed) and harmony of the ambiance (from not harmonious to very harmonious). Participants performed the same task (choosing a drink in the list and assessing the ambiance) for each of the five clips consecutively.
2.1 Data analysis

Ambiance ratings were converted into scores from 1 to 10. Liking, warmth, arousal, and harmony scores were submitted to 3-ways ANOVA (furniture, clips, participants (in furniture)). Whenever a furniture × video-clip interaction was observed, t-tests were performed to compare the two furniture types for each video-clip. Drink choices were assessed by counting the number of choices observed for each drink in each bar and each ambience. The distributions of the choice in each condition were then analysed using $\chi^2$ tests.

3. RESULTS AND DISCUSSION

3.1 Ambience assessments

The warmth of the ambience is driven by the video-clips only, $F(4, 687) = 222.86, p < 0.0001$ as there is no significant furniture effect nor furniture × clips interaction. As expected the iceberg landscape was assessed as the coldest and the desert landscape as the warmest. The abstracts clips are assessed with intermediate levels of warmth and with significant differences among the three clips.

<table>
<thead>
<tr>
<th>Video-clips</th>
<th>Warmth scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Blue</td>
<td>5.0 b</td>
</tr>
<tr>
<td>2-Desert</td>
<td>8.2 a</td>
</tr>
<tr>
<td>3-White</td>
<td>4.1 c</td>
</tr>
<tr>
<td>4-Icebergs</td>
<td>3.7 d</td>
</tr>
<tr>
<td>5-Red</td>
<td>7.9 a</td>
</tr>
</tbody>
</table>

Liking and arousal evoked by the ambiances are driven by the video-clips only as no significant furniture nor furniture × clips interaction was observed. Table 2 shows the mean scores obtained for each video-clip. For abstract videos there is a relation between liking and
warmth scores. However, this link does not hold for figurative videos as icebergs and desert landscapes are much contrasted in term of warmth but were equivalently liked.

### Table 2: Mean liking and arousal scores.

<table>
<thead>
<tr>
<th>Video-clips</th>
<th>Liking scores</th>
<th>Arousal scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Blue</td>
<td>6.5 c</td>
<td>4.2 c</td>
</tr>
<tr>
<td>2-Desert</td>
<td>7.2 ab</td>
<td>5.9 b</td>
</tr>
<tr>
<td>3-White</td>
<td>5.0 d</td>
<td>6.6 a</td>
</tr>
<tr>
<td>4-Icebergs</td>
<td>6.8bc</td>
<td>3.6 d</td>
</tr>
<tr>
<td>5-Red</td>
<td>7.4 a</td>
<td>4.1 cd</td>
</tr>
</tbody>
</table>

The furniture type did not impact the evaluation of warmth, liking nor arousal. But, the furniture was not completely ignored by the participants. A significant furniture × clips interaction was observed for harmony scores, $F(4, 687) = 4.10, p < .01)$. It is worth noticing that the interaction was significant for the abstract video-clips but not for the figurative ones (Table 3).

### Table 3: Mean harmony scores.

<table>
<thead>
<tr>
<th>Video-clips</th>
<th>Wood furniture</th>
<th>Plastic furniture</th>
<th>t-test (Pr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Blue</td>
<td>5.79</td>
<td>6.38</td>
<td>1.60 (.11)</td>
</tr>
<tr>
<td>2-Desert</td>
<td>6.64</td>
<td>6.68</td>
<td>0.13 (.90)</td>
</tr>
<tr>
<td>3-White</td>
<td>4.36</td>
<td>5.39</td>
<td>2.88 (.004)</td>
</tr>
<tr>
<td>4-Icebergs</td>
<td>6.68</td>
<td>6.62</td>
<td>-0.18 (.86)</td>
</tr>
<tr>
<td>5-Red</td>
<td>7.16</td>
<td>6.37</td>
<td>-2.35 (.02)</td>
</tr>
</tbody>
</table>

### 3.2 Drink choices

Some beverages were pooled as they showed similar choice profiles: tea and hot chocolate were pooled as “hot drinks”; still water and Perrier were pooled as “water”; coke, diet coke, seven up, ice tea, Schweppes, and orangina were pooled as “soft drinks, and all fruits juices were also pooled.

Figure 2 shows the number of choices for different drinks for each bar and each ambience. The ambience and more specifically the video-clips had a clear impact on drink choices. The video-clip depicting icebergs led to choose preferentially hot drinks; more than half of the participants chose a hot drink in this ambience. It was even more pronounced in the wood bar although the difference is not significant. The video-clip depicting a desert landscape led to choose more desperado, margarita and pina colada than in other ambiances ($\chi^2 = 96.6; p < .001$). These three drinks are typically link to South-America at least for French people. These choices were probably oriented by both the video and even more the music that evoked South-America. Abstract video-clips also induced some specific choices. The white video-clip led to choose significantly more spirits (vodka and in a lesser extent gin and whisky) than in other ambiances ($\chi^2 = 87.3, p < .001$). The blue video-clip led to choose significantly more fruit juices than in other ambiances ($\chi^2 = 11.0, p < .001$). Finally, the red video-clip led to choose significantly more stout beer than in other ambiances ($\chi^2 = 36.9, p < .001$).
4. CONCLUSION

This experiment showed that it is possible to evoke a bar situation and to impact the drink choices by modifying the ambience inside the bar. As expected, figurative video-clips very contrasted in term of temperature evocation clearly induce some specific drink choices. But, abstract video-clips were also efficient to direct choices. This experiment is a preliminary study demonstrating the potential of an immersive approach to credibly evoke a consumption situation. However, in this experiment, we only recorded declarative choices, participant were well aware they will not actually get the drink. A further step will be to confirm the interest of this approach to study actual behaviours.

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REFERENCES


