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Short Communication

The effect of an analytical appreciation of colas on consumer beverage choice

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ABSTRACT

This experiment examined if the analysis of beverage taste changes the favorite drink of a taster. Participants blind-tasted two brands of cola, Coke and Pepsi. Those who were not asked to verbalize their reactions to each tended to prefer Coke over Pepsi; those who expressed them were more likely to favor Pepsi; and those who indicated an aversion to both showed no clear preference. Participants found it easier to describe their predilection for Pepsi than for Coke but experienced equal difficulty in verbalizing their negative reactions to both colas. These findings suggest that when people taste carefully they tend to focus on the attributes of drinks that they find salient and that seem relevant to their preferences, leading them to choose the one with these attributes as their favorite.

1. Introduction

Consumers often prefer different products in blind tests and open tests. This divergence is typically exemplified by the *Pepsi paradox*, which indicates that people are prone to prefer Coke to Pepsi when the labels of these beverages are visible, while the preference for Coke is compromised when they are not (Koenigs & Tranel, 2008; McClure et al., 2004). Similarly, some bottles of wine are strongly preferred when prices are evident but spurned when they are not (Goldstein et al., 2008). Furthermore, the same brand of beer is most liked in open taste but not in blind taste tests (Allison & Uhl, 1964; Guinard, Uotani, & Schlich, 2001).

This kind of paradox has been documented in the domain of marketing research, which emphasizes the effects of brand knowledge on consumer preferences. Consumers "drink" labels rather than the cola, the wine, or the beer on which they are affixed. A beverage label works as an extrinsic cue that evokes a taste expectation, one that may override or compromise the immediate, holistic experience of a beverage's intrinsic properties. Provided with a brand name or price, consumers experience a drink in line with the anticipations generated by these concrete indicators (Rao & Monroe, 1989). Moreover, it is implicitly assumed that blind tasting is more precise, true, and less biased than open tasting (c.f., Fritz, Curtin, Poitevineau, Morrel-Samuels, & Tao, 2012; Raghubir, Tyebjee, & Lin, 2008). Based on this assumption, many researchers, for example, have understood the Pepsi paradox in a one-sided manner, relying on the successful marketing strategies or brand knowledge of Coke as the explanations of its success in overriding Pepsi's superiority in taste. (c.f., de Chernatony, McDonald, & Wallace, 2010). Another, less considered issue is that consumer preferences, which depend on the evaluative procedure and the task context (Kahneman, 2011), can be biased even in blind tastings. If people are not certain about what they taste, then this fact itself may alter their evaluative procedures and consequences.

Blind tastings are akin to guessing games, since those engaged in them are put into a position of ignorance. Tasters are thus likely to ask themselves what a drink may be, how it tastes, or why they react to it as they do (Salmon, 2009). However, some perceptual and affective experiences are primarily based on processes that cannot be adequately verbalized or that are not even consciously accessible (Nisbett & Wilson, 1977; Schooler & Engstler-Schooler, 1990). When people attempt to articulate their feelings about a stimulus, they focus their attention on attributes that are perceptually salient, easy to verbalize, and plausible explanation of their preferences (Dijkstra, van der Pligt, van Kleef, & Kerstholt, 2012;

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Wilson & Schooler, 1991; Yamada, 2009). However, even the most definite attributes may not actually determine their experiences. As a result, people are likely to offer explanations that may misrepresent their sensory and affective experiences. When subsequent judgments are based on this explanation, they provide different evaluations than those that arise from the raw sensory data of the stimulus (c.f., Popper, Rosenstock, Schraidt, & Kroll, 2004; Prescott, Lee, & Kim, 2011). From this point of view, we point out the possibility that a particular brand may be largely preferred in blind tastings because tasters are encouraged to focus and base their preferences on the limited properties of a drink or food rather than on its superiority in taste.

In this study, participants were asked to analyze their reasons for either liking or disliking two brands of carbonated drinks, Coke and Pepsi. We expected that the careful analysis of taste would focus participant attention on the attributes of the colas that are salient and easy to verbalize. Given the prevailing observation that people are more likely to prefer Pepsi to Coke in blind tasting settings than in open tasting settings (Koenigs & Tranel, 2008; McClure et al., 2004), the attributes on which tasters tended to focus in the former were expected to work to the advantage of Pepsi and, hence, the disadvantage of Coke. If the salient attributes worked to the advantage of Pepsi, then when the participants analyzed their reactions to the two colas, they would prefer Pepsi over Coke more than the control participants who did not deliberately reflect on their choice. Similarly, if the salient attributes worked to the disadvantage of Coke, then participants who analyzed the reasons for disliking these attributes would also prefer Pepsi more than the control participants.

2. Method

2.1. Sensory test

A sensory test was conducted to delineate the sensory characteristics of the experimental materials, Coke and Pepsi (see Table 1). Twenty-four undergraduate students, who did not participate in the main experiment, tasted the two colas and rated six sensory characteristics (sweetness, sourness, saltiness, bitterness, flavor, and carbonation) on a 7-point scale, ranging from *very weak* (0) to *very strong* (6) of each cola. Pepsi was rated as sweeter than Coke, $t(23) = 2.88$, $p < .05$, $d = .59$, and as possessing a stronger cola flavor, $t(23) = 2.32$, $p < .05$, $d = .48$. Other characteristics were equal for both colas, $ts(23) < 1.74$, $ps > .10$, $ds < .35$.

2.2. Participants

Sixty-six undergraduate students took part in the experiment for a course credit. They ranged in age from 18 to 20, and 80.3% were male.

Table 1
Profiles of the Colas.

Attribute	Type of Cola		Statistics
	Coke	Pepsi	
Sweetness	3.25 (0.30)	4.17 (0.27)	$p < .05$
Sourness	2.13 (0.39)	2.42 (0.37)	n.s.
Saltiness	1.33 (0.31)	1.33 (0.37)	n.s.
Bitterness	1.42 (0.29)	1.29 (0.27)	n.s.
Cola flavor	3.50 (0.32)	4.13 (0.24)	$p < .05$
Carbonation	4.29 (0.21)	3.88 (0.27)	n.s.

Note: Mean (and standard error) perceived taste intensity ratings are given. Ratings were made on 7-point scales ranging from *very weak* (0) to *very strong* (6).

2.3. Materials and test settings

Coke and Pepsi were used as stimuli. The participants were not informed of the brand names throughout the experiment. The samples were placed in a refrigerator (4 °C) until the time of the test. The experiment was conducted from 10:30 a.m. to noon of the same day in an air conditioned (25 °C) room.

2.4. Procedure

Groups of 3–5 participants were run at one time. The participants were told that the purpose of the study was to evaluate two different kinds of colas. The experimenter indicated that the colas would be tasted sequentially and that each would be rated on several aspects after tasting. Participants were randomly assigned to a control condition, a positive analysis condition, or a negative analysis condition. The participants in the two analysis conditions were instructed to taste and scrutinize the two colas and to list the reasons for liking or disliking each. The positive analysis participants were asked to describe why they liked the colas and negative analysis participants why they disliked them. The control participants were not explicitly instructed to analyze their like or dislike of the colas but were simply asked to taste each.

All participants were then presented with two cups, one containing Pepsi and the other Coke. The cups were delivered one at a time, with the order of drinking balanced across the participants. Each cup contained 80 ml of cola. The first delivered cola was called *cola A* and the second *cola B*, with an identifying character of *A* and *B* on the cups, respectively. Cola distribution was made by the experimental assistants, who were unaware of the purpose of the study and the content of the cups. The participants were then asked to sip as much as they wished from each cup. They were given two minutes to taste each sample. Before tasting each cola, they rinsed their mouths with natural water.

After the tasting session, all participants were asked to rate how much they liked each cola on a 7-point scale, whose endpoints were labeled *dislike very much* (−3) and *like very much* (+3), and how palatable each cola was on a 7-point scale, whose endpoints were labeled *not palatable at all* (−3) and *very palatable* (+3). They were also asked to choose the cola that they preferred the most by indicating the identifying character, *A* or *B*. Participants in the analysis conditions were then asked to indicate the difficulty of providing the requested reasons for each cola on a 7-point scale, whose endpoints were labeled *very difficult* (−3) and *very easy* (+3). Finally, all participants indicated if they had any skill or disability in taste perception, of which none did.

3. Results

3.1. Reported preferences for colas

Preference scores for each cola were calculated by averaging palatability ratings and liking ratings (Coke; $r = .89$, Pepsi; $r = .76$). Fig. 1 shows the results. The preference scores were analyzed with a $3 \times 2 \times 2$ mixed ANOVA, with condition (Control, Positive Analysis, or Negative Analysis) and Order (Coke first or Pepsi first) as between-subject factors and Cola (Coke or Pepsi) as a within-subject factor. There was a main effect for condition, $F(2, 60) = 3.41$, $p < .05$, $\eta_p^2 = 0.10$, indicating that the negative analysis participants showed an overall tendency to give colas lower preference scores than the control and positive analysis participants, $ts(60) > 2.29$, $ps < .05$, $ds > .48$. A Condition × Cola interaction was also obtained, $F(2, 60) = 3.65$, $p < .05$, $\eta_p^2 = .11$, indicating that the positive analysis participants preferred Pepsi over Coke, $F(1, 60) = 11.18$, $p < .01$, $\eta_p^2 = .11$, whereas the control