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“That’S Bitter!” Culture Specific Effects of Gustatory Experience on Judgments of Fairness and Advancement

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In English, unfair treatment and social injustice are often described as “bitter” experiences, but in Chinese “eating bitterness” means endurance in hardship. Three studies show that incidental bitter tastes influence fairness judgments for Canadian but not Chinese, and endurance judgments for Chinese but not Canadian, participants.

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EXTENDED ABSTRACT

A rapidly growing body of research shows that incidental sensory experiences can influence consumers’ thoughts, feelings, and behaviors. These influences can reflect a number of different processes, including the use of sensory experiences as a source of information; the influence of sensory processes on mental simulations; and the grounding of abstract concepts in metaphorically related concrete experiences (for reviews, see Barsalou, 2008; Krishna & Schwarz, 2014; Landau, Meier, and Keefer 2010). In this work, we focus on a consumption related sensory experience that has received little attention, namely bitter taste.

An analysis of metaphors and sayings related to bitter taste indicates large cultural differences. Most notably, in the Chinese language and culture, bitterness is associated metaphorically with concepts of adversity. Chi-Ku (“eating bitterness”) means “to endure a hardship”, “to overcome difficulties”, and “to forge ahead” (Loyalka, 2012). In China, young children are taught to embrace the experience of Chi-Ku because it is regarded as a necessary step to progress towards their goals and achieve success, as illustrated by sayings such as, “only via eating bitterness can you surpass your peers.” This metaphorical meaning of bitter tastes is uncommon in the English language and unfamiliar to Canadians. Instead, Canadians associate bitterness with unfair treatment and social injustice. This link is exemplified by a famous quote from Emmeline Pankhurst, an early British feminist leader, who observed, “I have not personally suffered from the deprivations, the bitterness and sorrow which bring so many men and women to a realisation of social injustice.” These observations suggest an association between bitter taste and endurance of hardship in Chinese (but not in Canadian) culture and between bitter taste and injustice in Canadian (but not in Chinese) culture.

Therefore, we conducted three study to test the culture-specific metaphoric effects of bitter taste. We hypothesized that bitter taste (1) influences Chinese (but not Canadian) participants’ judgments of endurance and (2) Canadian (but not Chinese) participants’ judgments of fairness.

Study 1. To assess taste associations within each culture, we asked 57 native Canadian students to rate how strongly sweetness, bitterness, sourness, and saltiness are associated with injustice and 87 native Chinese students to rate how strongly these tastes are associated with hardship and challenges (Chan, Tong, Tan, and Koh, 2013). As expected, Canadians associated injustice more with bitterness ($M=5.05$) than sweetness ($M=1.63$), sourness ($M=4.02$) or saltiness ($M=3.67$; all $p<.001$); Chinese associated hardship more with bitterness ($M=5.77$) than sweetness ($M=3.28$) sourness ($M=4.09$) or saltiness ($M=3.29$; all $p<0.001$).

Study 2. To test the expected culture-specific behavioral effects of bitter taste we conducted a 3 (taste: bitter/water/sweet) x 2 (culture: Canadian/Chinese) x 3 (judgment: fairness/effort/motivation) factorial experiment, with the last factor manipulated within participants. Participants ($N = 165$; average age 20, 55.5% female) were students at a major Canadian university; 84 were native speakers of Chinese and 81 were native speakers of English. They were first exposed to one of three randomly assigned taste experiences (bitter, sweet, neutral) and then responded to measures of motivation and

effort in a challenging tasks context and measures of fairness in a job rejection context. As expected, Chinese participants who tasted bitter lotus seeds reported higher motivation and more effort in response to challenging tasks than those who tasted candy or water (simple effect on Chinese for motivation $F [2,159] = 7.201, p=.001$; for efforts $F [2,159] = 4.756, p=.01$). These effects were not observed among Canadian participants (simple effect on Canadians for motivation $F [2,159] = .641, p=.528$; for efforts $F [2,159] = .386, p=.680$; interaction effect for motivation $F [2,159] = 5.253, p=.006$; for efforts $F [2,159] = 3.722, p=.026$). Also as expected, Canadian participants judged the described job situation as more unfair after they tasted something bitter than sweet or neutral (simple effect on Canadians $F [2,159] = 2.927, p=.05$). The fairness judgments of Chinese participants were not significantly influenced (simple effect on Chinese $F [2,159] = .354, p=.702$) but showed a similar pattern (interaction effect $F [2,159] = .702, p=.488$). This may reflect that the Chinese students had acquired some of the cultural associations between injustice and bitterness during their studies in Canada. Study 3 addressed this possibility.

Study 3. 72 native speakers of English from a major Canadian university and 88 native speakers of Chinese from a top Chinese university were exposed to one of three taste experiences (bitter, sweet, neutral) and then responded to the job rejection paragraph used in Study 2. Replicating Study 2, Canadians found the job situation less fair after tasting something bitter than after tasting something sweet or neutral (simple effect on Canadians $F [2, 154] = 4.505, p = .013$). Chinese participants were not influenced by the taste manipulation (simple effect on Chinese $F [2, 154] = 1.283, p = .283$), resulting in the predicted interaction between culture and taste, $F(2, 154) = 3.249, p = .041$.

In combination, these findings highlight that the *same* sensory experience can have divergent culture-specific effects on judgment. Consistent with culture-specific metaphors, incidental bitter tastes influenced Canadian, but not Chinese, assessments of social justice and fairness and Chinese, but not Canadian, assessments of motivation and effort in a difficult situation. A comparison of Chinese students in China and Canada further suggests that culture-specific metaphors can be acquired through prolonged cultural exposure. How culture specific metaphors moderate the influence of identical sensory experiences, and how such metaphors are acquired through cultural exposure, provides a promising avenue for future research in embodiment and sensory marketing.

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