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a case study with novel beers
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Publication date:
2012

Document version
Peer reviewed version

Citation for published version (APA):
Stimulus collative properties in food products and their importance for consumer liking: A case study with novel beers

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Introduction
There is a dilemma between liking for familiar stimuli and a wish to experiment with new ones. Berlyne’s theory on aesthetic preference\(^1\), predicts that to maximize sensory appreciation, a (food) product should aim at optimizing the balance between familiarity and novelty.

Methods
Eight beers were tested by a consumer panel (N=135), for which relevant consumer characteristics – namely product knowledge, food neophobia and variety seeking tendency – were known. Consumers evaluated liking and three collative properties: novelty, familiarity and complexity.

Results
A multiple linear regression model was carried out to analyze effects of the three collative properties on liking (Adj. \(R^2 = .4\), \(F_{(3, 1076)} = 239.66, p < .001\)). All properties significantly positively predicted liking, with complexity (\(b = .47, t_{(1076)} = 14.67, p < .001\)) and familiarity (\(b = .39, t_{(1076)} = 15.06, p < .001\)) being the strongest regressors, followed by novelty (\(b = .27, t_{(1076)} = 8.23, p < .001\)). Non-linear relationships were assessed by computing smoothing points using locally weighted polynomial regression\(^2\). Berlyne’s predicted trajectory (inverse U-shaped) described most accurately the relationship between novelty and liking (Figure 1a), whereas the relationships between liking and the two other collative properties is linear and monotonic (Figure 1b+c).

ANOVA was performed using consumer traits as main effects. High variety seeking consumers gave significantly higher overall liking (\(p = .008\)). Consumers with higher product knowledge rated the beers significantly more familiar (\(p = .02\)), less novel (\(p = .03\)) and less complex (\(p < .001\)). No significant effects of degree of neophobia were observed.

Conclusion
Taken overall, our results confirm that liking is indeed a result from a combination of novelty, familiarity and complexity. Furthermore, we expand prior work on collative properties in a food context, by showing that several different consumer variables need to be taken into consideration for predicting consumer liking.

References:

Fig. 1 – Robust smoothed values of novelty (a), familiarity (b) and complexity (c) against liking.

Keywords: Product experience, Arousal theory, Novelty, Consumer psychographics