Stimulus collative properties and their importance for consumer liking
a case study with novel beers
Giacalone, Davide; Bredie, Wender Laurentius Petrus; Frøst, Michael Bom

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Stimulus collative properties in food products and their importance for consumer liking:
A case study with novel beers
D. Giacalone*, W.L.P. Bredie, M.B. Frøst
University of Copenhagen, Denmark

Introduction
There is a dilemma between liking for familiar stimuli and a wish to experiment with new ones.
Berlyne’s theory on aesthetic preference¹, 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 regression². 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