

Odour-Taste Congruence: When Does Their Combination Create New Sensory Meaning?

Sensory Science and Judging Ethics — Ahmad Issam Maadarani's Series

Official article information

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Article code —	Protection number —	
Reference —		

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Ahmad Issam Maadarani separates odour-taste congruence, sensory intensity and liking. He proposes comparisons that test each combination's specific effect, using questions that avoid assigning an aromatic impression to sugar content or treating familiarity as a quality law.

Evidence map

Published evidence: [ODOR96], [ATTR93]

Author proposal: Separate congruence, intensity and liking.

1. Congruence is not enhancement

An aroma may seem suitable for a dessert without increasing perceived sweetness, and greater sweetness need not improve liking. The author therefore reserves separate fields for congruence, intensity and liking. Congruence concerns the relationship between cues; intensity concerns the magnitude of a named sensation. An unfamiliar combination should be evaluated for task performance and clarity before unfamiliarity itself becomes a penalty.

2. Experimental evidence

One study did not reduce odour-induced sweetness enhancement to congruence judgments. [\[ODOR96\]](#) Another found that attribute-rating instructions could change taste–odour interaction judgments. [\[ATTR93\]](#) These findings motivate precise questions. They neither guarantee enhancement nor establish preferences across cultures and products. Their interpretation remains bounded by the published experimental designs.

3. Attribute transfer

In a hypothetical example, vanilla cream could receive higher sweetness ratings despite an unchanged base recipe. Did sweetness perception change, or did “sweet” describe the overall impression? Record aroma, sweetness and liking independently, defining terms before testing. Do not correct responses to fit a theory. If ambiguity persists, investigate instructions as a separate experimental factor rather than interpreting every answer as a direct measure of composition.

4. A factorial comparison

Choose two ordinary, safe sweetness levels and two aroma conditions in one product, creating four versions. Standardize mass, temperature and presentation, balance order, and collect intensity, congruence and liking separately. Examine the aroma effect at each sweetness level rather than comparing only the most liked version. If aroma addition changes other properties, report those limitations: a design label does not isolate an uncontrolled variable.

5. Proposed culinary reasoning

A successful combination fulfils a declared, describable function, such as ingredient identity or a comfortable transition from onset to finish. These are the author's criteria, not findings of the cited studies. If greater sweetness obscures a principal component, preserve both effects and justify their weighting. If assessors like a combination without calling it congruent, retain that result; the working definition of congruence may need revision.

6. Scope and relationship record

Retain formulations, attribute definitions, instructions, sample order and individual sweetness, aroma, congruence and liking ratings. Repeat independent preparations. A cream result cannot automatically transfer to a drink, and a panel need not represent every audience. This article connects interaction structure with aroma pathways while asking whether "congruence" actually explains the outcome or merely redescribes it afterwards.

Application worksheet

Field	What to retain
Composition	Sweetness levels and aroma conditions
Instructions	Attribute definitions and order
Outcome	Intensity, congruence and liking

The author's analysis and proposals; examples are hypothetical and proposed procedures have not been tested here. No new experimental data are presented. Research-attributed claims remain within their source scope.

Related articles

- [26 — Article 26](#)
- [47 — Article 47](#)
- [50 — Article 50](#)
- [54 — Article 54](#)

References and source scope

1. **[ODOR96]**Schifferstein, H. N. J., & Verlegh, P. W. J. (1996). The role of congruency and pleasantness in odor-induced taste enhancement. *Acta Psychologica*, 94, 87–105. DOI: 10.1016/0001-6918(95)00040-2.<https://pubmed.ncbi.nlm.nih.gov/8885712/>
2. **[ATTR93]**Frank, R. A., van der Klaauw, N. J., & Schifferstein, H. N. (1993). Both perceptual and conceptual factors influence taste-odor and taste-taste interactions. *Perception & Psychophysics*, 54(3), 343–354.<https://pubmed.ncbi.nlm.nih.gov/8414893/>

Sensory interaction in specified experimental conditions.

Attribute judgments; does not establish a superior recipe.

Publication metadata and available abstracts were used; complete original texts were not fully reviewed for this edition.

Suggested citation: Maadarani, Ahmad Issam (2026). "Odour-Taste Congruence: When Does Their Combination Create New Sensory Meaning?". *Sensory Science and Judging Ethics*, article 60, version 1.0, 4 October 2026.

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