

How sound can influence taste perception?

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Two methods are here introduced, which are intended to address the influence of sound on taste perception.

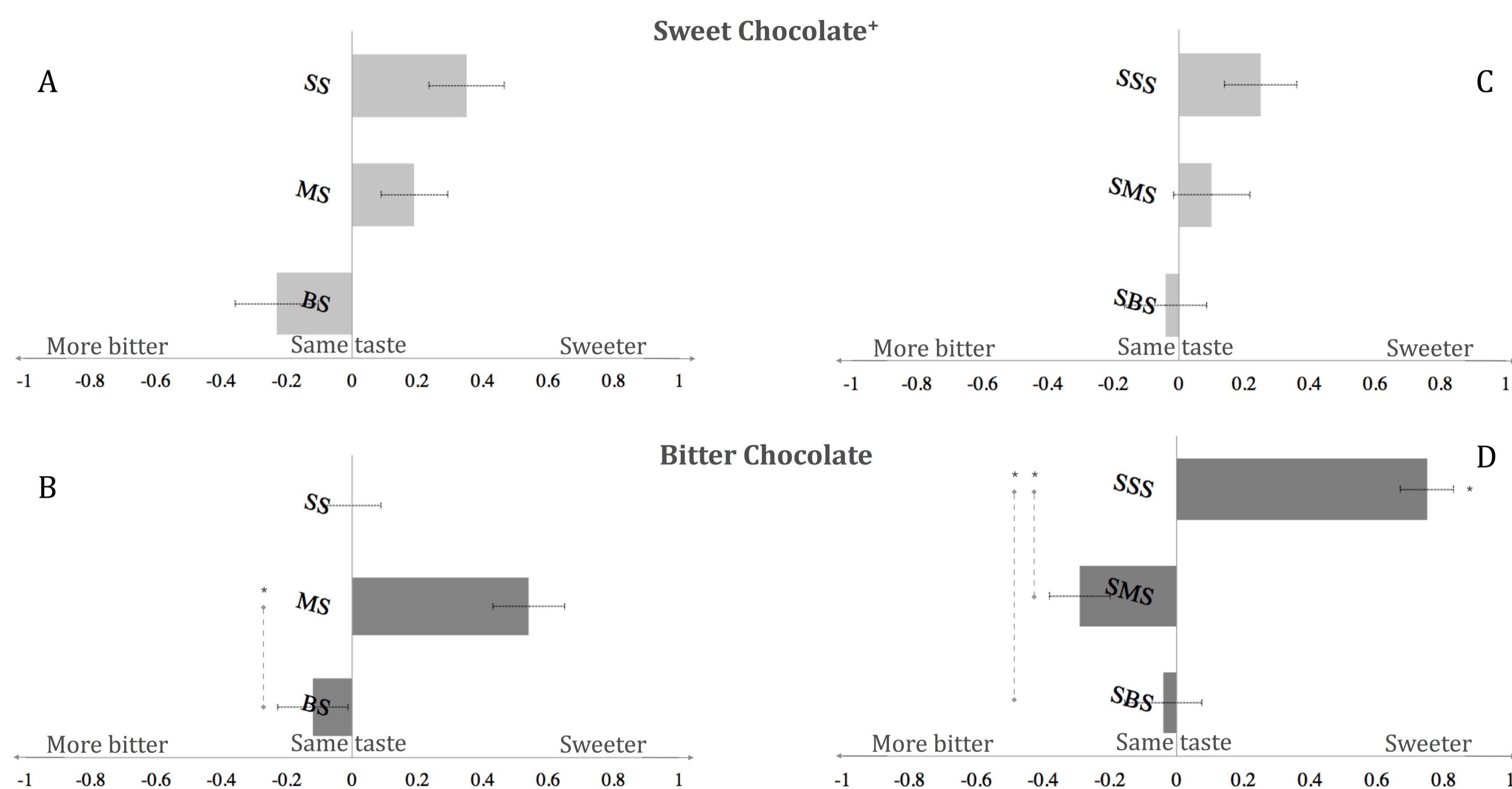
[A] Does music influence the Multisensory Tasting Experience?

Sound-based modulation of Taste

In this study, participants initially had to pair each of three sounds with one of three chocolates (varying on the bitter-sweet dimension).

In a second part of the study, the impact of the various music samples on participants' ratings of the taste of various chocolates was assessed.

The results demonstrate that what people hear exerts a significant influence over their rating of the taste of the chocolate. Interestingly, when the crossmodal match was based on the participants' individual music-chocolate matches (rather than the average response of the whole group), more robust crossmodal effects were revealed. These results therefore provide support for the claim that ambient sound influences taste judgments, and potentially provide useful insights concerning the future design of multisensory tasting experiences.



This figure illustrates how the perception of the taste of the chocolate was influenced by listening to a soundtrack versus when tasting in silence. Zero corresponds to 'no change in taste' (same taste). Positive values (to the right) indicate that the participants reported that the sweetness of the chocolate was enhanced while listening to a soundtrack. Negative values (to the left) indicate that the participants rated the chocolate as tasting more bitter while listening to a given soundtrack.

One of the novel contributions of the present research is in showing how, by considering a participant's individual response, further inspiration for user-studies in gastrophysics and actual gastronomic situations may be provided.

These methods approach how sound may be able to modulate taste, becoming a valuable tool when assessing, for example, the decision-making process of human food/beverage consumption.

[B] Using sound-taste correspondences to enhance the subjective value of tasting experiences

Here, we investigated whether contextual sound would enhance the subjective value of a tasting experience.

The customers in a chocolate shop were invited to take part in an experiment in which they had to evaluate a chocolate's taste while listening to an auditory stimulus. Four different conditions were presented to four different groups in a between-participants design. Envisioning a more ecological approach, a pre-recorded piece of popular music and the shop's own soundscape were used as the sonic stimuli.

The results revealed that the customers reported having a significantly better tasting experience when the sounds were presented as part of the food's identity. Here, we also show that consumers are willing to pay significantly more for food experiences accompanied by customized and contextualized soundscapes. The method outlined here paves a new approach to dealing with the design of multisensory tasting experiences, and gastronomic situations.



These results highlight a clear distinction between the ratings of the participants before eating the chocolate and after having enjoyed the multisensory tasting experience. When stimulated by a song and a soundscape that were part of the identity of the chocolate, and when told that the chef himself had hand-crafted the food, not only did they experience sound as part of a context, but they also had the opportunity to learn - and, somehow, to share - the creative process involved during the development of the product that they had tasted. Under such conditions, sound can be considered as a sensory link between the chef's creative process and his (or her) customers' tasting experience.

BIBLIOGRAPHY

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[B] REINOSO CARVALHO, F. R., VAN EE, R., RYCHTARIKOVA, M., TOUHAFI, A., STEENHAUT, K., PERSOONE, D., & SPENCE, C. (2015b). Using sound-taste correspondences to enhance the subjective value of tasting experiences. *Frontiers in psychology*, 6.