

Title: Temporal methods: study design and data analysis
Teachers: Michael Meyners, John Castura
Duration: ½ day
Audience: Sensory scientists and statisticians interested in study design and analysis
Background: basic understanding of statistics is advantageous, though not mandatory

The sensory identity of diverse products – foods, beverages, cosmetics, etc. – has an important temporal component. But until recently, available methods for investigating temporal aspects have required a significant investment in training assessors, have allowed measurement only at discrete time intervals, and/or have produced continuous measurement of only a single attribute.

Recently, new temporal sensory methods have been proposed to capture some of the richness and diversity of consumer sensory perceptions that arise from multiple sensations. The workshop will focus especially on the following two methods:

- temporal dominance of sensations (TDS; Pineau et al., 2009), which captures the attribute to which assessors attended spontaneously, and draws attention to the attribute dominance rate over time as an important sensory characteristic; and
- temporal check all that apply (TCATA; Castura et al., 2016), which permits assessors to describe samples continuously using a simple checklist to characterize the temporal profile in a product.

In this workshop, we will review study design considerations that are relevant to these and other temporal methods. Workshop attendees will have the opportunity (either during or outside the workshop) to understand the assessor's task via hands-on web-based data collection using Compusense Cloud software.

Next we review analysis methods for temporal sensory data. We discuss pros and cons of various approaches commonly used as well as of some alternative methods we propose. We further discuss the potential for linking temporal sensory data from consumer with sample liking data or other data provided by these same consumers. This opens the possibility of determining links between liking and perception that were not possible to investigate previously.

We will conclude with a brief overview of alternative temporal methods, old and new, including their advantages and limitations.

Selected References

- Castura, J. C., Antúnez, L., Giménez, A., Ares, G. (2016). Temporal Check-All-That-Apply (TCATA): A Novel Temporal Sensory Method for Characterizing Products. *Food Quality and Preference*, 47, 79-90.
- Pineau, N., Schlich, P., Cordelle, S., Mathonniere, C., Issanchou, S., Imbert, A., Rogeaux, M., Etiévant, P., & Köster, E. P. (2009). Temporal dominance of sensations: construction of the TDS curves and comparison with time-intensity. *Food Quality and Preference*, 20, 450-455.