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Exploring temporal methods to assess dynamic product profiles

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Background: Current products are designed to supply multi-sensorial experiences, delivering a complexity of texture and flavour which change over time. In additional, products are ever more frequently designed to address specific target group needs (eg children, elderly) and understanding the temporal profile during oral processing is critical to design. To uncover the perceptual journey experienced we need to utilise novel and emerging methodologies to harness information providing actionable product insight enabling developers to achieve their ambitions. This study aimed to explore and compare the evolving techniques (TDS, TCATA, TOS), using in market products to exemplify dynamic product profiles.

Method: 54 consumers used 4 different temporal methods; Temporal Liking (TL), Temporal Dominance of Sensations (TDS), Temporal Check-all-that-apply (TCATA) and Temporal Order of Sensations (TOS), as well as providing Classical liking scores using 9pt hedonic scales. Products (2 spicy/chili crisp products) were presented as a series of portions (6) to realistically represent the consumer experience during normal consumption. Results   Results indicated consumers were able to perform even the more challenging method of TDS with relative ease. Differences were identified in texture and flavor attributes, both between products, and across product portions, highlighting the need for multiple samplings to capture a full product profile.

Discussion: Although the temporal methods identified similar temporal evolution of sensory attributes for each product, it was clear that TDS and TCATA provided a greater depth of information compared to TOS, and TCATA appeared to give a broader range of attributes compared to TDS, which may be important for product discrimination of complex products. Both TDS and TCATA were able to capture lingering sensations which TOS did not, although TOS was considered the easiest to use by consumers. All methods provided slightly different output emphasizing the need to have a clear objective when performing temporal assessments which will guide the decision of correct methodology.