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From first to last bite: Emotions change from high to low arousal and dominant sensations built-up during multiple bite assessment of yogurt

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Sensory perceptions and food-evoked emotions evolve over time. Evaluation of sensory perceptions and food-evoked emotions after one bite are common. However, single bite assessments do not represent normal eating behaviour as consumers eat food portions with multiple bites. We hypothesise that dynamics of sensations and emotions not only evolve within a bite but also evolve between bites. This study aims to investigate the temporal dynamics of sensations, emotions and hedonic perceptions using multiple bite assessment employing Temporal Dominance of Sensations (TDS), Emotions (TDE) and alternated Temporal Drivers of Liking (A-TDL). Seventy-six participants evaluated six yogurts with granola pieces varying in size, hardness and concentration. Results showed that sensations were mainly dominated by yogurt attributes in the beginning of each bite (creamy and sour), whereas at the end of each bite sensations were dominated by granola attributes (sweet, wheat and sticky). Sticky sensations gradually increased in dominance duration from the first to the last bite. Creamy, crunchy and sweet were observed to be positive drivers of liking, consequently increasing liking. Sour and sticky were negative drivers of liking, decreasing liking upon dominance of these attributes. All yogurts were characterised by a dominance of interested feelings at the beginning of the first bite. However, the dominance of interested disappeared and dominance rates of bored feelings increased towards the last bite. We conclude that specific texture attributes built-up in dominance perception from the first to the last bite, and food-evoked emotions shift from high (e.g. interested) to low (e.g. bored) arousal emotions from the first to the last bite. These findings indicate that multiple bite evaluations of dynamic sensations and emotions provide additional information about food perception, such as the built-up of sensations from bite to bite. These changes in sensations and emotions cannot be quantified by single bite assessments.