

An Overview of wine sensory characterization: from classical descriptive analysis to the emergence of novel profiling techniques

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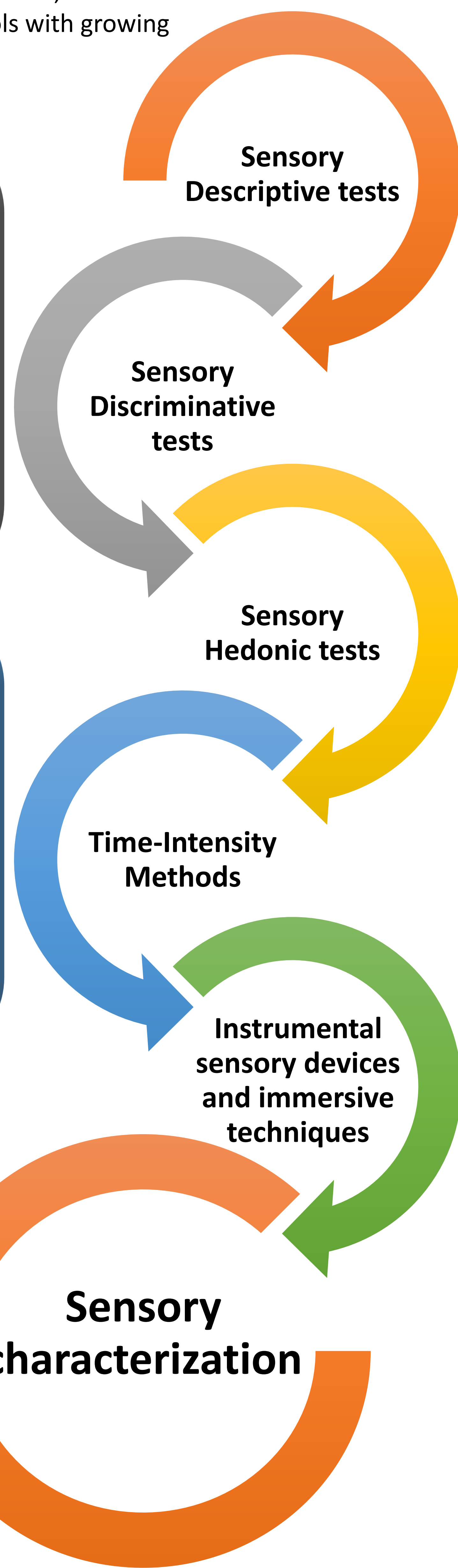
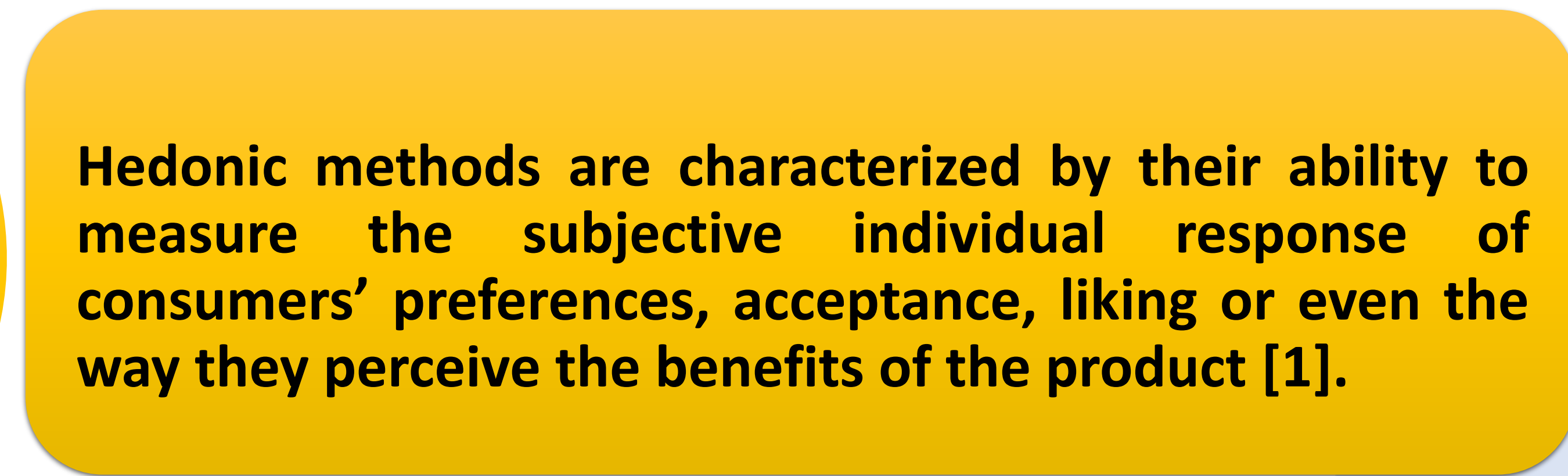
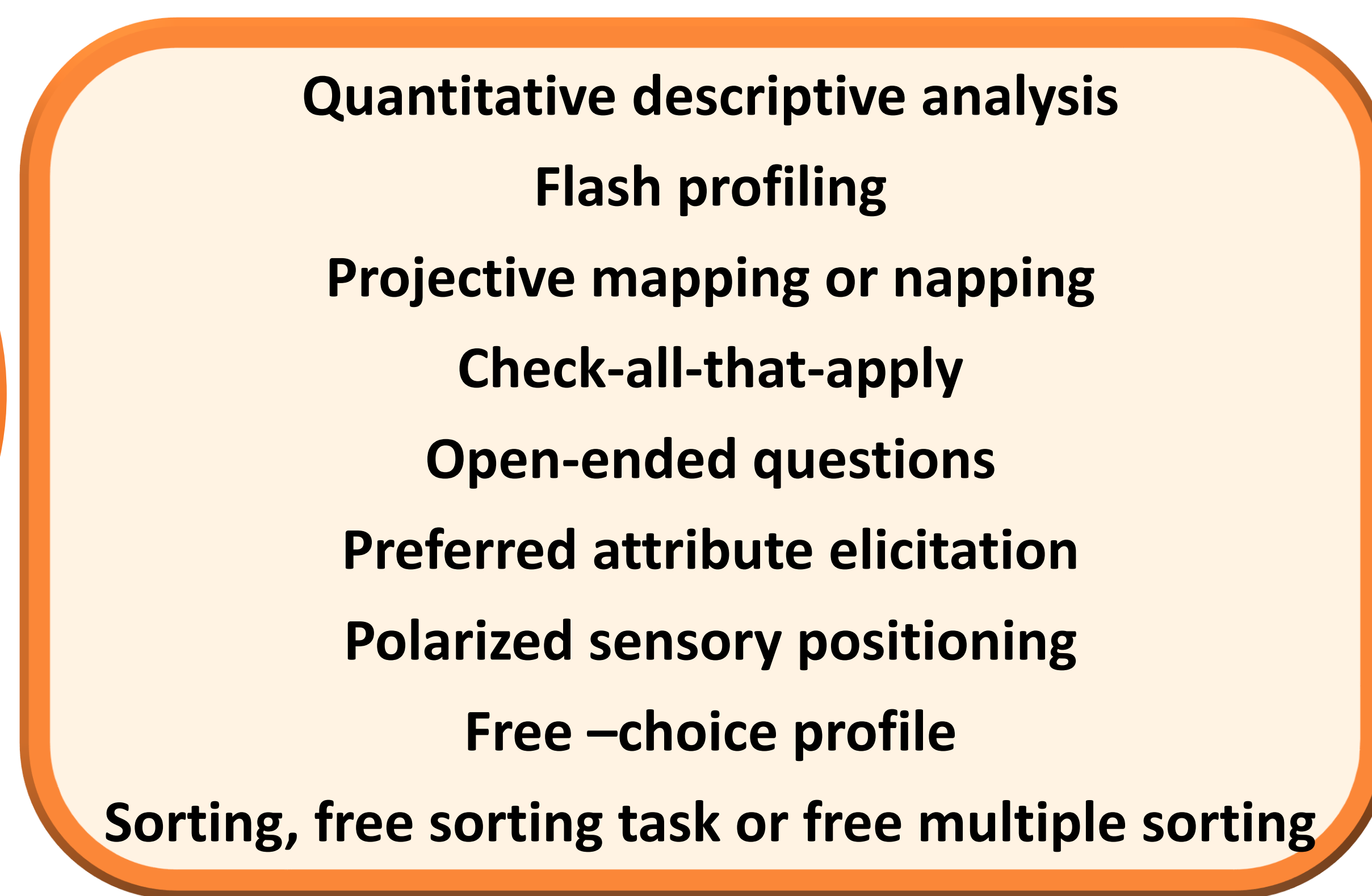
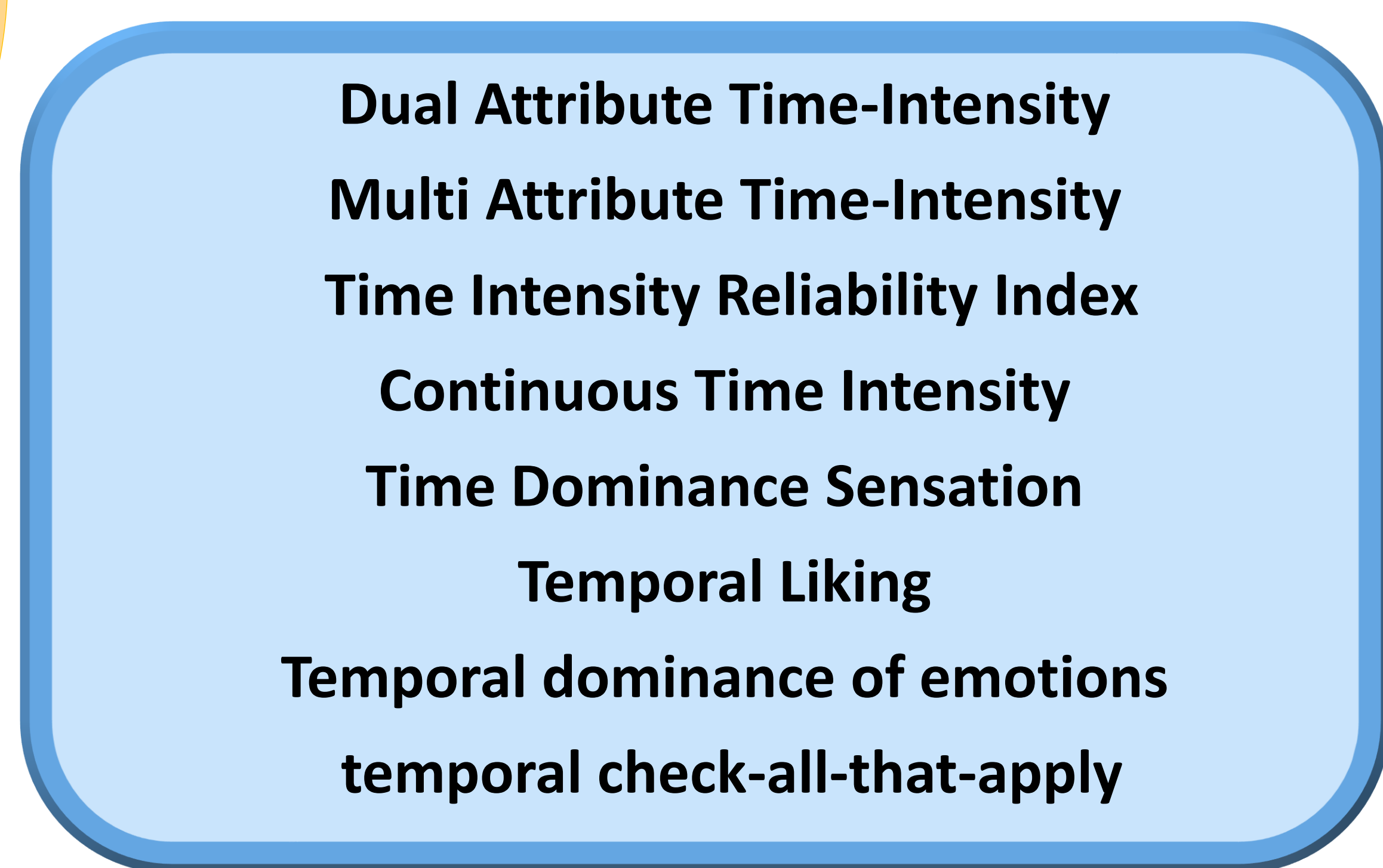
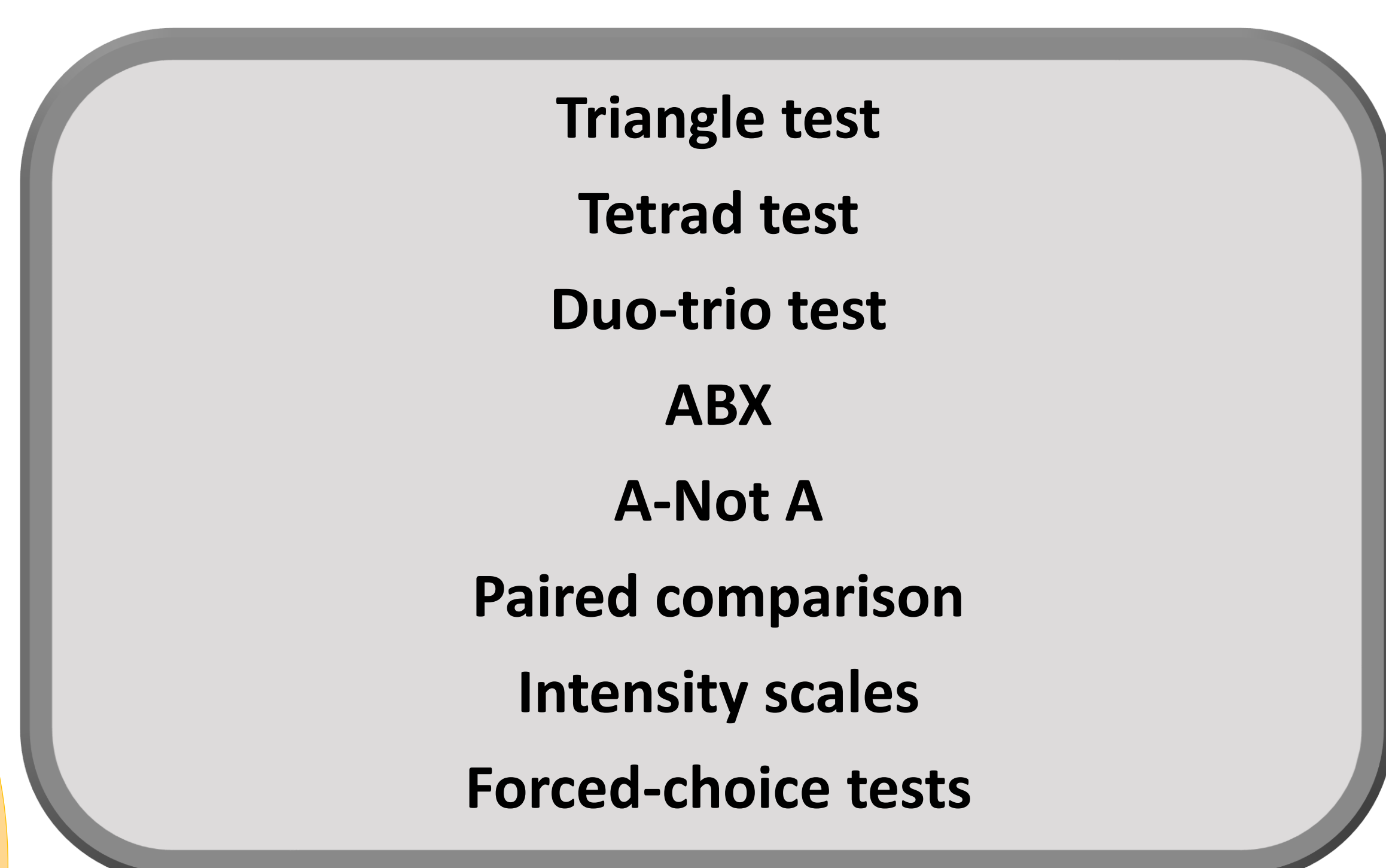
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Introduction

The wine industry requires coexistence between tradition and innovation to meet consumers' preferences. Sensory science allows the objective quantification of consumers' understanding of a product and subjective feedback of consumer's perception through acceptance or rejection of stimulus or even describing emotions evoked [1]. To measure sensations, emotions and liking, and their dynamics over time, time-intensity methods are crucial tools with growing interest in sensory science [2].

Aim

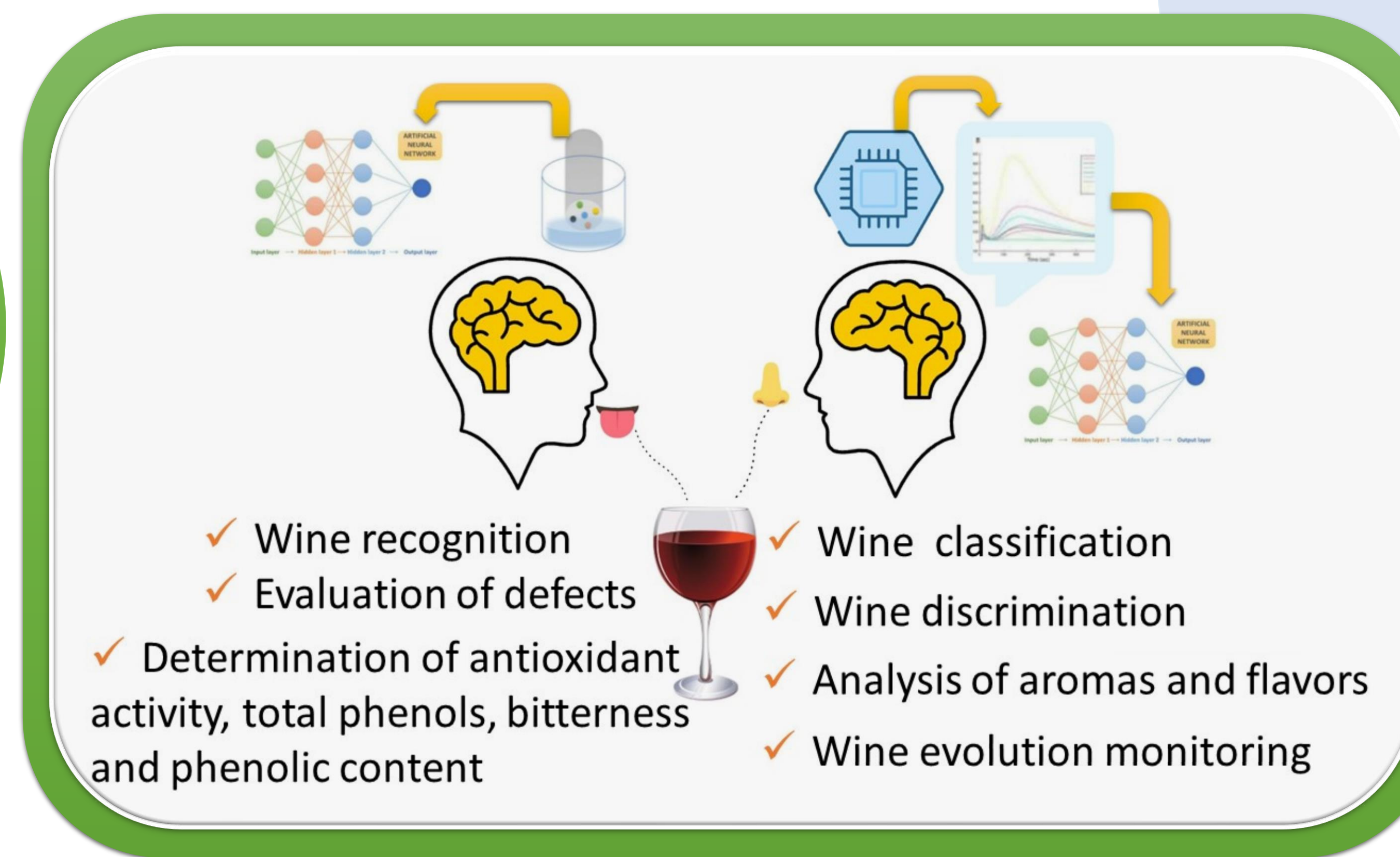
This research aimed to give a big picture of the latest investigation about sensory methods and their variations, and the successful application of sensory devices and immersive contexts in wine evaluation.



Instrumental sensory devices

E-tongue

E-nose

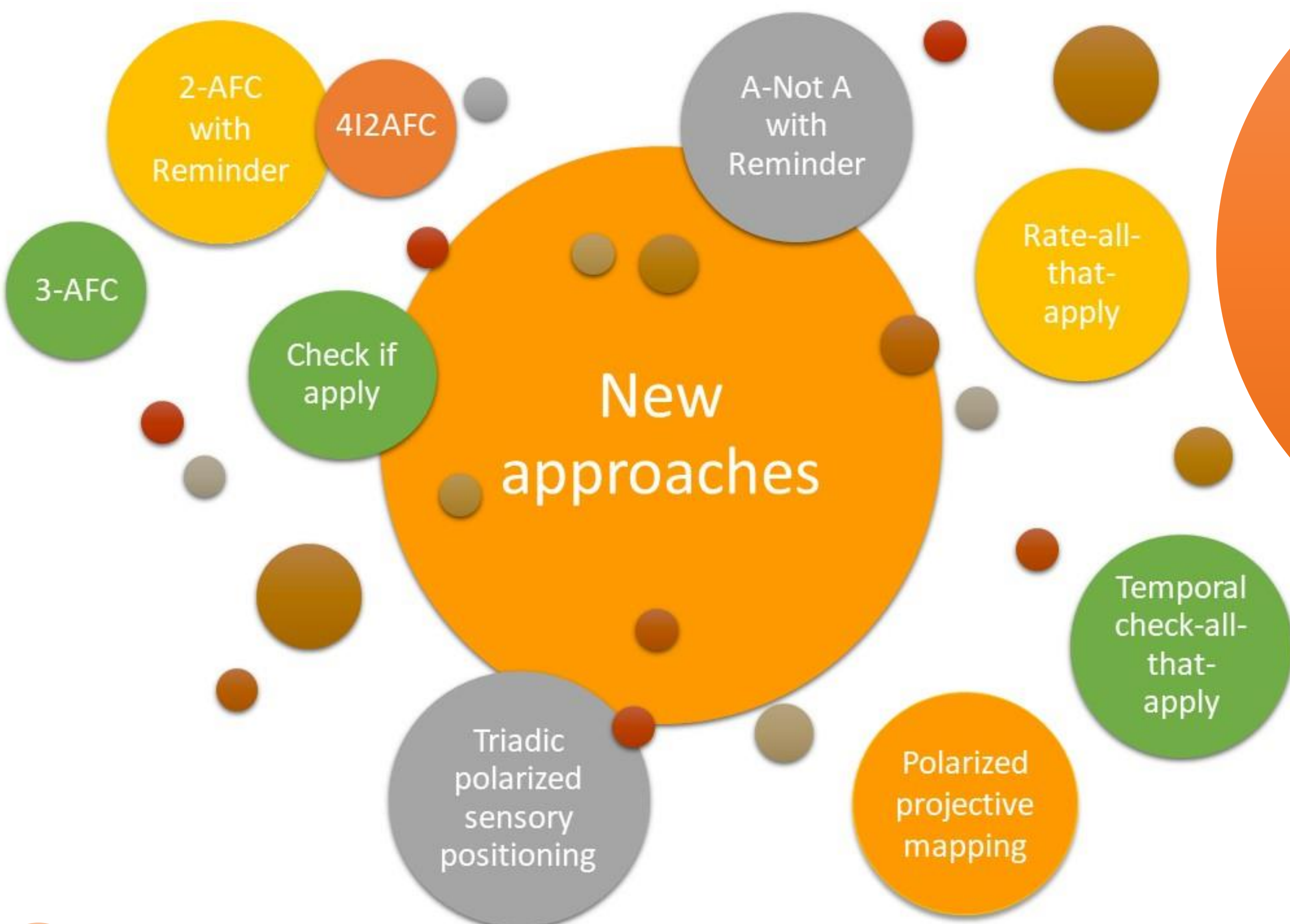


Immersive techniques

Virtual reality

Gaming

Augmented reality



Conclusions

The characterization of sensory methods and techniques have been investigated in the literature. However, there is a limited articulation between descriptive, discriminative, hedonic tests and time-intensity methods as well as instrumental sensory devices and immersive techniques. Furthermore, statistical techniques in sensory science play a crucial role and increasingly allow a more precise sensory data analysis and more adapted to a complex product such as wine.

References:

- [1] A. Vilela et al., "Beverage and Food Fragrance Biotechnology, Novel Applications, Sensory and Sensor Techniques: An Overview," *Foods*, vol. 8, no. 12, p. 643, 2019, doi: 10.3390/foods8120643.
- [2] Q. C. Nguyen and P. Varela, "Identifying temporal drivers of liking and satiation based on temporal sensory descriptions and consumer ratings," *Food Qual. Prefer.*, vol. 89, no. November 2020, p. 104143, 2021, doi: 10.1016/j.foodqual.2020.104143.

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