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RECORDING FACIAL MIMICS AND TEMPORAL DOMINANCE OF SENSATIONS AND EMOTIONS



(Time Sens

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INTRODUCTION

- Recognized today as a reference method in temporal sensory analysis, the Temporal Dominance of Sensations (TDS; Pineau et al., 2009) has been extended to measure emotions (TDE; Jager et al., 2014) in a declarative way.
- Facial expressions analysis is a promising way for highlighting rapid and uncontrollable facial micro-responses that can explain consumer preferences (Leitch et al., 2015).

Home tested products:
-Food (session 1): 3 dark chocolates (tested 60s)
-Video (session 2): 3 advertisements (48 to 54s) for coffee

(of a same brand)

OBJECTIVES

- Test on three different product types (food products, cosmetics and video advertisements) if an implicit emotion measurement using facial recognition can capture a temporal emotional response.
- Compare results and conclusions from implicit measurements of facial recognition and TDS

MATERIAL & METHODS

Experimental design

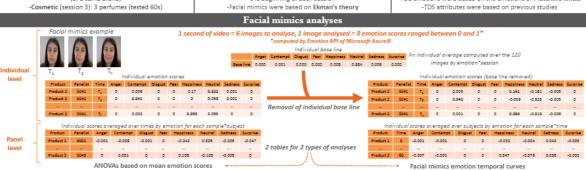
Face Reader procedure:
-Group A (42 panelists): recording facial mimics while testing
Recording 20 seconds « base line » (neutral emotion control) at

the beginning of each session -Facial mimics were based on Ekman's theory

TDS and TDE procedure

-Group B (45 panelists): performing TDS for chocolates or TDE for perfumes and advertisements

-TDE emotions were based on the emotions of Plutchik's wheel -TDS attributes were based on previous studies



RESULTS

Analysis of facial mimics emotions (Group A)

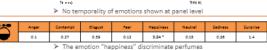
ANOVA: Mean Emotion = Product + Subject (random Subject)
F table Table of Product Effect (Signif. codes: *** 0.001 *** 0.001 ** 0.05)

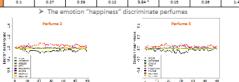
For each ANOVA, only facial mimics temporal curves of products the most discriminated are show

Analysis of TDS and TDE (Group B)

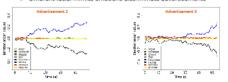
ANOVA: Attribute duration = Product + Subject (random Subject)
F table Table of Product Effect (Signif. codes: '###' 0.001 '##' 0.01' '#' 0.05)
For each ANOVA, only TDS/TDE curves of products the most discriminated are shown







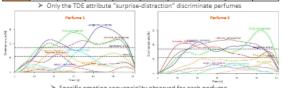
Terro inj							
>	No tempo	orality of e	motions sl	hown at pa	anel level		
linger	Contempt	Disgust	feer	Happiness	Neutral	Sedness	Surprise
0.16	0.64	0.14	1.29	9.23 ***	4.97 °	8.16 ***	1.15
➤ Diffe	rent facial r	nimics em	otions disc	riminate a	dvertisem	ents	



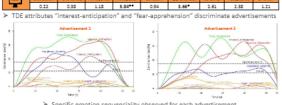
 \succ The emotion "happiness" peaks during key scenes of videos at panel level

Sweet Sites Cocce Fatty Sour Astringent Woody Dry Melting Fully Floral Sticky Nothing 45.20*** 13.28*** 12.95*** 7.77*** 4.88* 3.51* 5.21 2.72 2.71 0.85 0.21 0.55 0.41 > TDS sensations strongly discriminate chocolates





Specific emotion sequenciality observed for each perfume



> Specific emotion sequenciality observed for each advertisement

CONCLUSIONS

- Recording facial mimics enables perfumes and advertisements to be emotionally discriminated. Temporal patterns of emotions are observed at panel level only for advertisements. Declarative (TDE) and implicit (facial mimics) methods give different information.

PERSPECTIVES

To better take into account facial mimics individual variability and protocol specificities, analyses should go deeper in data treatment.

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