SPISE 2016

TASTE AND TRY BEFORE YOU FRY: FROM PRODUCT FORMULATION TO CONSUMER EXPERIENCE

DO SPICES HAVE THE SAME ODOR ON THE OTHER SIDE OF WORLD? EFFECT OF CULTURE ON SPICE ODOR PERCEPTION

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Introduction

Culture is known to affect people's **olfaction ability** as sensitivity, discrimination, recognition, identification, as well as odor representations. **Familiarity** has been suggested as a factor underlying this effect.
France and Thailand are very different in the nature and the type of **spices** they use for cooking. Thai people use a lot of curry powders whereas French do not. So curry is a good stimulus for exploring the influence of familiarity on odor perception.

Role of familiarity linked to cultural food habits on the individuals' ability to identify (**verbal task**) or recognize (**perceptual task**) spice odors presented **alone** or **in mixtures**?

Hypotheses:
1. Familiarity with spices would influence more the verbal than the perceptual process.
2. This effect is modulated by participant country of origin.

General procedure

Assessors
> 240 participants
> 50% Thai / 50% French

Products
> 6 spices: alone or in mixtures
- 6 single spices
- 3 binary mixtures
- 4 ternary mixtures

Method
> 2 different tasks:
- **Identification** task (verbal task)
- **Perceptual** task (immediate recognition task)

> Signal detection theory:
- Hit, False Alarm, Correct Rejection, Miss
- Correct Score (Hits + CR)

More familiar to French(FR): Cinnamon, Cumin, Star anise
More familiar to Thai (TH): Garlic, Curcuma, Lemongrass

Results

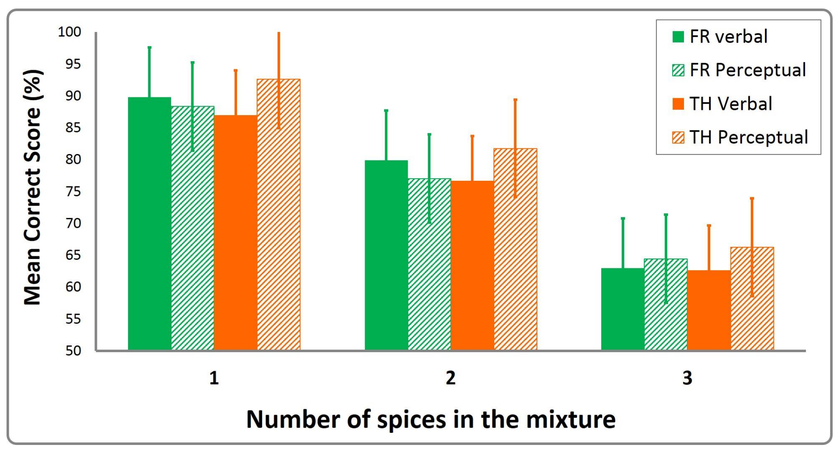

Fig. 1. *Mean Correct Score for each country (France/Thailand) and each type of task (perceptual/verbal) presented for single spices, binary and ternary mixtures.*

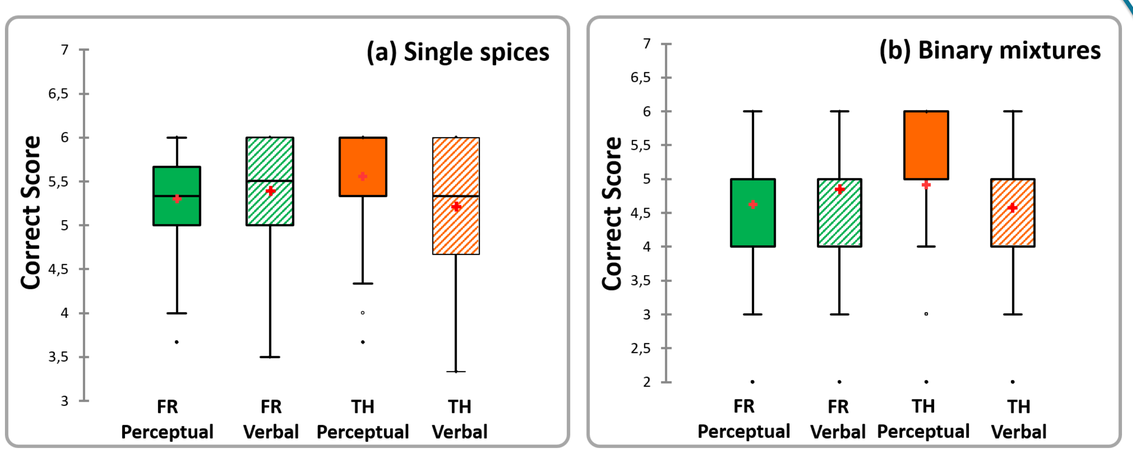

Fig. 2. *Box plots of correct score distributions calculated for French (FR) and Thai (TH) participants for the and tasks for: (a) Single spices and (b) Binary mixtures.*

> **Globally**, whatever the country:
- Results of both immediate recognition and identification tasks **decrease** with the number of spices in the mixture (in agreement with the literature)

- Very low results for the ternary mixtures

> For **TH**: **Perceptual > Verbal** for single spices & binary mixtures
→ Recognized the spices but did not know their names
→ Could be explained by demographic characteristics

> For **FR**: **no difference**

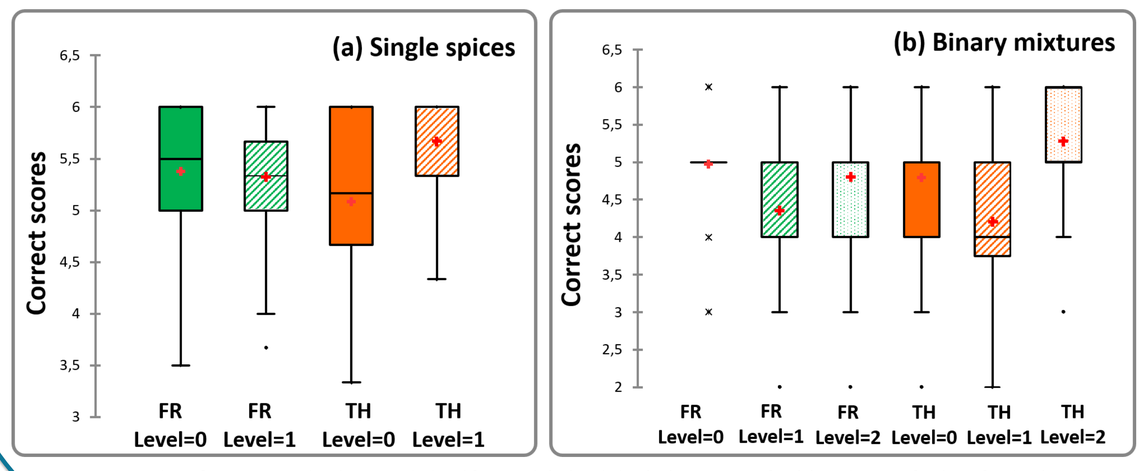

Fig. 3. *Box plots of correct score distributions calculated for French (FR) and Thai (TH) participants for: (a) Single spices for the unfamiliar (Level=0) and the familiar spices (Level=1), and for (b) Binary mixtures for the three levels of familiarity (Level=0, Level=1 and Level=2).*

> Globally, Thai did not perform better than French

> Significant effect of **familiarity**: the more participants are familiar with spices, the more there were able to recognize/identify them (alone or in mixtures).

> **Interaction** between familiarity level and country:
- For *single spices*: Familiar spices > Non-familiar spices for TH
No difference for FR

- For *binary mixtures*: Non-familiar > Familiar Level 1 > Familiar Level 2 for TH and FR

Conclusion

> Global effect of the **familiarity level**, more important for Thai than for French participants.
> Thai participants are better at recognizing than identifying spices alone or in mixtures. No difference between the two processes for French participants.
→ Strengthen previous literature on the impact of familiarity of odor perception
→ This effect depends on several factors like the type of task or personal characteristics (*e.g.* age, cooking habits).

Poster Session: **Poster Number:** **Presentation time:**