

Non-verbal approach to assess emotions of worldwide consumers induced by a multi-functional ingredient

SS_164



Maniere Audrey^{1*}; Leriche Laëticia²; Trunet Aurélie¹
¹: Lucas Meyer Cosmetics-IFF, 13 rue Elsa Maillart 91300 Massy – France
²: Silliker SAS - Merieux Nutriscience, Saint Herblain, France



INTRODUCTION

There is something special about cosmetics: more than a driver of sensory stimulation, it is directly related to personal references, age, country, memories, and may make feel different. **Emotions are composed of a variety of definitions and are in fact a multifaceted phenomenon** consisting of the following components: behavioral reactions (e.g., approaching), expressive reactions (e.g., smiling), physiological reactions (e.g., heart pounding), and subjective feelings (e.g., feeling amused) [1]. **Choice of subjective measure with pictures** has been done, as pictures carry a lot of information and arouse emotions. As the tool is **non language-dependent**, it represents a strong advantage for **cross-cultural studies**.

In cosmetics, emotions are first conveyed by packaging, then mostly by the texture, fragrance, and benefits. **Multi-functional ingredients** acting on the viscosity, skin feel and providing efficacy benefit are particularly interesting to study as emotion inducer. **Hydrogenated phospholipids, combined with the right fatty amphiphiles, promote lamellar phase in emulsions, able not only to stabilize, thicken, vectorize hydrophilic actives but also enhance skin feel and skin barrier properties** [2][3].

We evaluated the emotions perceived by consumers from France, USA, and China, by applying the same simple fluid emulsion containing a phospholipids-based ingredient as the main texture promoter. We used a unique approach focused on measuring the cognitive part of perceived emotions and personality traits during a cosmetic product usage thanks to a non-verbal tool based on pictures.

MATERIALS & METHODS

FLUID EMULSION TESTED	
INCI	%
Water	84.20
Sodium Phytate (and) Water (and) Alcohol	0.10
Xanthan gum	0.50
Hydrogenated Lecithin (and) C12-16 Alcohols (and) Palmitic Acid	4.00
Tocopherol (and) Helianthus Annuus (Sunflower) Seed Oil	0.10
Isopropyl Isostearate	4.00
Diisopropyl Adipate	6.00
Phenoxyethanol (and) Caprylyl Glycol	1.00
Fragrance	0.10
pH	
Viscosity : 14700mPa.s (Brookfield LV, spindle 64, 6rpm)	

Women (N=80) in each of the 3 countries France (Paris & Nantes), China (Shanghai), USA (Chicago), aged 50% 20–40-year-old and 50% 41–65-year-old, were invited to participate in a Home-Use-Test, testing one day-emulsion, through one unique application. Women have been asked to evaluate their feelings while applying the emulsion, by seeing one by one the boards of pictures, randomized.

Each board has been rated on a quantitative 7- points scale, with anchors at each point (“does not match at all this board of images” to “matches completely this board of images”)

METHOD VALIDATION

A complete list of emotions from a literature review [4][5][6], 11 emotions (4 negative and 7 positive) and 10 personality traits have been each one translated into pictures and illustrated through a board, containing several pictures for a multidimensional overview.

Matches between board of pictures and emotions have been validated in 9 countries and on approx.160 consumers each, by ranking from 1 to 5, from an initial list of 35, the most representative emotions that apply when looking at the board. The main emotion representing the board is the one with the highest % and cited by at least 60% of the consumers [7][8].



Example of a board that would represent Joy (not contractual)

- 4 Negatives emotions**
disgust, sadness, anger (nervousness in China), ill-at-ease
- 6 Positives emotions**
curiosity, joy, surprise, desire, trust, tenderness

- 10 Personality traits**
soft tender, suffocating, secret mysterious, adventurous (natural in China), soothing calm (natural in China), warm joyful, elegant (refined in France), magical (for France & USA), seductive (for France & USA), energetic (for France)

Data analysis :

- Top -3-boxes : frequencies calculated on “matches rather +matches well + matches completely this board of images”
- Bottom-3-boxes : frequencies calculated on “does not match much + does not match + does not match at all this board of images”

A χ^2 test has been performed to highlight potential over-representation at 95% against theoretical frequency

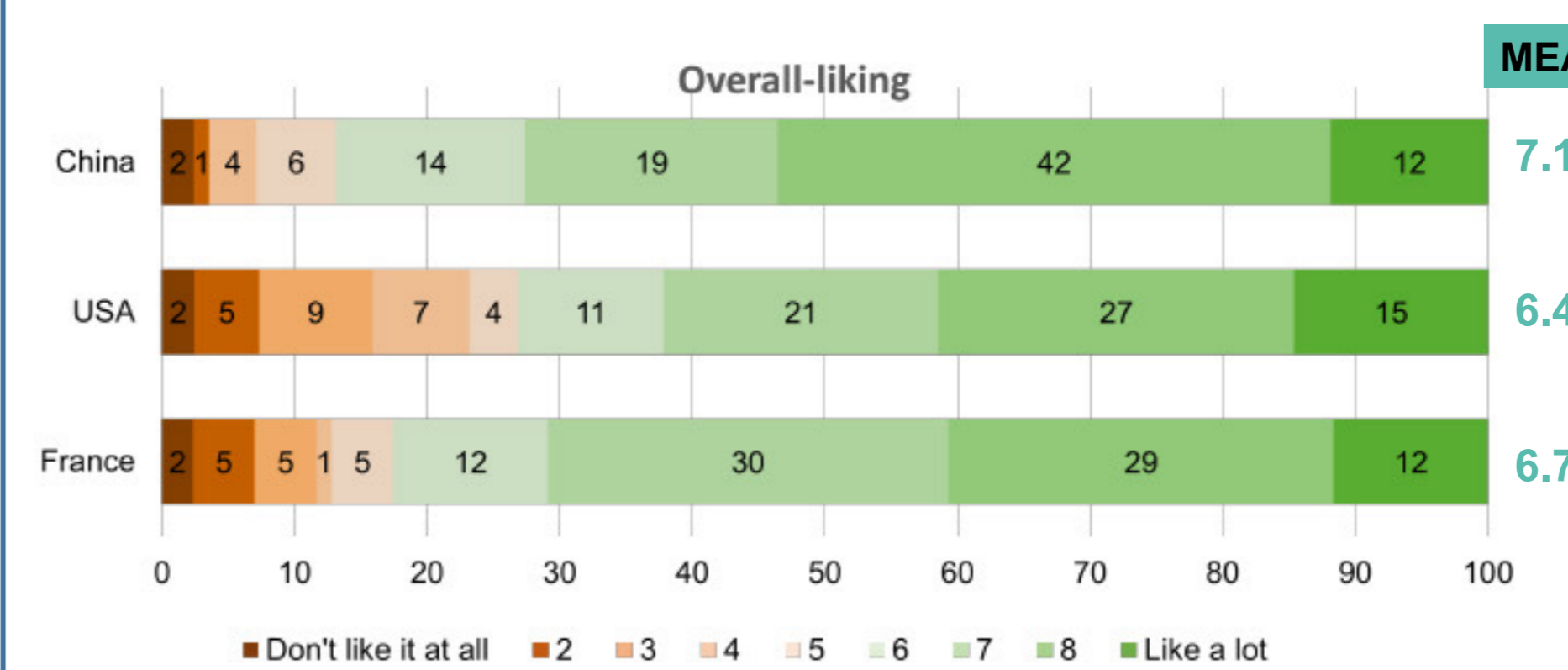
- Over-representation compared with the theoretical frequency all countries gathered
- Under-representation with the theoretical frequency all countries gathered

Standard questions:

Standard questions completed the questionnaire: overall-liking on a 9-points scale, agreement scales (pleasant to apply, comfort, hydrating), intention of usage from “yes certainly” to “No certainly not”, two open-ended questions (effect on the skin and opinion on texture).

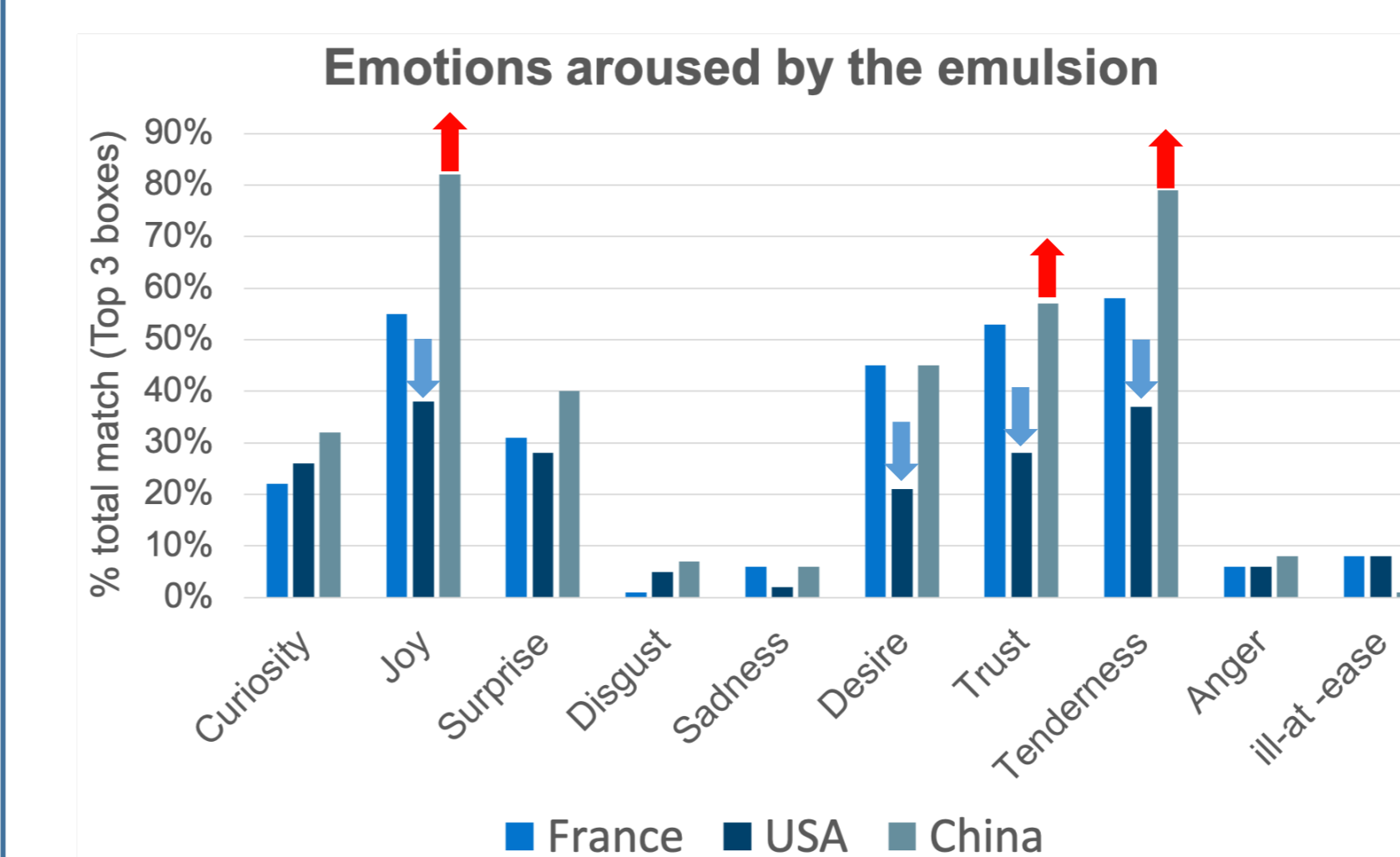
RESULTS and DISCUSSION

Overall-liking



Globally, the main emotions perceived by the consumers after application of the emulsion are mostly **positive emotions**. After application, most of the consumers agree to say the emulsion doesn't induce any negative feelings, even if we observe **different emotional sensitivities from one country to another**.

Emotions

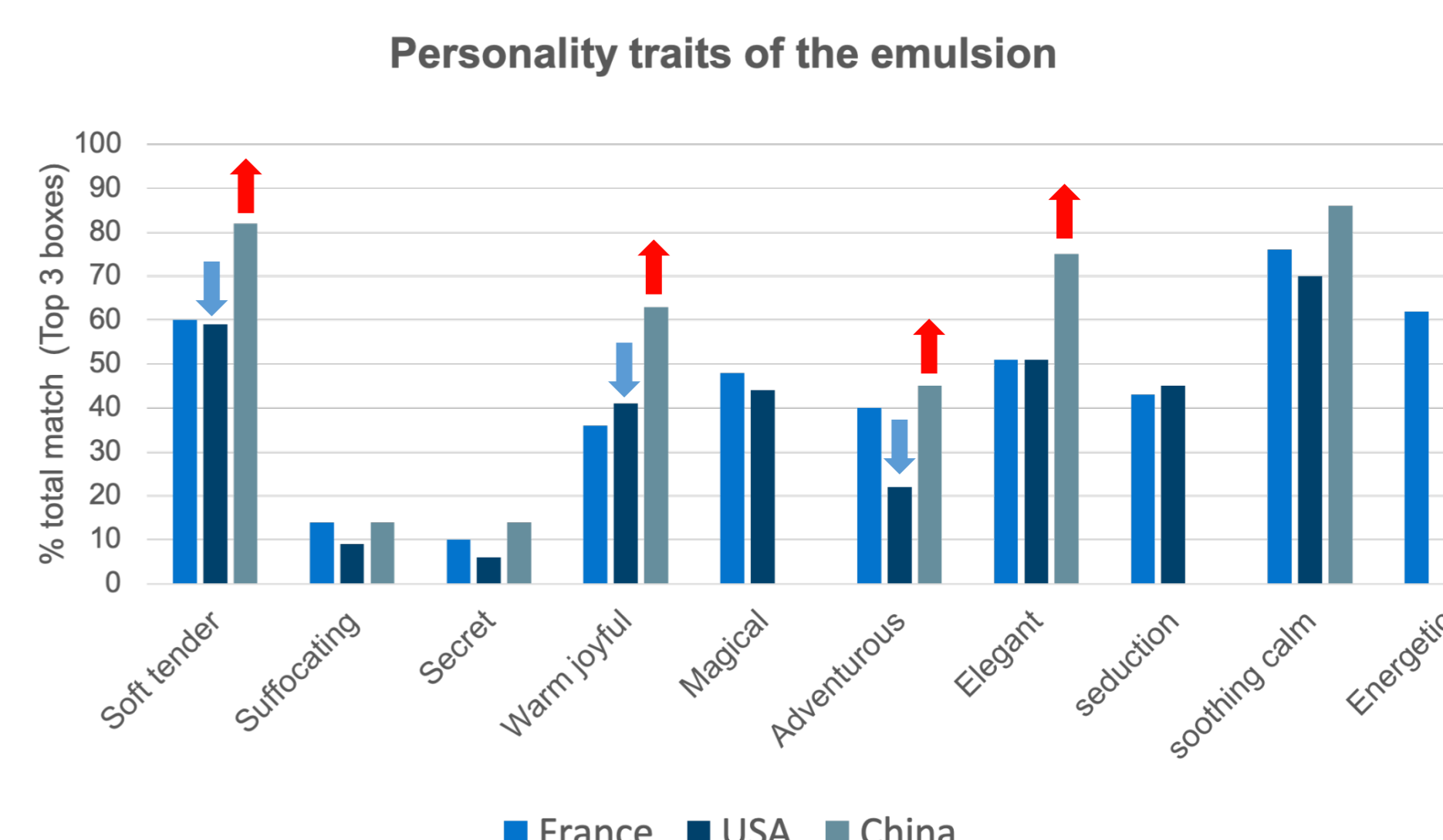


Chinese and French women expressed *joy, trust, and tenderness* whereas American women answered more negatively on these items. Roughly speaking, American women appear significantly less receptive and answer a specific low emotional response for all the emotions, even though they well appreciated the emulsion. Indeed, the global appreciation is good (above 6,4) by the participants from the 3 areas who think the emulsion is nice to apply, leave a comfort sensation and the skin enough hydrated all day long.

Looking more deeply into consumers responses as a function of the age, we noticed that all the emotions are similarly perceived, excepted *trust* more positivity felt. Thus, any other explanation can be made when looking into age brackets.

Personality traits

Regarding the personality traits of the emulsion, the opinions match much more. **The 3 countries strongly agree to attribute the adjective soothing calm to the emulsion, followed by soft tender. Elegant also reflects their experiences with the emulsion.** Therefore, a consensual description of the emulsion is come out from different cultures. This information can be particularly useful for developing a product: not only the product claims can be adapted to a global or specific market, but the formulation team can select the right ingredient which fit to the marketing claims.



Nonetheless studying emotions allows us to bring additional information that could give a new perspective to understand the consumers behavior. The texture of the emulsion may not correspond to the deep American consumers expectations. Obviously, assumptions related to the texture, feelings and the intensity of the fragrance could be done. For instance, American women may appreciate more perfumed, thicker, and richer galenic? A sensory qualitative approach could be a way to explore deeply the main emotions related to the product texture. On the other hand, American are usually known to rate the emotions a little bit lower than other population, especially compared to the Chinese consumers.

CONCLUSIONS

Such data should move the positioning of the ingredient toward premium applications as well as wellness and sensitive skin applications. By being used on 3 countries in the same way, this international non-verbal tool allowed to compare the emotional differences among them. Globally, Chinese consumers appeared to be most receptive, followed by French and then American consumers.

By means of this innovative study, we brought out the emotional features induced by the phospholipids-based ingredient in 3 different continents. This precious knowledge enables brands to take full advantage of the ingredient strengths and develop the texture fitting to the deep consumers expectations, while deploying the right international strategy.

REFERENCES:

- Pieter Desmet (2003) Measuring Emotions - Development and application of an instrument to measure emotional responses to products
- Gillian M.Eccleston (1990) Multiple-phase oil-in-water emulsions, J.Soc.Cosmet.Chem, 41, 1-22
- Maniere A, Trunet A, Olive C, Bezin C, Estelle Loing (2018) Biomimetic emulsifier with cashmere touch, Personal care Europe, April 2018.
- Plutchik, R. (Retrieved on 2008-05-08) “The Nature of emotions”
- http://www.personalityresearch.org/basicemotions.html A table of basic emotions according to a variety of authors.
- ©2013 Hoffman Institute Foundation Rev. 03/15. Feelings List
- Danilo S. & Kergoat M. (2009), Pangborn Symposium (oral presentation): Sense'n Feel™, a new nonverbal tool to differentiate fragranced products.
- S. Danilo, L. Dreyfuss, D. Brémaud and C. Quinton, Pangborn Symposium (oral presentation), Could a nonverbal emotional method be cross-cultural?