

# When time is of the essence

## - Rapid mapping of emotional and sensory characteristics of products

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### Introduction

Today's food, drink and personal care markets are busy, with more product launches than ever.

Approximately 400,000 new products are launched globally each year [1]. This ever increasing number of product launches requires faster product development for CPG companies to keep up with competitors, while ensuring both consumer liking and fit-to-brand is achieved. Beyond delivering key brand equities, products elicit conceptual associations, which in turn trigger emotional outcomes for consumers [2].

This can heavily influence consumer product and brand acceptance, therefore achieving conceptual and product fit leads to repeat purchase, strengthening the overall brand. This is a fundamental goal for worldwide CPG companies and ensuring that the accurate measurement of conceptual associations is included during product research can be key to achieving brand success.

Research has shown that fragrance is the strongest sensory stimulus for both conceptual and emotional associations [3] and therefore crucial, particularly in personal care products, to delivering against the intended functional and emotional benefits of the brand promise.

Developing an agile solution to characterize the ideal fragrance to cue key brand conceptualizations is a ground-breaking development for rapid new CPG product formulation.

### Objectives

This study developed a process to integrate two agile sensory and conceptualization approaches [4-5];

- Taxonomic Free Sorting (TFS) sensory mapping
- Check All That Apply (CATA) conceptual profiling

These were combined to investigate the relationship between fragrance profiles of personal care products, and the conceptual associations they trigger.

### Method

30 bath products were assessed for fragrance by a trained expert panel (n=12). 2 mL of each bubble bath was placed in 30 mL glass odor tubes with individual sets prepared for each panellist. To prevent light damage and any visual assessments, each tube was covered and labelled with 3-digit codes before being presented to the panel.

Panellists assessed each sample individually before grouping the 30 products according to similarities into a minimum of three groups.

Descriptors of the characteristics which united the products in each group were provided by the panellists and conceptual associations for each product were selected from a randomized CATA list containing positive, negative and neutral terms (Table 1).

Table 1:  
Conceptual Terms included in CATA list

Annoying	Indulgent
Brash	Irritating
Calm	Miserable
Caring	Masculine
Cheap	Playful
Cheeky	Powerful
Cheerful	Reassuring
Comforting	Relaxed
Elderly	Sensual
Feminine	Simple
Friendly	Sociable
Fun	Traditional
Happy	Youthful

After a short break, panellists combined the two groups of their individual sort they considered to be most similar, justifying the sensory rationale behind this new grouping. This process was repeated until only two groups remained.

In total only three hours of panel time was required to complete both the taxonomic free sorting and CATA tasks, which allowed analysis to produce a PCA map of the CATA data correlated with the taxonomic free sorting results.



### Findings

Mapping CATA and taxonomic free sorting data highlighted the role of fragrance in personal care products in triggering a wide range of conceptual associations (Figure 1).

Six distinct regions of the map were identified, each driven by the conceptual associations triggered by the product fragrance profiles. Within each of these regions it was clear that specific sensory characteristics were driving consistent and clear emotional and functional associations, for instance:

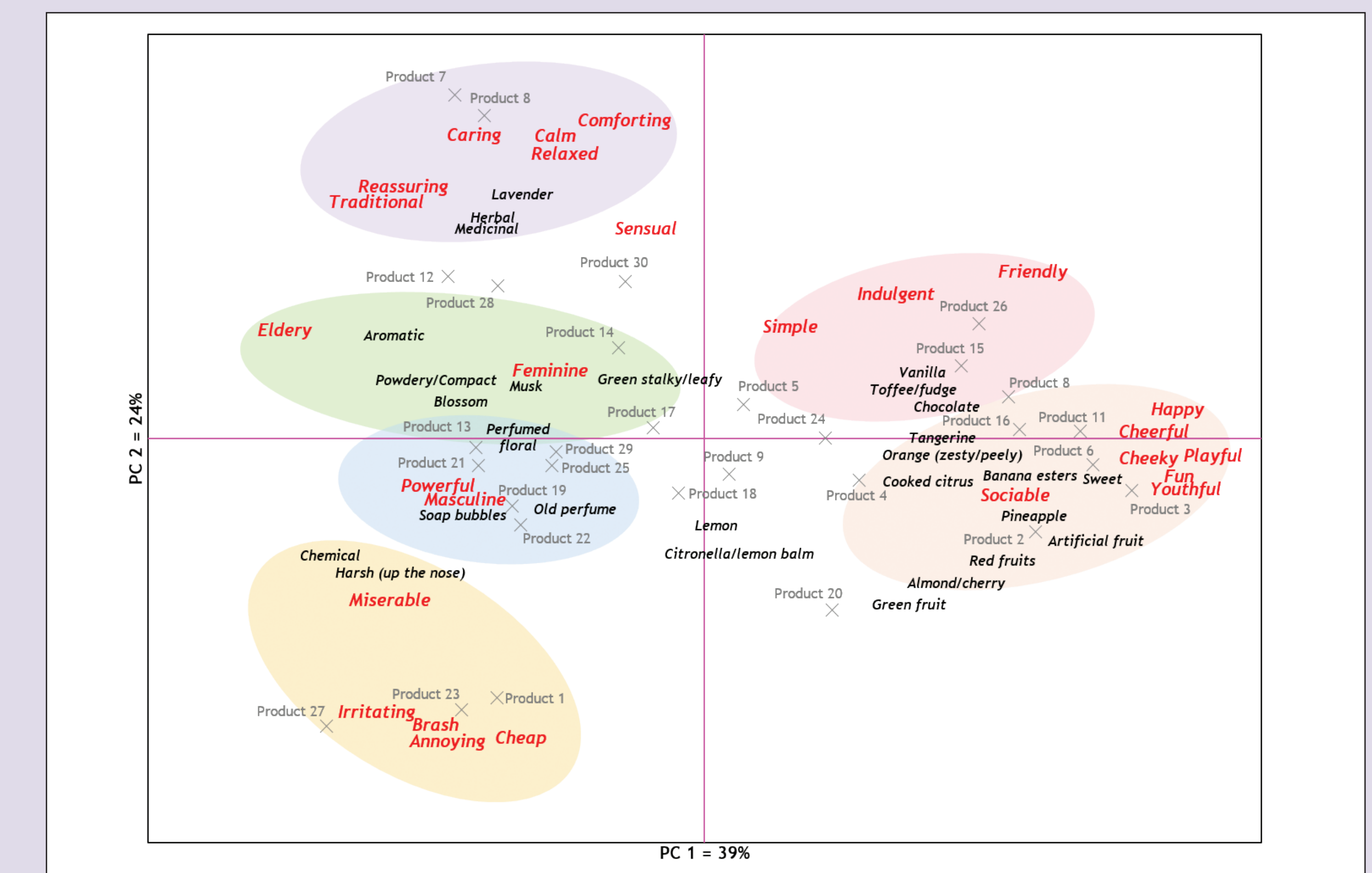
- Caring, calm, relaxed, reassuring and traditional associations are cued by lavender, herbal and medicinal fragrances in these bath products
- Chocolate, toffee and vanilla scents generate indulgent and friendly associations
- Fruity scents are considered happy, cheerful, playful, fun and youthful
- Unsurprisingly the harsh chemical characters of products 27, 23 & 1 lead to strong irritating, brash, annoying and even cheap cues, and are unlikely to be desirable for consumers

Interestingly, while feminine and masculine are in similar regions of the map, with perfumed notes linking these terms, secondary fragrance notes play a key role in defining whether a fragrance is associated with being more feminine or masculine;

- To deliver feminine cues, floral blossom, compact powdery notes and musk are key, with fragrant characters bringing in older, more elderly associations
- In contrast soap and old stale perfume characters deliver more powerful and masculine associations, highlighting the role of both attribute intensity and secondary fragrance notes in delivering diverse conceptual associations

The breadth of sensory characteristics and conceptualizations developed during this study indicates how fragrances can lead to strong and varied conceptualizations. This gives further weight to the opportunity to design products specifically to deliver desired brand equities through conceptual association, even during a rapid product development process.

Figure 1:  
PCA map of products with both conceptual and sensory descriptors



Conceptualizations  
Sensory Descriptors

### Conclusions

This study combined two agile sensory approaches to understand the role of fragrance on the conceptual profile of personal care products. Taxonomic free sorting, provided the sensory characteristics of a wide range of bath products, while CATA integrated conceptual associations to provide the key equities of the fragrances and the products.

Combining these rapid approaches, allowed sensory and conceptual insight to be generated in just three hours of panel time, providing opportunities to integrate both functional and emotional benefits in any product development process. Providing this level of insight quickly during early stage NPD offers greater clarity for development while prioritising conceptualizations. These fundamental product and conceptual learnings ensure CPG companies achieve fit to brand; a key requirement for all new products.

1) Mintel (2016), Global New Products Database  
2) Thomson, D.M.H., Withers, C.A., Coates, T. (2016) A new indirect approach for capturing emotion in product research, Eurosense workshop presentation  
3) Toffolo, M.B.J., Smeets, M.A.M., van den Hout, M.A. (2012) Brief Report Proust revisited: Odors as triggers of aversive memories. Cognition and Emotion 26 (1): 8392  
4) Courcoux, P., Qannari, E.M., Taylor, Y., Buck, D., Greenhoff, K. (2012) Taxonomic free sorting. Food Quality and Preference 23 (1):30-35  
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