Creation of a link between sensory description and evocation with the help of Pivot Profile ©

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I. Introduction and objectives

Sensory evaluation of a perfume is a delicate and difficult challenge due to the diversity of olfactory notes and their complex combinations. In this way, sensory descriptions are often subjective, and evocations produced by a perfume are unspecified and individual. This study has a double aim :

- Determining olfactory sensations and produced evocations (consumer's mind) of 7 perfumes
- Highlighting the existence of correlations between sensory descriptors and personal evocations in order to meet our major issue :

Is there a link between the sensory characterization of a perfume and its evocations ?

The sensory analysis method implemented in this study is the "Pivot Profile ©" [1.Thuillier 2010], which consists of a comparison between each perfume with the reference called "Pivot", an equimassique mixture of the 7 perfumes.

II. Sensory descriptions versus evocations

The study was conducted on 60 consumers from 18 to 25 years, in blind conditions and was based on the evaluation of 7 anonymous perfumes. Consumers compared each perfume to the "pivot", by writing, with their own words, what it had "more" or "less" than the pivot in the way of sensory description, and then, in the way of evocation.

The obtained results were processed in Excel® and Tastel® software. Two Factorial Correspondence Analysis (FCA) were performed using keyword descriptors. A keyword descriptor brings together synonyms under a common sense : 9 descriptive terms and 7 evocative terms were selected (Table1).

Table 1 : Keyword descriptors selected for description and evocation

Description	Floral , Fresh, Soft, Sweet, Spicy, Fruity , Woody , Acid, Strong
Evocation	Candies, Childhood, Nature, Holidays, Cleanliness , Grandmother , Spring

Pivot Profile© succeeded in highlighting that the main OLFACTORY NOTES of each perfume were easily identified by consumers (Figure 1).
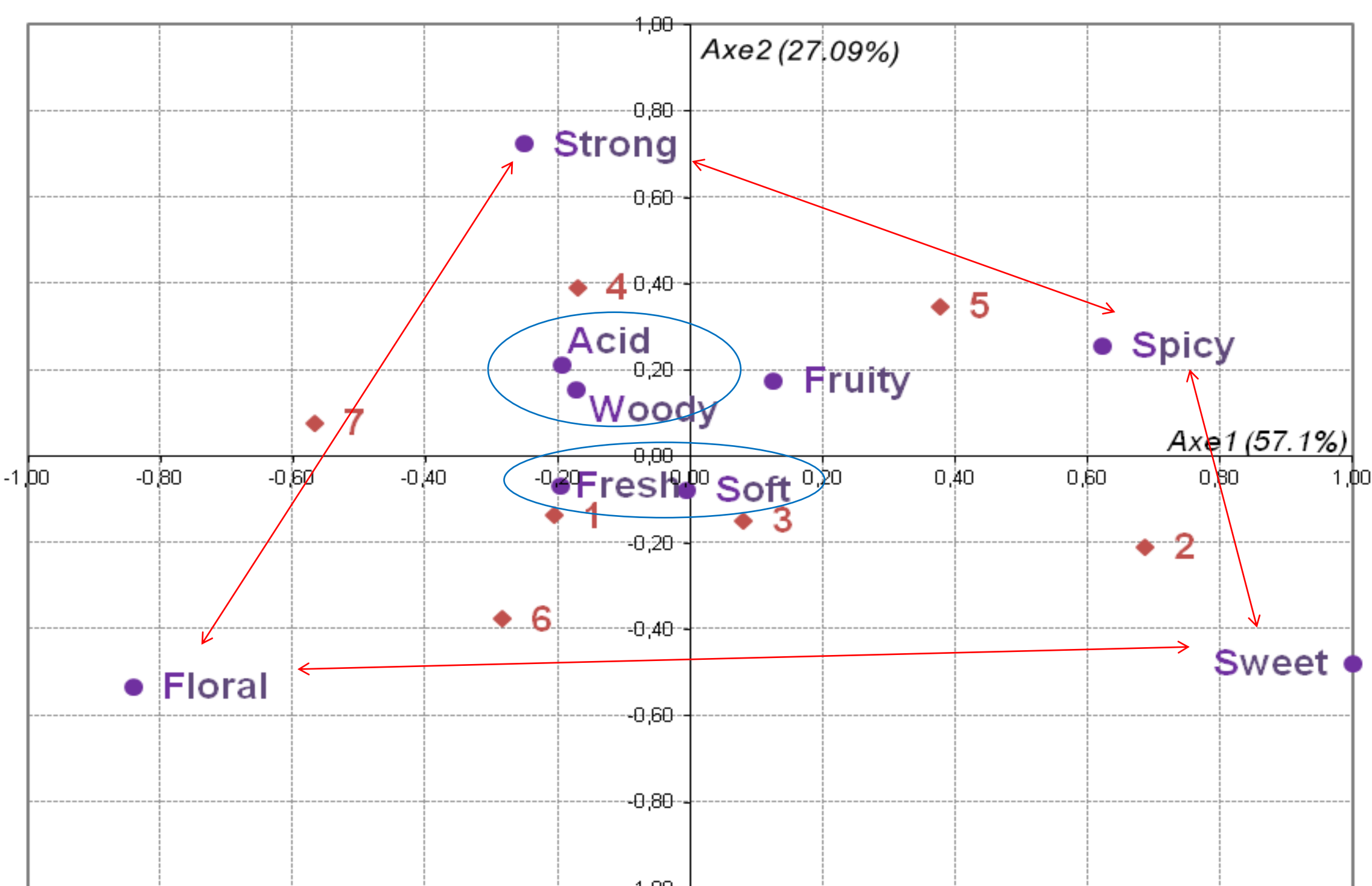
Percentage of information provided by the first component on the figure : 84.19% : good representation of all individuals in the panel.
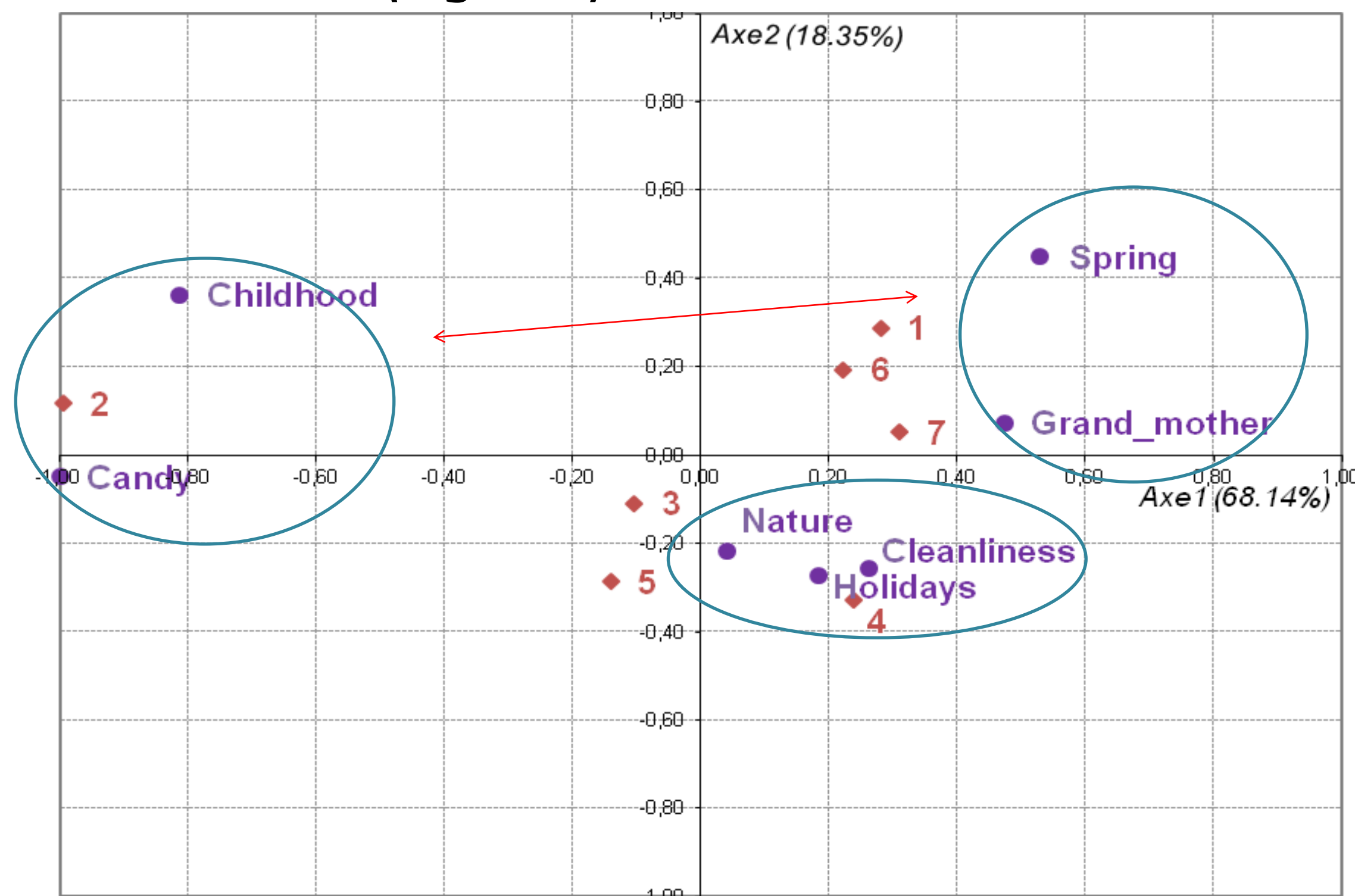
Figure 1 : Perfume's olfactory descriptions (FCA)

Pivot Profile© succeeded in highlighting that some consistency appears through consumers' expression, in spite of the difference and the subjectivity of answers from a consumer to another in PERFUME'S EVOCATIONS (Figure 2).

Percentage of information provided by the first component on the figure : 68,14% : good representation of all individuals in the panel.

Figure 2 : Perfume's generated evocations (FCA)

With the help of these two FCA, perfume's olfactory descriptions and evocations were established (Table 2).

Table 2 : Perfume's olfactory descriptions and evocations

Perfume's Number	Perfume's Olafactory Family	Description	Evocation
1	Floral	Fresh	Cleanliness, Holidays
2	Oriental	Sweet, Spicy	Candies, Childhood
3	Floral	Soft	Nature
4	Citrus	Acid	Holidays, Cleanliness
5	Citrus	Fruity, Spicy	Nature
6	Floral and fruity	Fresh, Sweet	Holidays, Cleanliness
7	Chypres	Floral, Woody	Grandmother, Cleanliness

Perfume's olfactory description :
- Terms "floral", "sweet", "spicy" and "strong" are opposed
- High correlation between "acid", "woody" and "fresh"

Perfume's generated evocations
- Descriptor "childhood" and "candy" opposed to "grand_mother" or "spring"
- Descriptors "nature", "holidays" and "cleanliness" are highly correlated
- Descriptors "childhood" and "candy"
- Descriptors "spring" and "grand_mother"

III. Creation of a link between sensory description and evocation

Links between descriptive terms and evocation terms were analyzed by a PCA (Principal Components Analysis) statistical method which uses the occurrence frequency of each basic descriptor in the concerned FCA analysis (Figure 3). The PCA was performed with the 16 keyword descriptors, in order to see if the perceived olfactory notes can be associated with recurrent personal evocations and if these can be assigned to a specific perfume as mean of characterization.

- We highlight some strong positive correlations (>0,80) between descriptors :
  - Childhood and sweet
  - Spring and floral
  - Candy and sweet
  - Candy and childhood
  - Grandmother and woody
  - Cleanliness and acid
- Also, a strong negative correlation between descriptors spicy and floral exists (>0,80) .
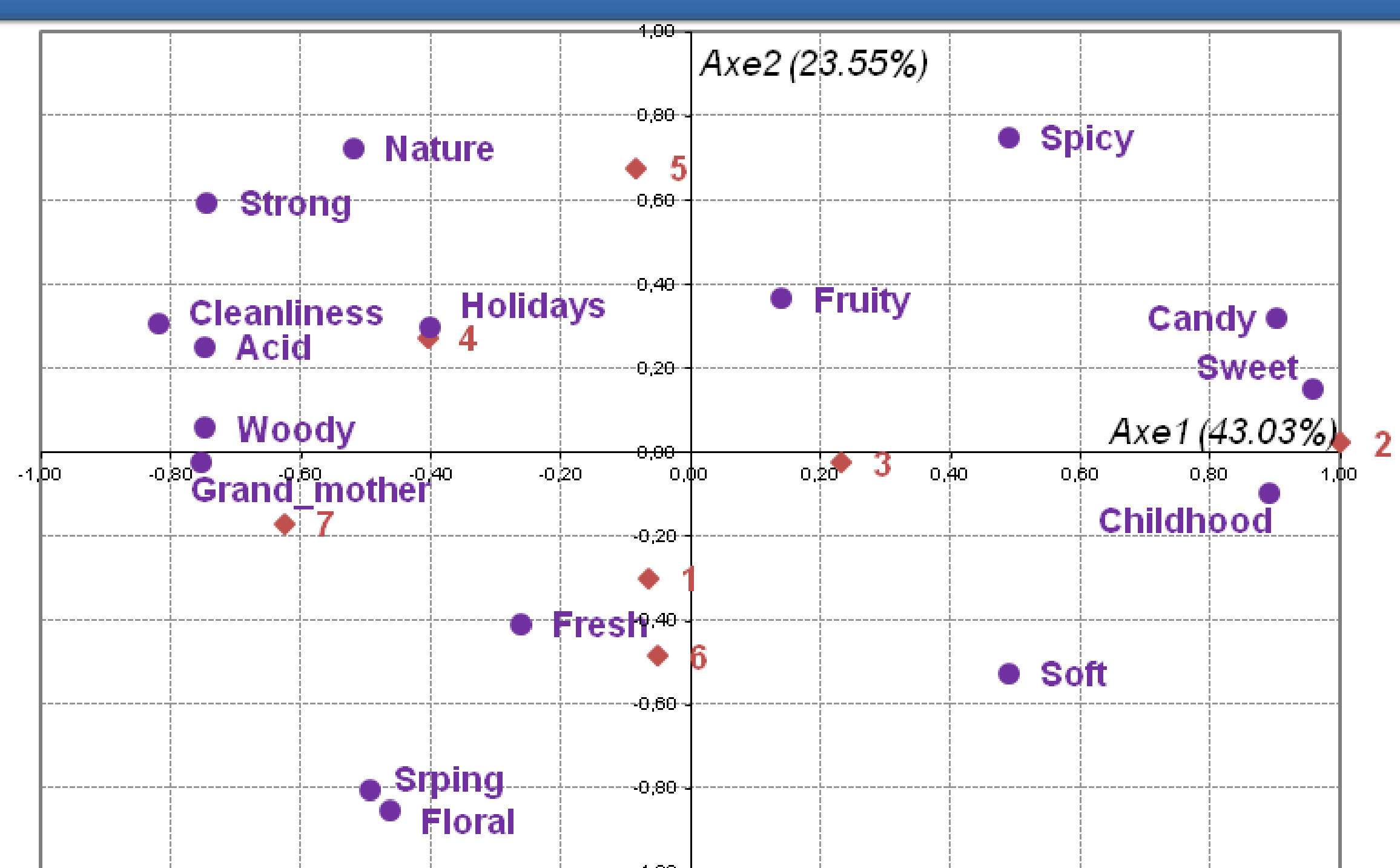

Figure 3 : Link between olfactory descriptions and generated evocations (PCA)

IV. Conclusion

Sensory description is quite realistic ; descriptors are common between consumers and similar from real perfume's olfactive characteristics. Generated evocations were subjective and different from a consumer to another, but it appears a certain consistency through the consumer expression. This coherence had let us to select keyword descriptors among all the terms of the volunteers, and underline that some perfumes involved in this study, represent real "pictures of emotions".

➔ Finally, Pivot Profile© allows us to show that a real link between sensory description and evocations exists. This association let a better understanding of consumer's perception by industrials.

– Thanks to all the panelists for having participated at this study –

Reference : 1. Thuiller. *Pivot Profile© , new sensory method for complex products' evaluation.* http://www.abt-sensory-analysis.com/docs/methode_profil_pivot.pdf 2010.