The Ideal Mapping: a new technique for the determination of a consensual ideal product from the *IPM.*

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Introduction

In sensory, it is common sense to ask experts/trained panels to describe the products of interest. This generates the so-called product profiles.

In parallel, consumers are asked to rate the same products on overall liking.

Alone, this information (sensory or hedonic) is not valuable: it has to be combined. This can be done statistically, using different methodologies.

Among these methodologies, we can mention:

- the external preference mapping (PrefMap);
- the Landscape Segmentation Analysis (LSA);
- etc.

Introduction

The use of such statistical methodologies allow defining area which would be common to a maximum of consumers.

This would be a maximum in the surface plot proposed by Danzart for the External Preference Mapping technique.

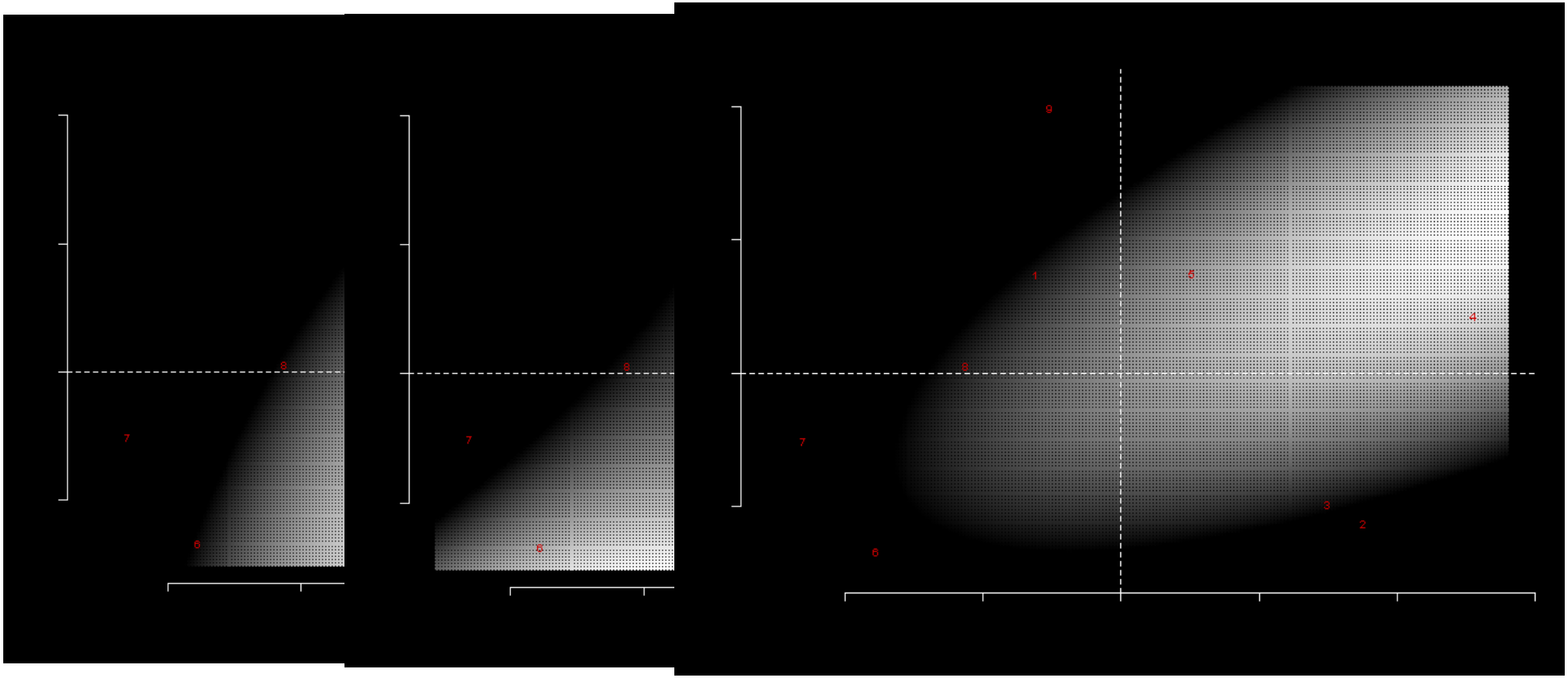
These areas (of maximum consensus) are often called “ideal”.

The sensory profiles of these “ideal products” can be estimated, for instance by the use of the inverse formula of the PCA.

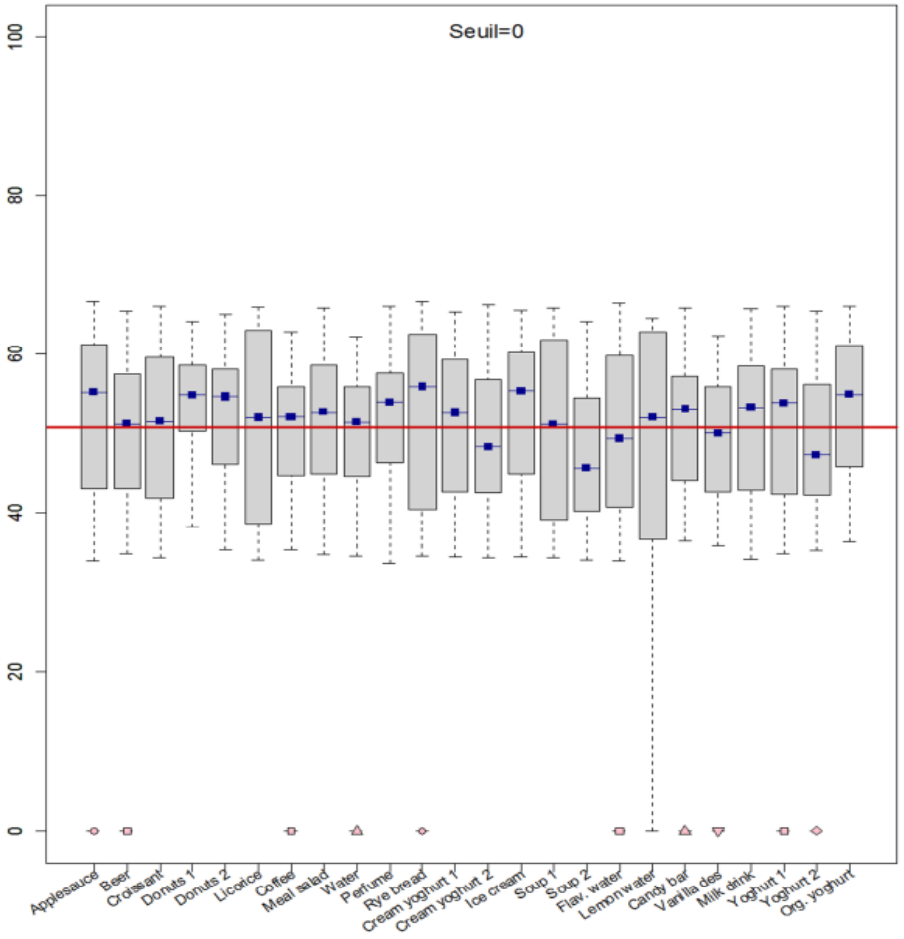
But what does this maximum mean??

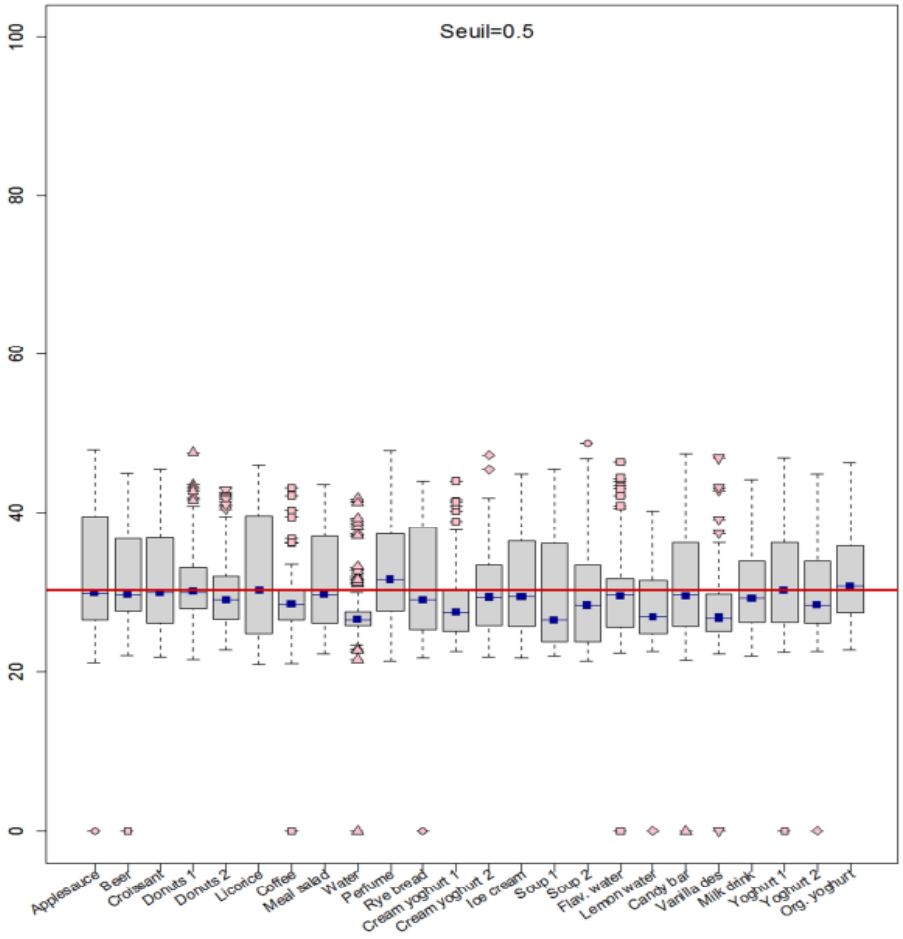
Consensus and PrefMap?

Individual surface of acceptance? (standard level in PrefMap)

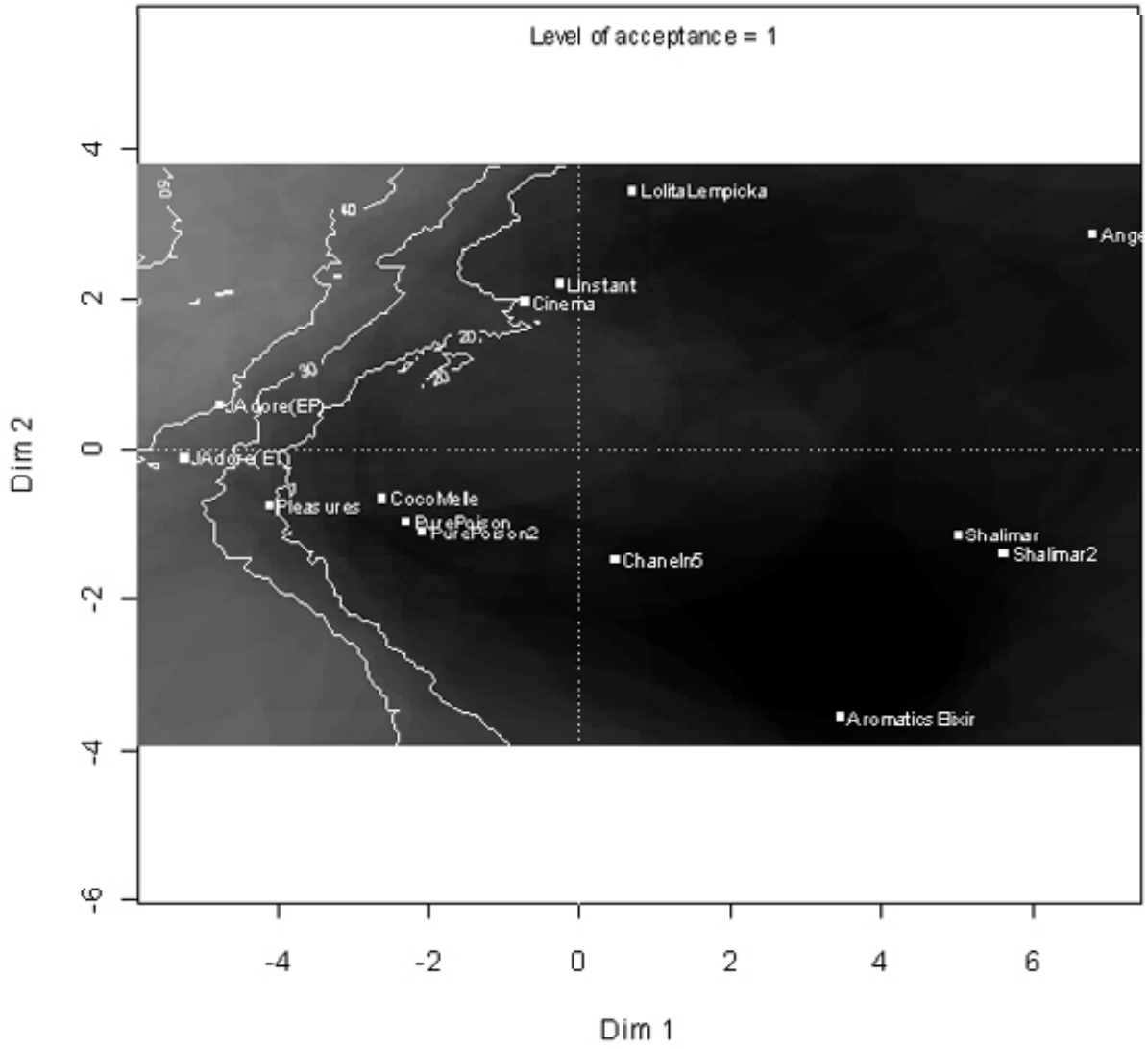


Consensus in PrefMap? (24 projects)

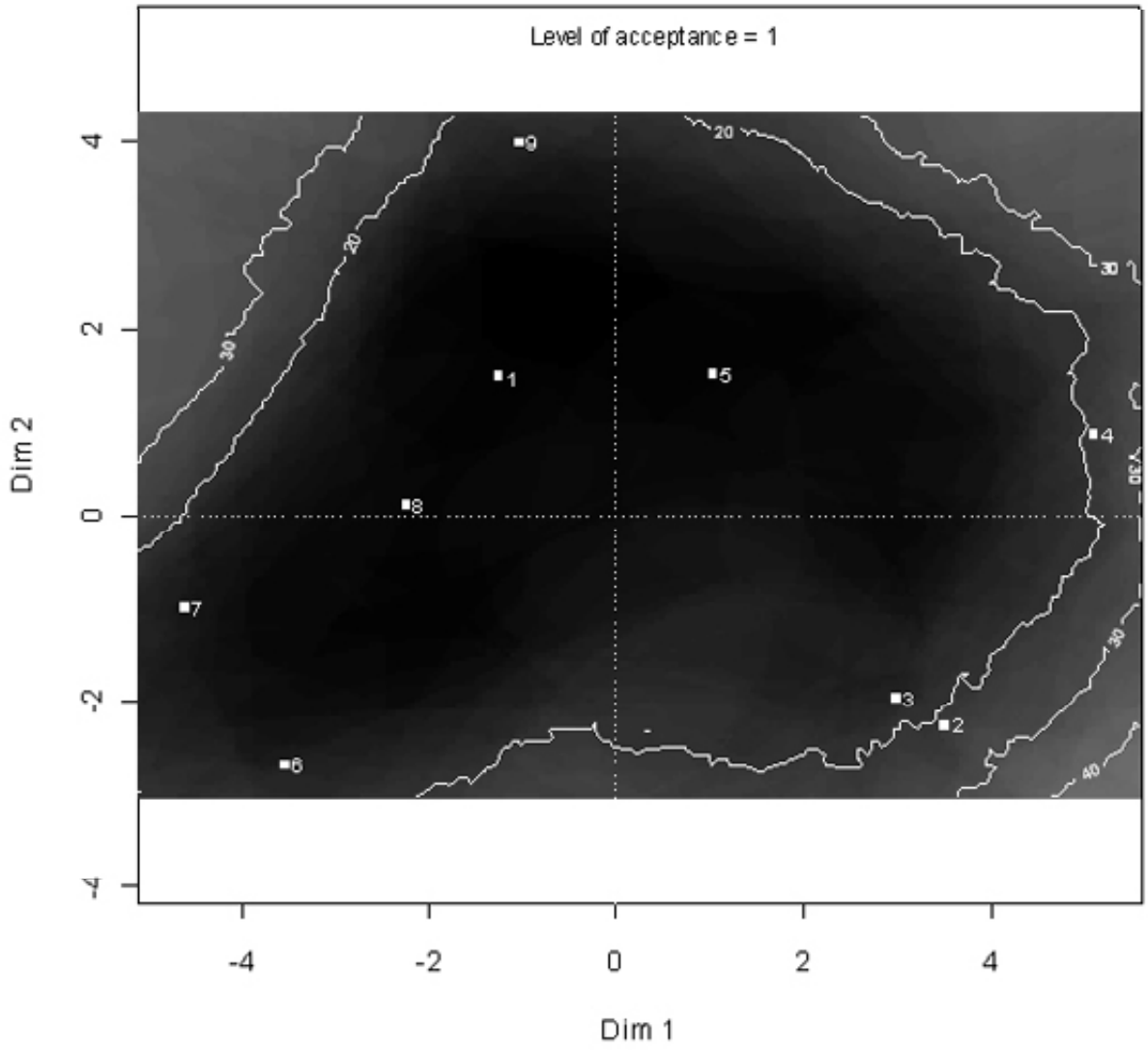




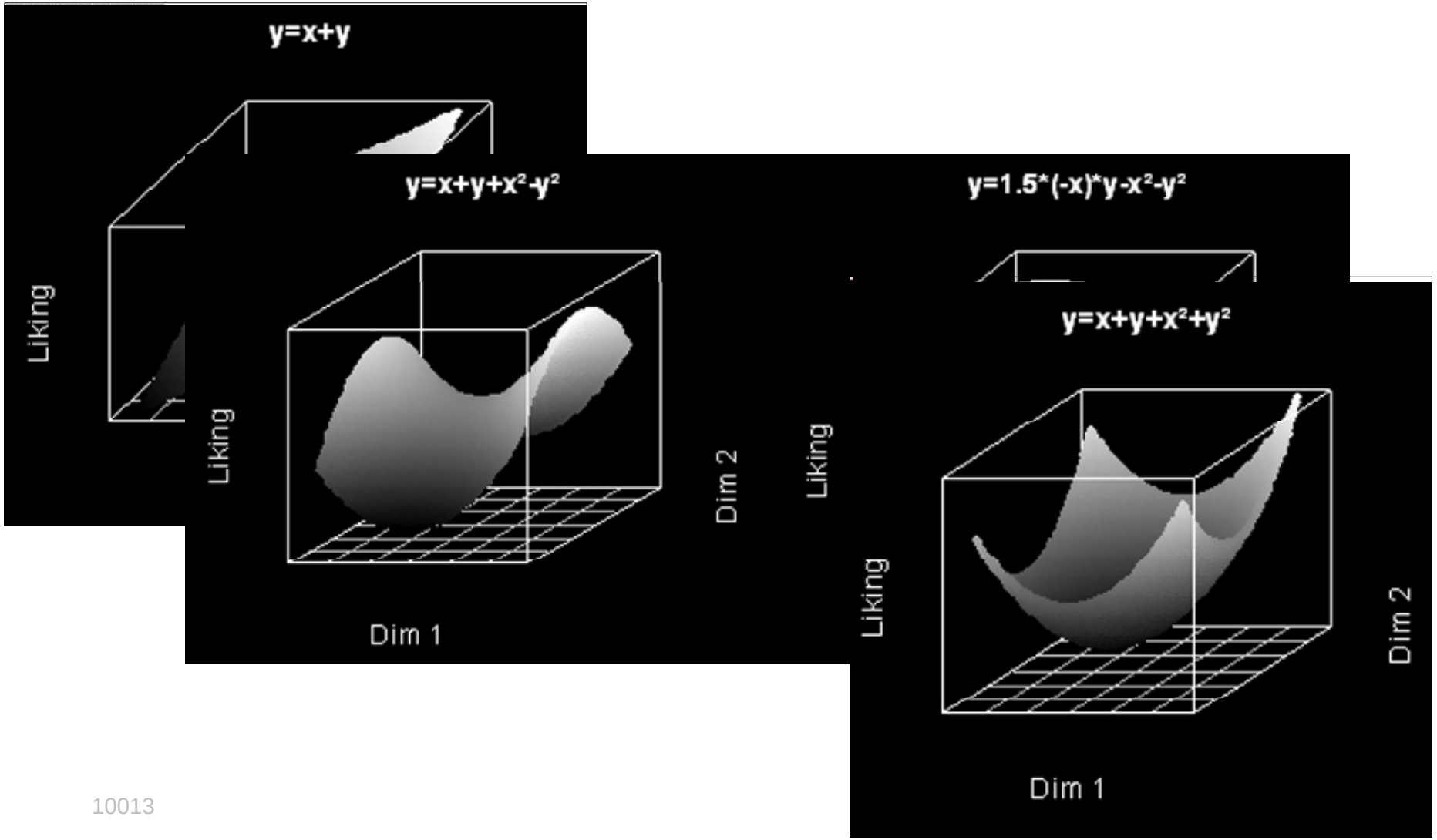
Stability of the PrefMap?



Stability of the PrefMap?



Individual responses

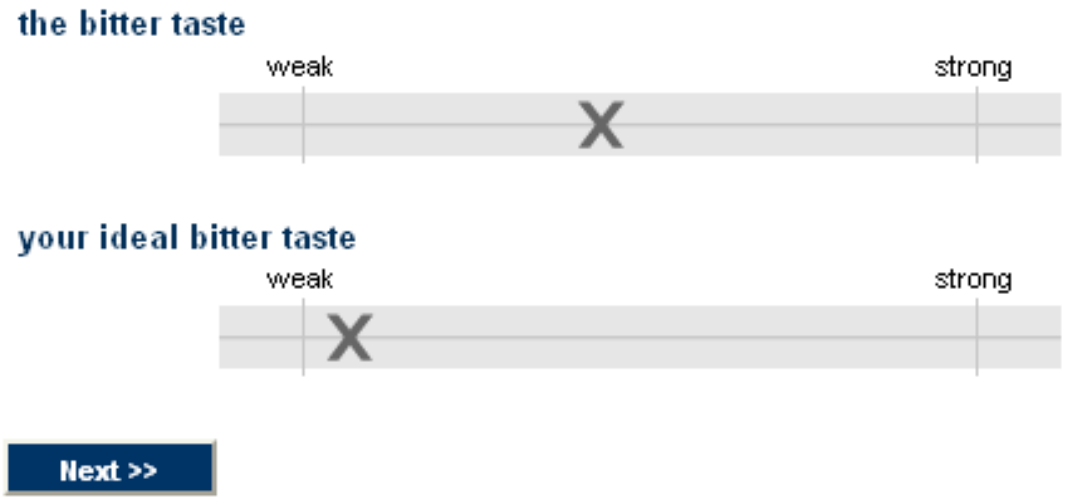


The Ideal Profile Method

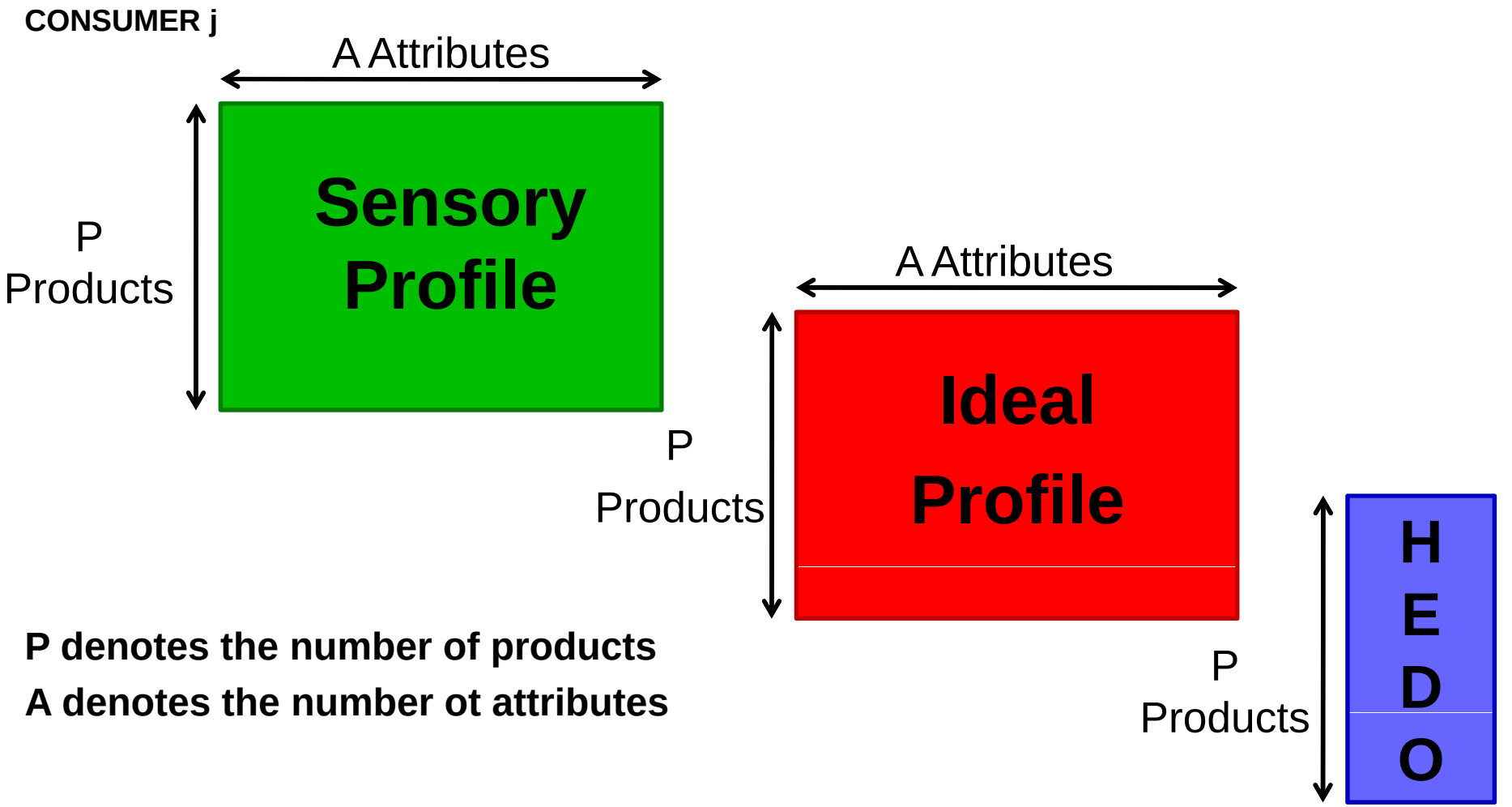
Use of IPM to define a new Ideal of Reference…

Introduction to the Ideal Profile Method

IPM: consumers are asked to rate the products on both perceived and ideal intensities on a list of attributes. Hedonic scores are also asked.



Introduction to the Ideal Profile Method



P denotes the number of products

A denotes the number ot attributes

Benefits of the Ideal Profile Method

With the Ideal Profile Method, consumers provide directly their ideals.

→no need of estimating them.

In this case, we still need to define the profile of the ideal product used as reference. Often, the averaged ideal profile measured for the entire panel is considered.

Although this solution seems to be interesting, it is not always optimal (particularly not when some segmentation is observed).

Objectives of the Ideal Map

- help defining the Ideal of reference to consider…
- consider the ideal information of the consumers…
- be related to the products tested.

→ **METHODOLOGY INSPIRED BY PREFMAP BUT USING THE IDEAL INFORMATION PROVIDED BY THE CONSUMERS**

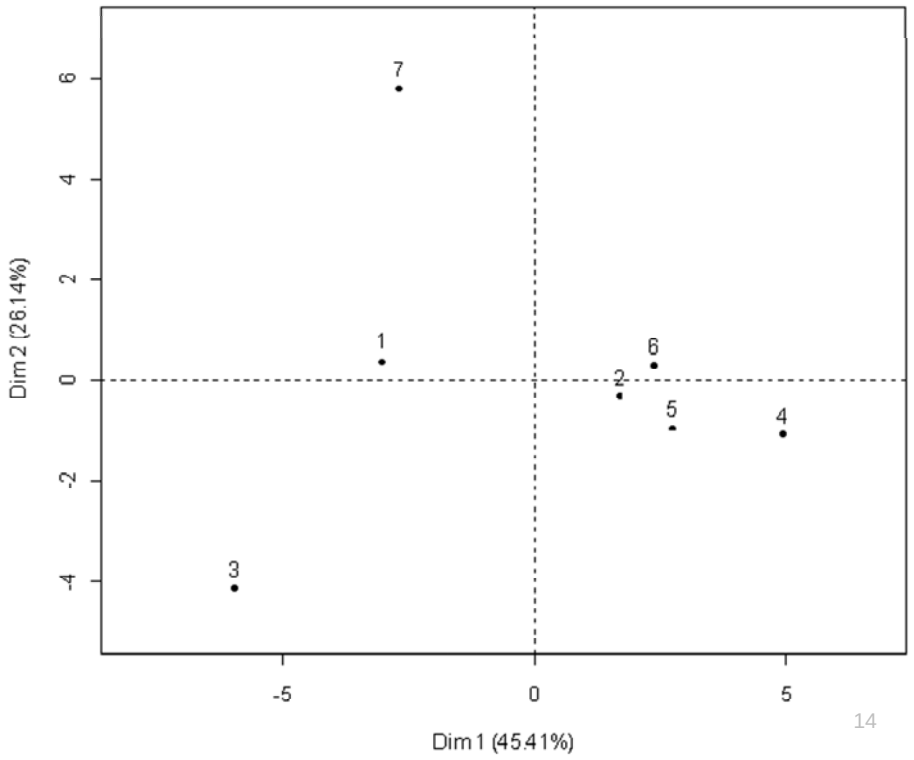
Creation of the sensory space

***A* attributes**

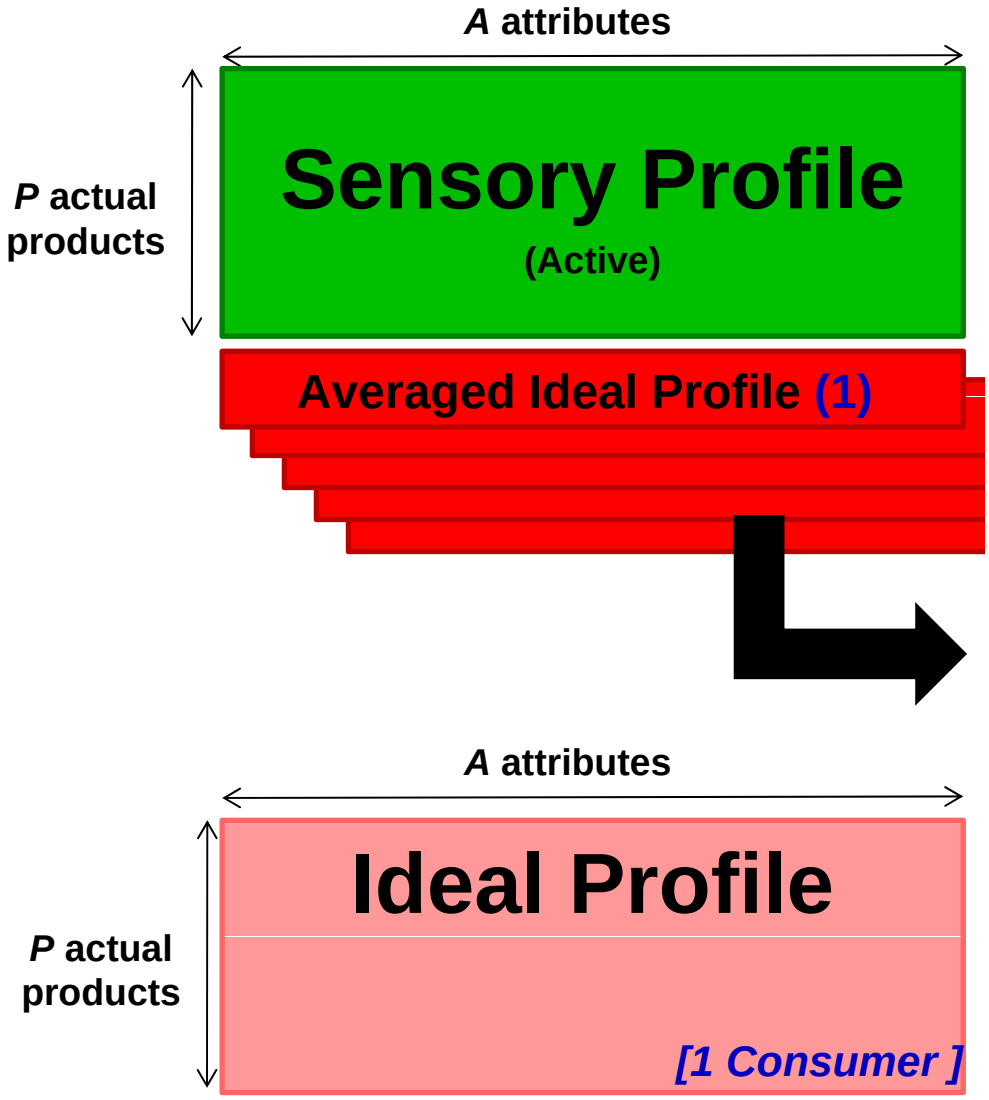
***P* actual products**

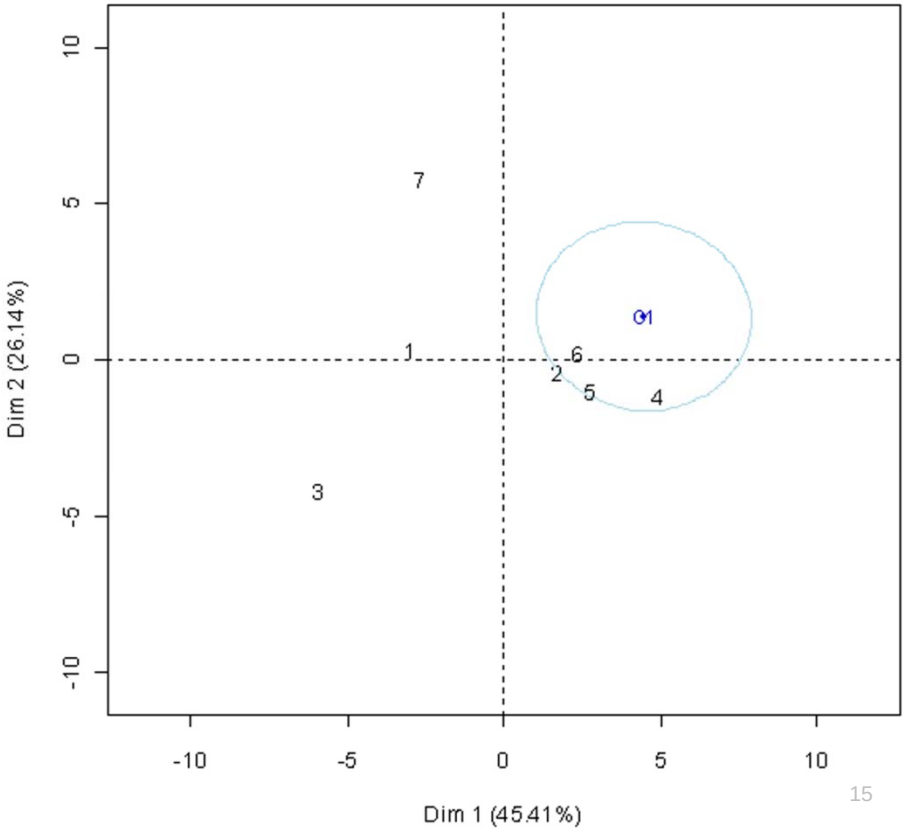
Sensory Profile

(Active)



Creation of the confidence ellipse around the ideal





Creation of the confidence ellipse around the ideal

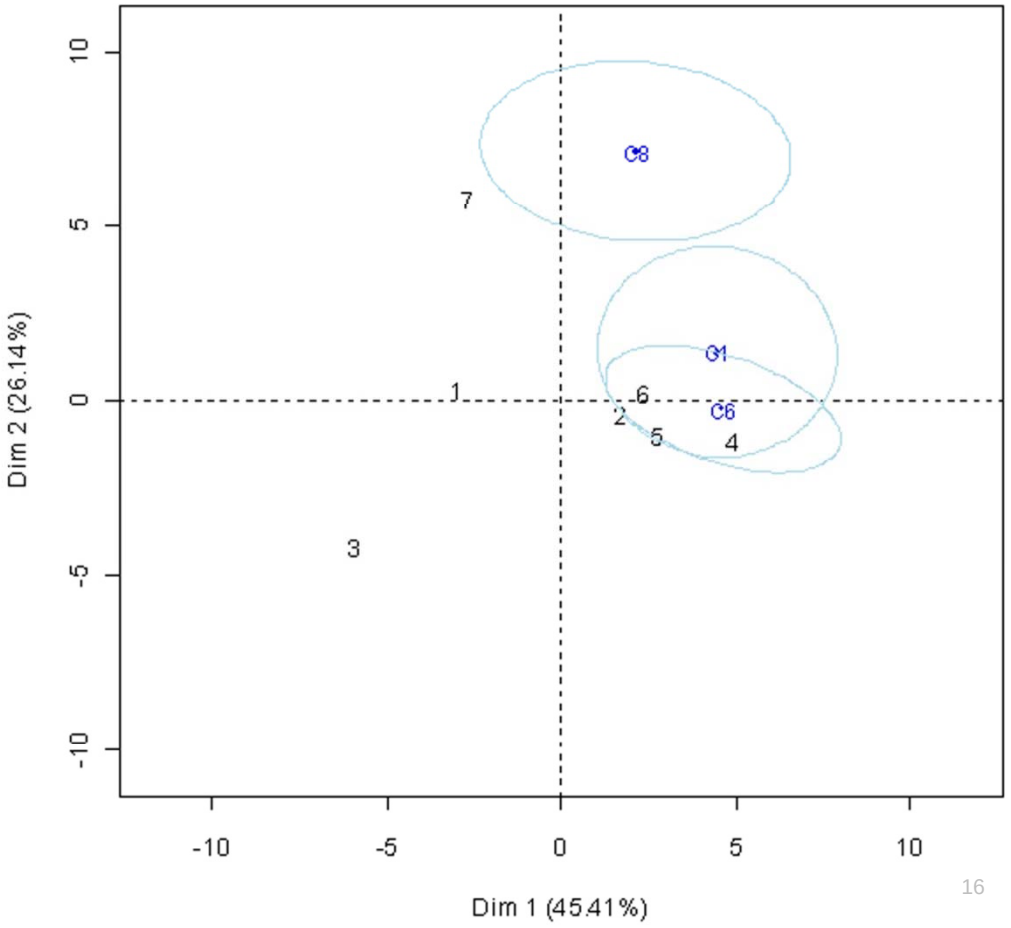
Sensory Profile

(Active)

Averaged Ideal Profile (3)

Ideal Profile

[3 Consumers]



Creation of the confidence ellipse around the ideal

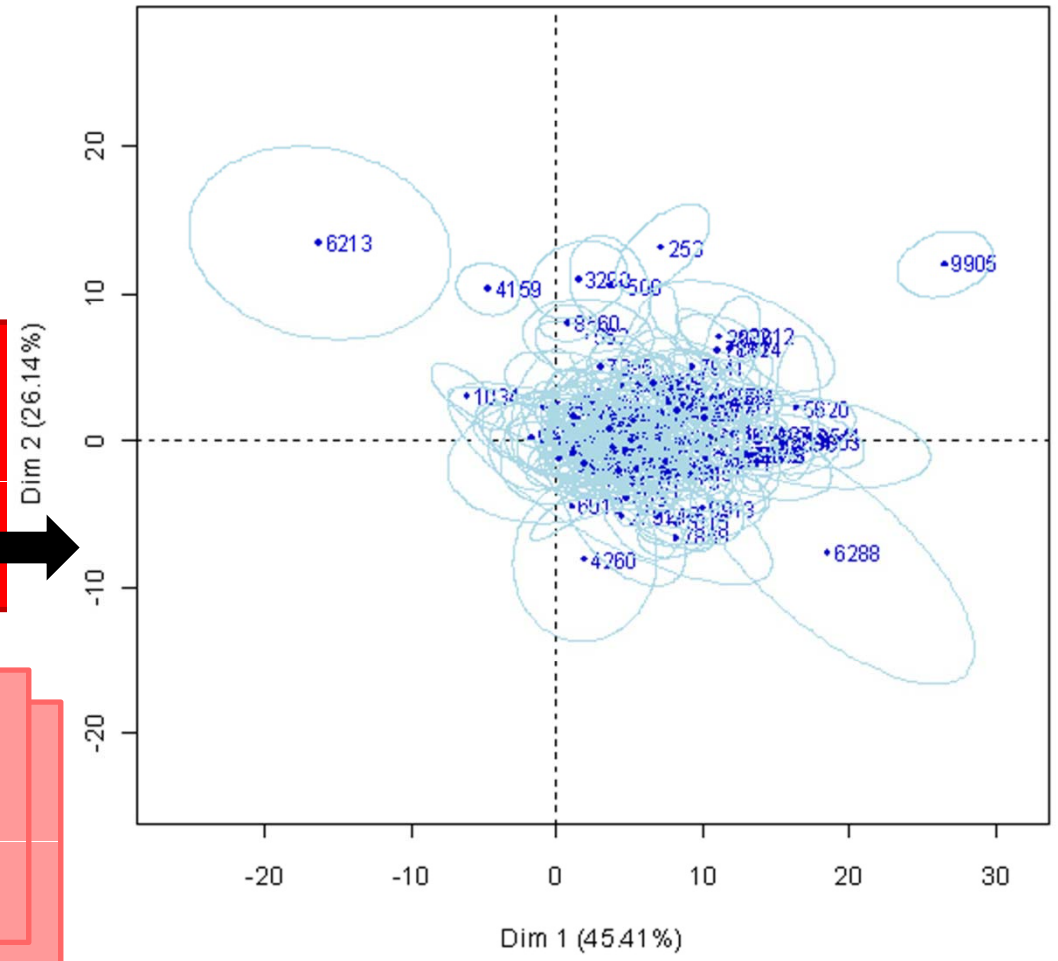
Sensory Profile

(Active)

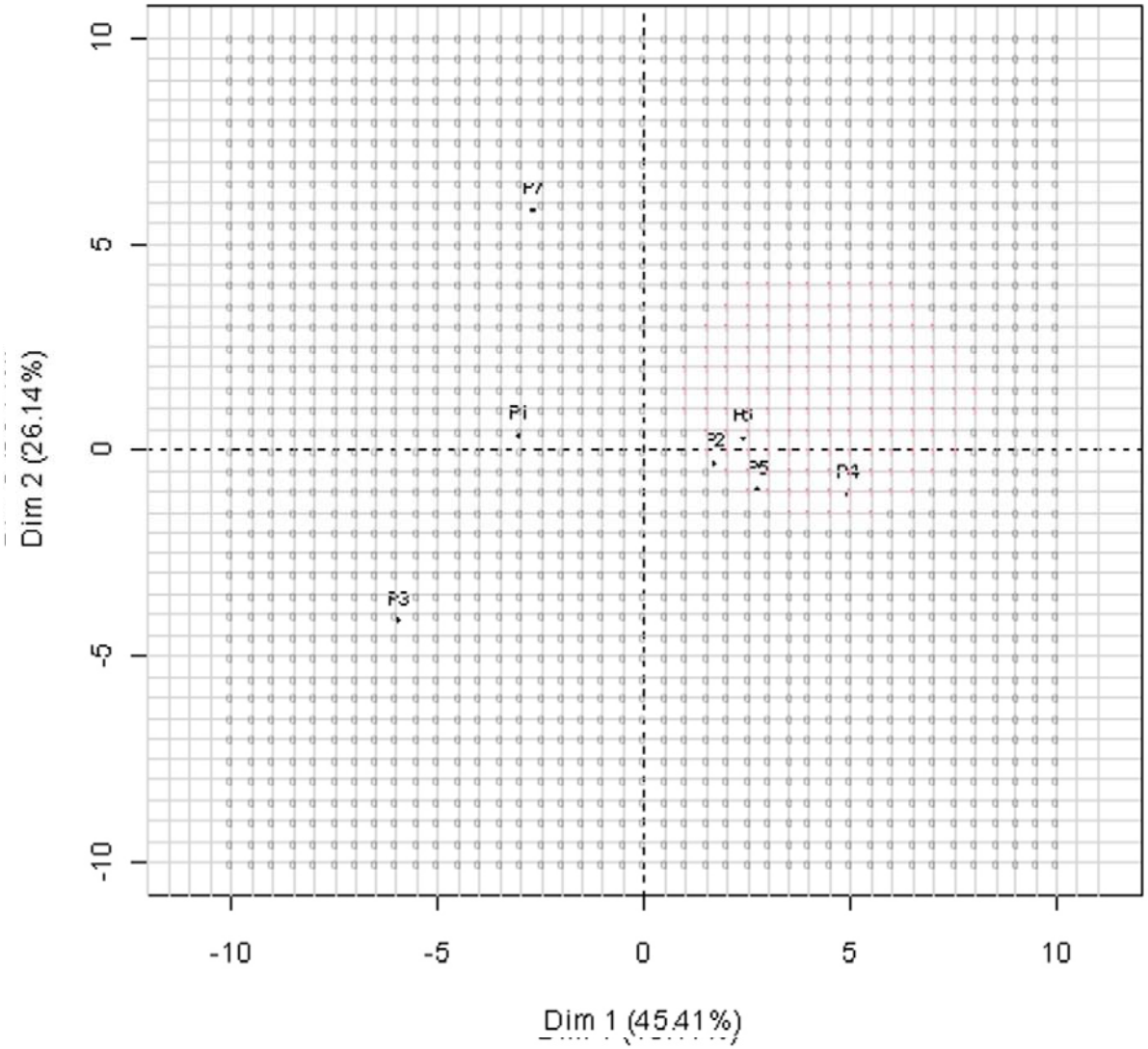
Averaged Ideal Profile

Ideal Profile

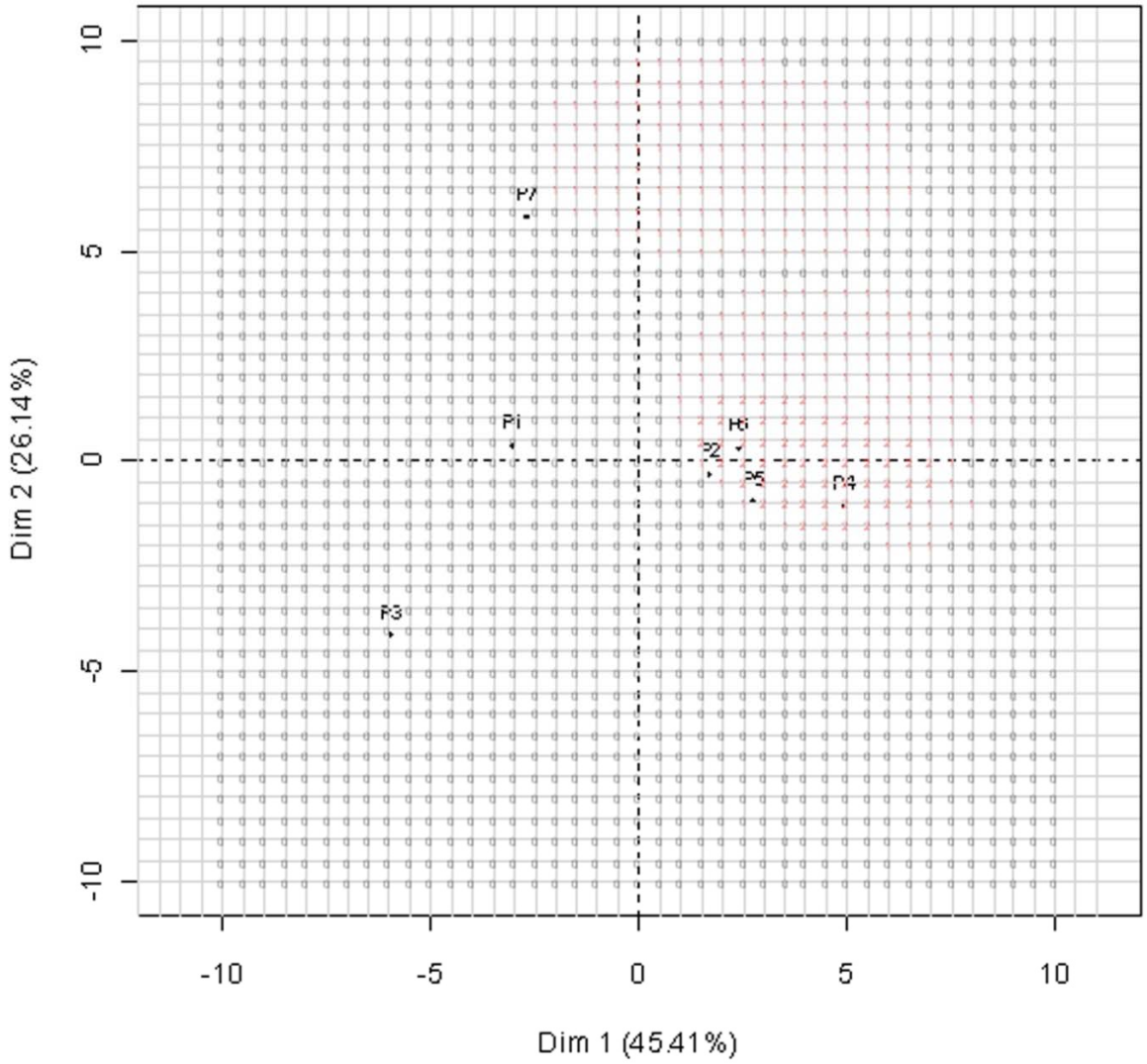
[All Consumers]



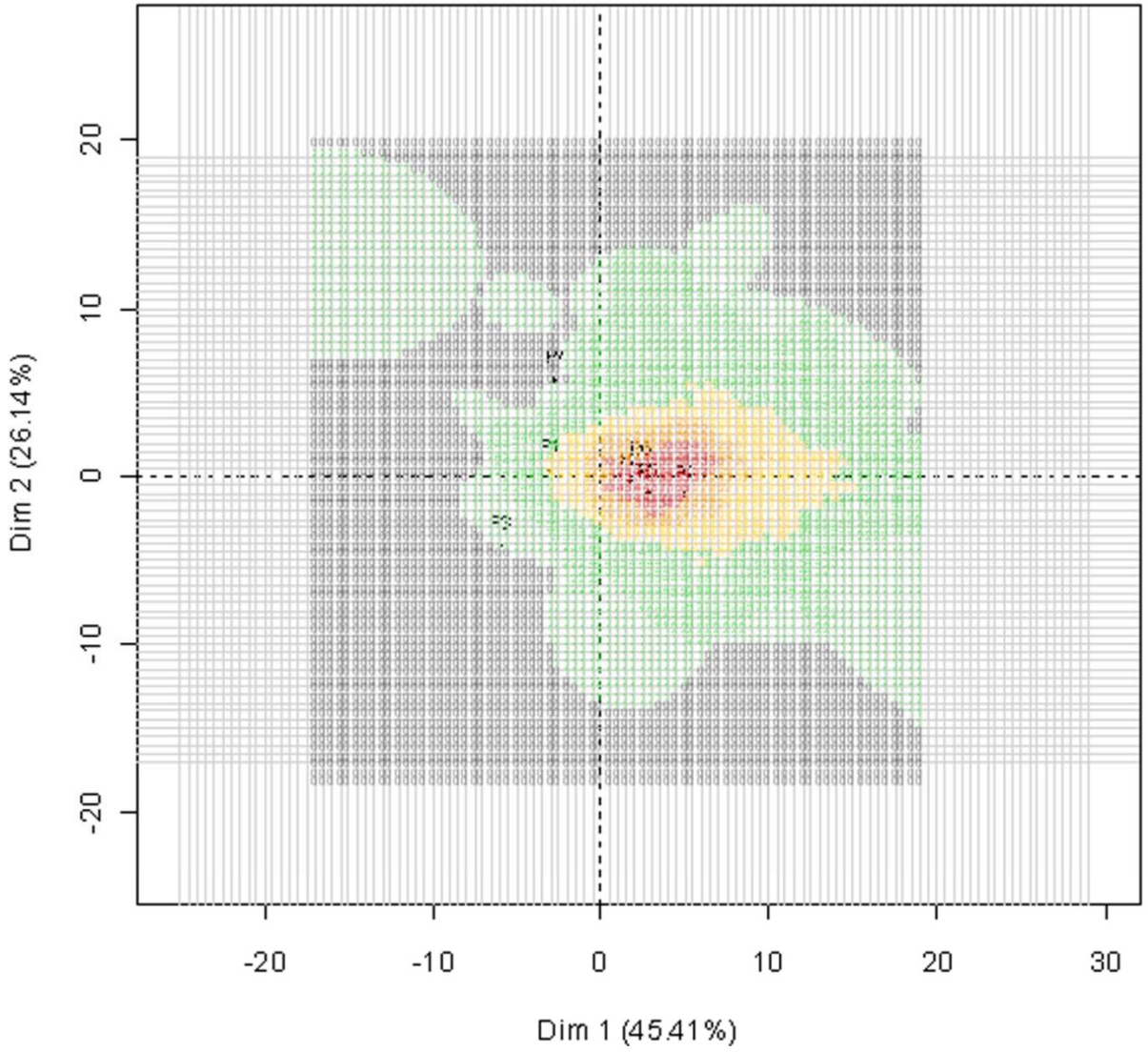
Grid the sensory space



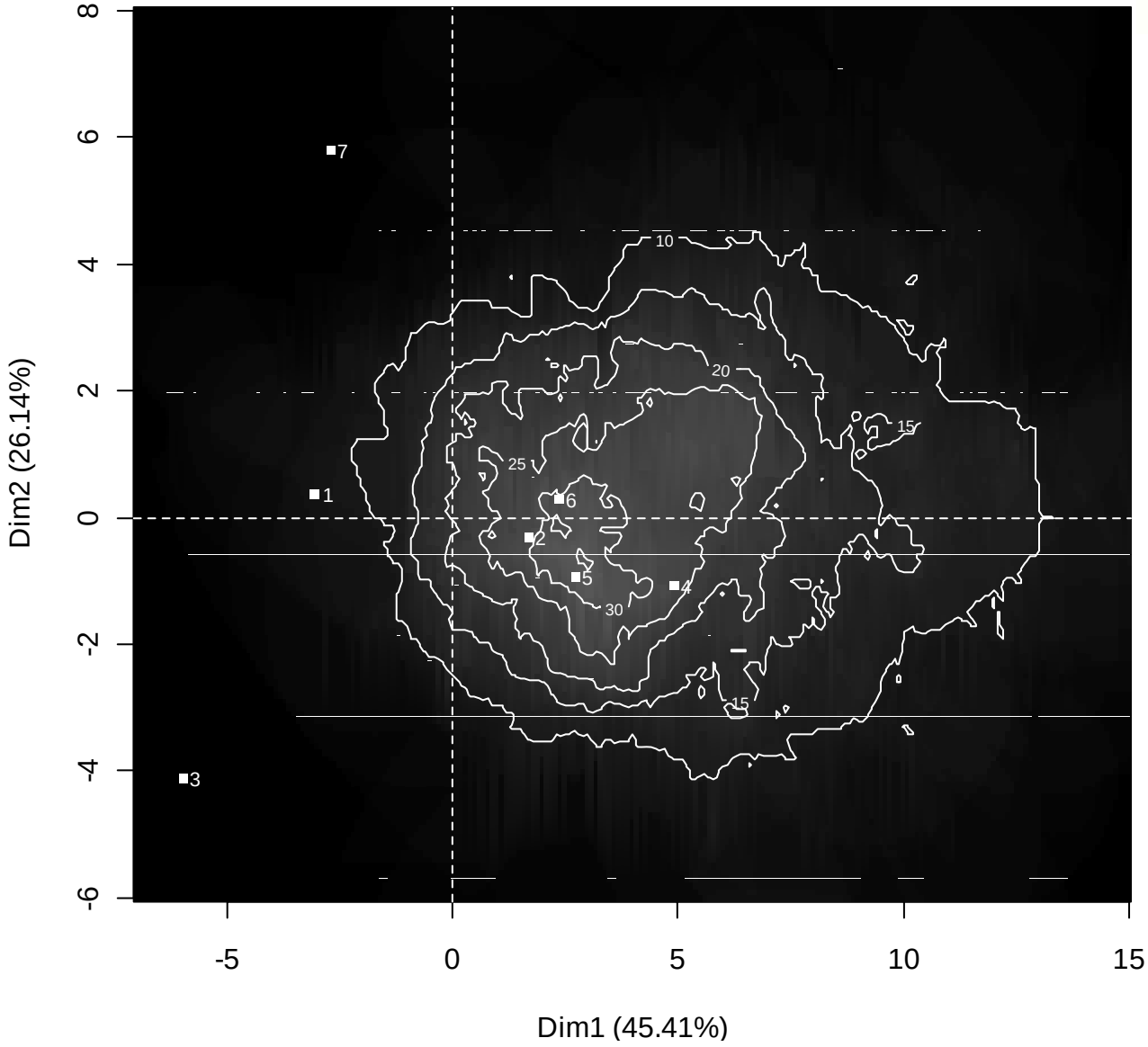
Grid the sensory space



Grid the sensory space



Ideal Map


Dim2 (26.14%)
8
6
4
2
0
-2
-4
-6
-5
0
5
10
15
Dim1 (45.41%)
7
1
3
6
2
5
4
10
20
15
25
30
15

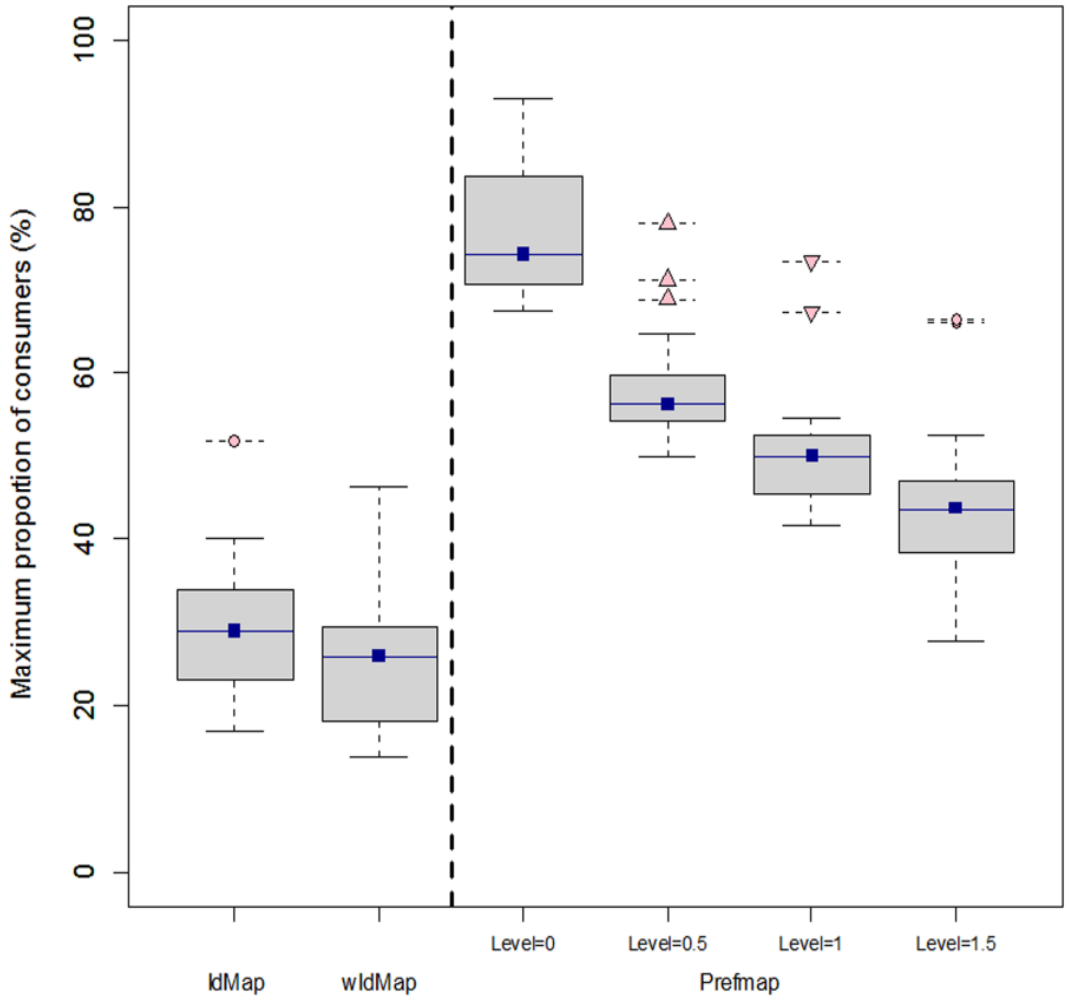
First remark

The Ideal of reference is common to a maximum of consumers...

BUT…

The proportion is low (around 30%)!

Proportion of consumers (24 projects)



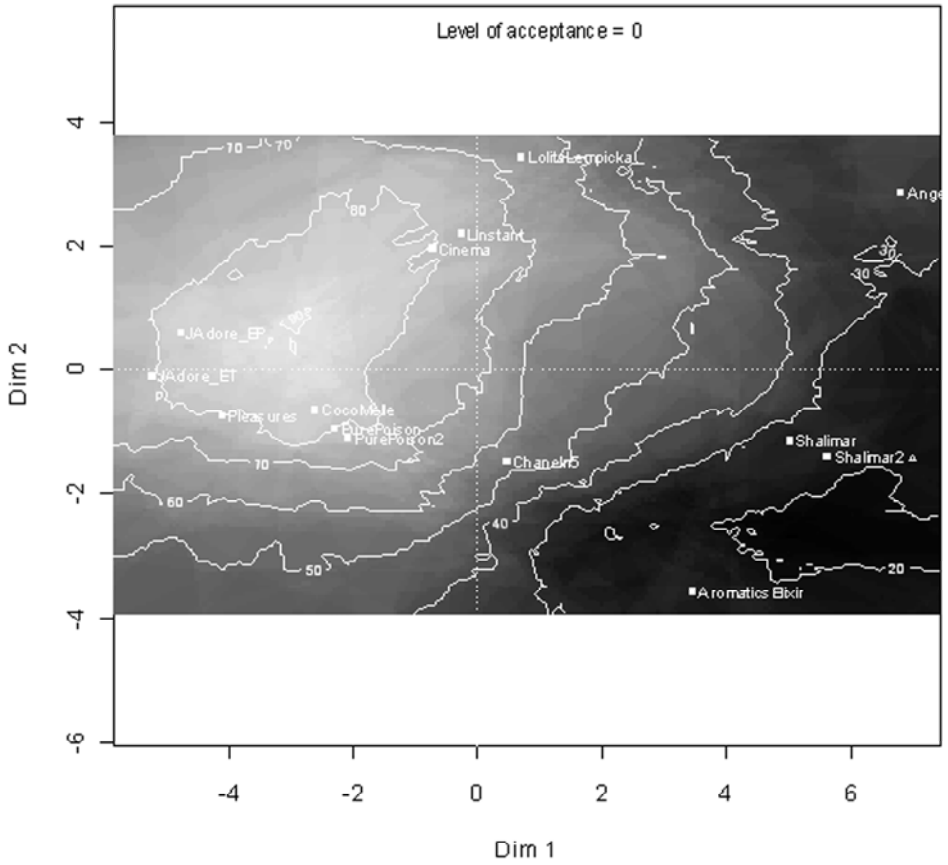
Illustration

Presentation of the dataset

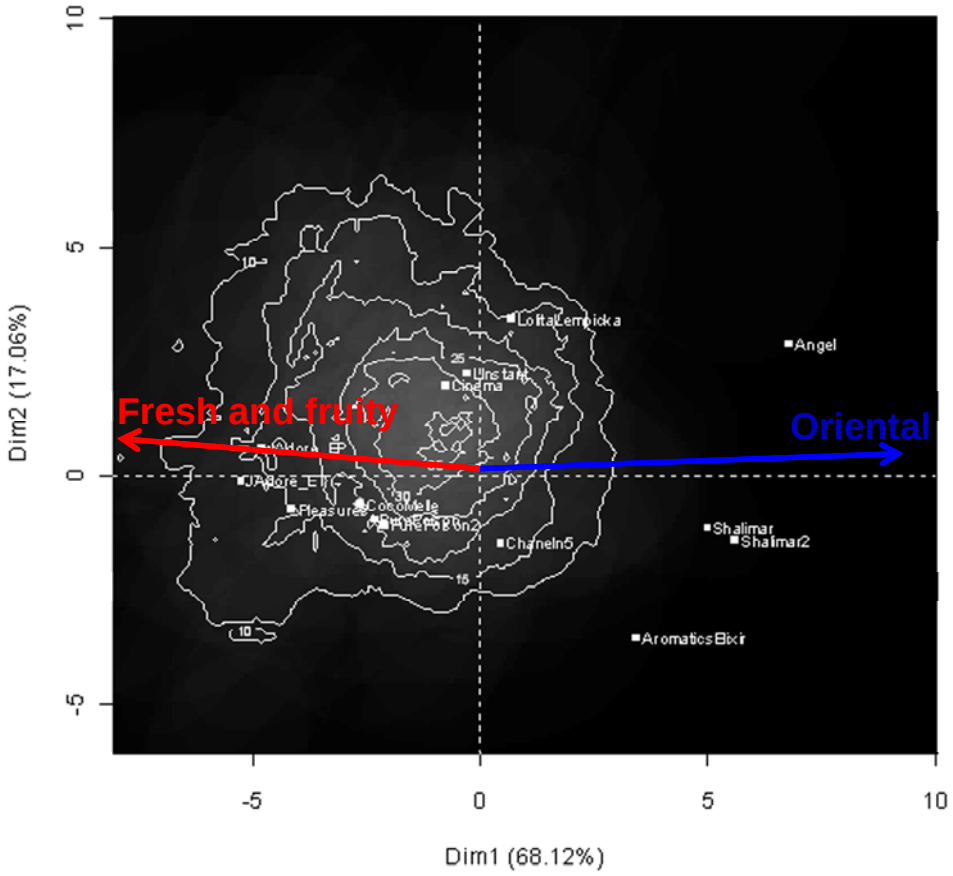
- Perfume study:
  - 12 products (2 were duplicated)
  - 103 consumers
  - 21 attributes (both perceived and ideal)
  - Overall liking
- Croissant study
  - 9 products
  - 151 consumers
  - 26 attributes (both perceived and ideal)
  - Overall liking

IdMap vs. PrefMap (Perfume)

PrefMap

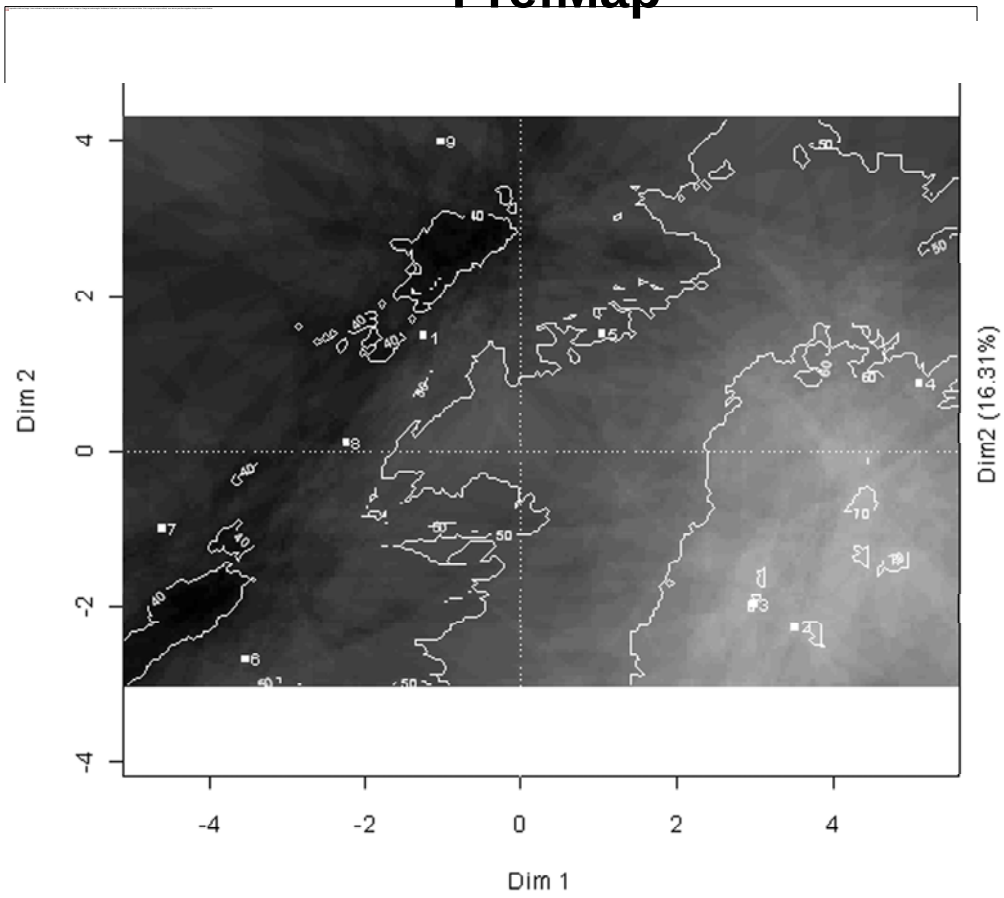


IdMap

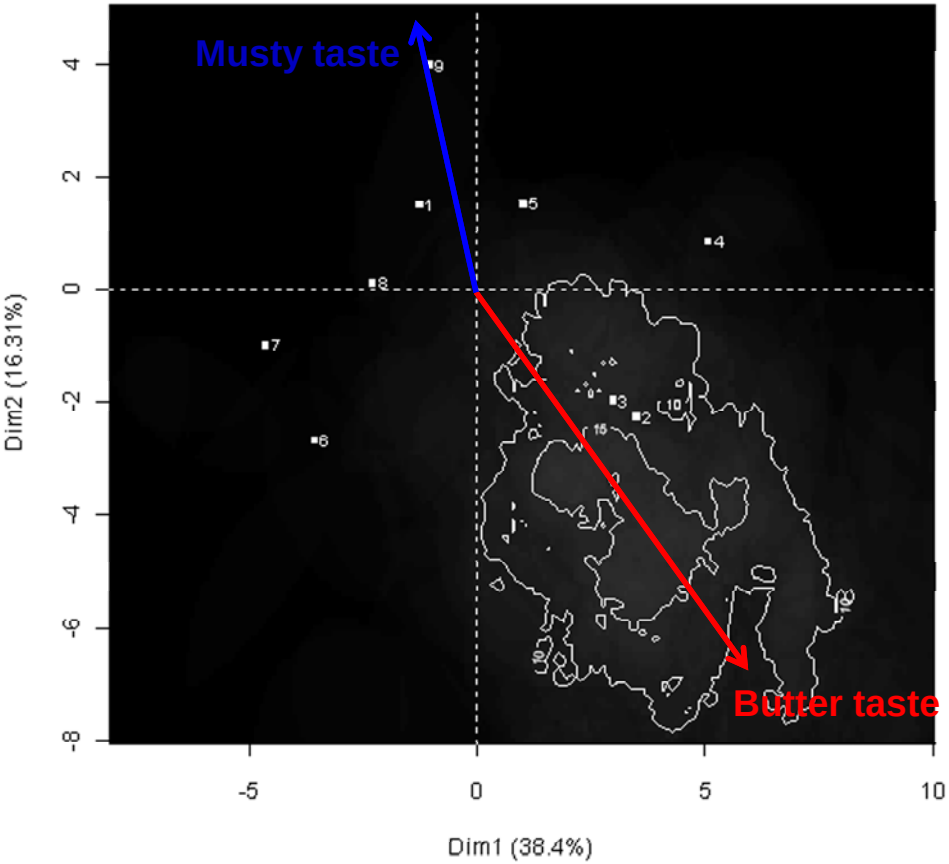


IdMap vs. PrefMap (Croissant)

PrefMap



IdMap



Conclusion:

The Ideal Map is a complement of PrefMap when the ideal belongs to the product clouds

It is an extension of the PrefMap when the ideal is outside the clouds

The philosophy behind the methods is different…

Conclusion:
Comparison of PrefMap and IdMap

	PrefMap	IdMap
Ideal Profiles	Indirect Estimated by aggregation No validation	Direct Measured from consumers Possible validation
Space considered	Sensory cloud only	Extended product cloud
Interpretation issues	Models: ➢ dependence to the models ➢ low number of df	Ellipses: ➢ size ➢ homogenization?
Proportion of consumers (contour lines)	High (50% of the space covered for each consumer)	Low (restricted area corresponding to the ideal)
Meanings of the map (for each consumer)	Area of acceptance / non-rejection	Ideal area

THANK YOU

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