



Projective tests using Napping[®], the Rorschach test revisited:

Are the cultural differences between
Asians and **Caucasians**
Significant?

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Psychology : the Rorschach test, a projective test

- Psychology test created in the 1920s
- Named after the Swiss psychologist Hermann Rorschach, and also known as the Rorschach inkblot test or inkblot test
- Psychological test analyzing the subjects' perceptions of 10 inkblots:



I.



II.



III.



IV.



V.



VI.



VII.



VIII.



IX.



X.

Psychology : the Rorschach test, a projective test



- Belongs to the projective tests: “Personality test designed to let a person respond to ambiguous stimuli, presumably revealing hidden emotions and internal conflicts” (Wikipedia)
- Especially helpful when patients are reluctant to describe their thought
- Procedure: the analysis of responses is recorded using a tabulation and scoring grid, counting among other things the occurrence of words (selected on the basis of several studies)

→ But... only very local studies for an “international” grid: inference problem due to cultural differences?



Cultural differences in psychology tests



- Most of psychology tests have been established at a local level
- Fundamental cultural and ethnical biases in any psychological experiment
- Rorschach test : inkblots chosen to reveal some underlying thought disorders
- Though this method has been improved (Exner), the test is highly criticized, in particular about its accuracy when used in different countries
- Many differences acknowledged between Eastern and Western countries: especially between Asian and Caucasian perception of the world



Napping[®]: a “projective” method ...

- New method of sensory data collection (J. Pagès, 2003)
- Aim: directly evaluate distances between objects according to the panelists' perception
- Napping[®] is also called “Projective Mapping”



Napping[®]: ... for a projective test

- During a psychological experiment: understand the subject's personal thinking processes
- Napping[®]: a very spontaneous method, uses panelists' personal criteria and not a fixed set of descriptive terms
- Napping[®] thus allows the subject to express his own thought directly

→ That's why we chose this method for this study,
based on a psychology test

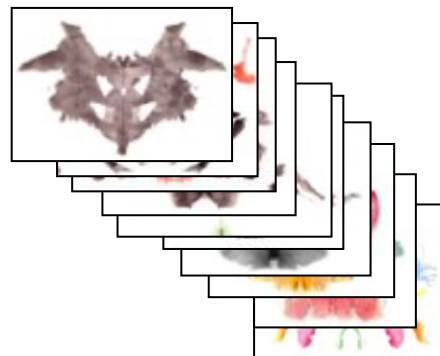
The aim of this experiment: study cultural differences using the Rorschach test as a way to understand the thinking processes

- The 10 Rorschach plates are used as a basis for this experiment
- Panels : 20 Caucasian students (mostly French) vs. 20 Asian students (mostly Chinese)
- Aim: get the plates positioning from the Napping method and an associated verbalization about the plates
- Language used : mostly French, but other words allowed for more accurate descriptions
- To avoid the order effect (observed in the original Rorschach test), the plates are given to the panelists following a randomized design

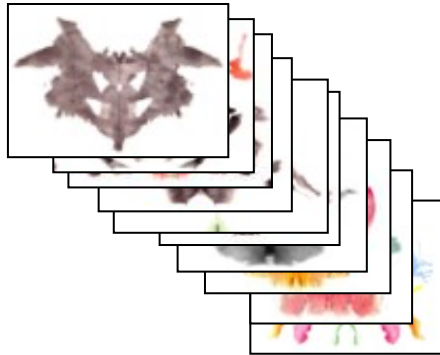


Positioning of the 10 Rorschach plates: Napping® method

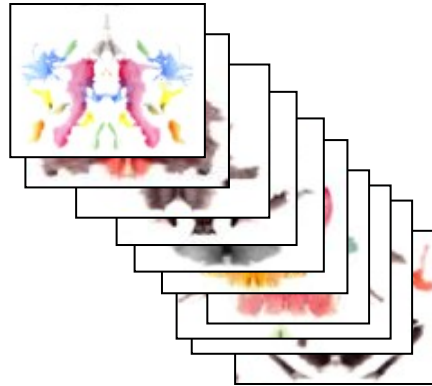
- 1) Plates are given to the panelist in the randomized order
- 2) The panelist is asked to watch one by one carefully each plate and to place them on a tablecloth (40 cm × 60 cm)
- 3) Two plates have to be very near if they seem identical, according to any personal criterion, and distant from one another if they seem different



Positioning: example of tablecloth

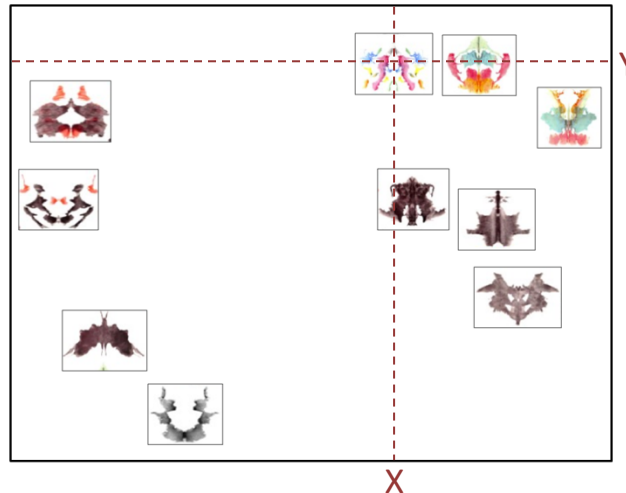


Positioning: example of tablecloth



The Napping[®] dataset

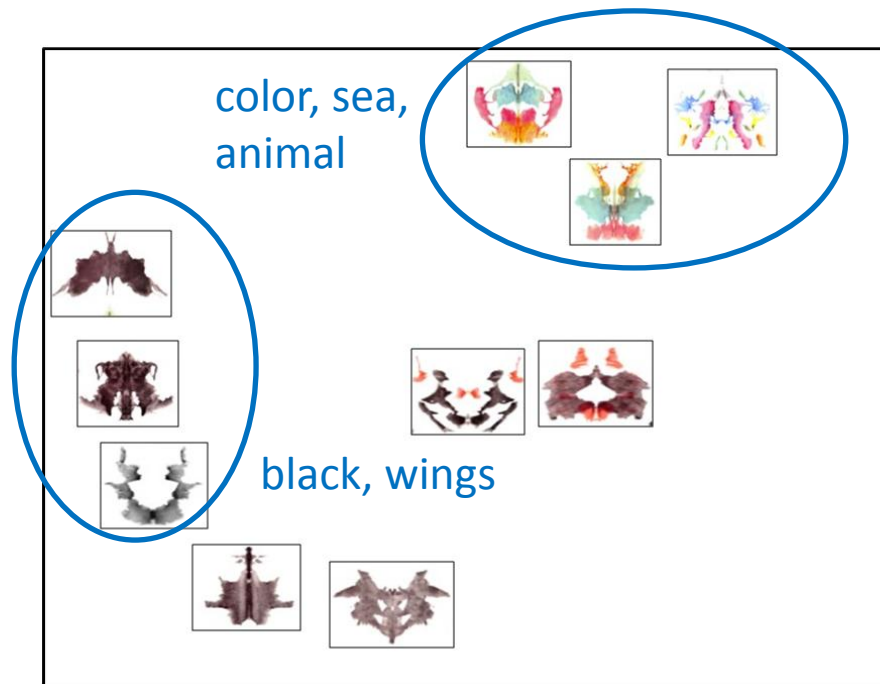
- For each plate, X co-ordinates and Y co-ordinates are collected and compiled in a table: plates (10) x {X,Y} (40*2)
- Also collected: the direction of each plate on the tablecloth (panelists are free to turn the plates over and over)



Plates	X1 Y1	X2 Y2		X... Y...		X40 Y40
Plate1						
Plate 10						

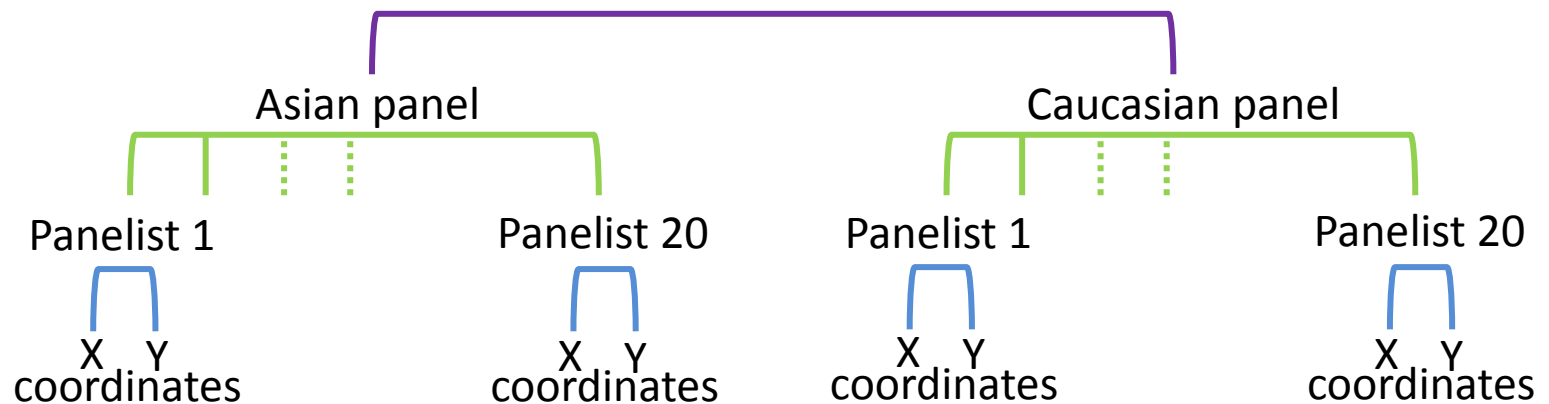
Verbalization to describe the positioning: method

- After the positioning is finished according to the panelist's own opinion, the panelist is asked to describe each plate or group of plates according to what he sees in each of them
- The panelist is not allowed to move the plates anymore during this step
- The words or sentences are collected and if necessary translated



Analysis of the Napping[®] positioning: HMFA with FactoMineR

- The dataset containing 40 pairs of coordinates (one for each panelist), the MFA method is the most appropriate one to analyze from a global point of view the (X,Y) positioning of the plates
- A supplementary level, the cultural background (Asian/Caucasian), needs to be taken into account to compare the groups
- The HMFA method: consists of a MFA on the coordinates of the separate MFA of each cultural group, balanced according to this first MFA step



Analysis of the verbalization: Textual Analysis using SPAD

- Lemmatization of the words used to describe the plates
- Deletion of very rare words (frequency < 1)
- Description of the plates with the words that characterize the best (and the worst) each plate, for the two panels

Example:



Plate 1 – Asian panel: animal, insect, black, bat, middle, white;
not red, color

Caucasian panel: angel, fly, end, bird, paradise, eagle
not bat, color, sea, animal

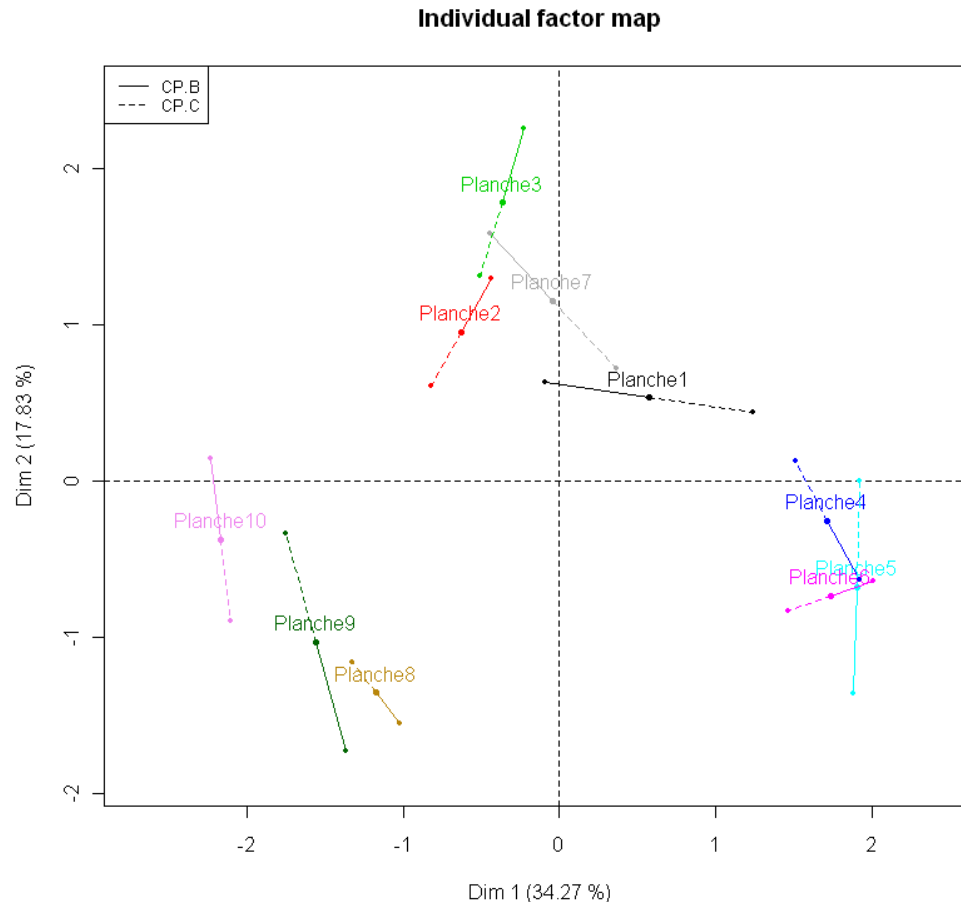


Plate 3 – Asian panel: red, feminine, face, couple, person
not butterfly, color, animal, flower, insect

Caucasian panel: face, person, dance, feminine
not animal, fly, bat, sea

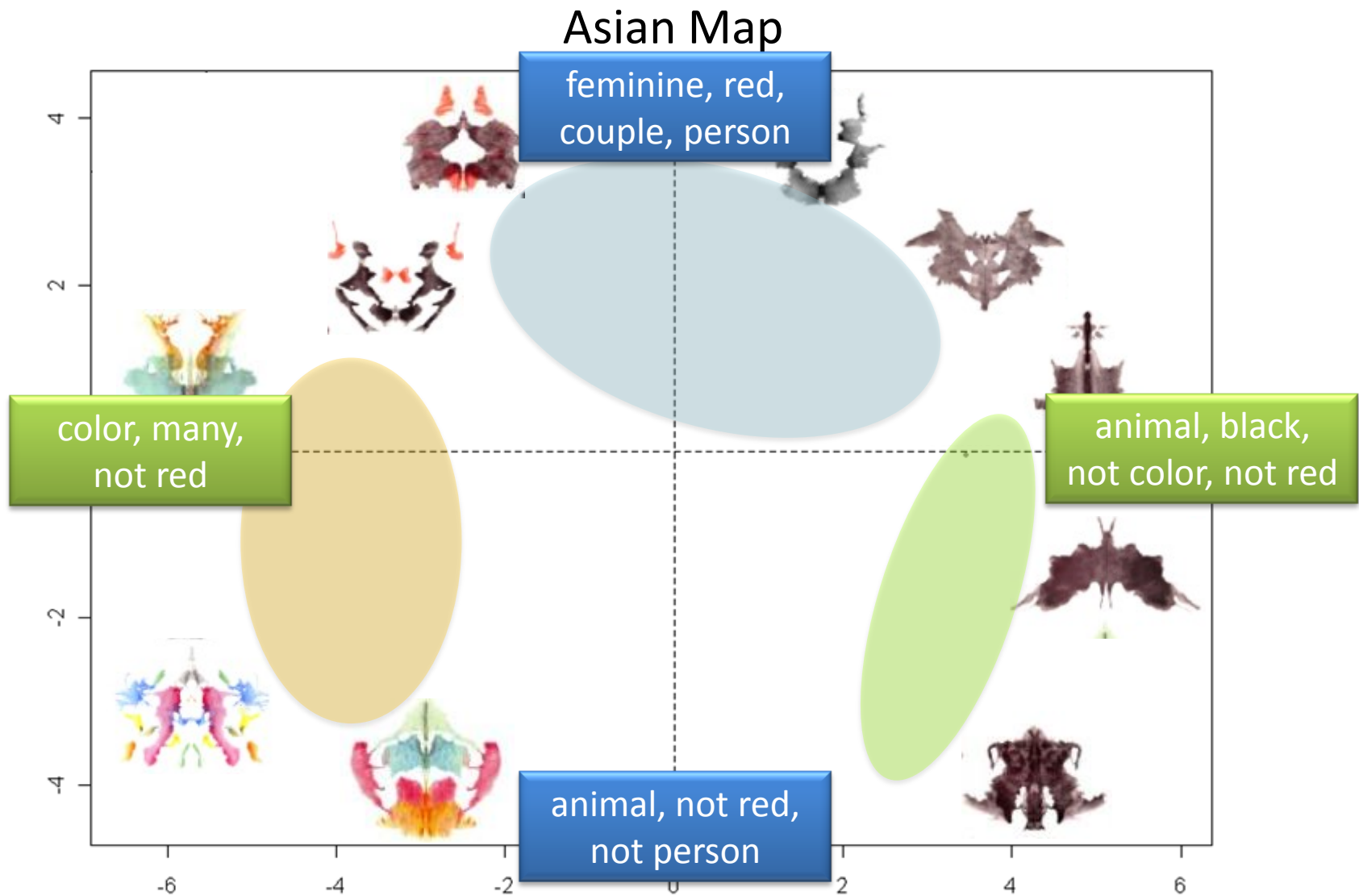


Results: Asian versus Caucasian Positioning from the Napping®

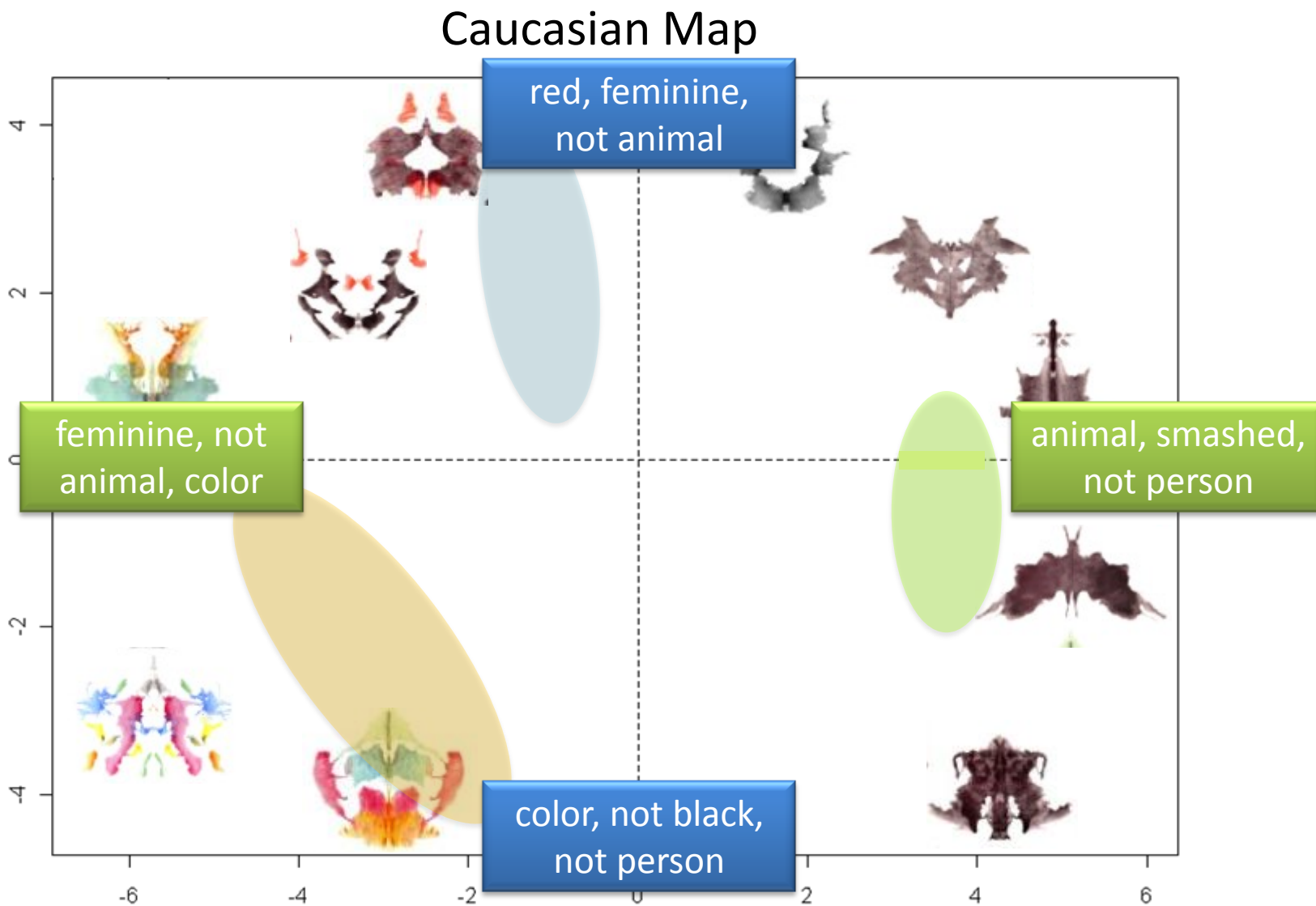


- Rather high similarity of the positioning for the two panels
- 3 main groups in both panels: 1-2-3-7, 4-5-6, 8-9-10

Results: Asian Positioning according to Napping®

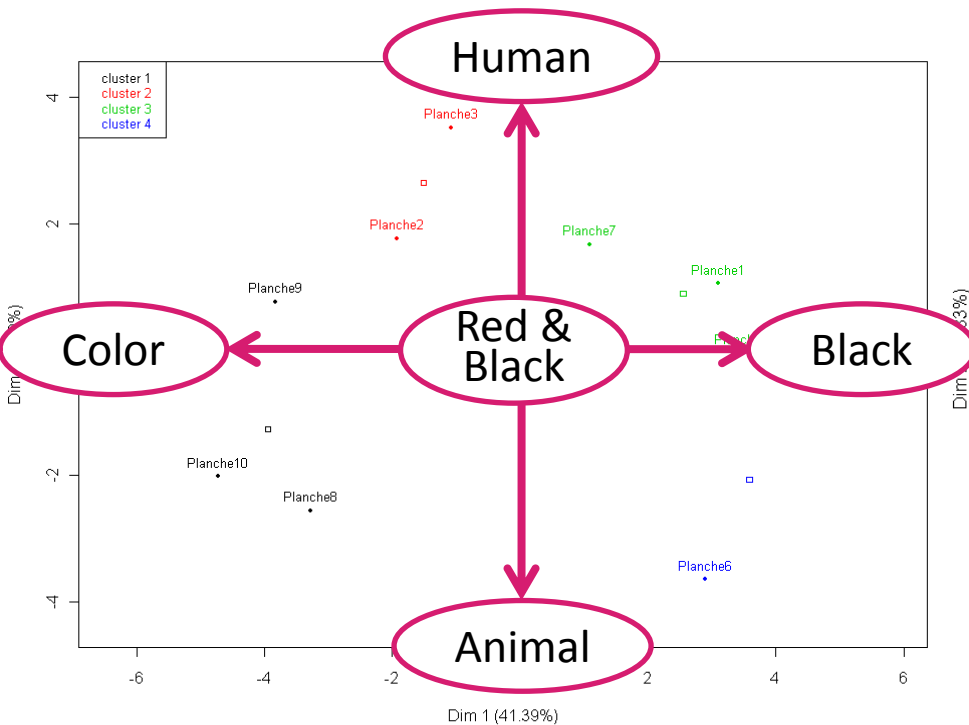


Results: Caucasian Positioning according to Napping®

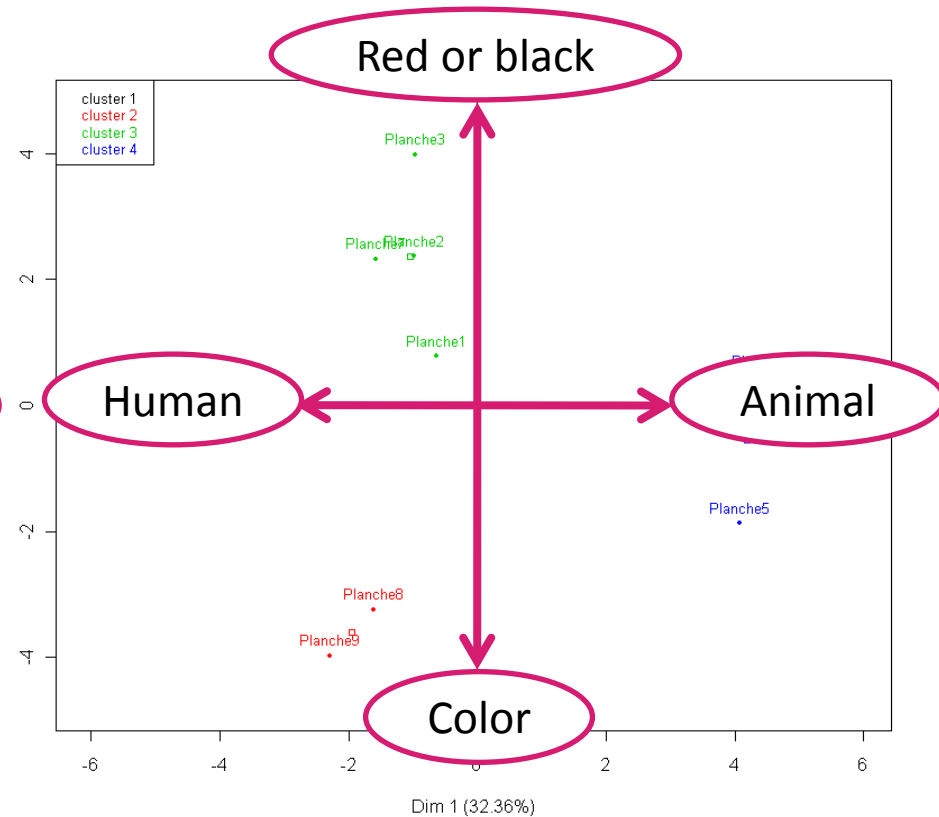


Main oppositions between the plates for Asian/Caucasian panels

Asian panel




Caucasian panel



Conclusion on this experiment:

- **Cultural differences** between Asians and Caucasians are known to be quite important concerning the **perception of the world**, which might be found in the perception of those **psychological pictures**
- Using the **optimal design**, the perception of the plates between people of different cultures is **less different than expected**: this design might free us in some extent from the culture barrier
- We can notice a slight opposition between a rather **holistic approach** for the Asian panel, who sees first the background (color) and describes the emotions induced by the pictures, and a more **analytic approach** for the Caucasian panel, who describes first the characteristics of single objects seen in the pictures (humanity/animality)
- Those results have to be linked with numerous other studies about the differences in perception for Asian and Caucasian panels, which confirm this interpretation.





Thank you
for your attention!

