

L-PLSR modelling in consumer research

“The effect of “animality” on consumers’ disgust response”

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Outline of presentation

- Short introduction: L-PLSR and consumer research
- Case: “The effect of animality on consumers’ disgust response”
 - Background
 - Experiment
 - Results
 - Conclusions
 - Implications

- The X matrix = product variables
- The Y matrix = consumer affective responses
- The Z matrix = background characteristics of consumers

- L-PLSR (Martens et al., 2003) - Two-way bi-linear modelling regression procedure (X, Y, Z)

- The procedure can bring out the structures in Y that are seen both from X and from Z.
 - The consumer responses (Y) are interpreted by the product variables (X) and by the background information variables (Z)
 - The model parameters are checked by cross validation

- The L-PLS regression procedure presents the results in one graphical plot, the ***correlation loading plot***
- This plot graphically displays the relevant and reliable structure from all the input data, and the products are included as dummy variables
- Causal interpretations of the results
- L-PLSR can be considered as an extension of preference mapping

Now to the case:

- Experimental design to measure the effect of disgust elicitors related to animality on consumers' disgust **at the prospect of meat preparation**
- A multi-methodological approach
- L-PLSR

- Meat- Many negative symbolic associations: animal and slaughter, blood
- Of all the food avoidances meat avoidance is associated with the strongest negative feelings, e.g. disgust
- Disgust is motivated through being close to an “indigestible object or idea” - functions to avoid contact with an offensive item.
- What is characteristic for an offensive item? “Animality”. All animal products are potentially disgusting

Disgust is relevant in modern society because:

- Consumers- far removed from the origin of their food
- Consumers want to escape from touching and preparing raw meat and meat cuts- unfamiliar with preparation of fresh meat
- More consumers are particularly avoiding red meat

Relevant consumer background variables and disgust with meat :

- **Gender:** Females more sensitive
- **Age:** Younger consumers more sensitive
- Trait of **disgust sensitivity:** People scoring high more sensitive
- **Meat eating** habits: Red meat avoiders more sensitive

Since it is believed that all animal products are potentially disgusting we hypothesised:

- H1. The more the meat stimulus can be animalised the more disgust it will provoke

- H2. The effect of animality will be more pronounced in females, young consumers, people exhibiting high levels of general disgust sensitivity, and non-red meat eaters

The scope of the study was to manipulate three **attributes** related to “**animality**”

- Meat Typicality- The meat stimulus association with the category meat

Red versus white meat

- Vividness- The meat stimulus' association with the living animal

Meat cuts versus prepared meals

- Personification- The subjectivity of the meat.

Pet name + naming animal versus no name

The experimental design:

No.	Meat typicality		Vividness		Personification	
1	White (chicken fillet)	-	Picture of prepared meal	-	No name	-
2	Red (prime fillet of beef)	+	Picture of prepared meal	-	No name	-
3	White (chicken fillet)	-	Picture of cuts	+	No name	-
4	Red (prime fillet of beef)	+	Picture of cuts	+	No name	-
5	White (chicken fillet)	-	Picture of prepared meal	-	Pet name ^a	+
6	Red (prime fillet of beef)	+	Picture of prepared meal	-	Pet name ^b	+
7	White (chicken fillet)	-	Picture of cuts	+	Pet name ^a	+
8	Red (prime fillet of beef)	+	Picture of cuts	+	Pet name ^b	+

^aMeat from the chicken Ludvig. ^bMeat from the calf Benjamin.

Animality and disgust- Experiment

Picture stimuli for Vividness:

Low level



High level

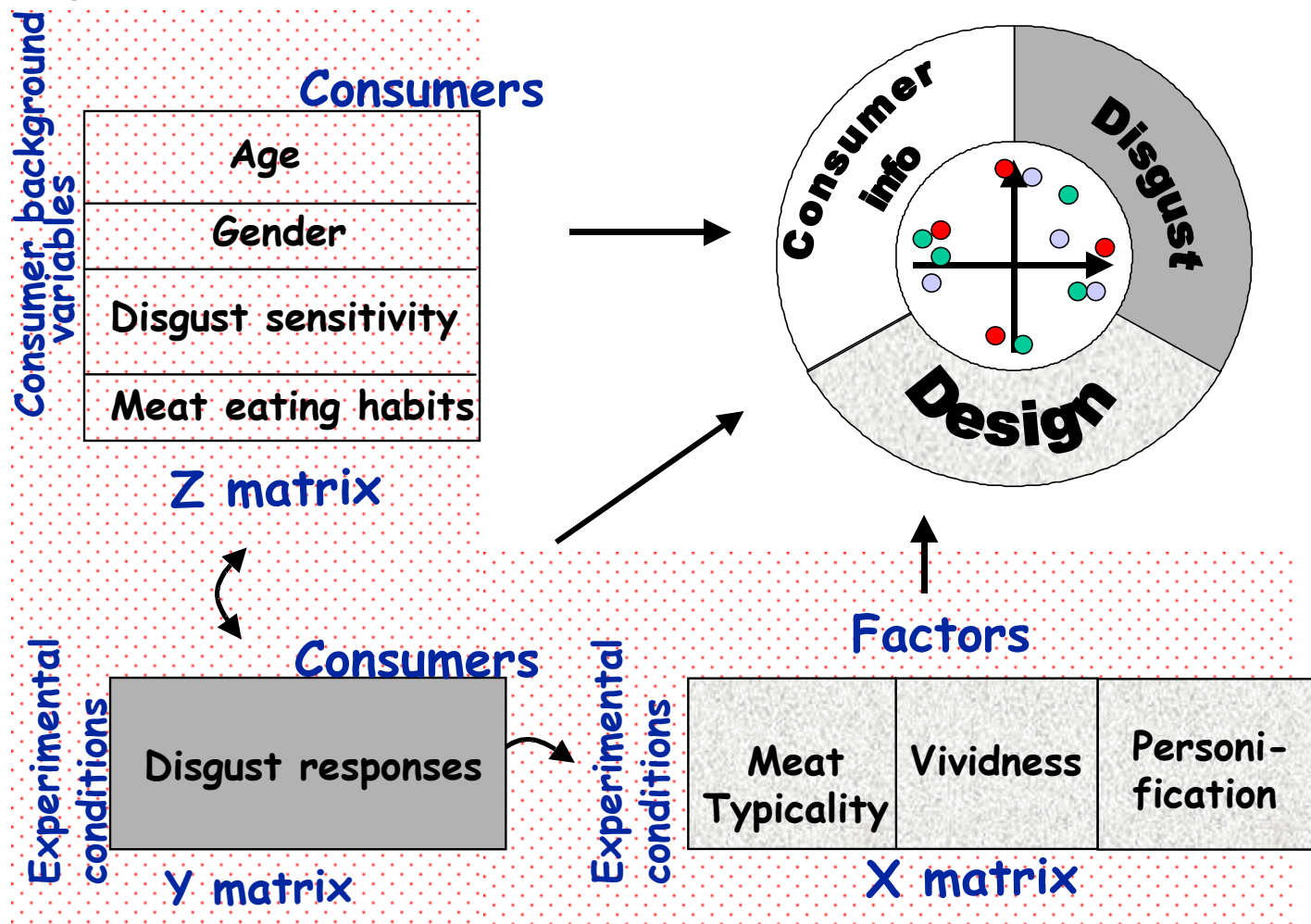


- Dependent variable/disgust response: Three questions were rated on a 7-point scales for each condition:
 - “The thought of touching this meat makes me nauseous”
 - “It would have been disgusting and repulsive to touch this meat”
 - “I couldn’t manage to cut into this meat”

(Rozin et al., 1997)
- These three questions were averaged for each condition before further analysis. (The reliability: 0.71 to 0.91)

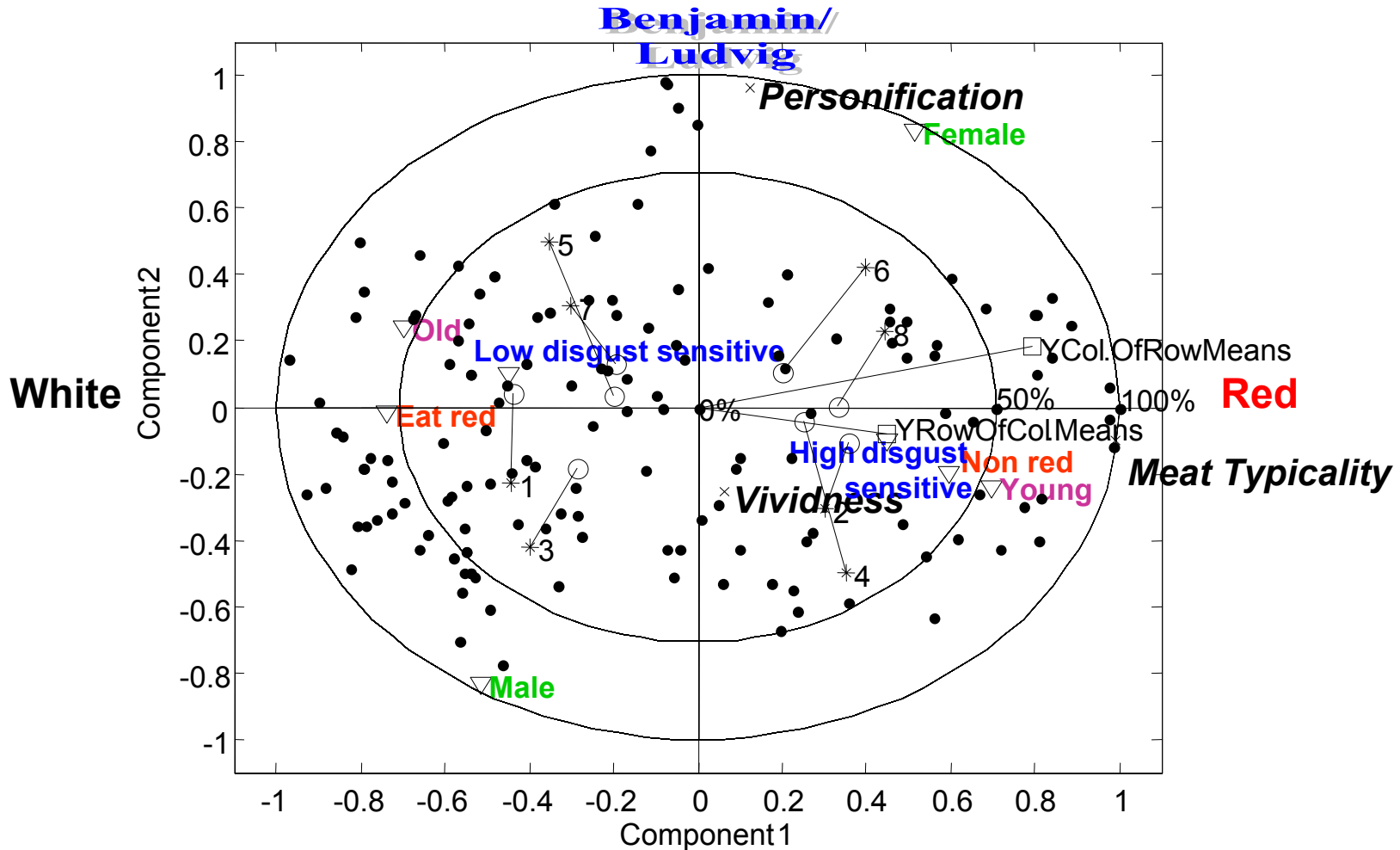
- Consumer sample:
 - 236 consumers (not professionally involved in animal production/industry)
 - 119 adolescents (age 15-18)
 - 117 adults (age 21-69)
- Two days, two sessions:
 - The main experiment (Responding to 8 conditions, randomised order)
 - Collection of relevant consumer variables
- Analyses: L-PLSR (and traditional ANOVA)

The L-shape and content of the data matrices:



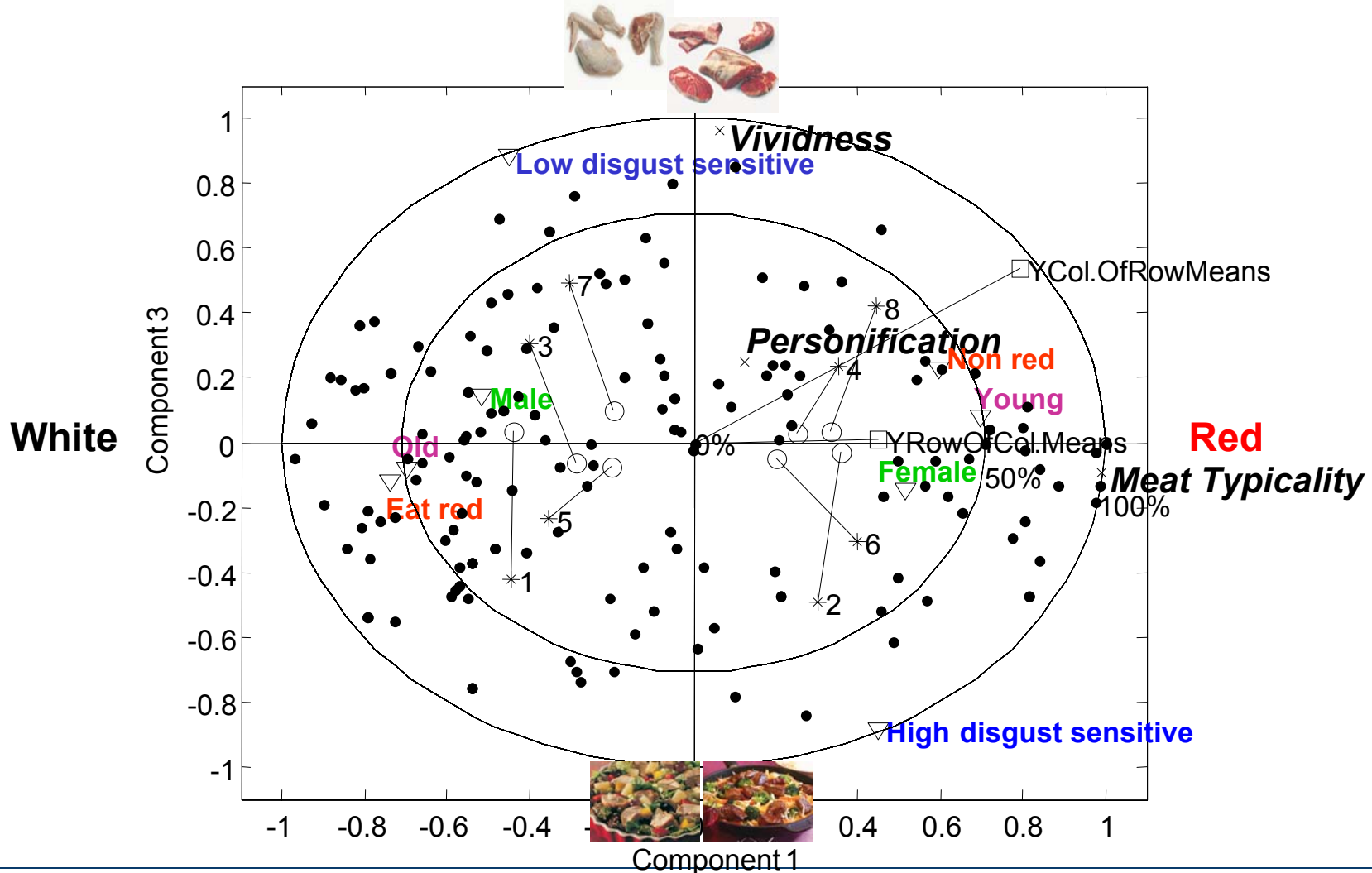
Animality and disgust- Results

x=Design var., ∇ =Consumer backgr., • =Disgust responses, * = Combinations, o = Z-corr.



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ANOVAs supported the L-PLSR and plots:

- Significant influence of animality on disgust responses
- The effect of Meat Typicality depended significantly on age, gender, disgust sensitivity
- The effect of Vividness was not depended on the consumer variables
- The effect of Personification depended significantly on gender

- Meat Typicality was the primary elicitor of disgust (young consumers, females, high disgust sensitive, non-red meat eaters)
- Vividness was not related particularly to the background variables
- The effect of Personification was particularly evident among females

Why disgust?

- Food choice/anti-choice
- The industry should address the barriers against consumption in order to comply with tastes of critical consumer segments
- Appeal and presentation in the food counter
- Introduce new varieties of processed products - ready to cook solutions
- Market communication - origin marking

Make the consumers think forward to the meal and not backward to the personified cow that was slaughtered!

Thanks for your attention!