

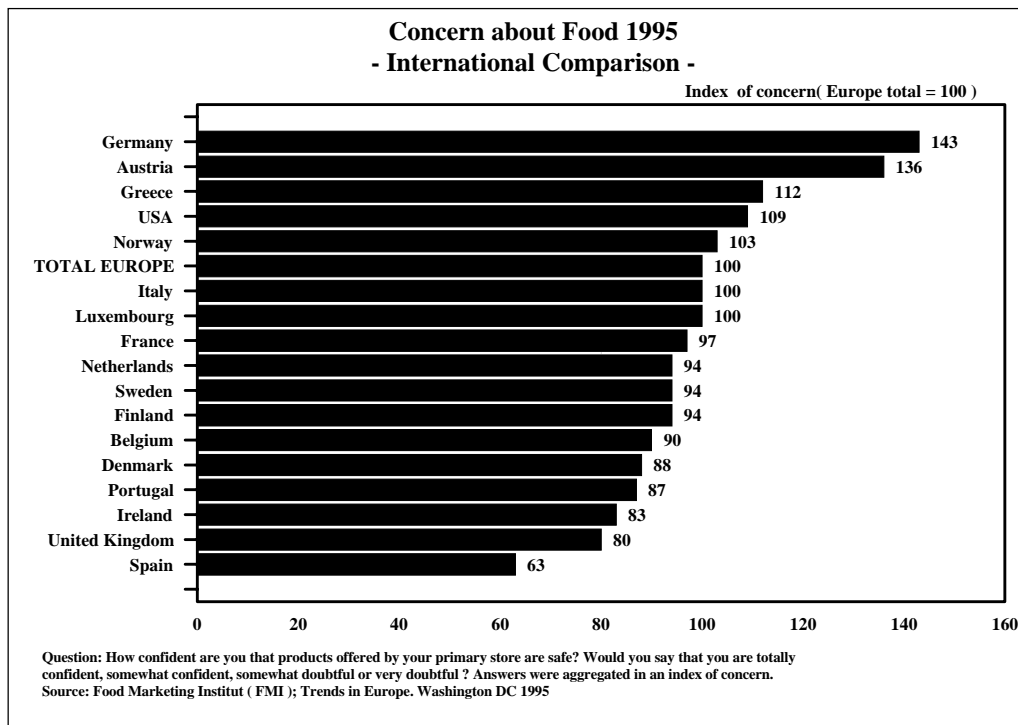
# Consumer Perceptions of Food-Related Hazards and the Problem of Risk Communication

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## 1. Introduction

The Germans are world champions in distrust and concern about food. Chart 1 is showing the results of a study of the Food Marketing Institute in Washington D.C. in 1995. We used the results for constructing an index of concern. The European average was given the value 100. Germany and Austria are ranking first with index values of 143 resp. 136. The United States (109) are ranking above the European average and the United Kingdom (80) and Spain (63) are found on the last ranks.

Chart 1



The purpose of this paper is to analyse the consumer concern about food and the resulting communication problems in Germany. The empirical basis is a consumer survey conducted in summer 1997. The sample consisted of 332 persons, which have been selected at random from the addressbook of the city of Kiel.

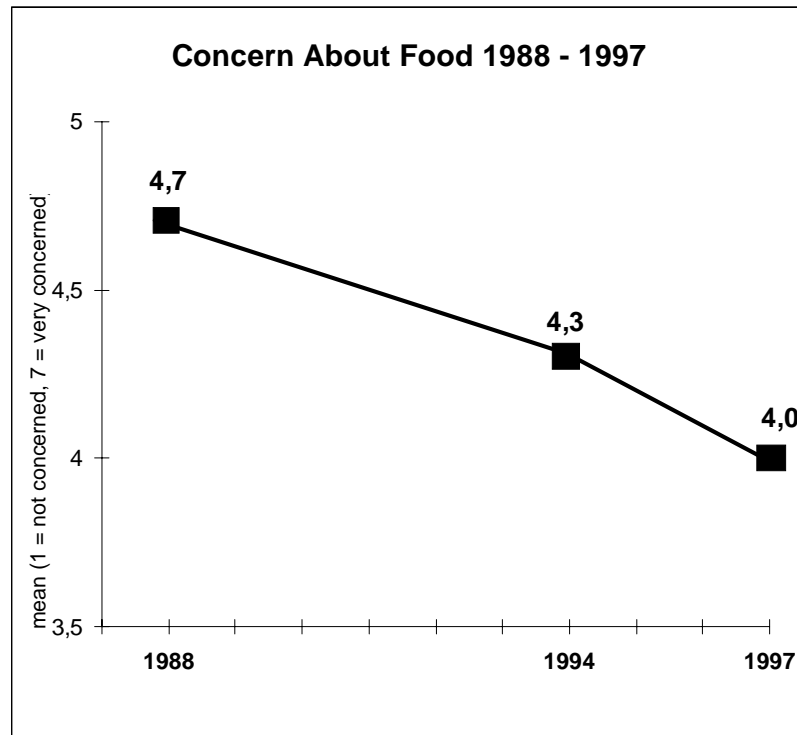
## 2. Consumer Perceptions of Food-Related Hazards

### 2.1. Development of Consumer Concern about Food 1988 - 1997

We started our investigation with the hypothesis that the degree of concern about food has increased during the last three years due to the BSE-crisis. We compared our survey results of 1997 with survey results of 1994 and 1988 and found that this hypothesis has to be rejected.

As can be seen on chart 2, the degree of concern about food has decreased since 1988. From other surveys we know, that the peak of concern was at the end of the eighties - a development which was probably connected with the Tschernobyl-accident in 1986 (Fricke, 1996).

Chart 2



## 2.2. Measuring the Degree of Concern about Food and Segmentation

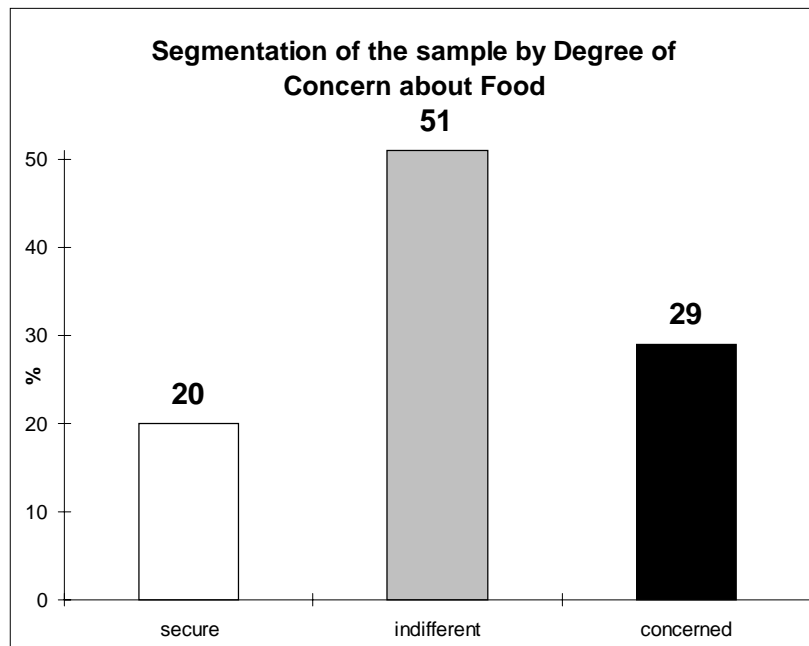
How did we measure the degree of concern? We asked the test persons to score the following statements on a scale from 1 to 5. 1 stood for „agree completely“ and 5 for „disagree completely“:

- We are slowly poisoned by the food supply in our times.
- By the constant talk about food scandals the consumer is frightened unnecessarily.
- Our food has never been as safe as today.

For every interviewed person the degree of concern was the mean of the scores given to these three statements.

The sample was segmented as is shown on chart 3. 20% of the interviewed people felt secure about food, they were not concerned. 51% were indifferent - this group consists of people with an indifferent opinion and of people with a medium degree of concern. 29% of the interviewees were concerned about food.

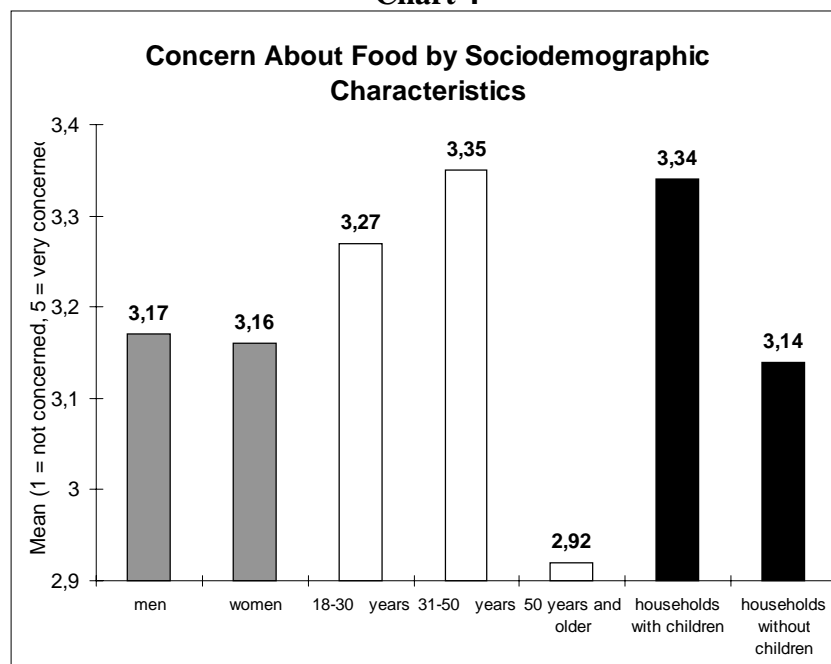
**CHART 3**



A comparison of the mean values of different sociodemographic groups brought the following results (chart 4):

- There was no difference between men and women
- The highest concern was found in the medium age group (30-50 years) and the lowest concern in the oldest age group. These results are consistent with two former studies conducted in 1994 (Fricke, 1996, v.Alvensleben 1994).
- Households with children are more concerned than the households without children.

**Chart 4**



### 2.3. Determinants of the Degree of Concern About Food

What are the reasons for concern about food? With different statements we measured attitudes and opinions of the interviewees. We made a correlation analysis with the degree of concern. The statements and results are summarized in chart 5:

**Chart 5**

<b>Determinants of the Degree of Concern</b>	
<b>degree of pessimism:</b>	
„Mankind is drifting inevitably towards a precipice.“	
„I am looking more with confidence into the future.“	
correlation coefficient	0,34
<b>environmental concern:</b>	
„For a better environment I would willingly renounce a part of my income..“	
„There are environmental problems, but oftenly they are described too extreme.“	
correlation coefficient	0,3
<b>technology acceptance:</b>	
„The modern technology made the people less imotional and imaginative.“	
„Only with technological progress, in agriculture as well, our high standard of living can be maintained .“	
correlation coefficient	- 0,25

- The degree of pessimism is the most important determinant. With growing pessimism concern about food is increasing (correlation coefficient = 0,34).
- It is followed by the degree of environmental concern. With an increasing degree of environmental concern concern about food is growing (correlation coefficient = 0,3).
- The third important determinant is the general technology acceptance. With a decreasing acceptance of technology the degree of concern about food is increasing (correlation coefficient = - 0,25).

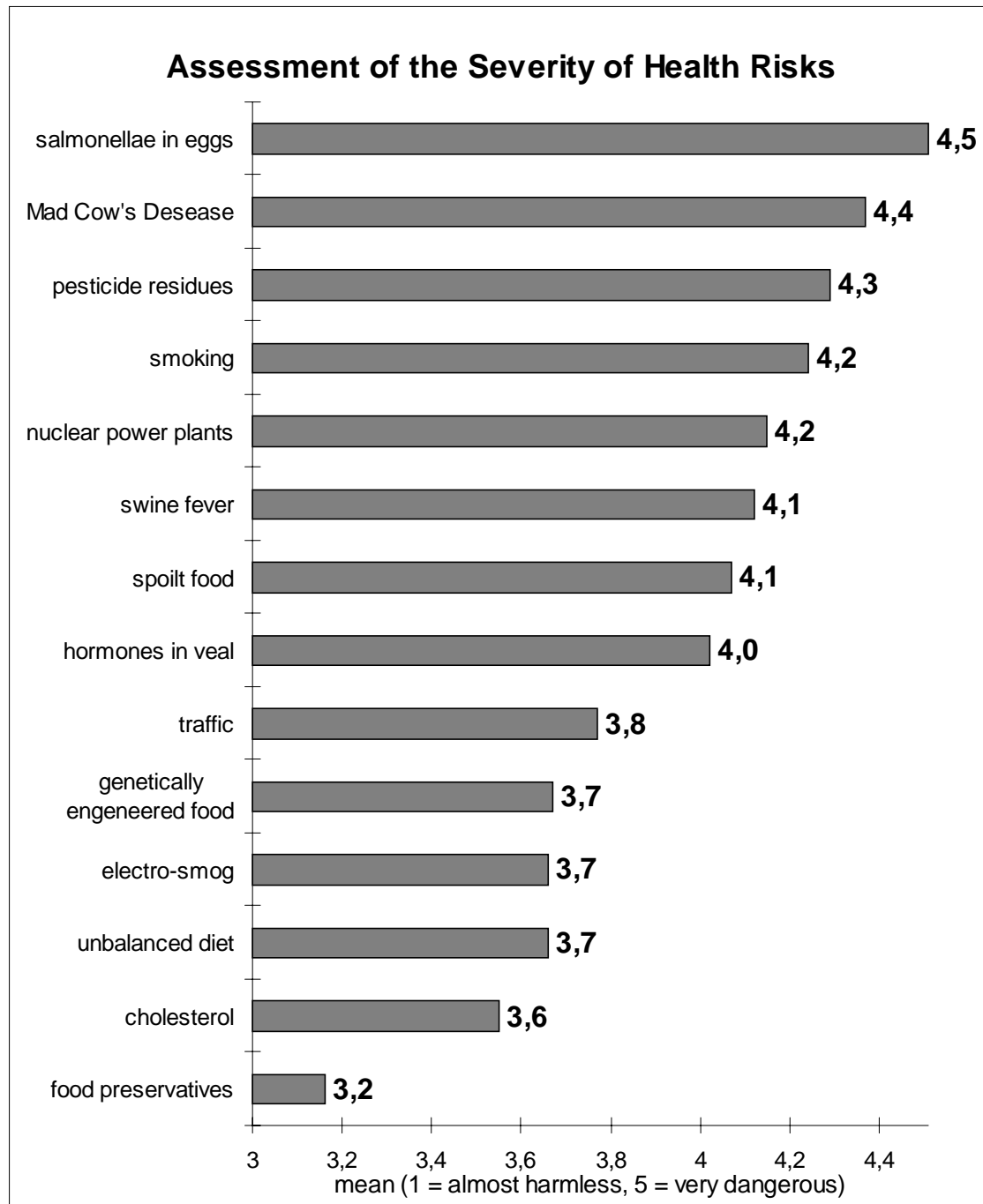
In general it has to be pointed out that the concern about food is closely connected with basic values and attitudes of the individuals, which are difficult to change by communication measures.

### 2.4. Assessment of the Severity of Health Risks

The test persons were asked to assess the severity of different health risks on a scale from 1, almost harmless, to 5, very severe. The results are shown in chart 6. Salmonellae in eggs are assessed to be the most dangerous health risk, followed by BSE and pesticide residues. The less dangerous risks were food preservatives, cholesterol, and an unbalanced diet. Interesting

is, that swine fever was assessed almost as dangerous as nuclear power plants and more dangerous as, for example, traffic.

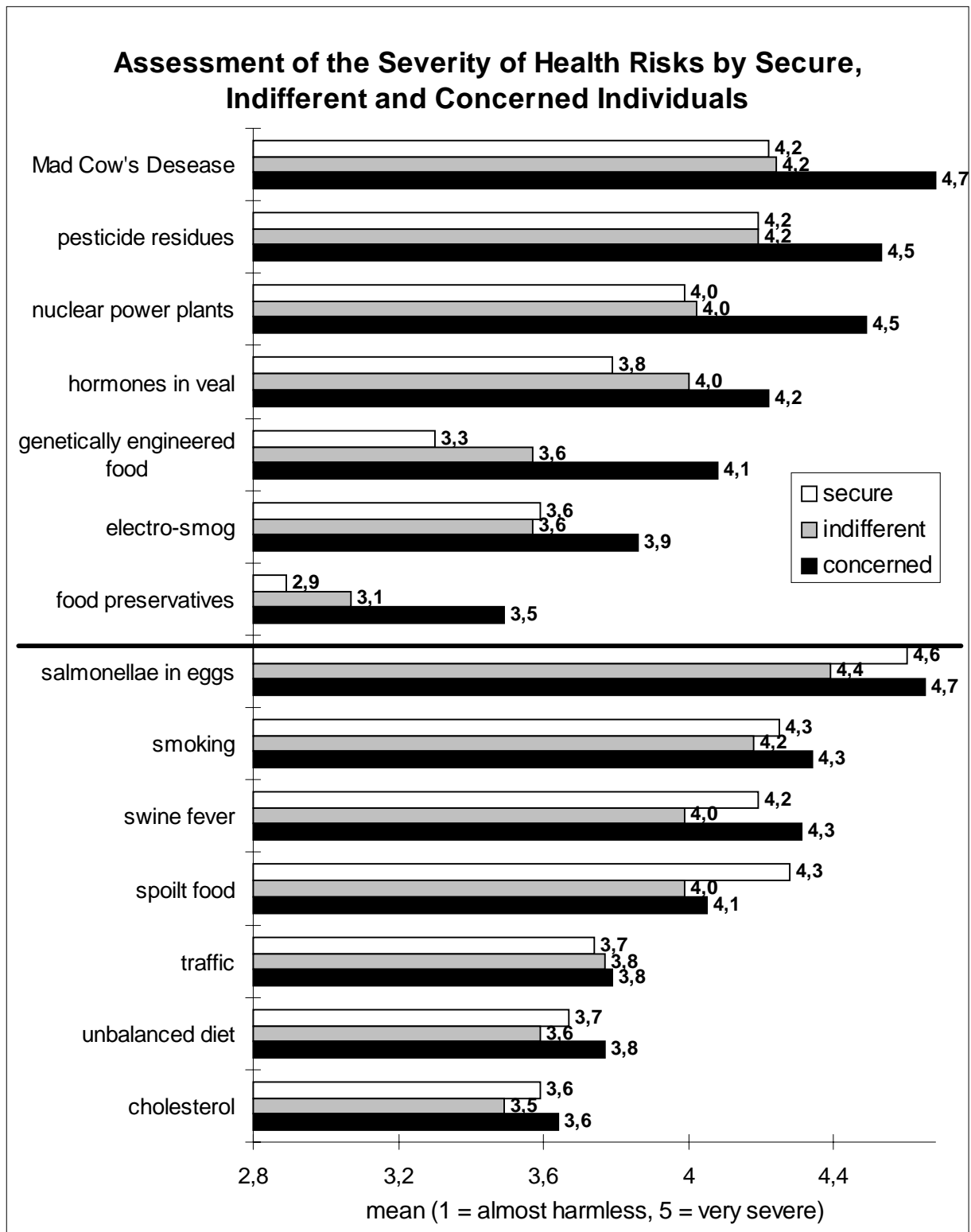
**Chart 6**



Did the assessment of the risks differ depending on the degree of concern?

- In chart 7 the risks have been divided into two groups. The upper half of the chart shows risks, where we find clear differences between the secure (white) the indifferent (grey), and the concerned individuals (black). The lower half shows the risks without differences between the groups.

Chart 7



- Great differences can be found in the group of risks that are in the perception of the consumer connected with modern technology, including chemistry, like pesticide residues, nuclear power plants and electrosmog. BSE stands for the modern methods of animal production, as well as hormones in veal.

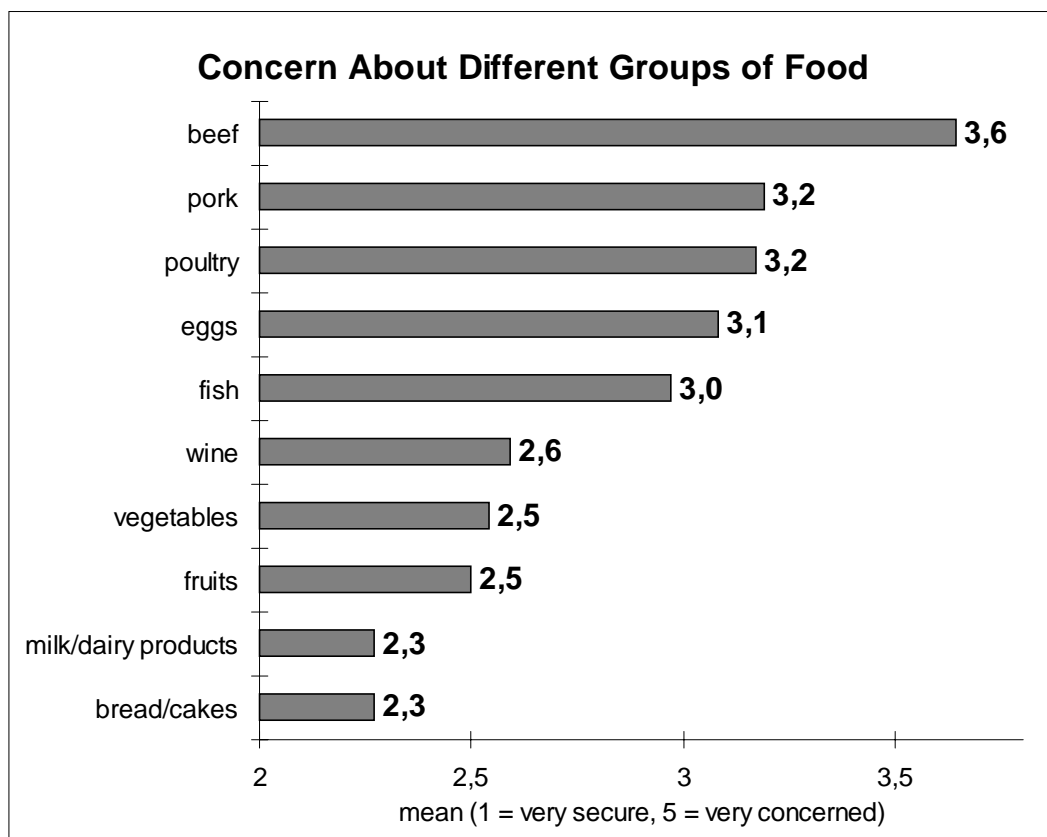
- Low differences could be found in the group of risks, that are not caused by new technologies or are already wellknown, as there are salmonellae in eggs, smoking, traffic and cholesterol.

Generally it can be seen, that the concerned individuals assessed all risks except spoilt food more severe than the other two groups.

### 2.5. Concern About Different Groups of Food

The interviewees were asked to give their degree of concern about the different food groups on a scale from 1 to 5, where 1 stood for very secure and 5 for very concerned (chart 8).

**Chart 8**



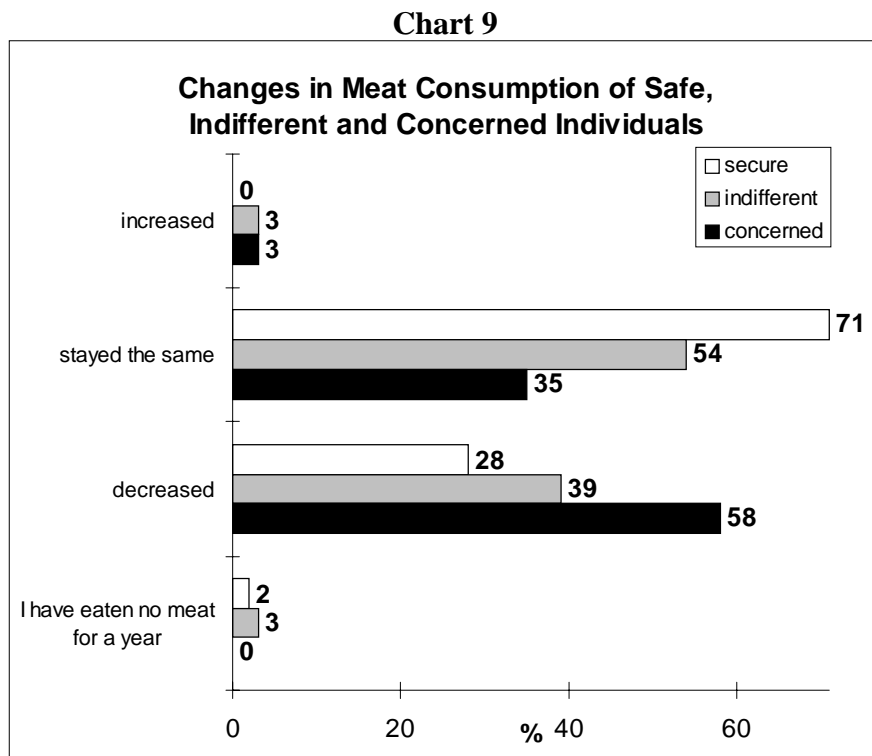
- The highest degree of concern was found with beef, followed by pork, poultry and eggs. The lowest degree of concern was found with milk and dairy products and with bread, cakes and pastries. Fish, wine, vegetables and fruits were positioned in the middle. Concern seems to be higher with animal than with vegetable product groups, except milk and dairy products
- Compared to the general health risk assessments we have seen in chart 7, the degree of concern in different food groups was not very high.

### 2.6. Concern and Behaviour: The Case of Meat

Does the degree of concern effect the behaviour? We analysed the relation between concern and behaviour in the case of the meat consumption. The test persons were asked whether their consumption of meat changed during the past year: 2% increased their meat consumption, 51

% said that their meat consumption stayed the same, 42 % decreased their consumption and and 2 % have not eaten meat for a year. The results differ not very much from a survey of 1994 (v. Alvensleben, 1994).

But how did the change in meat consumption differ between the three segments of the sample? Chart 9 is indicating that with growing concern about food the test persons perceived, that their consumption of meat decreased.

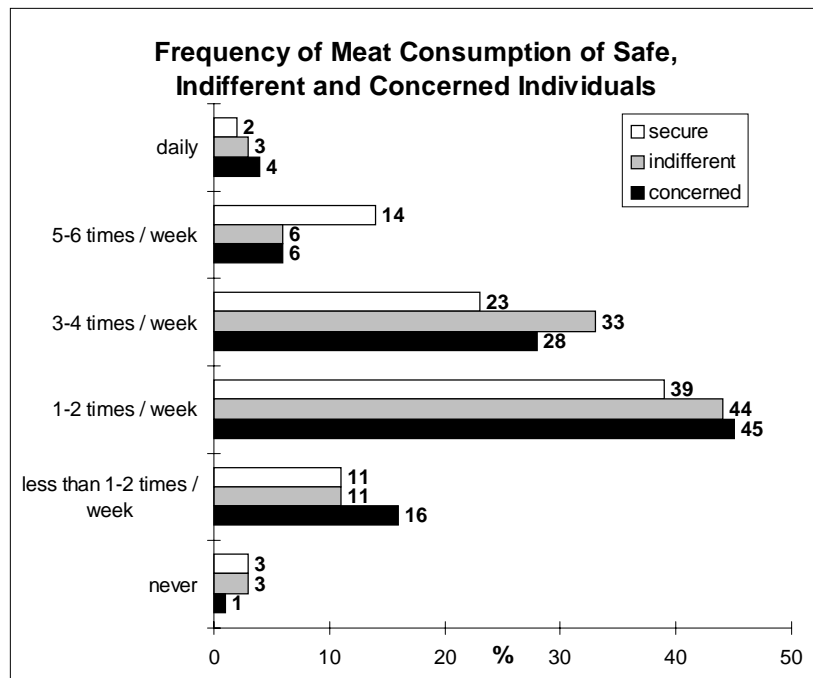


However we have some doubt, whether the answers of our test persons are reflecting their actual behaviour. There is some indication, that the respondents expressed wishful thinking or socially desired behaviour. Asking the test persons for their actual frequency of meat consumption, we came to the following result: Most people, 43 % eat meat 1-2 times per week, 32% 3 - 4 times per week, 12 % less than 1-2 times per week, 8 % 5-6 times per week. Only 3 % consumed meat daily and 2 % were vegetarians.

Chart 10 is showing that the degree of concern about food has only a minor effect on the frequency of meat consumption. There seem to be other reasons than concern for a low meat consumption. This finding corresponds with the results of our investigation of 1994 that about 20% of the explained variance of meat consumption was due to the factor „concern“ and about 80% to the factor „preference“ (v. Alvensleben, 1994).



**Chart 10**



## 2.7. Summary of Chapter 2

The major findings up to now can be summarized as follows:

- The people 50 years and older were less concerned than the younger groups.
- Risks, that were connected in the consumers mind with new technologies including chemistry were assessed to be more dangerous than risks, that are already well known or not connected with modern technologies.
- The concern about different food groups was highest with meat, esp. beef and was higher with animal than with plant products.
- With increasing concern the test persons stated they had decreased their meat consumption during the past year, but the actual frequency of meat consumption per week was not clearly decreasing with increasing concern. Concern about food seems to be a minor reason for the decrease of meat consumption.

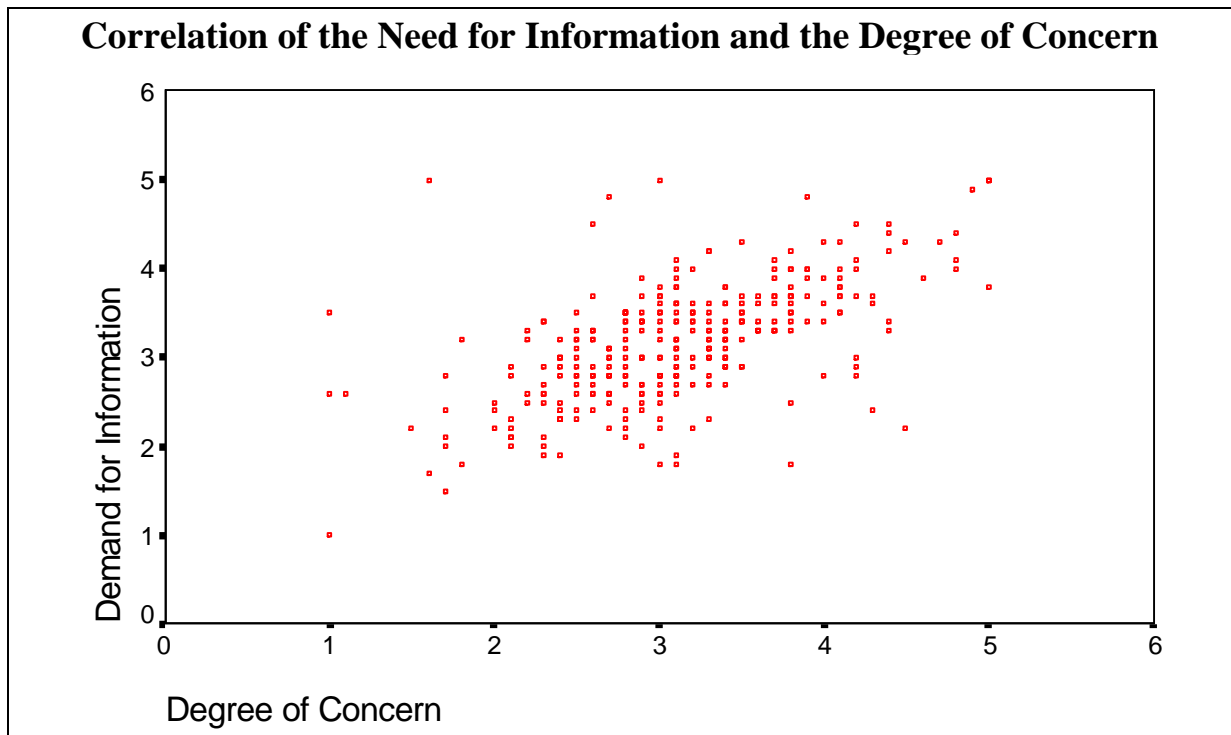
## 3. The Problem of Risk Communication

### 3.1. The Demand for Information and the Degree of Concern

Individuals were asked to state their degree of concern and their demand for information about different groups of food on a scale from 1 to 5. A correlation of both brought a correlation coefficient of 0,6. With growing concern the demand for information is increasing. (chart 11).

This does not mean, that more information of the concerned individuals will result in less concern within this group. We will come back to this problem later.

Chart 11



### 3.2. *Desire for Overcoming Alienation*

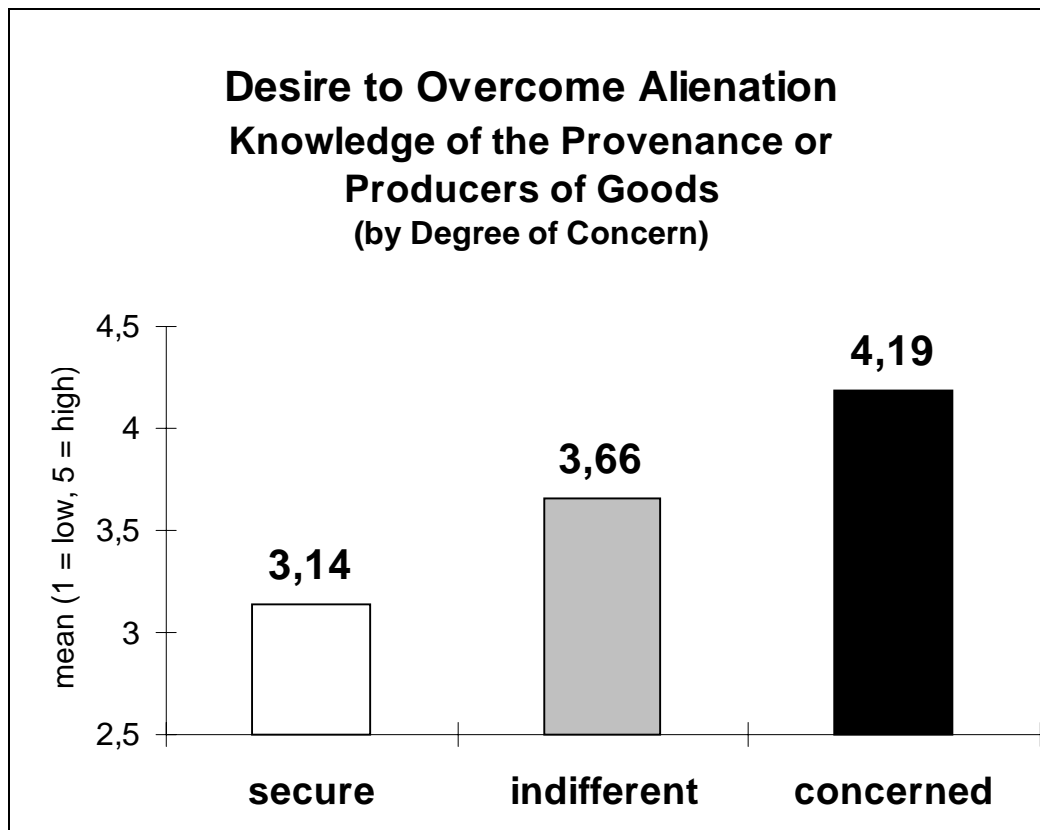
Another important issue is the desire for overcoming alienation, the importance of knowing of the provenance or the producers of food. With the following two statements we measured the desire fore overcoming alienation:

„The provenance of food is not very important for me, when price and quality are correct.“

„When I am buying in the supermarket I dislike, that one does not know anymore, where the foods there are coming from and how they are produced.“

We see on chart 12: With growing concern of the consumers the desire for knowing the provenance of food or the producers of food becomes more and more important.

Chart 12



### 3.3. Information Contents

What are appropriate contents of communication? To throw a light on this problem, we tested different advertising slogans and the reaction of concerned and not concerned individuals: We asked the interviewees about their opinion on different advertising slogans.

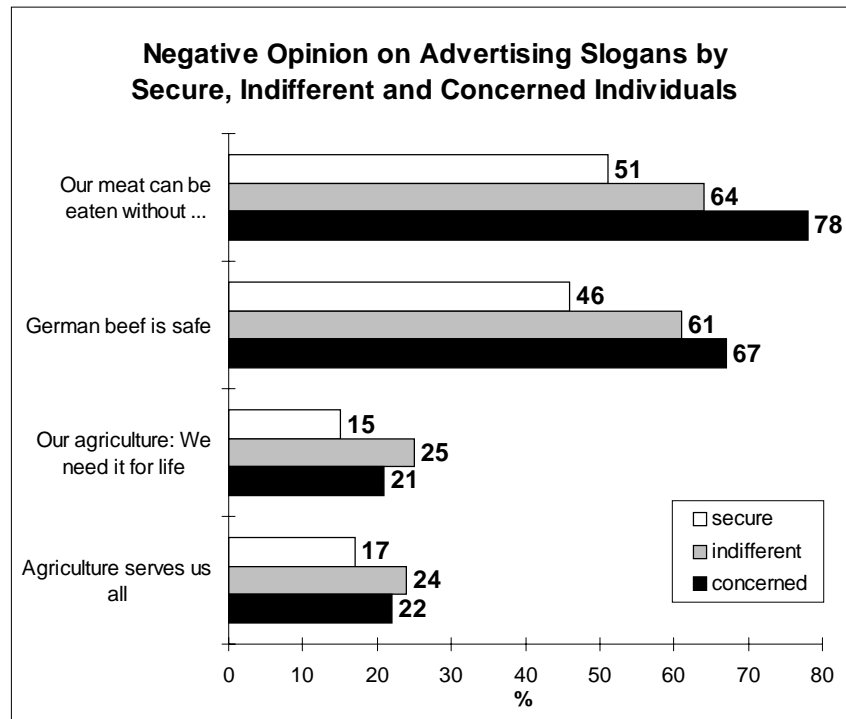
These were:

Our meat can be eaten without reservation  
German beef is safe  
Our agriculture: We need it for life  
Agriculture serves us all

We can conclude from the test results (chart 13):

- slogans, that try to persuade the consumers, that food is safe, are assessed more negative, than slogans, that did not mention the aspect of safety.
- with growing concern the negative reaction of the individuals is increasing.

**Chart 13**



### *3.4. Confidence in Quality Labels*

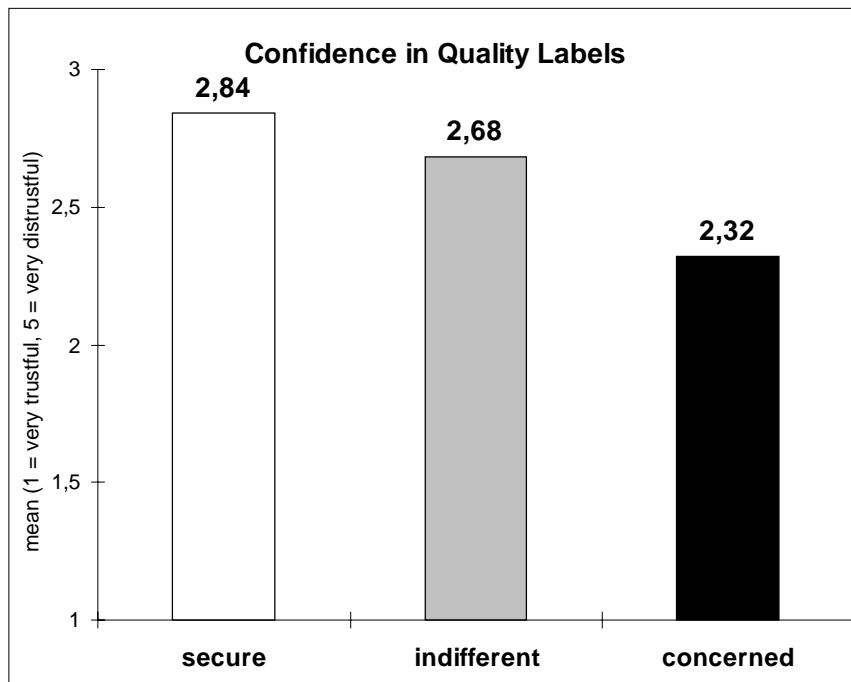
We saw, that with growing concern the desire for overcoming alienation is increasing. How is the reaction of individuals on quality labels? We measured confidence in quality labels with the following statements:

- „Quality labels and seals of of origin are standing for safety and quality of the foods.“
- „There are so many quality labels, one does not really know, what there is behind it.“

Chart 14 is showing that with growing concern about food the confidence in quality labels is decreasing.

Conclusion: Quality labels seem to be a measure to confirm secure people rather than to create confidence among concerned consumers.

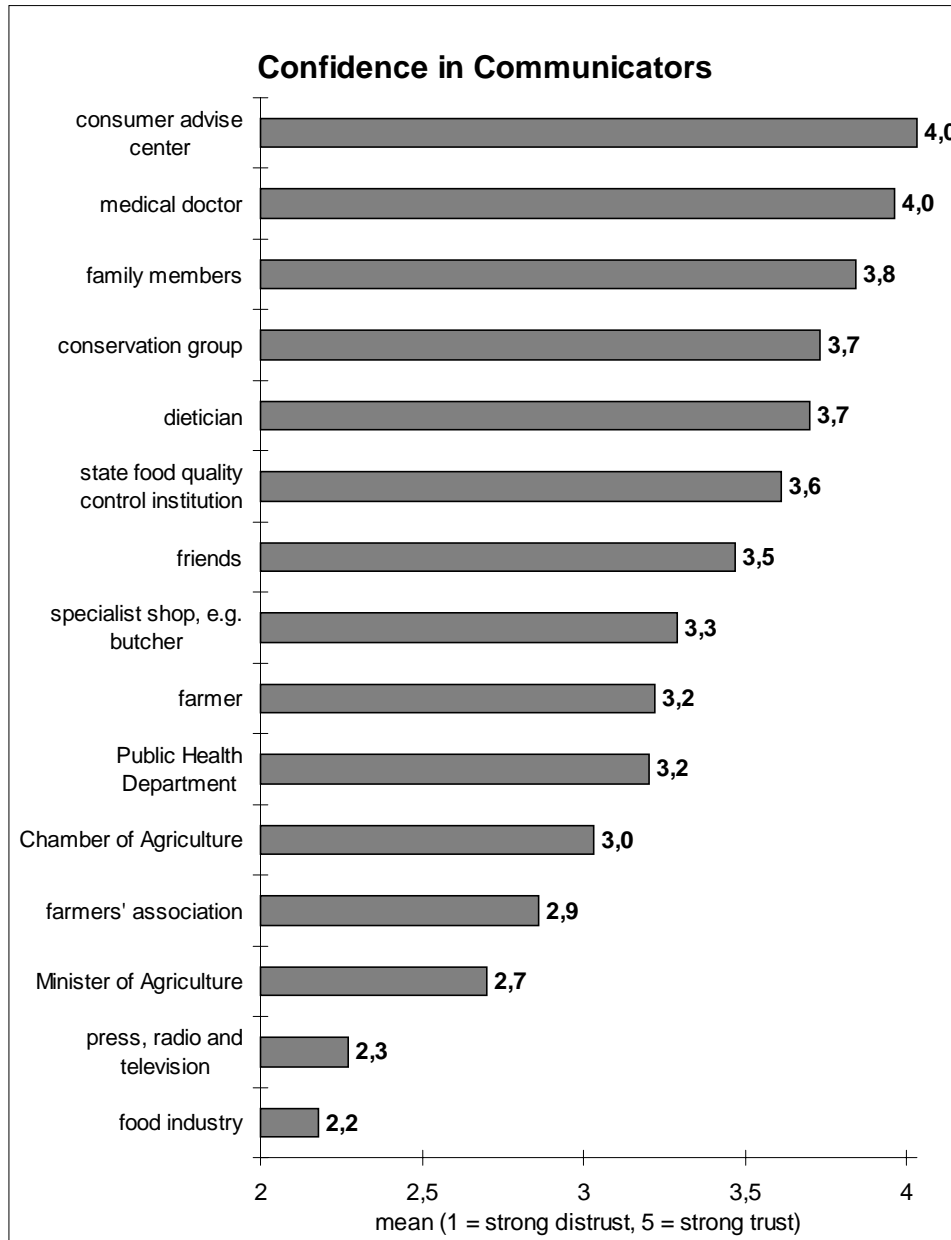
**Chart 14**



*3.5. Confidence in Different Communicators*

Who are the most suitable persons or institutions for communication? The test persons were asked to state their degree of confidence in different communicators (chart 15).

Chart 15



Communicators mostly trusted were the consumer advise centre, followed by the medical doctor and the family members. Communicators mostly distrusted were the food industry in general, followed by the press, radio and television. The degree of confidence in farmers is higher than in their lobbyists.

Are there any differences between secure and concerned people regarding their degree of confidence? Communicators can be divided into three groups (chart 16):

- Within the first group, where the consumer advise centre, the family members and the Conservation groups can be found, confidence is increasing when the degree of concern is growing.
- Within the second group, where the medical doctor, the dietician, the friends, the Minister of Agriculture and the media can be found, are communicators without significant differences between the differently concerned segments.

- The third group, the state food quality control institutions, specialist shops, the farmer, the farmers association and the food industry, consists of communicators, where with growing concern, distrust is increasing.

Generally we can conclude:

- the more communicators are commercially orientated or are lobbyists for agriculture or the food industry, the more they are distrusted.
- the more they are consumer orientated and independent from the food industry or agriculture, the more they are trusted. This group is including family members and friends.
- These tendencies are accentuated with increasing concern.

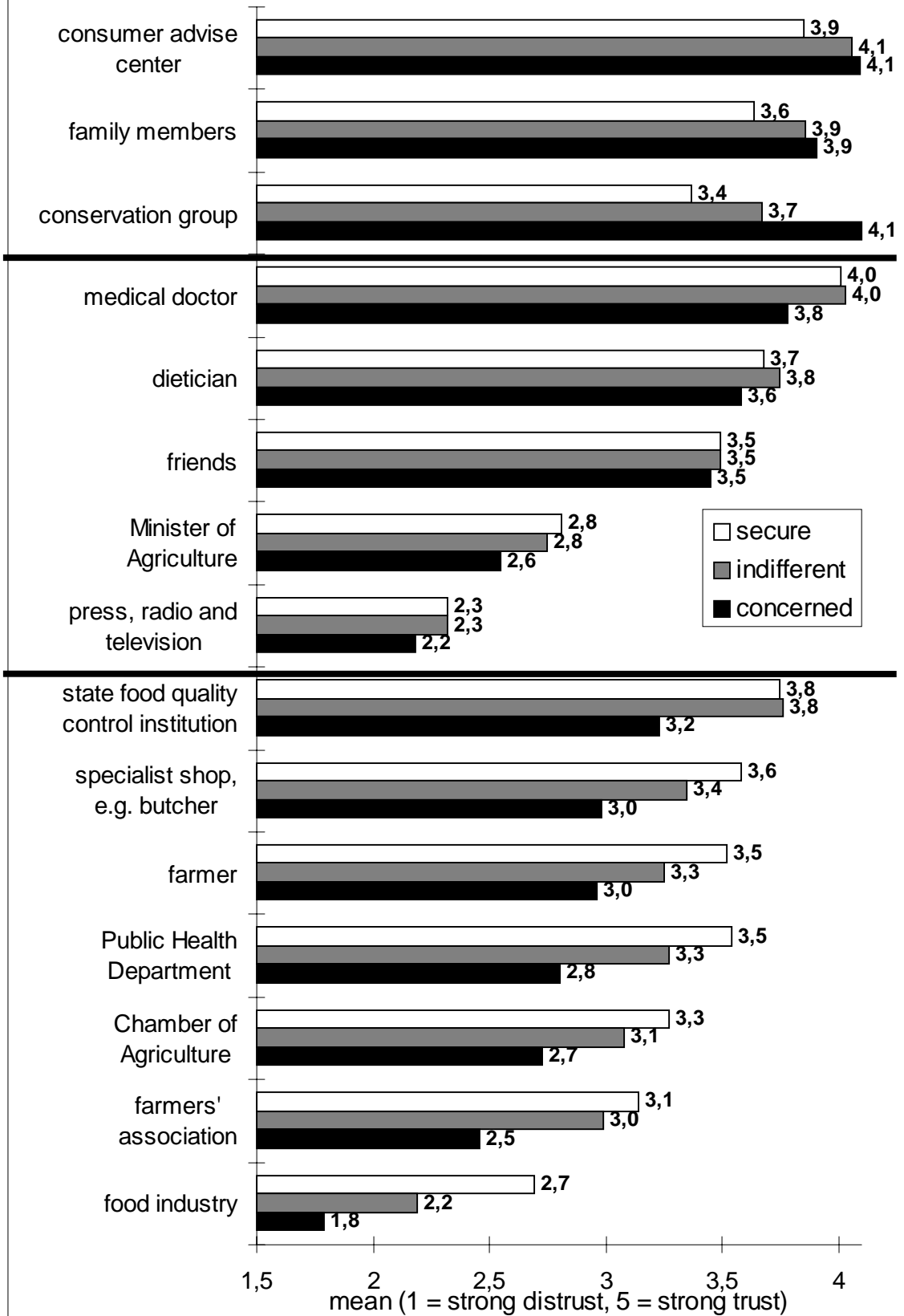
### *3.6. Summary of chapter 3*

The findings up to now can be summarized as follows:

- With growing concern demand for information is increasing.
- With growing concern desire for overcoming alienation is increasing.
- The more communication contents try to persuade individuals that a good is safe, the more they are disapproved.
- With growing concern distrust in quality labels is increasing.
- The more communicators are commercially orientated or lobbyists, the more they are distrusted, especially with growing concern.

Chart 16

### Confidence in Communicators by Secure, indifferent and Concerned Individuals





## 4. Conclusions

What are the consequences for the communication policy?

**1. Communication goals:** First we have to raise the question, whether the communication goal „Regaining the Confidence“ is a relevant and realistic goal. It may be not very relevant, because the consumer behaviour is determined more by preference than by confidence. It may be not very realistic, because the concern about food is closely related with some basic values and attitudes, a pessimistic view of life, environmental concern, scepticism against modern technologies, which hardly can be changed by communication.

**2. Communication contents:** If we want to achieve the goal „regain the Confidence“, we have to raise the question, whether it makes sense to adress the safety aspects directly (by using slogans like „beef is safe“). The risk of such type of risk communication is, that it may cause more distrust especially in the group of concerned persons. Thus, we may achieve the opposite of what we intended. The question is, whether indirect methods of regaining confidence may be more successful - for example by stressing the enjoyment, fun, provenance and other aspects of food without mentioning safety aspects. More confidence may be achieved without talking about safety.

**3. Communicators and communication channels and situation:** If we communicate with the consumers, we should keep in mind, that the selection of the appropriate communicator is often more important than the communication contents. This means, that the possibilities to use more personal communication instead of mass communication, should be investigated. We have seen, that concern is caused by alienation, especially in the group of the most concerned persons. More personal communication may be a measure to overcome alienation: Especially the personal communication with multipliers seems to be a rather efficient way of communication.

In this stage of our investigation we can only raise these questions without giving final answers. Thus we are looking forward for the discussion and your answers to these questions.

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