"Country of origin" as a cue for quality and safety of fresh meat

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Abstract

In this paper, it is distinguished between extrinsic and intrinsic quality cues and between eating (experience) quality and credence quality. Based on these distinctions, the economics of regulating cues is developed. The theoretical considerations are illustrated by the results of a consumer survey in several Member States of the European Union. In this survey, the extrinsic and intrinsic cues, the experience and credence quality attributes for fresh meat are evaluated by European consumers. In particular, information is presented on the helpfulness of cues for predicting eating and credence quality. The research clearly shows that the importance of the extrinsic cue "country of origin" as judged by consumers varies considerably between EU Member States and between the different meats. Furthermore, "country of origin" is regarded by consumers both, as a cue for eating quality and as a cue for food safety. Further analysis shows that those consumers claiming to be able to predict eating quality of meat from inspection in the shop are relying more on intrinsic cues, like "colour", while the "non-experts" seem to rely more on extrinsic cues and here in particular on "country of origin" and "place of purchase". The theoretical framework is employed to discuss the efforts of the EU to support "country of origin" claims. Not only the PDO and PGI are efforts in this direction, but the beef traceability and labelling regulation has to be added here. In particular the "country of origin" claims are discussed on the background of the aim of the Common Market to remove non-tariff barriers to trade between Member States.

Keywords : country of origin, quality, safety, meat, search goods, experience goods, credence goods, extrinsic cues, intrinsic cues, eating quality, consumer behaviour, PDO, PGI

INTRODUCTION

The "country of origin" is one cue, among other extrinsic (and intrinsic) cues[1], on which consumers base their quality perception of the food product.

Cues signal quality attributes to the consumer. Quality attributes are subjectively perceived and the outcome of the cue processing process of the individual consumer. How cues are interpreted by the consumer depends on her/his experience with the cues as indicators for quality attributes and on the information about the product from other sources, for example from media. The consumer learning process may be conceptualised as learning from experience about the predictive value of cues for indicating product attributes. Furthermore, the confidence value of extrinsic cues is important for the consumer in cue processing. Here, the consumer has to rely on third party or public control. Cues have to be reliable to be accepted by the consumer as indicators for product quality. The higher the predictive and the confidence value of a cue, the more important is this cue for the consumer as a signal for product quality.

The outcome of the cue processing process are expected product attributes at the time of purchase. The attributes themselves are experienced later in food consumption. But at the time of quality selection in the shop mere expectations on the offered product qualities are shaping the product selection process.

Quality attributes received from purchase and consumption of the product may be regarded as arguments of the consumer utility function. This is the approach chosen in this paper.

Consumer behaviour theory would suggest a more sophisticated approach to the attribute evaluation process than just a transformation from the attribute space into the utility space. In consumer behaviour analysis, attributes (and other factors) are regarded as shaping the overall attitude (or preference) towards the product. Ultimately, consumer's overall attitude towards the product is combined with personal and social norms to form a purchase intention.

While the consumer behaviour approach clearly gives more structure to the attribute evaluation process, for our needs here, we will use the economic approach.
In the economic approach, the focus is not on the forces shaping the individual preferences, but on the decision process of the consumer given the preferences of the consumer. The focus of this paper is not on the analysis of attributes as means to fulfil final ends for the consumer, but on the cue processing process and implications for public policy. Accordingly, the analysis of the frame shaping the transformation from the attribute space to the utility space is beyond the scope of this paper[2].

"Country of origin" is well established on the market as a cue signalling quality attributes for fruits and vegetables. For wine and cheese, the "region of origin" is an even more important than "country of origin" as a cue for indicating quality attributes. Here the name under which the product is sold may be even identical with the name of the region, where the product has been originally produced, like wine from Bordeaux or *Emmentaler* cheese[3].

In the case of fresh meat, "country of origin" is used increasingly on the market as a cue to signal quality to the consumer (e.g. beef from Argentina) respective to signal safety (e.g. beef from a country with little or no cases of mad cow disease). In the case of meat products, the "region of origin" is acting as part of the product name, like for cheese and wine. The importance of the cue "country of origin" for consumers is particular increasing on the fresh meat market.

While the "region of origin" and the product name may be identical for wine, cheese, sausages, ham and other meat products, this is not the case for fruit and vegetables. Here information on the country of origin is used in addition to the product name to signal quality and is a product quality attribute and not a product name.

"Region of origin" or even "country of origin" may be both, a product name and an indicator of specific attributes of the product. As an indicator for quality, "country of origin" is less established than "region of origin" in most cases. Very few products using a regional identity have a transnational notoriety. Usually, the regional identity of a product will be less known, the further away the region, in which the consumer is living. Furthermore, the regional identity of a product in one country will have in general no meaning for consumers in other countries, with *Champagne*, *Roquefort* and *Porto* being an exception[4] "Region of origin" is mainly of importance for the national consumer, but less so for the consumers in other Member States.

While it is the task of EU policy to remove barriers to trade between Member States, the "country of origin" is the more critical and important cue than "region of origin" for EU policy. The focus of this paper is on regulating cues on the EU level, accordingly we will concentrate on "country of origin" and not so much on "region of origin" as a cue.

It is rather obvious, and confirmed with several studies, that the "country of origin" perception differs for product categories.[5] A German car may be regarded by the consumer as superior to an Italian car ; but for shoes, European consumers would probably prefer Italian shoes to German shoes. The "country of origin" image differs according to the nationality or regionality of the consumer. An Austrian wine may be regarded by a Swedish consumer as inferior compared to an Italian wine, while the opposite may be the case for a German consumer living at the border to Austria. Consumers in the different countries are offered different sets of products. While it may be impossible to get superior Austrian wine in Sweden, this does not hold for German consumers. Furthermore, preferences differ between consumers.

Brands are clearly the most reliable signal of product quality for many foodstuffs. Brands and other extrinsic cues as communicated with the label on pre-packaged foodstuff have no or less importance for those products weighted and packaged in the shop, like cheese, fruits and vegetables, fish and meat. For these (and other) products the "place of purchase" may act as an extrinsic cue indicating quality. Not only "place of purchase" but as well "country of origin" and "region of origin" will gain importance for the consumer's cue evaluation process, if brands and other extrinsic cues are missing.

It is interesting to note that the perceived quality of those products which are sold not pre-packaged and unbranded is particularly low. This is documented not only for Germany[6] but as well for each other Member State of the European Union[7]. Fresh meat is a product which is sold largely not pre-packaged and unbranded. Here the perceived quality is worse of all foodstuffs.

1. EXTRINSIC AND INTRINSIC CUES : TWO CATEGORIES OF CUES

The distinction between extrinsic and intrinsic cues seems to be rather intuitive and is confirmed by consumer behaviour analysis to some extent. This distinction is well established in the literature on food quality. Steenkamp gives an extended overview on the literature on cues as predictors for quality[8]. The distinction between extrinsic and intrinsic cues is attributed to Olson[9]. Other work in the area of food quality adapted this distinction[10].

Our research supports this distinction as well. In a factor analysis (Main components analysis, Kaiser-Criterion, Varimax Rotation), the factors behind the attributes were extracted. The two factors extracted have high factor loading either on the members of the set of intrinsic or of extrinsic attributes[11].

While extrinsic cues are communicated to the consumer mainly with the label, in the case of not pre-packaged food products, intrinsic cues, like the appearance and outlook of the food itself, act as quality signals as well[12]. Extrinsic and intrinsic cues together serve as a basis for the consumers' quality perception of the food product in the shop. While the cues are objectively measurable, quality perception is a highly subjective process.

If there is a demand of consumers on product quality information not met by the supply of cues communicated to the consumer, perceived quality will be rather low. Branded food products may use advertising and as such have an additional information channel available to communicate quality attributes to the consumer. Not branded products have to rely as a communication channel on the information given with the label.

In the case of not branded and not labelled products, like fresh meat, fresh fish, fresh vegetables or fresh fruits, quality perception by the consumer has to rely on other signals, in particular on intrinsic cues, like appearance. Freshness and selling unlabelled and unbranded seem to imply each other to some extent. Furthermore, the importance of brands on the particular market and the quality perception of consumers seem to be correlated. For fresh fruit, meat and vegetables, consumer perceived quality is particular low and brands do not dominate these markets[13].

2. EXPERIENCE AND CREDENCE : TWO WAYS OF COGNITIVE AND AFFECTIVE PROCESSING OF CUES

Our approach has some resemblance to the search-, experience-, and credence quality attribute approach

prominent in the industrial economics literature[14]. This approach has undergone some modifications from the pioneering papers in this field[15] to the more recent use of this approach in the literature[16].

Search goods, as introduced in the economic literature, denote those goods, where there are search costs involved to search for quality. With each further step of search, the sample of qualities available for choice increases. Search quality is accordingly the quality, which is available for inspection. The consumer behaviour literature adapted the term "search quality" in this definition, without giving attention to the sampling aspect. Search quality here is understood as the quality known by inspection in the shop, therefore sometimes denoted as inspection quality[17].

We will further modify this approach by using the term "quality in the shop" instead of "search quality attributes". This is not another phrase for the same content, but it includes as well another meaning. "Quality in the shop" is meant to consist of cues or indicators for the product quality in consumption. The quality detected in the shop is regarded here as not directly utility generating. The "quality in the shop" merely consists of cues predicting the quality in consumption, "place of purchase" being one of them.

Experience quality attributes were introduced in the economic literature as those attributes, where the user has to consume the product to experience the quality. Accordingly, we will use the term "experience quality" or, more understandable for consumers, "eating quality".

Credence quality, like search quality, is not a standardised concept in the literature. The usage of the term credence quality has undergone some modifications in the last decades. Darby and Karni[18] introduced this term to analyse markets in which the information asymmetries between seller and buyer are such that sellers are also experts who determine customers' needs : "The possibility of this situation is suggested by the observation that in a considerable number of cases involving medical, automotive, and other repair services, contrary to the basic assumption of conventional demand theory, the consumer is unaware of the ability of the repair service to satisfy a given want".

This understanding of the term credence quality referring to goods and services whose sellers are also the experts who determine the customers' needs is used as the conceptual basis for a growing branch in the economic literature. An overview on this literature is given by Emmons[19]. This usage of the term credence quality is a more particular one than in the consumer behaviour oriented literature.

In the consumer behaviour literature, "credence quality attributes" denote those features of the product, which are important for the consumer, but which are not experienced in consumption[20].

This is a rather intuitive definition of credence quality attributes. For economic analysis, more formal structure has to be given to a definition. While Darby and Karni supply some formal structure of the term credence attribute, this is not the structure complying with the intuitive definition of credence in consumer behaviour literature.

In Becker[21], a theoretical framework is presented, which integrates the economic and consumer behaviour approaches. In this framework, search attributes are defined as those attributes, which are known by the consumer before consumption. Experience attributes are experienced only in consumption. At the time of quality selection in the shop, consumers may form a subjective probability estimate on the likelihood that the product will deliver a specific experience quality attribute[22]. Accordingly, the consumers' decision process may be modelled as a signalling game. The cues are the signals indicating in a probabilistic way experience quality attributes. If we model experience in this way, Bayesian updating becomes an important issue. In Becker the consumer behaviour model is linked to a supply side model. It is assumed that firms maximise revenue. Higher quality will incur higher production costs. In the Bayes-Nash equilibrium of a game, where suppliers choose quality attributes to maximise revenue and consumers demand product attributes to maximise a multi-attribute utility function, the results of Ackerlof are replicated[23]. In the Bayes-Nash equilibrium for experience attributes, less than social efficient quality is supplied. High quality will not be offered though the cost of producing this high quality is lower than the consumers' willingness to pay for the high quality. Quality erosion to a level less than socially optimal will be the result. Means to stop the tendency for quality erosion include brands and warranties, as already suggested by Ackerlof. In the framework presented in Becker, experience quality selection is modelled as a game under risk. The suitable measure is

the probability measure, as already used by Ackerlof. This probability measure captures the predictive value of cues.

In the case of credence attributes, probability estimates have no basis in the experience of the consumers. Here, the confidence value of the cue becomes an important issue. Modelling the confidence value as a fuzzy measure (Becker 1997) or as a non additive probability measure (Benner 1999), will result in a quality erosion to an even lower level than in the case of experience attributes. The equilibrium in this game incurs even larger social welfare losses than in the case of experience attributes.

Credence quality attributes, as defined so far, include diverse issues like animal welfare and environmental concerns, but as well food safety issues like use of antibiotics as growth promoter, use of hormones or BSE. Further differentiation is here needed for further analysis. We will distinguish between :

- Food safety (including hygiene) credence attributes,
- Health credence attributes,
- Other credence quality attributes.

If the repair and service approach, as pursued by most of the literature on credence quality, is taken care of, another category :

- Bundled credence attributes,

has to be added[24]. However, this category is of minor importance for foodstuffs.

We will regard experience quality attributes as equivalent to the eating quality. We will use the latter term in the connection with the consumer survey, to make the concept easier to understand by the consumer. Credence quality includes food safety. Accordingly, we will use food safety as the concept presented to the consumer, which is regarded as equivalent to the credence attribute concept. Food safety is regarded here as one category of credence attributes, which is easy to understand by the consumer.

Experience (eating) quality and credence quality (e.g. food safety) are conceptualised as fundamentally distinct quality dimensions[25]. This distinction will give the foundation for the economics of regulating the "country of origin" and other cues indicating experience and credence quality attributes.

3. A SEQUENTIAL MODEL OF CONSUMER QUALITY SELECTION IN THE SHOP

The supply side supplies a product which can be regarded as a bundle of characteristics. These characteristics are communicated with intrinsic and extrinsic cues to the consumer while shopping. The consumer perceives the cues and makes predictions of the quality attributes of the product on the basis of these cues received while shopping and other sources of information. While the eating quality is experienced in consumption, this does not hold for the credence quality. These quality attributes are not known even after consumption. Here, trust in information and confidence in information sources becomes important.

The food consumer demands organoleptic quality attributes, but increasingly extrinsic quality attributes, like animal welfare, environmentally friendly production etc. are becoming important. These extrinsic product attributes are mainly focusing on the quality of the production process and not on the product itself.

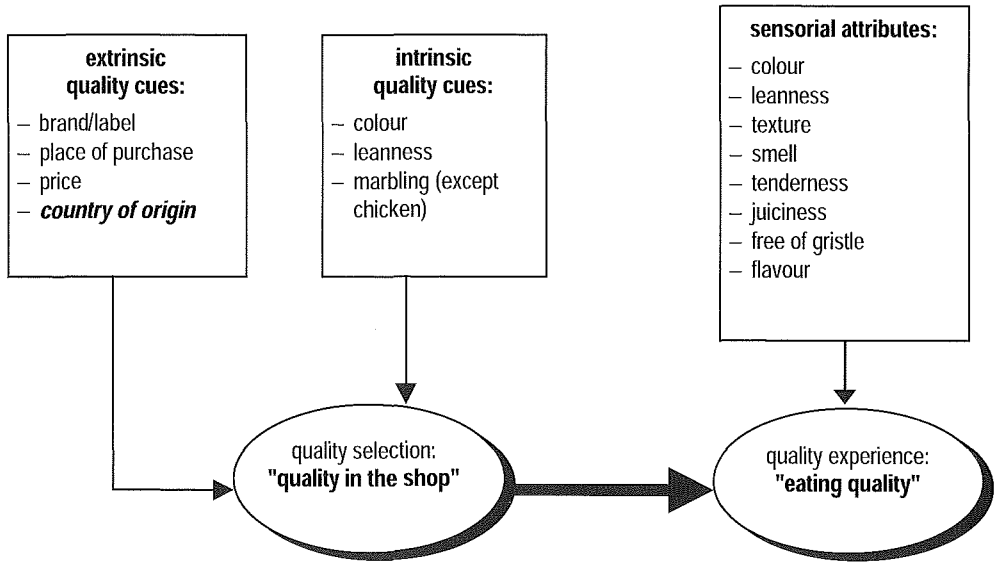
Credence quality attributes, as defined so far, include diverse issues like animal welfare and environmental concerns, but as well food safety issues like use of antibiotics as growth promoter, use of hormones or BSE. We will focus in this paper on "country of origin" as a cue.

"Country of origin" may be regarded by consumers as both, as a cue for eating quality and food safety. Our framework makes it possible to link the consumer model with public quality policy and accordingly to give normative suggestions for improving public quality policy.

Focus groups (2-3 per country) on meat have been conducted in each of the countries participating in this study. Extrinsic and intrinsic cues of help in assessing the eating quality and the safety of meat were elected from the focus group sessions. Furthermore, the most important organoleptic quality attributes and the salient concerns on the safety of meet as they came out of the focus group sessions were used in the questionnaire. The survey data was collected through telephone surveys. The survey was conducted by a commercial telephone survey organisation, using random-digit dialling procedures, in March 1997. This was one year after the announcement by the Health Minister of the United Kingdom, Stephen Dorrell, that a link between BSE and the human degenerative brain disorder

Creutzfeld-Jakob Disease could not be ruled out. The questionnaire was designed in English. The translated questionnaires were checked by native speaking experts, which conducted already the focus groups, on consistency with the English worded questionnaire. Consumers in six countries of the European Union (Germany, Ireland, Italy, Spain, Sweden, United Kingdom) were interviewed and 500 successful interviews per country conducted. The interviewed persons had to answer the same set of questions for beef, pork and chicken separately.

Figure 1 : Predicting Eating Quality



Source : Becker T., Benner E. and Glitsch K., 1998 (modified)

The consumers were asked to judge the helpfulness of intrinsic and extrinsic cues "in assessing the eating quality of meat while shopping." It has to be stressed here, that we did not ask for quality in general but "eating quality" in particular to focus attention of the consumer on the organoleptic experience. "Eating quality" is a term easily to understand and easily to translate. The extrinsic and intrinsic quality cues used in the survey, as an outcome of the focus group sessions, are presented in figure 1. In the questionnaire itself, no distinction was made between extrinsic and intrinsic cues. The cues were rated by the consumer on a 5-point scale ranging from "very helpful" (1), "quite helpful", "neither", "not very helpful", to "not at all helpful" (5). All the cues presented in figure 1 were rated on average in each country and for each meat as very helpful or quite helpful, with price being the least helpful quality cue with an average rating of 2,7 on the scale.
The relative importance of the extrinsic and intrinsic cues received while shopping to predict the sensorial experience in eating the meat (eating quality) is presented in table 1. At the average "colour", "place of purchase" and "country of origin" are regarded as being most helpful in assessing the eating quality of beef and chicken. The price of meat is of least importance for consumers as an indicator of quality.

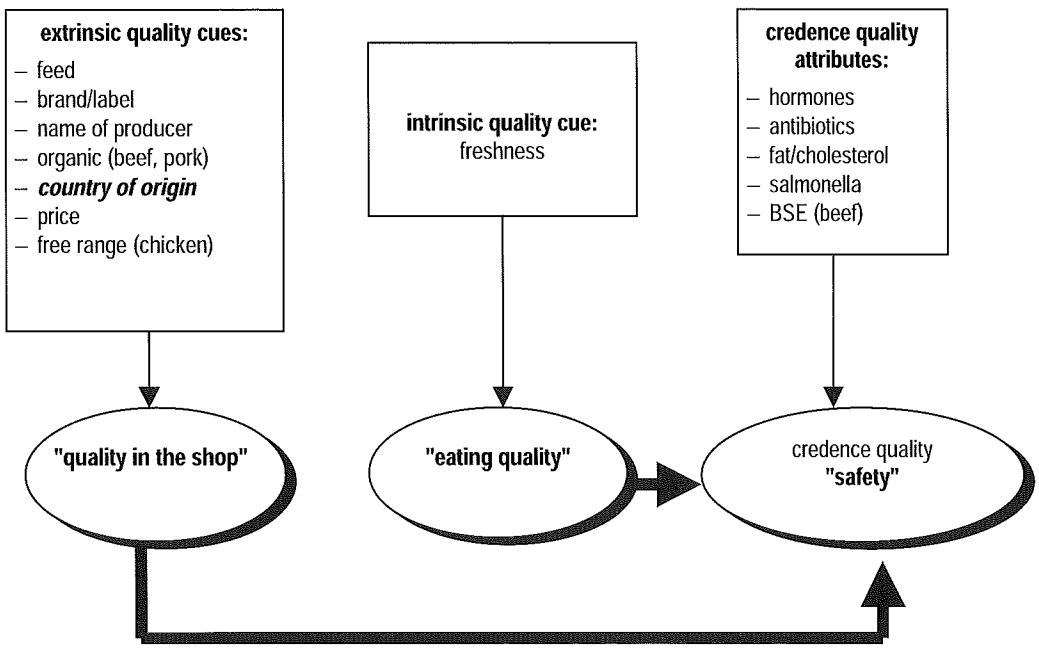
Table 1 : Average Ratings of Indicators for Eating Quality (Germany, Ireland, Italy, Spain, Sweden, United Kingdom)

	BEEF	PORK	CHICKEN
Colour	1,5	1,6	1,7
Place of purchase	1,7	1,8	2,0
Country of origin	1,7	2,1	2,1
Leanness	1,9	1,9	2,1
Marbling	2,0	2,2	
Brand/Label	2,1	2,2	2,1
Price	2,6	2,7	2,7

Source : own calculations

To get a better understanding of the eating quality perceived by the consumer, we asked for sensorial attributes : "How important or unimportant are each of the following for assessing the eating quality of beef" (or pork or chicken, separately for each category). The attributes used in the survey are presented in figure 1. All these attributes rated on a 5-point scale from "very important" (1) to "not at all important" (5) for each country and each meat as very or quite important, with no attribute rating lower than 2,5 on average.

Figure 2 : Predicting Credence Quality



Source : Becker T. (1999), p. 104.

The cues for the prediction of credence quality attributes are perceived while shopping and (possibly) while consuming. Food safety is clearly an important credence quality attribute, which is rather well understood by the consumer.

The most important cues for assessing the safety of beef (pork, chicken), as they came out of the focus groups, were used in the survey. They are listed and segregated here in this presentation for analytical purpose, but not in the questionnaire, in extrinsic and intrinsic quality cues. We asked : "How helpful or otherwise are each of the following in assessing the safety of beef (pork, chicken) ?" Again, a 5-point scale was used. The cues listed in figure 2 were regarded by the consumers of each country investigated and for each meat investigated on average as helpful or very helpful, with "price" being an exception with an average rating of "neither" for all three meats.

The relative importance of the extrinsic and intrinsic cues in predicting the safety of the meat (credence quality) in presented in table 2. "Freshness", "feed", "country of origin" and "free range" (only for chicken) are regarded as being most helpful for assessing the meat safety. For chicken, brands and labels seem to be more important than "country of origin". The "price" and "name of producer" are of least importance for the respondents as indicators for meat safety.

Table 2 : Average Ratings of Safety Indications (Germany, Ireland, Italy, Spain, Sweden, United Kingdom)

	BEEF	PORK	CHICKEN
Freshness	1,31	1,24	1,25
Feed	1,69	1,79	1,72
Country of origin	1,64	1,9	2,01
Brand/Label	1,89	1,97	1,96
Organic production	2,02	2,04	1,69
Name of producer	2,43	2,48	2,41
Price	2,74	2,80	2,83

Source : own calculations

The rank in importance of the cues for predicting eating quality for each country separately is presented in table 3. In all countries investigated, except in the United Kingdom, "country of origin" is ranked first or second as an indicator for predicting eating quality. In the case of beef, German, Irish and Swedish consumers seem to attribute particular importance to the "country of origin" cue as an indicator for eating quality. In the case of chicken, "country of origin" is of primary importance only for the German and Swedish consumers.

Table 3 : Significant Differences in the Helpfulness of Cues for Predicting Eating Quality

	Germany	Ireland	Italy	Spain	Sweden	United Kingdom
BEEF						
1st rank	***origin***, place	colour, place, leanness, ***origin***	colour, place	place, colour	colour, ***origin***, label	colour, leanness
2nd rank	leanness, colour	marbling, label	***origin***	leanness, ***origin***, marbling, label	marbling	place, marbling, label
3rd rank	marbling, label	price	marbling, label, leanness	price	leanness	price, ***origin***
4th rank	price		price		place, price	
PORK						
1st rank	place,	colour, leanness, place	colour, place	colour, place	colour, ***origin***	colour, leanness
2nd rank	***origin***, colour leanness	***origin***	***origin***, marbling, label, leanness	leanness, marbling, label, ***origin***	label	place
3rd rank	label, marbling	label, marbling	price	price	marbling	marbling, label, price
4th rank	price	price			leanness	***origin***
5th rank					place	
6th rank					price	
CHICKEN						
1st rank	place, ***origin***, leanness, colour, label	colour	colour	colour, place	***origin***	colour
2nd rank	price	leanness, place	place, ***origin***	leanness	label	leanness
3rd rank		***origin***, label	leanness, label	label, ***origin***	colour	place, label
4th rank		price	price	price	price, place leanness,	price
5th rank						***origin***

Source : Glitsch K., Consumer Requirements for Fresh Meat : Results of the Survey. In : Becker T. (ed.) : Quality Policy and Consumer Behaviour. Final Report of EU FAIR CT 95-0046 delivered to the Commission in January 1999.

The "country of origin" seems to be of less importance as a safety indicator. In table 4, the importance of the cues for predicting meat safety is presented for each country investigated. "Country of origin" as an indicator for safety is regarded as most important only for beef in Germany.

Table 4 : Significant Differences in the Helpfulness of Cues for Predicting Safety

	Germany	Ireland	Italy	Spain	Sweden	United Kingdom
BEEF						
1st rank	***origin***, freshness	freshness	feed	freshness	Freshness	freshness
2nd rank	feed	***origin***	freshness	feed, organic, ***origin***	***Origin***	label, feed
3rd rank	organic, producer, label	feed, organic, label	***origin***, label, organic, producer	label	Label	***origin***, organic
4th rank	price	producer	price	producer, price	Feed	price
5th rank		price			Organic	producer
6th rank					price, producer	
PORK						
1st rank	freshness	freshness	feed, freshness	freshness	Freshness	freshness
2nd rank	feed, ***origin***, organic, label, producer	***origin***, label, feed, organic	organic, label, ***origin***, producer	feed, organic	***Origin***	label, organic, feed
3rd rank	price	producer	price	***origin***, label	Label	price, ***origin***
4th rank		price		producer, price	Feed	producer
5th rank					Organic	
6th rank					price, producer	
CHICKEN						
1st rank	freshness	freshness	feed, freshness	freshness	freshness	freshness
2nd rank	free range	free range, ***origin***	free range	free range, feed	***origin***	free range, label, feed
3rd rank	feed	label, producer, feed	label, ***origin***, producer	label, ***origin***	label	price, ***origin***
4th rank	***origin***	price	price	producer, price	feed	producer
5th rank	label				free range	
6th rank	producer				producer	
7th rank	price				price	

Source : Glitsch K., Consumer Requirements for Fresh Meat : Results of the Survey. In : Becker, T. (ed.) : Quality Policy and Consumer Behaviour. Final Report of EU FAIR CT 95-0046 delivered to the Commission in January 1999.

In order to get an idea on consumers use of "country of origin" and other extrinsic cues for predicting quality attributes, we asked the consumer in an opened question to name quality symbols for meat.

In Germany, the vast majority of answers related to the origin of meat. It was the most important factor for beef. More than half of the respondents only mentioned "origin", while others explicitly named "German" or a certain German state or region. Brand names only played a role for chicken, more than 10% of all answers referred to a certain brand. The most common quality labels, the CMA and DLG label, were mentioned just by few respondents.

The Irish consumers mentioned Irish produced meat as the predominant symbol for pork and particularly for beef. The "Q" mark is following. For chicken, most Irish consumers look after brands, whether or not it was free range produced.

For Sweden, origin appeared as one of the key factors, particularly for beef and pork. The vast majority of answers when referring to origin was "Swedish", while "locally produced" was of rather minor importance. The second most mentioned label is a commercial brand, which is of most importance for chicken meat.

The extremely high frequency of missing answers in the Italian sample can be explained by the fact that meat in Italy is still a highly undifferentiated product. With the exception of label AIA for chicken, only a few respondents mentioned quality marks and labels of origin.

In Spain, only a very small proportion of fresh meat is sold with labels or brands. Accordingly, they have minor importance for the consumer, although labels of origin and a slaughterhouse stamp are more widely used for chicken meat.

In the United Kingdom, the most frequently mentioned mark or label in the case of beef, pork and chicken was the "country of origin", in particular "British" or "Scottish". The most important labels for chicken, apart from "origin", were "free range/outdoor geared", "grade" and retailer name.

The great majority (70% to 80%) of Italian and Spanish consumers do not look for any symbols or labels, when buying meat. This is demonstrated in table 5. The other extreme is the Swedish consumer. Here only 40% do not look for symbols or labels, which indicates that 60% of the Swedish consumers look for symbols and labels, in particular for "country of origin".

Table 5 : Share of Respondents looking for any Symbols or Labels (in %)

	BEEF	PORK	CHICKEN
Germany	54	57	51
Ireland	56	67	40
Italy	83	83	65
Spain	71	74	67
Sweden	42	38	41
United Kingdom	51	62	53

Source : Glitsch K., Consumer Requirements for Fresh Meat : Results of the Survey. In : Becker, T. (ed.) : Quality Policy and Consumer Behaviour. Final Report of EU FAIR CT 95-0046 delivered to the Commission in January 1999

The Irish, German, Spanish and Italian consumers showed a high preference for local foods ; about 90% of them agreed strongly or agreed slightly with the statement : "I prefer to buy food which is produced locally". In Sweden and in the United Kingdom, this percentage is lower, although here the majority still agrees with this statement. In Sweden, the "country of origin" is very important, whereas the "region of origin" seems to have only little importance. In the United Kingdom, "country of origin" seems to be very important as a cue, consumers look for, but not as a cue for indicating eating quality or safety. This paradox may be

explained as a reaction of the British consumers on the BSE crisis in the United Kingdom.

In all countries, 80% to 90% of the consumers agreed to the statement, that "it is important to know the country where the meat I buy has been produced" with the United Kingdom being again an exception with only 60%.

4. CONSUMER SOCIO-DEMOGRAPHICS AND "COUNTRY OF ORIGIN" CUES

Sweden seems to be a case of particular interest to be analysed more in detail. Ever since the Swedish application for EU membership, "Swedish" or the "Swedish model" has been heavily promoted by producers and media as well as by politicians. To a substantial degree, the media has focused on the shortcomings in the meat production standards in other EU Member States. Politicians have fought for what is perceived to be the core of the Swedish model and producers have marketed Swedish products as of superior quality. Three key features of the Swedish model[26] are : a stronger emphasis on process standards based on animal welfare considerations than in the rest of the EU, a prohibition of antibiotics in the feed, and a salmonella control program that is unique with the EU. In 1995, Sweden joined the EU and as a consequence the Swedish meat sector has been exposed to enhanced competition from other countries. Imports of beef have increased dramatically in 1998.

Hoffmann estimated, for the Swedish questionnaire data, two dichotomous models for the response levels quite and very helpful of the statements on the helpfulness of "country of origin" for predicting eating quality of fresh meat and on the statement for the helpfulness of "country of origin" for assessing the safety of fresh meat. Hoffmann concludes, that the results indicate that women use "country of origin" as a quality cue to a larger extent than men, both in terms of evaluating food quality as well food safety. Furthermore, higher income was found to decrease the probability of perceiving "country of origin" as a useful quality indicator for pork and beef but not for chicken. The same result was obtained for the cases of predicting eating quality and of predicting safety. For all meats, animal welfare concerns had a positive effect on the use of "country of origin" as an eating quality indicator. With respect to food safety, concerns about antibiotics were found to have a statistically significant positive effect on the use of "country of origin" as a quality cue for all meats. Concerns about salmonella have a positive impact with respect to pork and chicken but not for beef.

We will report here on the results for the six countries investigated (Germany, Ireland, Italy, Spain and United Kingdom). For the six countries average, there is a statistically significant correlation for all meats between the importance of "country of origin" in predicting eating quality respective safety of fresh meat and the socio-demographic variables sex and age. Women give higher importance to "country of origin" than men. Younger people perceive "country of origin" as more important than older people.

Extrinsic cues are of more importance to younger people than older people, while intrinsic cues are valued higher by older people[27].

The number of children respec ive the number of persons in a household is statistically significantly correlated with the importance attributed to "country of origin" as a cue for eating quality and for safety of beef. The more children respective people belong to household, the more important is "country of origin" as a cue for beef eating quality and beef safety.

At the six countries average, the consumption frequency of the meats is not statistically significant correlated with the importance of "country of origin" as a cue for predicting quality or safety. The chicken consumption is an exception. The higher the importance attributed to "country of origin" as a cue for indicating pork safety respective chicken safety, the more often is chicken consumed. Income and level of education seem to have no influence on the level of importance of "country of origin" given by the respective consumer[28].

5. REGULATING INTRINSIC CUES

While shopping, the consumer receives intrinsic cues before quality selection takes place. These intrinsic cues have by definition a high confidence value, though their predictive value may differ. On the basis of the framework presented above, it becomes obvious that the market for quality is efficient for intrinsic cues in the sense, that complete information for quality selection exists. No informational asymmetries or other reasons for market failure prevail[29]. Regulatory intervention will decrease social welfare. This is equivalent with the results of Bocksteal[30]. She demonstrated in a two-

quality supply-demand model, that, when consumers can perceive quality before purchase, minimum quality standards lead to social losses. Her approach is consistent with our approach here.

Other researches come to even more pronounced conclusions. In a kind of signalling model, Jovanovic[31] concludes that, if disclosure of quality is expensive, in equilibrium more than the socially optimal amount of disclosure takes place[32]. His results are driven by the assumption that misrepresentation of quality is impossible in his model. This is exactly the case for intrinsic cues for eating quality. Though the perception of the intrinsic cues may be influenced by suppliers by advertising, the intrinsic cues themselves can hardly be misrepresented, unless meat or other food is bought without inspection in the shop.

However, intrinsic cues may be manipulated to deceive consumers. Public policy should take care of this possibility. Accordingly, the Council Directive 79/112/EEC, the main piece of EU legislation regarding the labelling of foodstuffs, like national laws, includes a general prohibition of consumer deception. In the Council Directive 89/395/EEC, it is believed that the consumer needs to be informed about any irradiation treatment undergone by a foodstuff. Where such treatment is permitted under national legislation, it must be acknowledged on the food label through the use of a corresponding indication. According to Commission Directive 94/54/EC, packaging gases used in packaging certain foodstuffs should be mentioned on the label of foodstuffs which have undergone that process.

6. REGULATING "COUNTRY OF ORIGIN" AS A CUE FOR EATING QUALITY

"Country of origin" is an extrinsic cue. Here the confidence value becomes important, in addition to the predictive value. In the case of pre-packaged food, brands, labels or other marks may signal quality[33]. Other means to signal quality are discussed in the economic literature. All cues for which reputation could be built up are possible signals of quality. Reputation can be regarded as the general mechanism to build up confidence without third party verification or public control. For reputation to be credible for the consumer, the cost for signalling high quality by the producer has to be higher for low quality, or the benefit from signalling high quality has to be higher for the high quality producer, because of a damage to reputation if low quality is offered. Furthermore, the price (above cost) premium for high quality has to be higher than for low quality, to induce high quality production of eating quality. Investments in sunk cost (building up reputation) are the result[34].

The market mechanism to supply quality in the case of eating quality attributes only works, if there is the possibility for high quality suppliers to build up reputation and accordingly receive a price premium. This market mechanism can work in the case of food products sold pre-packaged. Here brands, marks, labels etc could signal quality. However, in the case of not pre-packaged foodstuffs no such cues are available. The Council Directive 79/112/EEC, the main piece of EU legislation on labelling, extends to both pre-packaged and not pre-packaged foodstuffs. But member states have chosen to limit the field of application to pre-packaged foodstuffs[35]. Accordingly, the practical importance of this directive for not pre-packaged foodstuffs may be neglected.

Labels play an important role in the market for food quality. This is covered more in detail by Caswell in her effort to link attributes and regulatory regimes together[36]. But in the case of meat and some other food products, these products are sold to a large extent not pre-packaged. Accordingly, the cues to establish a reliable signal of high quality are rather restricted. Brands and labels are of use for the consumer to predict eating quality, but they have only minor importance in the fresh meat market. The "place of purchase" and the "country of origin" become here the main signals for product quality.

Food labelling has to fulfil three essential requirements : product identification, consumer information and product marketing. To fulfil these requirements, clearly recognisable, legible, simple understandable, interesting and informative labelling is needed.

In the case of meat, the consumer in general perceives the quality supplied by the butcher as more reliable than the quality sold pre-packaged in supermarkets. The kind of outlet (butcher or supermarket) is, according to our results, very important as quality signal used by consumers. For beef and pork, the "place of purchase" was the among the most important cues for indicating eating quality in all countries except in Sweden and in the United Kingdom, where the market share of traditional butchers is comparatively low. For chicken,

"place of purchase" is a little less important than for beef or pork, because chicken is mainly bought in super- or hypermarkets[37].

"Country of origin" is more important in the case of Sweden, than "place of purchase". In all other countries, except the United Kingdom, "country of origin" ranked lower (but only in some cases statistically significant) for beef and pork than "place of purchase". For chicken, "country of origin" seems to be as important as "place of purchase".

The high importance of "country of origin" for beef in particular in Ireland, Germany, Sweden, Italy, and Spain seems to reflect the BSE concerns of consumers regarding imported beef.

The importance attributed to the cue "country of origin" gives high support for the approach of the EU to supply the means to reliable claim "country of origin" by the beef traceability and labelling regulation. Two caveats have to be added :

- First, "country of origin" is objectively no good predictor of eating quality, as confirmed in sensorial studies[38]. From an objective view on quality kind of "placebo effect" or "potemkin effect" may be induced with the public regulatory support underlining the importance of "country of origin".
- Second, "country of origin" is a cue, which is associated with an extensive set of issues, ranging from the image of the geographical area to perceived national differences in culture and tradition. Consumers may associate issues with this quality cue of no relevance for eating quality[39].

The "country of origin" or "region of origin" is important for differentiating products and reducing interchangeability. As such, it attempts to establish a kind of regional or national marketing brand. The results of our and other[40] research available support the importance of the country of origin on perceived product quality. This effect could be the result of the increasing anonymity of markets and increased importance of these cues, while other cues are missing. This effect is especially important in the meat sector.

At least, the effects of "country of origin" claim, as they will occur in the future as an outcome of the beef traceability and labelling regulation, have to be screened to circumvent the erection of non-tariff barriers to trade between Member States of the EU by this regulation. Furthermore, the public national support for advertising this cue has to be screened in detail.

There seems to be no justification in the case of pre-packaged foodstuffs for public intervention regulating eating quality attributes. Here brands and labels are more efficient means for the individual supplier to signal eating quality. Like in the case of intrinsic cues, consumer deception should be avoided and taken care of in public regulations. But regulating eating quality will decrease the possible range of qualities which may be delivered to the market. Accordingly, social welfare will decrease, if eating quality is regulated, unless the aim of the regulation is to avoid consumer deception.

A standard on eating quality may be imposed on the market by collective or public action. There is clearly a need for this kind of collective action in the case of eating quality. In particular, if the supply side is rather fragmented in many small enterprises. But the market should decide, which standard is accepted. Accordingly, standards exclusively targeting towards eating quality attributes should be voluntary.

7. REGULATING "COUNTRY OF ORIGIN" AS A CUE FOR FOOD SAFETY

We distinguish between eating quality and food safety. Food safety is one kind of credence attributes. According to our research, consumers seem to mix up safety and quality concerns. "Country of origin" is both, important as a cue for eating quality and for safety.

The possible quality erosion for credence attributes is clearly more severe than in the case of experience quality. [41] While in the later case the quality becomes obvious after consumption, this is not the case for credence quality. Accordingly, policy makers have here a higher responsibility to avoid consumer deception on these issues.

Credence quality attributes may be communicated in general like experience quality attributes with cues indicating specific quality attributes of the product. But in the case of credence quality, these claims are not provable by the consumer. Truthfulness as backed up by third party control seems to be of decisive importance for consumer confidence in cues indicating credence attributes.

Cues available for judging the credence quality of fresh meat are sparse. Extrinsic cues should be defined by the market to take care of consumer needs or backed up by voluntary definitional standards, as supplied by regulators. These cues should clearly differentiate between eating quality and food safety. These concepts should not be mixed up in cue communication. If quality attribute bundling is profitable, the market will find the optimal solution as long as the quality attributes are understood and known by the consumer. Quality attribute bundling in public standardisation policy seems to be questionable. The market seems to be a better instrument not only to regulate quality supply, as long as the quality is open to inspection, but as well to find the optimal quality bundling of inspection quality.

Consumers should define standards meeting their needs, not interest groups. Policy making should not only contribute to a better understanding of the consumer of the content, scope and nature of the standard. Even more important, standards should address one issue at a time, either eating quality, or health concerns, or food safety issues, or process quality concerns. One very clear result of our research is that for fresh meat the same cues are used as indicators for eating and credence quality. In a successful public policy, these issues should be clearly separated.

There is an important argument for a public intervention that prohibits the communication of safety as a cue to the consumer. Markets would split up in perceived safe and perceived unsafe foodstuffs. Consumer confidence would erode even further.

8. EU POLICY REGULATING THE USE OF COUNTRY/REGION OF ORIGIN CUES

The Commission Communication "Completion of the Internal Market : Community Legislation on Foodstuffs" (COM 85 - 603) noted that since the European Union had rejected the idea of introducing numerous EU compositional laws for foodstuffs, it was necessary to introduce a well-developed and clear system providing for the labelling, presentation and advertising of food products throughout the European Union. The framework Directive (79/112/EEC) on food labelling "went a long way towards fulfilling that role", but it had to be amended several times in order to enhance consumer protection[42].

Three principles are governing EU quality policy, the principle of mutual recognition, the principle of subsidiarity, and lately the principle of consumer protection[43]. The BSE-crisis has given impetus to many important changes in EU meat policy and food policy. The new approach of the Commission on scientific advice and control has been laid down in the Communication on Consumer Health and Food Safety. Important for food policy in general is the decision on the separation of responsibilities for the management of scientific committees, and for control activities from the responsibilities of the legislative departments. Furthermore, the legal position of consumer interests was increased. Consumer protection was strengthened.

The other important outcome of the BSE-crisis is the publication of the long-awaited Green Paper on Food Law in May 1997. In the Green Paper, a review of existing legislation is given. Here the Commission invites comments : "In the field of labelling, binding labelling rules should ensure that consumers are provided with essential information about the foodstuff in a user-friendly manner. It is necessary to strike a balance which ensures that consumers receive all useful information, whilst avoiding unnecessarily detailed provisions. Manufacturers should remain free to provide additional information provided if it is not misleading. Although in some cases legislation may be necessary to govern the provision of this additional information. In this context, the Green Paper specifically invites comments on the approach followed in Community legislation to claim and nutritional labelling".

The Council Regulation 820/97/EEC, establishing a system for the identification and registration of bovine animals and regarding the labelling of beef and beef products, is another result of the BSE-crisis. The implementation of the Directive 92/102/EEC on the identification and registration of animals has not been entirely satisfactory and needed further improvements. Several amendments were made[44]. The beef traceability and labelling regulation regards the re-establishment of stability by improving the transparency of the conditions for production and marketing of products concerned as an important task. The traceability is a major concern.

While the beef traceability is mandatory, the labelling is voluntary. If "country of origin" claims are made on the label, they had to be confirmed. Traceability is the

means to do this. Traceability is the prerequisite for cues to be controlled by third party inspection. Whereas with missing traceability the credence attribute claims on the label are not verifiable.

The Council Directive 79/112/EEC on labelling, the main piece of the EU labelling regulation, regards "country of origin" as a cue, which has to be indicated to the consumer, in cases where the failure to indicate the place of origin or provenance might mislead the consumer to a material degree as to the true origin of provenance of the foodstuff. "Country of origin" has to be communicated to the consumer, if the no-communication will deceive the consumer.

The "region of origin" cue may be protected with the system provided with the Council Regulation 2081/92/EEC. The Regulation lays down rules on the protection of designations of origin (PDO) and geographical indications (PGI) of agricultural products as listed in Annex II of the EU Treaty such as meat, fish, eggs, milk, cheese, fruit and vegetables and products listed in the Annexes to this Regulation. These are: beer, natural mineral waters and spring waters, beverages made from plant extracts, bread, pastry, cakes, confectionery, biscuits and other baker's wares, natural gums and resins and hay, essential oils[45]. The Regulation is meant to provide opportunities to small-scale producers to supply for one of these quality symbols as a means to market and promote their products without having to go through the long and costly process of obtaining a trademark for these products. Only producer groups or associations working with the same agricultural product or foodstuffs are eligible to apply for these certificates. Names becoming "generic" may not be registered. The protected designation of origin is defined as the name of a region, specific place or in exceptional circumstances, a country. It is used to describe an agricultural product of foodstuffs, originating in that region, specific place or country ; and of which the quality or characteristics are essentially or exclusively due to a particular geographical environment with its inherent natural and human factors, and the production, processing and preparation of which take place in the defined geographical area. A protected geographical indication is defined as the name of a region, a specific place and in exceptional circumstances, a country, used to describe an agricultural product of foodstuff originating in that region, specific place or country. This product possesses a specific quality, reputation or other characteristics attributable to that geographical origin and the production and/or processing and/or preparation which take place in the defined geographical area. The difference between the two definitions does not appear to be immediately obvious, more so for the average consumer. The choice is between a specific geographical environment and a specific geographic origin. The geographical origin of a product appears to offer substantially more possibilities for interpretation than of geographical environment.

Regulating "country of origin" is still an open task for EU policy.

9. CONCLUSION AND IMPLICATIONS OF THE RESEARCH FOR EU POLICY

"Origin", "place of purchase" and "colour" were shown to be the most important factors for assessing meat quality in the shop. Leanness of beef and pork was also among the most important factors for Irish and British consumers. Generally, "labels" were not considered to be very helpful. The labels already on the market are too manifold and confusing, not only for consumers but even for highly specialised experts. "Origin" and "place of purchase" seem to act as substitutes for labels.

Private quality policy is well advised in trying to separate the market by focusing on the "country of origin" or "region of origin". The country of origin is among the best marketing arguments. On the other side, "country of origin" may act a barrier to trade between Member States. This is the concern of the Commission.
The beef traceability and labelling regulation meets consumer requirements and will restore consumer confidence, if established on the market. They could give examples for efforts undertaken for fish and other products sold un-packaged over the counter, like vegetables or fruit.

However, the retailers and butchers will not support the labelling of meat. Accordingly, the labelling effort may be damned to fail. More support to inform consumers on the traceability and labelling effort, in particular consumers in butcheries, could be decisive to bring the labelling effort to success.

The ban of "country of origin" claims as envisaged by the Commission, seem to be counterproductive. "Country of origin" claims may be controlled by third parties to avoid consumer deception.

Furthermore, safety issues should be addressed by EU and not by national policy measures to avoid further loading of the "country of origin" cue on safety issues in the mind of the consumer.

Concerns and meat consumption are interrelated[46]. A further decrease in meat consumption can be stopped only by addressing consumers' concerns. National efforts consequently focus on the "country of origin" or regional aspects. This clearly addresses consumer needs because "country of origin" is regarded by the consumers as being of utmost help in assessing the eating quality and safety of fresh meat.

In the case of not pre-packaged food products like meat, fish, fruit and vegetables, consumers receive little information with the product. On the other side, consumers would like to have more information on the quality of these products. This results in consumers' perception of quality erosion regarding these products. Furthermore, the lack of information results in an over-evaluation of the importance of "country of origin" as an indicator for quality and safety of the product. It is not only of interest for private enterprises but as well for national quality policy to use the "country of origin" as a marketing argument.

There is a conflict between EU policy and national policy looming at the horizon. The Commission has to take care of removing barriers to internal trade. The origin is among the best private and national marketing arguments, which is clearly demonstrated by the results of the consumer survey. Accordingly, it is in the interest of collective policy efforts on national level to focus on origin as a marketing argument. The Commission regards this as a form of subsidy, not allowed according to article 92 of the Maastricht Treaty. Furthermore, the marketing efforts of public or semi-public institutions like CMA, Board Bia or MLC may contradict article 30 of the Consolidated Treaty.

The ban of using "country of origin" as a marketing argument will lead to renewed political resistance and opportunistic behaviour of the Member States, caused by national consumers' defeat. Early attempts of harmonisation at the expense of the diversity of national and regional food product regulations have led to a course of considerable political resistance. Subsequently, due to the revision of the Commission's legislative program, the overriding principle of "mutual recognition" has evolved.

It is not a consumer-oriented solution to ban the use of "country of origin" claims in advertising and generally in marketing. EU quality policy should use another approach to take care of the removal of the potential trade discriminating effect of "country of origin" claims. The consumer survey and the analysis of the quality policy reveals that EU policy should give priority to take care of a level playing field and not to ban. A level playing field could be supplied, if the safety policy of the EU will address the problem of Salmonella.

The Swedish model seems to be a promising approach as guidance for addressing consumer needs. The Swedish model is characterised by a stronger emphasis on process standards based on animal welfare considerations than in the rest of the EU, a prohibition of antibiotics in feed and a Salmonella control program that is unique within the EU. The Danish seem to adapt to the Swedish model introducing a Salmonella control system. These different national policies may give further meaning and importance to "country of origin" claims.

If national marketing efforts are successful in linking safety issues to the perception of "country of origin", the "country of origin" is given further loading on important concerns of the consumer. EU policy should do anything to avoid an over-emphasis of "country of origin" claims by the producer.

It is clearly a better solution to control "country of origin" claims than to ban them. Such claims may be controlled by a European Food Safety Administration, like the Food and Drug Administration in the US, which is controlling health claims. Functional foods and health claims will have to be controlled as well to avoid consumer deception. These issues will come up more so in the future.

The consumer concerns on antibiotics in feed are already addressed by EU policy. Here a firm position on banning the use of all antibiotics as growth promoters in the feed seems to be promising to establish consumer confidence and prevent further dramatic decreases in meat consumption.

To some extent, the consumer concerns on the use of hormones in the feed are already addressed by EU policy, in particular with regard to the bovine growth hormone, as used in the US. But more consumer information seems to be needed here.

The introduction of the traceability and labelling approach for beef was in the beginning mainly targeted towards the safety aspect and as such should be mandatory. But even more important, traceability is the prerequisite for marketing claims, like origin, feed, animal welfare etc., meeting consumers needs and controlled by an independent third party. The truthfulness of supplier's claims on credence quality attributes, like safety or process quality aspects, can not be controlled by the consumers. Accordingly, an independent institution has to monitor these claims.

Traceability opens new ground for the fulfilment of consumers needs. Accordingly, it is highly welcomed from a consumer perspective. It will provide information needed and this information will meet consumers' needs. The market will take care of this. Here EU policy should abstain from regulating the kind of cues allowed to be used in the marketing by banning certain cues. It would be more advisable for EU policy to concentrate on the task to avoid consumer deception on these issues. Here standards for certain claims, hard to be understood by the consumer in detail, and public control of these claims could help to avoid consumer deception and unfair trade practices.

The effort to introduce labels for fresh meat and other products which are sold not pre-packaged should be supported by collective action, on the national or EU policy level. But it is questionable whether the labelling effort will be accepted on the market, if it is voluntary. Butchers and retailers act contrarily. Butchers will not accept other labels or brands. They are aware that place of purchase is very important for the consumers and will not support any other label or brand than their own label, being a most trusted butcher shop. Retailers have there own schemes. Here again, the retailers' name is important, the retailers' quality scheme itself is hardly communicated to the consumer. Accordingly, butchers and retailers will be rather reluctant to support the traceability and in particular the labelling effort.

EU quality policy should take care of the needs of butchers or the labelling effort will fail. Labelling is, at present, clearly to the disadvantage of butchers. Here the incentives for butchers could be changed giving them benefits from informing consumers on the attributes. It seems advisable to take care of the needs of small butchers and not to discriminate against them, as done with existing EU policy, in particular against the background of being the most trusted information source for consumers.

It is well advised to support information campaigns for the beef labelling effort. But regarding the budget of seven million ECU, it should be taken care of, that the information campaigns address consumer needs and supply them with information and that the funding is not used for other purposes. Furthermore, the budget should be targeted mainly to information campaigns by butcher shops.

The PDO, PGI, TSG are efforts at the EU level to protect designations of origins, geographical indications and traditional specialities. These standards are not known by the consumer. In particular, the distinction between protected designation of origin and protected geographical indications is hardly understandable by the consumer. Accordingly, the lower level standard, the PGI, will gain market share, if the standard is accepted by the market, to the disadvantage of the higher level standard. Thus, the higher standard will not be used on the market.

EU food policy should clearly separate between quality and safety issues. It is not advisable to have the market taking care of the most efficient level of food safety. Here political action is required. Quality aspects should be communicated to the consumer by private advertising and marketing. The use of safety arguments in marketing will result in a separation of safe and unsafe markets, focusing consumer concerns of safety aspect. Accordingly, consumer's meat quality perception and consumption will decrease further.

In order to conclude : private marketing should focus on the eating quality aspect, while the EU policy should take care of the safety aspect. Furthermore, cues with ambiguous meaning (loading on safety and eating quality) should be controlled to avoid consumer deception. Standards, labels and brand like cues used on the market and communicated to the consumer have to be understood in scope, content and nature by the average consumer. It may be advisable to install an institution taking care of the truthfulness of claims on the EU level, like the Food and Drug Administration in the US. In any case, the traceability and labelling effort should be further accompanied with research analysing the acceptance on the market and ways to address consumers needs more carefully. In particular the use of "country of origin" in labelling and advertising has to be screened.

NOTES

(1) Other terms which are used as synonymous terms in the literature include : signal, information chunk, indicator, information surrogate, information substitute or risk reliever, compare Stich (1997) p. 8.

(2) Here we may take the view of Stigler and Becker (1977) that advertising simply improves on the "appreciation" by inducing a kind of technical progress in the individual utility generating function. Another view is taken in the literature on signalling. Here advertising is regarded as one means to signal quality. This will be discussed later in detail.

(3) The Council Directive 79/112/EEC on the approximation of the laws of the Member States relating to the labelling, presentation and advertising of foodstuffs for sale to the ultimate consumer is the main piece of EU legislation regarding the labelling of foodstuffs. Article 5 of the Directive states that the name under which a product is sold shall be the name laid down by whatever laws, regulations or administrative provisions apply to the food in question. In the absence of any such name, the name customary in the Member State where the product is sold to the ultimate consumer should be used. Commission Directive 97/4/EC is a recent amendment of the Council Directive 79/112/EEC and states, that the use of the customary sales name indicated in the Member State in which a food product is manufactured should also be allowed in the case of food products to be sold in another Member State. However, in cases where there would be a possibility of causing confusion amongst consumers, the sales name must be supplemented by other descriptive information.

(4) Compare Trognon (1998) p. 26.

(5) Compare Ittersum and Candel (1998) p. 58.

(6) Compare Alvensleben (1995).

(7) International Research Associates (INRA) : Eurobarometer 47.0, 20 March 1997.

(8) Steenkamp (1989).

(9) Olson (1972). Cited according to Steenkamp. This dissertation was not available for the author of this paper, but the framework is described in detail in the book by Steenkamp, cited above.

(10) First of all in Steenkamp (1989) ; in Steenkamp (1990) and in Steenkamp and van Trijp (1996). But as well in Grunert; Baadsgaard, Larsen and Madsen (1966) and in Grunert (1997) or in Stich (1997). Our approach to perceived quality is rather similar to the one pursued by Steenkamp (1990). The main theoretical innovation of our paper is, that we refine this approach and link it to the economic theory of market failures to derive conclusions for public quality policy.

(11) In a few cases, only one factor was extracted.

(12) Or to put it the other way round, those products for which the appearance of the food itself is an important quality indicator for the consumer are either sold not pre-packaged or with the food itself still visible for the consumer.

(13) It is hard to establish a brand for a product only seasonal available.

(14) Compare for example Krouse (1990) or Carlton and Perloff (1994).

(15) Nelson (1970) and Darby and Karni (1973).

(16) Andersen and Philipsen (1998) and Caswell and Mojduszka (1996).

(17) For example Kaas and Busch (1996).

(18) Darby and Karni (1973).

(19) Emmons (1997).

(20) For a discussion on food safety as a credence attribute compare Caswell (1997) or Caswell and Mojduszka (1996).

(21) Compare Becker (1997).

(22) Here the Lancaster approach is employed. The utility function of the consumer is assumed to be linearly separable in the attributes, which are contributing to utility (compare more in detail Becker 1997).

(23) An overview on the adverse selection problem including experimental results is given in Molho (1997). The kinds of problems, first pointed out by Ackerlof (1970), are called adverse selection problems in economic theory.

(24) This term is owed to Anderson and Philipsen (1998). But their categories of credence quality attributes seem to mix up experience and credence attributes and are not used here.

(25) Empirical work supports this assumption, compare Kaas and Busch (1996).

(26) Compar Hoffmann (1998).

(27) Compare in detail on this particular aspect Glitsch (1999).

(28) These are results of the analysis of the correlation matrix. Further analysis is intended here.

(29) Accordingly, the Arrow-Debreu framework could be applied with the resulting welfare theorems.

(30) Bocksteal (1984).

(31) Compare Jovanovic (1982).

(32) These results are equivalent with the results achieved in Spence (1973) and other later literature on signalling.

(33) On this topic, a lot of literature is available. Among the quality signals that consumers are assumed to use are : price, brand name, shop name, ingredients, country of origin, friends recommendations, consumer magazines, previous use, advertisements, guarantees and packaging. In particular price as a quality signal has found vast interest in economic theory. According to our own research results, we regard price as no important indicator for food quality in general and fresh meat quality in particular.

(34) Compare in detail Klein and Leffler (1981).

(35) Compare Bund für Lebensmittelrecht und Lebensmittelkunde e. V. (1999).

(36) As such, her approach is very similar to ours, but she exclusively focuses on labelling, while we try to extend this approach to other regulatory regimes. A further distinction between our approach and the approach employed by Caswell is that our approach differentiates between extrinsic and intrinsic cues, experience and credence quality, while she uses the search-, experience-, credence framework. Compare on labelling more in detail : Caswell (1997).

(37) Compare table 3.

(38) Compare Gerhardy (1996).

(39) Compare the papers presented at the workshop : "Consumer Preferences for Products of the Own Region/Country and Consequences for the Food Marketing" of the AIR-CAT project : "Measurements of Consumer Attitudes and their Influence on Food Choice and Acceptability", published as Vol. 4 N° 3 in the series of meeting reports, 1998.

(40) An overview on the results on other research is available in Liefeld (1993). In the meat-analysis by Verlegh and Steenkamp the grand average effect size is calculated and classifies the country-of-origin effect as a powerful factor in the formation of product evaluation. In Stich (1997), an overview is given on the few results of empirical research on 'country of origin' with respect to the predictive and the confidence value of this cue.

(41) Compare Becker (1997).

(42) Compare O'Rourke (1998).

(43) These principles are explained in detail in Becker (1999).

(44) Compare in detail Benner E. (1999).

(45) Compare O'Rourke (1998), R. p. 76.

(46) Compare Glitsch (1999).

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