

RUNNING HEAD: Biased Consumers' Hypotheses on Price-Quality-Relationships

Biased Consumers' Hypotheses on Price-Quality-Relationships: Influences of Numerical
Anchors

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Abstract

Product prices are often considered to be an indicator of quality. Low prices suggest low quality, high prices premium quality. In some situations prices in terms of index-linked currency remain constant but the numbers on price label change. This may result from currency changeovers or rapid inflation processes. In this chapter we reanalyze data from experiments conducted during the Euro introduction in Germany. All of a sudden the numbers on price tags were divided by about 2, i.e. premium products might have been considered as “cheaper” in Euro prices (low numbered) than before in German Mark (DM) prices (high numbered). In terms of the psychology of judgment such a result can be attributed to an effect caused by a numerical anchor (on the price tag). We tested if there actually was a corresponding decline in perceived product quality. Results suggested that the currency changeover had an impact on perceived quality which might be explained by numerical anchoring. The impact of the effect was dependent on product category. In case of products which are selected in less rational and low involvement decision processes (beer) this effect was stronger than in case of more rational and high involvement purchases (family car). Besides numerical anchoring, additional explanations for these results are discussed.

Introduction

Consumers' subjective hypotheses are crucial for buying processes because they tend to hang on to their preassumptions and to ignore new information. Consequently, they think and behave as if they had to confirm their preliminary assumptions. Within the psychology of thinking and reasoning this inertia effect is known as the confirmation bias (Klayman & Ha, 1987; Snyder & Swann, 1978; Wason, 1960). Various factors have an influence on consumers' tentative product evaluations. Some can be allocated to the buyer: These are factors like high- and low-involvement processes (e.g. Park & Hastak, 1994), the importance of rationalistic resp. emotional characteristics contributing to the decision as well as the combination of these factors (e.g. O'Cass, 2000; see also literature on the FCB-grid (Vaughn, 1980, 1986)). Other factors are product cues. These can either be intrinsic - like colour, size, and quality - or extrinsic, like brand name or country of origin. (cf. Dawar & Parker, 1994; Dodds, Monroe & Grewal, 1991; Jacoby, Olson & Haddock, 1971; McConell, 1968; Peterson & Jolibert, 1976; Render & O'Connor, 1976; Richardson, Dick & Jain, 1994; Verlegh & Steenkamp, 1999). In our study we focus on the product price. We will address the problem if pricing with different (i.e. low-numbered vs. high-numbered) currencies influences the perception of price and product image. Within the psychology of fallacies and biases the heuristic in question is the so called anchoring heuristic. In the first chapter we will describe the state of research concerning the influence of product prices and the anchoring heuristic on consumers' hypotheses. In the second paragraph we summarize the findings of our own experiment followed by a reanalysis of these data in the third paragraph. Finally, in the conclusion, we will integrate our findings within the context of current theories and research results within this field.

The relationship between product price, perceived product quality
and the anchoring heuristic

The relationship between product price and perceived product quality is an important topic of consumer behavior research. McConnell (1968) showed that the perceived quality of beer was influenced by its sales price. In recent decades there have been numerous studies which found a relationship between product price and perceived quality (e.g. Chang and Wildt, 1994; Dawar and Parker, 1994; Jacoby et al., 1971; Jung, 1983; Lichtenstein, Ridgway and Netemeyer, 1993; Render and O'Connor, 1976). Also, the interaction between the price effect and other factors like country of origin or quality has been investigated (e.g. Cordell, 1993). The present paper also deals with the relationship between product price and perceived quality. In order to extend the research on this topic we focus on the anchoring effect which is induced by the numerical value of the price. Usually, the variables *price* and *numerical value* are confounded. The higher the price, the higher is its numerical value and vice versa. If a product price is expressed in terms of different currencies, the price of the product remains constant but the numerical value for the price may change. This is the case if one travels to another country with a different currency and similar price level. In order to assess the price of the product it is necessary to translate the figure representing the price into another figure in terms of one's own currency. In terms of cognitive fallacies and biases, possible effects of different price numbers on price perceptions may be attributed to the so called *anchoring effect*. Tversky and Kahneman (1974) coined this term to describe a variety of phenomena found in their studies. Participants rated the percentage of African nations which are members of the United Nations lower when previously being asked *Is it more or less than 10 percent?* (experimental condition 1) than being asked *Is it more or less than 65 percent?* (experimental condition 2). Various experiments on the anchoring effect have shown that human judgment is easily influenced by obviously arbitrary and thus normatively irrelevant numbers that occur in the judgment context. Russo and Shoemaker (1989) asked their participants to write down the last three digits of their home telephone number. Afterwards, they

were instructed to add the number 400 to this number and write down the result. Then the participants were asked: *Do you think that Attila the Hun was defeated before or after that year?* The participants' answers were highly dependent on the initial anchor, defined by their personal phone numbers. Several studies demonstrated the relevance of randomly chosen initial anchors within the context of consumer behavior. E.g., in the study of Ariely, Loewenstein, and Prelec (2003) participants had to state whether they would buy a certain product at an amount of money (in US-\$) determined arbitrarily by the last two digits of their Social Security numbers. The students were then asked for the maximum price they would pay for these goods. These prices proved to be correlated with the last two digits of the participants' Social Security numbers. In a series of experiments closer to our topic, Jonas and her colleagues (Jonas, Greitemeyer & Schulz-Hardt, 2002; Jonas, Greitemeyer, Graupmann & Frey, 2002; Jonas, Greitemeyer, Graupmann, Triebel & Frey, 2002) studied anchor effects on price perceptions due to the currency change from German Mark (DM) to Euro. They hypothesized that during the DM era German consumers had adopted to the DM prices through lifelong learning and had formed reference prices for various product categories which served as numerical anchors even after the DM era. Since DM prices were about twice as high as Euro prices, as mentioned above, price estimations in Euro for various goods were predicted (and found) to be consistently higher than estimations in DM. This numerical anchoring effect occurred in spite of the fact that subjects were explicitly told to use the exchange rate of 2:1 in their price estimations. Interestingly, British subjects exhibited an anchor effect in the opposite direction, since they had formed reference prices in British pound which were lower than the corresponding Euro prices (1 British Pound \approx 1.50 Euro at that time). Activation of these smaller numerical anchors produced an underestimation of prices in Euro (as compared to prices in British Pounds). According to the authors, alternative explanations like

inflation expectations or image-differences of the Euro across countries, could not explain their results. We will come back to this issue in the conclusion section.

Experiment of Gielnik and Molz (2006)

This study explored possible anchoring effects as a matter of the fact that a product with a certain perceived quality is associated with a new and unfamiliar price tag showing an unexpected number. This was the case in many European countries after the introduction of the new Euro cash money in January 2002. In all these countries the new basic currency – Euro (€) - was worth more than the basic unit of the old currency (e.g. 1936.27 Italian Lira, 166.386 Spanish Pesetas, 6.55957 French Franc, or 1.95583 German Mark (DM)). So in any case one Euro had a greater value than any of the old basic currency units. Yet, there are big differences according to the conversion-rates. It seems very unlikely that these differences did not have any effect on economic behavior. Indeed, Desmet (2002) found some differences concerning consumers' buying intentions in Spain and in Germany. If an item that used to cost about 170 Pesetas was suddenly offered for just 1 € this difference was very striking and one felt immediately forced to calculate whether the Lira- and the Euro-price were equivalent. In case of the Italian Lira this tendency is likely to be more pronounced: 1 Euro equals about 2000 Lira. This, of course, is different for the currencies with a value closer to the Euro, e.g. the German Mark. The ratio is about 1 to 2. Consequently the numbers on price tags should be divided by 2 in order to get equivalent prices in €. This of course is still a big difference but, contrary to the Lira or the Franc, in most cases the price format, i.e. the number of digits, remained the same. In addition – due to the low and smooth numbers (“1 Euro \approx 2 DM”) - German consumers might not feel forced to perform the same cognitive efforts to convert Euro-prices into their old currency like consumers in many other Euro-countries: E.g. many Germans still - more than six years after the introduction of the Euro - tend to spend too much money for tipping (cf. e.g. Abendzeitung, 2008). After

adding two or three basic currency units (in €) to the restaurant bill, they realize that they gave a tip of almost four or six Marks.

In our study we focussed on possible differences concerning the price-perception of low-budget in comparison to premium products. An essential distinctive feature for both product groups is the price. This information is conveyed in form of the price segment, which can be operationalized comparatively (e.g. relatively cheap price for a low-budget product) and by the absolute amount of money shown on the price display (e.g. a book for 10 Dollars). In everyday-life these factors *price segment* and *price display* are confounded. This covariation changes all of a sudden if a new currency unit is introduced, e.g. the Euro cash money in January, 2001. If a product was intended to remain in the same price segment new price displays had to be assigned. If the digits of the price displays remained the same, this would have meant that the product belonged to another price segment.

Hypotheses

Our first assumption was that we would find the following relationship between product price and perceived product quality:

H1: The product price has a positive influence on perceived product quality.

Stating this hypothesis might appear to be trivial, but finding supporting data for it was an essential prerequisite to achieve before deciding about our other hypotheses. If a product had been allocated in a certain product segment and a new currency unit was applied, then we predicted that a changed number on the price display suggested that this product belongs to another product segment. If the old basic currency unit (e.g. DM) had a lower value than the new unit (e.g. €) then products were likely to be perceived as belonging to a lower price segment. By the beginning of 2001 the numbers on price displays in Germany had been divided by about two:

A package of cigarettes - formerly sold for 6 DM - actually costed 3 €. Consequently we predicted:

H2: Price displays in DM imply more positive subjective hypotheses about perceived product quality than displays in €.

Usually, customers are interested in paying low prices. But low prices reduce the perceived product quality. E.g. German breweries pay huge grocery store chains for not selling beer at low prices. So the effect proposed in our first hypothesis should have been stronger for premium products since their prices – contrary to low-budget products - are considered to be an indicator of quality. This prediction is subject of the third hypothesis:

H3: The difference of ratings reflecting subjective hypotheses about product quality between price displays in DM and displays in € is greater for premium products than for low-budget-products.

In statistical terms the third hypothesis predicted an interaction effect between product segment (low-budget versus premium) and price display (DM versus €).

Method

Sample

The participants (80 1st semester psychology students, average age: 23,0 years) were randomly assigned to the four experimental conditions; each of which was passed by 20 participants.

Design and independent variables

We decided to test our hypotheses in a laboratory experiment for four different kinds of products (car, trousers, hair shampoo, beer). For each kind of product we selected one sample out of the low-budget category and one out of the premium category. Table 1 lists the eight selected products and gives a short description of each.

Table 1: List of the products and its DM and €-prices

	Segment	
	Low-Budget product	Premium product
Kind of Car product	<i>Opel Vectra</i> Middle sized notch back limousine from the German subsidiary company of General Motors DM: 39100 €: 20600	<i>Mercedes C-class</i> Middle sized notch back limousine from Daimler Benz DM: 58700 €: 29.990
Trousers	<i>C & A Westbury</i> No-Name product sold by the department store chain C & A DM: 100,00 €: 51,00	<i>Levis 501</i> Classical brand for jeans fashion DM: 175,00 €: 89,00
Hair-shampoo	<i>Aldi Benny</i> No-Name product sold by the grocery shop chain Aldi DM: 1,99 €: 1,02	<i>Douglas Clinique Hair Care</i> Brand product exclusively sold in Douglas boutiques DM: 21,50 €: 10,99
Beer	<i>Oettinger Pils</i> Low price German beer brand DM: 0,49 €: 0.25	<i>Modelo Corona</i> Highly priced party beer DM: 3,90 €: 2,00

The short descriptions in Table 1 are not identical with the versions presented to the participants. The descriptions used in the experiment were longer (150 words each) and contained some information on the product and its producer. At the end of the text the price (either in DM or in €) was presented in big, bold letters. Each participant read four texts either about the low-budget products or the premium products. The factor *kind of product* (i.e. car, trousers, hair shampoo, beer) was varied within subjects. Possible sequential effects of the four products were balanced within a latin squared design. Fifty percent of the participants received the price information in DM, the others in €. Consequently, as for these two variables a 2 (low-budget versus premium segment) x 2 (DM vs €) plan was applied, both variables were varied between subjects.

Dependent variables

The participants' hypotheses about the product features were operationalized by means of seven-point bipolar adjective scales ranging from -3 to +3 (cf. Table 2).

Table 2: Psychometric qualities of scale defining the dependent variable

Seven point bipolar scales	Part whole item total correlations
	Two sided p-values: *p<.20, **p<.05***p<.001
Cheap – Expensive	-0,29**
Strong – Weak	0,52**
Hard – Soft	0,16*
Active – Passive	0,53***
Worth owning – Not worth owning	0,62***
Fast – Slow	0,52***
Exciting – Boring	0,72***
Not attractive – Attractive	0,74***
Complex – Simple	-0,49***
Good – Bad	0,66***
Ugly – Nice	-0,74***
Comfortable - Uncomfortable	0,69***

Internal consistency for all 12 items (Cronbach's Alpha): 0,86

Results

Analyses of the scales supposed to define the dependent variable proved that item-total correlations as well as internal consistency are more than sufficient (cf. Table 2). Our three hypotheses were tested by an ANOVA of the 4x2x2-experimental plan with the sum of the 12

seven-point ratings as dependent variable. Scores of polarities with negative item-total-correlations were reversed.

H1: The product price has a positive influence on perceived product quality.

The effect proposed in this hypothesis should be reflected by testing the first two main effects (product category and product segment). Both variables had a very strong effect, even after applying a Bonferroni-adjustment of the alpha-error (because we decided on only one hypothesis by two comparisons) both were significant: For the product category "beer" with the lowest average product price the averaged sum rating on the seven point scales was $-1,51$, for the second cheapest category (hair shampoo) the average sum rating was $0,02$, in the trousers category the rating was $3,39$, and finally for the cars $5,10$. This effect was very significant: $F_{3,19}=5,72$, $p<.01$. Another possibility for testing this effect is the comparison of low-budget products (averaged sum rating= $-3,74$) with premium products (averaged sum rating= $8,26$). This main effect became even highly significant ($F_{1,311}=124,218$, $p<.001$).

H2: Price displays in DM imply more positive subjective hypotheses about perceived product quality than displays in €.

The results regarding this hypothesis were also supported: DM-prices lead to the participants' hypotheses that the products are of better quality (averaged sum rating: $3,39$) than €-prices (averaged sum-rating: $1,13$), $F_{1,311} = 4,220$, $p = 0,02$.

H3: The difference of ratings reflecting subjective hypotheses about product quality between price displays in DM and displays in € is greater for premium products than for low-budget-products.

As suggested by the parallel lines in the interaction diagram (cf. figure 1) this hypothesis failed to be significant ($F_{1,311} = 0,182$, $p = .67$).

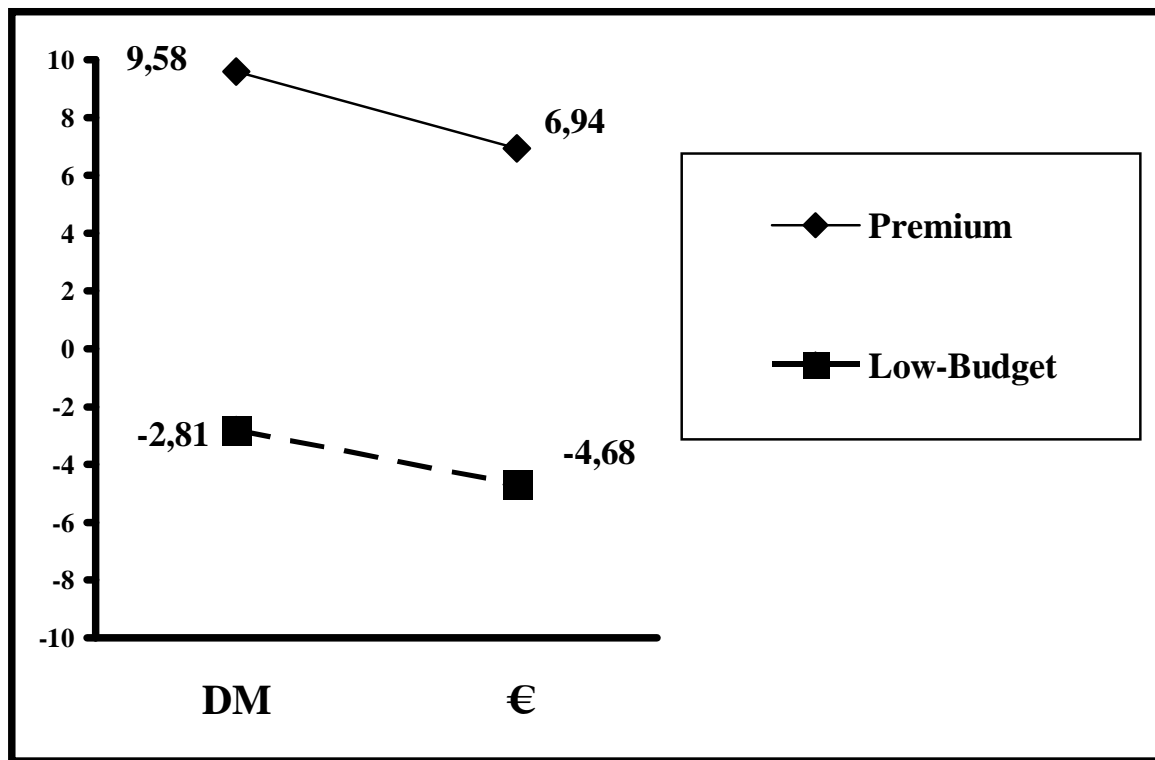


Figure 1: Interaction diagram of the two independent variables product segment and currency with the dependent variable "quality perception"

Discussion

The central findings of our study can be summarized as follows:

(1) We succeeded in replicating the well-known effect of the positive relation between price and perceived product quality. As mentioned above, this is only our prerequisite for the following two innovative findings of our study.

(2) Keeping the purchase value fixed but changing the currency unit may influence quality perceptions. If the price display for a product has a higher numerical value (as in the DM condition), then perceived product quality is rated higher as with smaller lower numerical values on the price display, for one and the same product. Note that these differences in price perception occurred in spite of knowledge of the correct conversion of DM- to Euro prices, i.e. knowledge of the semantic identity "1 Euro \approx 2 DM". This result fits well to the findings of Jonas et al.

mentioned above. Assuming that during their economic socialization people form reference prices for various products in their familiar currency, deviations from these anchor values are automatically interpreted - at least in part - as quality differences. In case of a currency change people are well aware of the correct translation of one currency into the other, but when confronted with an (unusual) price for a good in the new currency, the price-quality association is activated automatically and may assimilate quality perceptions to (purely numerical) deviations from the anchor price. In the present experiment participants reacted to downward-deviations from anchor prices with downward-assimilations of quality judgments. Had this experiment been conducted in a country with a national currency with nominal prices lower than equivalent Euro prices (like the United Kingdom), then the opposite effect, that is an upward-assimilation of quality judgments would be expected. Unfortunately we are not aware of direct empirical evidence for this conjecture, but the above mentioned finding of Jonas, Greitemeyer, Graupmann, Triebel & Frey (2002) with British test persons is promising in this respect.

It should be mentioned, however, that there exists a straightforward alternative explanation for our results: the bad public image of the Euro (as compared to the DM) in Germany at the time of the experiment (Jungermann, Brachinger, Belting, Grinberg & Zacharias 2007; Molz & Hopf, 2002; Müller-Peters, Pepermans, Kiell & Farhangmehr, 2001). Products labelled in Euro prices therefore might have been perceived generally less positive than the same products labelled in (equivalent) DM prices. Part of the negative Euro image might have been transferred in a general way to quality perceptions, independent from possible effects of anchor prices. We will discuss this problem in the discussion section.

(3) We failed to demonstrate that the hypotheses for product quality due to changes in currency are stronger influenced for premium products than for low-budget products. That is, the observed anchor effect was not moderated by the premium vs. low budget distinction. Of course, products

and consumers' product decisions may be classified along a variety of psychologically meaningful dimensions. In the next section we focus on involvement and cognitive load as possible moderator variables for the observed effect.

Reanalysis by Molz and Gielnik (2004)

Between acceptance and press of the 2006 paper (Molz & Gielnik, 2006) we conducted a reanalysis. According to Vaughn (1980, 1986) consumers do not approach each purchase decision in the same way. Depending on the kind of product, different processes determine whether a product will be positively or negatively evaluated. For instance, if the product in question was a car, the majority of consumers would be highly involved and inclined to make their decision on the basis of rational arguments. However, if the product in question was a bottle of beer, the majority of consumers would be less involved and make their decision on the basis of affective reactions towards the product rather than on the basis of rational arguments. Thus, differences between purchase decisions are dependent on the degree of involvement and at the same time on the relative dominance of think vs. feel processes. These two dimensions are the basis for Vaughn's (1980, 1986) FCB¹-grid that is made up of four cells representing the four possible categories when combining the two dimensions (see Figure 2).

¹ FCB refers to the advertising company of Foote, Cone & Belting Advertising. The FCB grid was developed by its Senior Vice President Richard Vaughn.

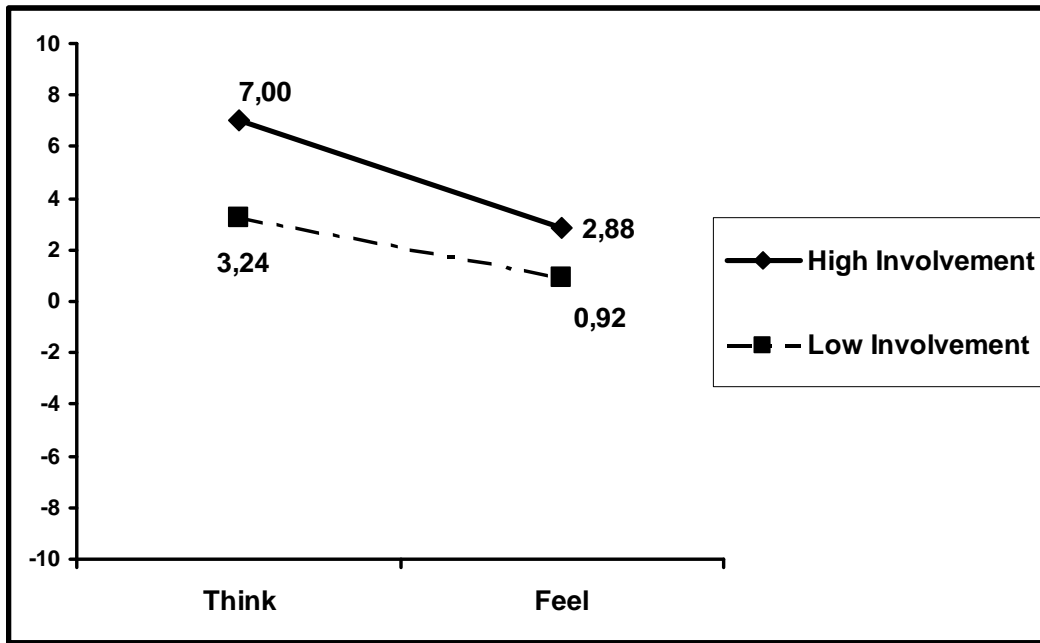
	Thinking	Feeling
High Involvement	Products: car, house, furnishing	Products: jewellery, cosmetics, fashion
Low Involvement	Products: food, household items	Products: cigarettes, liquor

Figure 2: FCB-Grid according to Vaughn (1980) with the four cells made up of the two dimensions involvement and thinking vs. feeling.

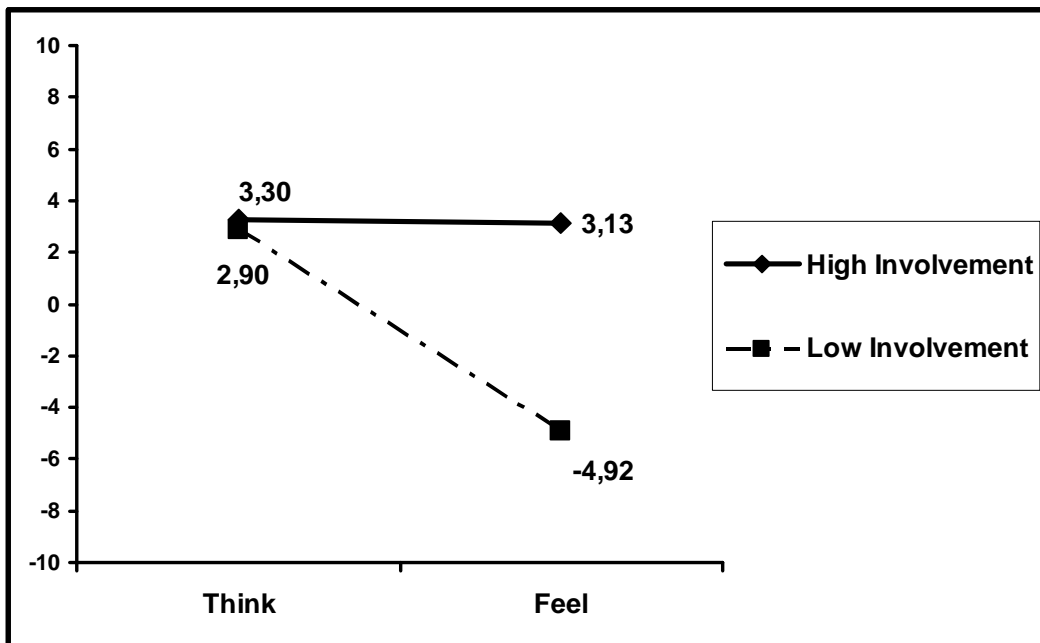
With regard to our experiment the product to be allocated to the *high involvement x think* – cell was the *car*. The *jeans* represents the *high involvement x feel* – cell. Consumers’ evaluations on *shampoo* belong to the *low involvement x think* segment. Finally, *beers* are instances for the *low-involvement x feel* – combination. (Vaughn, 1980). Hence different processes were involved when our participants evaluated each product and our question was whether labelling the products in Euro or in DM influenced our subjects’ attitude formation.

Results

In order to investigate our initial hypothesis about the interaction between product segment and price display, we pooled our data according to the two FCB-dimensions and calculated a three-way ANOVA (involvement x think/feel x currency) and tested the three-way-interaction for significance. We obtained the following interaction diagrams (see Figure 3):



Products labelled with DM-prices



Products labelled with €-prices

Figure 3: Interaction diagrams between the two independent variables derived from the FCB-Grid (think/feel and involvement) and price display (DM/Euro); dependent variable: quality perception.

The results showed a significant main effect of thinking (as opposed to feeling; $M_{\text{thinking}} = 4.09$, $M_{\text{feeling}} = 0.51$, $F = 8.20$, $p < .01$) and of involvement ($M_{\text{high involvement}} = 4.04$, $M_{\text{low involvement}} = 0.51$, $F = 7.89$, $p < .01$). The main effect of currency was identical to the previous analysis ($M_{\text{DM}} = 3.39$, $M_{\text{Euro}} = 1.13$, $F = 4.22$, $p < .05$). In addition to the main effects we also found a marginally significant three-way-interaction between thinking, involvement, and currency ($F = 3.51$, $p = .06$). As Figure 3 indicates, the marginally significant three-way-interaction results mainly from the poor evaluation of the low involvement, feeling product (beer) under the Euro condition.

Discussion

Our initial analysis provided evidence that consumers evaluate products that are labelled in Euro less positive than the same products labelled in DM. The initial assumption that this effect would be stronger for premium products than for low-budget products was not confirmed. However, our re-analysis according to the FCB-grid revealed that low-involvement, feeling products (e.g., beer) may particularly suffer in terms of consumers' product evaluation from labelling the price in Euro. This finding suggests that the anchoring effect we found in the initial analysis is not independent of the product to be evaluated or of the processes involved in making the evaluation and purchase decision, respectively. The low-involvement, feeling products are impulse or convenience buys that satisfy personal tastes (Vaughn, 1980, 1986). Research showed that heuristic processing is particularly strong in situations when the individual does not have the time, ability or motivation for elaborated information processing (Chaiken, 1987; Chaiken, Liberman, & Eagly, 1989; Payne, Bettman & Johnson, 1993; Petty & Cacioppo, 1986). Therefore, in a situation where spontaneous impulses exert a stronger influence on the purchase decision than rational arguments, consumers should be particularly susceptible to the anchoring effect induced by labelling the product in Euro. In the other three product categories either the consumers' involvement is high or the purchase decision is based on a more rational and less

impulsive approach. This should result in a more elaborated product evaluation process which may reduce the use of heuristics. Our findings support this line of reasoning by showing that the anchoring effect is more pronounced in a situation that favors the use of heuristics.

It is important to note, however, that the effect was present also with high involvement and “think” products (car, jeans, shampoo). This means that more elaborated information processing did not eliminate, but only reduce the use of heuristics, as can be seen from the significant main effect of *currency* in the analysis above. Although products from all four quadrants of the FCB grid suffered when prices were announced in Euro rather than in DM, this effect was strongest in the low involvement / feel condition. In this limited sense, involvement and the relative impact of rational vs. emotional processes can be considered as moderators of the effect of anchor prices on product quality perceptions. This result is in accordance with a growing body of evidence for the notion of judgmental heuristics as largely automatic and non-conscious cognitive processes which interact with deliberate, conscious processes in complex ways (Kahneman & Frederick, 2002; Stephan, Becker & Willmann, 2001; Stephan & Willmann, 2006; Willmann, 2004; Wilson et al., 1996). One implication of this notion is that high motivation and ability for elaborated information processing is usually not sufficient to neutralize the impact of heuristics on judgments and decisions – an implication which is clearly supported by our results.

As mentioned above, the bad public image of the Euro in Germany may serve as an additional explanation for our results. The fact that products labelled in Euro prices were perceived less favourable than products with DM prices, might also result from a negative image-transfer from the new currency towards quality perceptions. According to this interpretation the loss in perceived product quality is a consequence of semantic anchoring: The German Mark has a better reputation than the Euro, therefore products with DM-tags are more valued than items with the €-tag. Although we cannot rule out this possibility empirically (since we did not

measure attitudes towards the Euro), there are three reasons which limit the explanatory value of this interpretation of our data. First, the fact that formerly learned national reference prices serve as pure numerical anchors for price estimations in Euro - independent from subjects' attitudes towards the Euro - has been established in several experiments elsewhere (e.g. Jonas, Greitemeyer, Graupmann, Triebel & Frey, 2002). Second, although it is correct that the majority of the German public saw (and sees) more disadvantages than advantages in the Euro, our student sample belonged to the population segment in Germany with the most favourable attitudes towards the Euro (Müller-Peters et al., 2001, 236 pp; Eurobarometer 2006, 29 pp). Third, the image-transfer hypothesis cannot explain the interaction effect we found. This hypothesis leaves it open why the negative image-transfer of the Euro should be stronger for some products and weaker for others. From this perspective it seems fair to conclude that the main mechanism responsible for our results is probably numerical anchoring, although it cannot be excluded that a negative image-transfer from the Euro may have added to this effect.

Conclusion

Taken together, our experiment demonstrates that product quality perceptions of consumers may be biased by reference prices which may serve as numerical anchors. In situations of a currency change the former national reference prices continue to be the effective numerical standards for quite a while. Deviations from these reference prices due to unusual numerical values in the new currency may automatically trigger off adjustments in quality perceptions via the well established price-quality association. This assimilation effect may be stronger for low involvement / feel products than for high involvement and/or "think" products, since information processing is more controlled and elaborated in the latter case.

Literature

- Abendzeitung (2008). Ach! Die gute alte D-Mark [Lackaday! The good old German Mark].
<http://www.abendzeitung.de/nachrichten/wirtschaft/25532>.
- Ariely, D., Loewenstein, G. & Prelec, D. (2003). Coherent arbitrariness: Stable demand curves without stable preferences, *Quarterly Journal of Economics* 118(1), 73-105.
- Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social Influence: The Ontario Symposium (Vol. 5)*. Hillsdale: Erlbaum. pp.3-39.
- Chaiken, S., Liberman, A. & Eagly, A. H. (1989). Heuristic and systematic information processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought: Limits of awareness, intention, and control (pp. 212—252)*. New York: Guilford Press.
- Chang T.Z. & Wildt, R. A. (1994). Price, product information, and purchase intention: An empirical study, *Journal of the Academy of Marketing Science* 22(1), 16-27.
- Cordell, V. (1993). Interaction Effects of Country of Origin with Branding, Price, and Perceived Performance Risk, *Journal of International Consumer Marketing* 5(2), 5-20.
- Dawar, N. & Parker, P. (1994). Marketing universals: Consumers' use of brand name, price, physical appearance, and retail reputation as signals of product quality, *Journal of Marketing* 58(2), 81-95.
- Desmet, P. (2002). A study of the potential effects of the conversion to Euro, *Journal of Product and Brand Management* 11(3), 134 - 146.
- Dodds, W.B., Monroe, K.B. & Grewal, D. (1991) Effects of price, brand, and store information on buyers' product evaluation, *Journal of Marketing Research* 28(3), 307-319.

Eurobarometer (2006). The eurozone, 5 years after the introduction of euro coins and banknotes.

Flash Eurobarometer 193. The Gallup Organization.

Jacoby, J., Olson, J.C. & Haddock, R.A. (1971). Price, brand name, and product composition characteristics as determinants of perceived quality, *Journal of Applied Psychology* 55(6), 570-579.

Jonas, E., Greitemeyer, T., Frey, D. & Schulz-Hardt, S. (2002). Psychological effects of the Euro – Experimental research on the perception of salaries and price estimations. *European Journal of Social Psychology*, 32, 147-169.

Jonas, E., Greitemeyer, T., Graupmann, V. & Frey, D. (2002). Gewöhnung an den Euro. Experimentelle Untersuchungen zur Schätzung von Preisen in DM vs. Euro vor und nach der Einführung des Euro. [Adaptation to the Euro. Experimental studies regarding price estimations in DM vs. Euro before and after the introduction of the Euro.] *Wirtschaftspsychologie, Heft 4*, 29-35.

Jonas, E., Greitemeyer, T., Graupmann, V., Triebel, C. & Frey, D. (2002). Preisschätzungen in Euro vs. nationaler Währung – Ein interkultureller Vergleich. [Price estimations in Euro vs. national currency – a cross-cultural comparison.] *Wirtschaftspsychologie, Heft 4*, 36-42.

Jung, A.R. (1983). Price-quality relationship: An empirical investigation", *Journal of Consumer Studies and Home Economics* 7(1), 1-6.

Jungermann, H., Brachinger, H.W., Belting, J., Grinberg, K. & Zacharias, E. (2007). The Euro Changeover and the Factors Influencing Perceived Inflation, *Journal of Consumer Policy* 30(4), 405-419.

Kahneman, D. & Frederick, S. (2002). Representativeness revisited: Attribute substitution in intuitive judgment. In: Gilovich, T., Griffin, D. & Kahneman, D. (Eds.) (2002). *Heuristics and biases. The psychology of intuitive judgment*. Cambridge: Cambridge University Press.

- Klayman, J. & Ha, Y.W. (1987). Confirmation, disconfirmation, and information in hypothesis testing, *Psychological Review* 94(2), 211-228.
- Lichtenstein, D.R., Ridgway, N.M. & Netemeyer, R.G. (1993). Price perceptions and consumer shopping behavior, *Journal of Marketing Research* 30(2), 234-45.
- McConnell, J.D. (1968). Effect of pricing on perception of product quality, *Journal of Applied Psychology* 52(3), 331-334.
- Molz, G. & Gielnik, M. (2004). Wie beeinflussen die Faktoren Euro-Einführung, Produktsegment, Involvement und Rationalität die Wahrnehmung von Produkten? [How do the factors introduction of the Euro, product segment, involvement and rationality influence the perception of products?] In D. Kerzel, V. Franz & K. Gegenfurtner (Eds.) *Experimentelle Psychologie [Experimental Psychology]* (p. 174). Lengerich u.a.: Pabst.
- Molz, G. & Gielnik, M. (2006) Does the introduction of the Euro have an effect on subjective hypotheses about the price-quality-relationship? *Journal of Consumer Behaviour*, 5(3), 204 – 210.
- Müller-Peters, A., Pepermans, R., Kiell, G. & Farhangmehr, M. (Eds.) (2001). The psychology of the European monetary union: A cross-national study of public opinion towards the Euro. Santiago de Compostela: Compostela Group of Universities.
- O’Cass, A. (2000). An Assessment of Consumers Product, Purchase Decision, Advertising and Consumption Involvement in Fashion Clothing, *Journal of Economic Psychology* 21(5), 545-576.
- Park, J.-W. & Hastak, M. (1994). Memory-based Product Judgments: Effects of Involvement at Encoding and Retrieval, *Journal of Consumer Research* 21(3), 534-547.
- Payne, J. W., Bettman, J. R. & Johnson, E. J. (1993). The adaptive decision maker. Cambridge, MA: Cambridge University Press.

- Petty, R. E. & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* Vol. 19. New York, NY: Academic Press, 123-205.
- Peterson, R.A. & Jolibert, A.J.P. (1976). A cross-national investigation of price and brand as determinants of perceived product quality. *Journal of Applied Psychology* 61(4), 533-536.
- Render, B. & O'Connor, T.S. (1976). The influence of price, store name, and brand name on perceptions of product quality, *Journal of the Academy of Marketing Science* 4(3), 722-30.
- Richardson, P.S., Dick, A.S & Jain, A.K. (1994). Extrinsic and intrinsic cue effects on perceptions of store brand quality, *Journal of Marketing*, 58(4), 28-36.
- Russo, J.E. & Shoemaker, P.J.H. (1989) *Decision Traps*. New York: Simon and Schuster.
- Snyder, M. and Swann, W.B. (1978). Hypothesis testing in social interaction, *Journal of Personality and Social Psychology* 36(11), 1202-1212.
- Stephan, E. & Willmann, M. (2006). Grenzen der Willensfreiheit aus psychologischer Sicht: Nichtbewusste Einflüsse auf alltägliche Kognitionsakte. [Boundaries of free will from a psychological perspective: Non-conscious effects on everyday acts of volition.] In: Köchy, K. & Stederth, D. (Hg.): *Willensfreiheit als interdisziplinäres Problem*. Freiburg: Karl Alber. 51 - 76
- Stephan, E., Becker, J. & Willmann, M. (2001). How to explain the anchor effect? Theoretical models, current debates, and some new insights. Paper presented at the 26. IAREP conference in Bath, September 2001.
- Tversky, A. & Kahneman, D. (1974). Judgement under uncertainty: Heuristics and biases. *Science* 185(4157), 1124-1131.
- Verlegh, P.W.J. & Steenkamp, J.B.E.M. (1999). A review and meta-analysis of country-of-origin research”, *Journal of Economic Psychology*, 20(5), 521-546.

- Vaughn, R. (1980). How Advertising Works: A Planning Model, *Journal of Advertising Research* 20(5), 27-33.
- Vaughn, R. (1986). How Advertising Works: A Planning Model Revisited, " *Journal of Advertising Research* 26(1), 57-66.
- Wason, P.C. (1960). On the failure to eliminate hypotheses in a conceptual task, *Quarterly Journal of Experimental Psychology* 12(3), 129-140.
- Willmann, M. (2004). Wie viele Guppys leben in Santiago? Zur Ubiquität des numerischen Priming beim Ankereffekt. [How many guppies are living in Santiago? On the ubiquity of numerical priming in the anchor effect.] Dissertation. Kasseler Universitätsschriften-Server. URL: „<http://opus.uni-kassel.de/opus/volltexte/2004/108/>“
- Wilson, T.D., Houston, C., Etling, K.M. & Brekke, N. (1996): A new look at anchoring effects: Basic anchoring and its antecedents. *Journal of Experimental Psychology: General*, 4, 387-402.

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