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An experimental study on five french regions**

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Disconfirmation of Taste as a Measure of Region of Origin Equity. An Experimental Study on Five French Regions

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Summary:

Disconfirmation of expectations is the mismatch between the expected and blind evaluation of a product (Anderson, 1973). From the consumer's point of view, the hedonic evaluation of a product under full information (intrinsic and extrinsic) is considered as a measure of perceived quality. Generally, the perceived quality of a product differs according to tasting conditions (blind, or full information). Based on previous literature on food marketing we assume that the change of preference between blind and full conditions reflects the influence of extrinsic information (here, the region of origin). Two types of results can be expected from disconfirmation: "Assimilation occurs when the final evaluation of the product changes in the direction of the expectation provided by the extrinsic cue, whereas "contrast" occurs when this change is contrary to the expectation.

We experiment on five wines selected among regions with different reputation levels, and two groups of consumers, characterized by their level of expertise (trained/untrained students). Our experiments suggest that disconfirmation may be used to measure and interpret brand equity.

Keywords : perceived quality, expected quality, disconfirmation, assimilation/contrast, region of origin equity.

JEL : D110, D120, L660, M300

La Déconfirmation des Attentes Comme Mesure du Capital Marque d'une Région d'Origine, une Etude Empirique avec Cinq Régions Viticoles Françaises

Résumé :

La déconfirmation des attentes peut se définir comme l'écart entre l'évaluation en aveugle d'un produit et l'attente générée par le signal de qualité (Anderson, 1973). On considère que l'évaluation hédonique du produit en situation d'information complète constitue une mesure de la qualité perçue. On constate que cette évaluation diffère selon qu'elle se fait en l'aveugle ou en conditions d'information complète. La littérature sur le marketing alimentaire nous fait supposer que la différence entre ces deux niveaux d'évaluation résulte des attentes liées à l'information extrinsèque (dans notre cas, la mention de la région d'origine d'un vin). Deux types de résultats sont attendus : un effet d'assimilation, d'une part, lorsque l'évaluation finale se rapproche des attentes produites par l'information extrinsèque. Un effet de contraste, quand l'évaluation finale s'opère en sens inverse de celle des attentes. Nous expérimentons avec cinq vins issus de régions de réputations inégales, et auprès de deux groupes de consommateurs caractérisés par leur degré d'expertise (étudiants entraînés et non entraînés). Nos résultats nous laissent conclure que la déconfirmation des attentes peut constituer un outil d'évaluation de la force d'une marque sur la base d'une réponse de type comportemental.

Mots clés : qualité perçue, qualité attendue, non confirmation, effets d'assimilation/contraste, équité de la région d'origine

Introduction

The notion of expectation and perceived quality has been the subject of extensive research in literature pertaining to food quality perception. (Schifferstein et al., 1999, Cardello and Sawyer, 1992, Deliza et Mac Fie, 1996, Tuorila et al., 1994, Lange et al., 1999). In this line of research, expected product performance, based on quality indicators such as brand equity, price, product composition... is compared with the true evaluation of quality obtained through blind product tasting. The deviation between the blind evaluation of quality, i.e. the intrinsic perceived quality or intrinsic cue, and the evaluation of a product under full information (perceived quality) reveals the mediating effect of extrinsic cues between these two evaluations.

Extrinsic cues (packaging, brand, product definition....) create expectations of quality in each individual. These expectations may or may not be confirmed upon tasting. In research literature, the mismatch generally observed between expectations and perceived quality, is known as the « non confirmation » or « infirmation » of expectations (« *disconfirmation* », Anderson, 1973). Two types of results can be expected. The first, assimilation, takes place when the evaluation of the product under full information evolves in the same direction as the evaluation of the extrinsic cue (expectations). This evolution can imply that perceived quality comes closer to expectations under the effect of the extrinsic cue. The second, contrast, happens when the evaluation of the product under full information takes the opposite direction of the extrinsic cue, thus revealing the negative effect of this information.

One can therefore reasonably imagine that the meaning of this non confirmation, and its intensity, can vary in relation to the intrinsic qualities of a product, but also its associated cues. Thus, assimilation or contrast could be used to measure brand strength, or, for our present purpose, region strength. But what exactly is a strong brand? Aaker (1996) indicates that a strong brand creates « brand equity », which in turn creates value for the company. This brand equity can be identified through a set of indicators such as notoriety, fidelity, perceived quality and associated images (p. 8). For the author, perceived quality has the merit of synthesizing all the perceptions and associations related to a given brand. This then begs the question of how to measure perceived quality. In the present context, a strong region will be one that generates substantial assimilation effects, where, in the best case scenario, both expected and perceived quality are identified. Some regions could, on the other hand, generate less assimilation, or even contrasts.

In the case of wine, we are well aware that the expertise of individuals can affect the way in which they process information concerning quality (Perrouy , d'Hauteville, Lockshin, 2005, D'Hauteville, Perrouy, 2005). One can therefore put forward the hypothesis that the notion of « weak » or « strong » partly depends on individuals' experience. Consequently, our experiments take into account the individuals' degree of expertise in wine.

This empirical study, conducted using wines from French regions with varying levels of notoriety and image content, explores the question of the relation between expected and perceived value (quality).

Our paper begins by presenting some of the theories that underpin the notion of the mismatch between expectation and perception, and which can explain the mechanisms of assimilation or contrast. Then, we recall recent empirical results, based on experiments conducted with

champagne and orange juice. These two products have the merit of respectively belonging to high involvement (champagne) and low involvement (orange juice) product categories. We describe the experimental procedures followed and the results obtained. We then raise the question of whether the measure of assimilation or contrast could constitute a worthwhile experimental tool for measuring region of origin equity.

Theoretical principles of assimilation/contrast

According to Schifferstein et al (1999), the theoretical interpretation of the assimilation/contrast phenomenon is to be found in the mechanisms studied in social psychology where individuals are more or less inclined to express judgements which differ from preconceived opinions. And yet, as the author clearly underlines, assimilation and contrast are not symmetrical phenomena and require different interpretations. The case of assimilation recalls the theory of cognitive dissonance (Festinger, 1957, Hovland et al., 1957). Indeed, assimilation presupposes that, when faced with an uncomfortable mismatch between expected and intrinsic quality, individuals adjust their preference somewhere in between.

The contrast theory presupposes that extrinsic cues such as brand or region of origin, create expected stimulation for individuals, which is then challenged by the real experience (Helson, 1964). For example, an unknown brand can create a pleasant surprise upon tasting and thereby generate a contrast. Oppositely, an unpleasant experience with a well known product can create a feeling of disappointment which reinforces the perceived mismatch.

Many research studies have adopted such conceptual frameworks in order to explore the effects of the information liable to influence perceived quality, such as the packaged product itself, the brand or the price. Deliza and MacFie (1996) propose a literature review that highlights the links between information communicated by product marketing and what they call « sensory expectations ». Among these works, those of Tuorila et al. (1994) in particular confirm the effect of information on individuals' taste acceptability of new products.

This effect is generally highlighted to be either “assimilation”, where the hedonic evaluation is adjusted to follow the expectation created by the non-sensory stimulus, or « contrast » when this adjustment is contrary to expectations (Schifferstein, et al, 1996). Thus, by previously informing individuals that the grenadine cordial they are about to taste is bitter, Cardello and Sawyer (1992) note that individuals expect the product to be less sweet, and this expectation is confirmed during tasting. They put forward the theory that the individuals' cognitive system presupposes that bitter and sweet are two dimensions that must forcibly make up for each other. In another experiment on fruit juice, first blind and then under full information, Lange et al. (1999) observe that an adjustment takes place according to what the individuals expect from the different qualities of fruit juice, but there is only partial assimilation. The hedonic ratings explain most of the preferences.

Based on these results, we hereby formulate the following research hypothesis: the confirmation or non confirmation of expectations, as defined in the theory of assimilation/contrast, reveals the expected quality of a region of origin and therefore its strength. A strong region will be one which significantly improves the « full » evaluation of a product, i.e. an evaluation that combines sensory and non-sensory information (as opposed to blind product evaluation). A weak region

will be one where the blind evaluation prevails, i.e. the region does not significantly affect the « full » evaluation of a product when compared with blind tasting. Or even, in the case of contrast, where the name of the region has a negative effect on perceived quality and significantly degrades the « full » evaluation of the product with respect to blind tasting. The question remains however as to which measure would enable us to graduate the effect of region strength on perceived quality, in such a way as to compare regions among themselves or the effects of regions on different publics. An experimental method is needed to determine the respective weighting of intrinsic and extrinsic characteristics of perceived quality.

All of the research studies mentioned so far aim to identify the individual characteristics that explain the variance of results (sex, age, consumption rate, socio-economic categories). However, none have shed light on the relative expertise of the individuals with respect to the product category.

The research studies to which we refer follow the experimental sequence below :

1. Blind tasting evaluates the intrinsic characteristics of a product (aspect, odour, flavour) and gives a « Blind » measure.
2. The evaluation of information (here, the region of origin) provides a measure of the perceived capacity of a given region to produce good wine (« expectation »).
3. Product tasting under full information measures perceived quality.

The differential y between the « full - blind » evaluations is tallied against the differential x between the « expectation-blind » evaluations and thus measures the non confirmation of the expectation (disconfirmation). The model $y = f(x)$ thus shows how an assimilation is explained by the degree of disconfirmed expectancy. Previous research (Anderson, 1973, Schifferstein et al, 1996) shows that the scatter plot obtained can then be modelled by a regression line whose slope is situated between 0 and 1. When the slope is below 0,5, perceived quality is hardly affected by the region : the extrinsic cue does not affect the overall evaluation of the product (perceived quality). When the slope comes closer to 1, there is a maximum effect of the brand. When the slope is situated at 0,5, perceived quality is the result of both product tasting and region of origin.

Some empirical results : champagne and orange juice.

The case of champagne: brand means quality!

Among the experiments conducted by food consumption experts to explore the relative effects of products' sensory properties and quality cues on consumer preferences, (Siret and Issanchou, 2000 in the case of « pâté de campagne », Schifferstein et al. for yoghurts, 1996), a recent study on champagne (Lange et al., 2002) caught our attention in particular, since it clearly highlighted the importance of brand in consumer choices.

An important objective of this study was to compare two measures of perceived quality, the propensity to pay and the hedonic rating. The first can be established by organizing an auction system following the method put forward by Vickrey (1961), where respondents are required to bid their highest price at each stage of the experiment (blind product, brand, branded product). The second is obtained in a more traditional fashion by asking tasters to rate their preference on a scale of 1 to 10. Although these two methods reveal obvious differences in the statistic quality of the measures, they are totally convergent in terms of results.

The results obtained by both methods enable us to interpret the mismatch between the expectations and perceived quality of five brands of Champagne (three « well-known national brands », one « regional brand » and « one distributor brand »).

In the case of champagnes, all brands considered, the observed slope is 0,74 ($R^2 = 0,60$), (Lange et al, 2002 p. 603). This result suggests that for champagnes in general, the change of preference can largely be explained by the brand. For the « well-known brands», but also for the regional brand, the assimilation effect is quite spectacular, whereas negative assimilation is observed for the distributor brand: the score given to the product follows that attributed to the brand (and thus conforms with the assimilation model), but the brand is under-valued with respect to the blind evaluation, which pulls the final evaluation down.

It is also interesting to note that, upon blind evaluation, consumers cannot differentiate their preference for one champagne in particular: the bids, just like the hedonic scores, do not differ significantly for the five brands of Champagne.

The case of orange juice: taste is important too!

In this procedure, the authors (Lange et al., 1999) conducted a similar experiment with six orange juices. The extrinsic cue given here was not the brand, but the nature of the product itself: squeezed, orange concentrate and nectar, using two products per category. Compared to the champagne experiment, the spread of preferences upon blind tasting is much broader and the scores double. Moreover, for each juice, the regression slope is situated between 0,35 and 0,50 (with the R^2 between 0,25 and 0,44). In this experiment, the assimilation effect is at the most partial. It would therefore seem that the intrinsic properties of orange juice better explain perceived quality than expectations resulting from information on the type of product.

Pursuant to these two studies, our experiment uses the region of origin as the variable cue of expectation. We chose products from five French regions: Saint Emilion, Crozes Hermitage, Beaujolais, Gaillac, Fitou. We put forward the (unconfirmed) hypothesis that Saint Emilion and Beaujolais are extremely well-known by both expert and non expert consumers. Crozes Hermitage should also be well-known by the experts at least, whereas Gaillac and Fitou are origins that are generally unbeknown to most uninformed consumers. In an attempt to compare wines of similar quality, we chose them from the same distribution channel (Pierre Chaneau, under the Auchan label).

Experimental procedure

The experiments took place during the month of February 2004 with a population of « expert » ($n= 43$) and « non expert » ($n=19$) individuals. The level of expertise was objectively measured: contrary to individuals in the second group, members of the expert group were trained in wine-tasting. None of the respondents were previously informed about the type of experiment.

Separate tasting sessions were held for both groups, in appropriate premises and in compliance with standard tasting procedures (temperature of the wines, degree of daylight, tasters in individual booths). The wines were presented in any order (the experimental procedure was not tested however), and for the purpose blind tasting, wines were identified by means of a random three-figure number.

The experimental procedure is basically the same as that used in the studies mentioned earlier. It involves two tasting sessions. During the first session, wines are tasted 'blind' and given a hedonic score from 1 to 10.

During this same session, and after blind tasting, the expectations of the 5 regions of origin are evaluated. Respondents are requested to give a score (from 1 to 10) according to the aptitude of a region to produce quality wine (expectation). For the purpose of the study, information is also collected about the respondents: sex, consumption rate (regular, occasional, never), perceived expertise.

Following the same method used for blind tasting, the objective of the second session is to evaluate the products under full information in order to measure perceived quality. The time-lapse between the first and second sessions is intended to erase the sensory memories of the products. Here, a time-lapse of 30 minutes is respected and used by testers to prepare the second tasting session.

The experiment lasts 40 minutes in the first session and 30 minutes in the second.

Results

First and foremost we are seeking to test the « inter-individual » effects on the dependent variable of our model (Full-Blind), table 1. The « sex » factor of participants does not present a significant effect. However, the expertise of individuals ($p=0,017$), the type of wine ($p=0,071$), as well as the differential « region-blind » ($p<0,000$) show significant effects.

Table 1 : Tests on inter-individual effects

Dependent variable : full_blind

Source	Sum of squares type III	ddl	Mean Square	F	Significati on
Model	977,549 (a)	8	122,194	31,909	,000
Sex	10,283	1	10,283	2,685	,102
Expertise	22,106	1	22,106	5,773	,017
Type of wine	33,405	4	8,351	2,181	,071
region_blind	647,684	1	647,684	169,132	,000
Error	1202,451	314	3,829		
Total	2180,000	322			

a $R^2 = ,448$ (R^2 adj. = ,434)

Table 2 indicates the scores obtained successively for blind evaluation, expectation with respect to region of origin, and perceived quality under full evaluation. By analyzing the variance for

each variable, using the region of origin and level of expertise as factors, we discovered that both factors produce significant effects. The interaction between the factors is significant in the region and full evaluations, but this interaction is not significant in the blind evaluation. From the analysis of the level of expertise and assisted by post hoc tests, we identified groups of wine with different evaluations. In the blind evaluation, the experts distinguished Croze Hermitage with a significantly lower evaluation and St Emilion and Fitou with a significantly higher evaluation. The non experts detected no difference whatsoever in blind tasting. As regards the region evaluation, the experts classify the wines into three categories: a lower evaluation is given to Beaujolais and Gaillac, an average evaluation to Fitou (which is not that different from Gaillac) and a higher evaluation is given to Croze Hermitage and Saint Emilion. The non experts do not differ much from the experts, except that they do not differentiate Croze Hermitage and Gaillac, and Fitou is classed in the lower group.

Table 2. Scores on quality and expectations.

Région Wine	Blind			Region						Full			
	Experts		Non-Experts	Experts			Non-Experts			Experts		Non-Experts	
	1	2	1	1	2	3	1	2	3	1	2	1	2
Croze-Hermitage	3,52		4,84			8,95		7,18	7,18	4,80		6,16	6,16
Beaujolais	4,33	4,33	5,05	5,43			4,47			4,58		4,58	
Gaillac	4,65	4,65	5,50	6,26	6,26		6,18	6,18		4,67		5,53	
Saint Emilion		5,14	6,16			9,09			9,22		6,38		7,84
Fitou		5,51	6,26		7,19		4,38			5,53	5,53	4,44	
Signification	,107	,078	,567	,167	,094	,996	,199	,755	,105	,298	,425	,232	,249

The groups were formed by the way of post hoc tests at 0,05 signification level. Group n° 1 shows the lowest mean. Wines from each group have significantly equal means.

In order to test for assimilation and contrast, table 3 begins by presenting the mean scores for the three evaluation differentials: region-blind, full-blind and full-region. A mean score test was applied to each differential and to each type of wine in order to detect the significant differentials. A posteriori tests enabled us to compare the results between the wines and the expert and non-expert groups.

Table 3 : Scores by region and expertise

		R-B		F-B		R-F		(F-B)/(R-B)
		Mean	p	Mean	p	Mean	p	
Gaillac	Experts	1,667	0,000	0,023	0,941	1,505	0,000	NS
	Non experts	0,059	0,958	-0,632	0,514	1,000	0,122	NS
Beaujolais	Experts	1,071	0,021	0,026	0,335	0,833	0,039	NS
	Non experts	0,412	0,695	-0,263	0,708	-0,118	0,862	NS
Saint Emilion	Experts	3,953	0,000	1,262	0,000	2,738	0,000	+
	Non experts	3,882	0,000	2,333	0,000	1,444	0,002	+
	Experts	5,405	0,000	1,35	0,001	4,195	0,000	+

Hermitage	Non experts	1,824	0,003	1,105	0,128	1,176	0,101	NS
Fitou	Experts	1,674	0,000	0,023	0,943	1,651	0,000	NS
	Non experts	-1,500	0,070	-1,667	0,009	0,067	0,922	+

$R-B$ = Score of region (expectation) – score blind tasting

$F-B$ = Score of tasting with full information – score blind tasting

$R-F$ = Score of region (expectation) - score tasting with full information

The significant deviation between the region (expectation) and blind evaluation (R-B) indicates the non-confirmation of expectations for each wine tested. It is interesting to note that, for the non expert group, this effect is negative which means that the gustative quality of the product is higher than the expectation for the region.

Moreover, nearly all of the differentials are significant, except for the non experts in the case of Beaujolais or Gaillac. At this stage in the analysis, this result suggests that the non experts do not express any particular disconfirmation with regard to these two regions (where, remember, one is well-known – Beaujolais-, and the other not, - Gaillac). It would appear however, that the experts have higher expectations, which are reflected by more pronounced effects of disconfirmation. The a posteriori comparison of the mean scores shows that the R-B mean averages for Saint Emilion and Crozes Hermitage are significantly equivalent to each other and higher than other wines and that this holds true for both experts and non experts, indicating higher expectations for these two regions.

The significant deviation between the perceived quality of the wines under full and blind evaluation (F-B) reveals the effect of the name of the region. We should note that for expert and non expert tasters, this differential is only significant and positive for Saint Emilion, and for Crozes Hermitage it applies to expert consumers only. (The mean averages of these differentials do not differ significantly between the two wines for the experts). For the Gaillac and Beaujolais however, the differential scores under full and blind evaluation are not statistically different. The disconfirmation of expectations therefore functions differently depending on the regions and levels of expertise. In the case of St Emilion it generates assimilation, which is significantly more important for the non experts than for the experts. In the case of Crozes Hermitage, this effect is only observed in the expert group, which expressed a particularly high level of expectation for this designation. For Fitou, negative disconfirmation observed in the non expert group can be explained by the relatively low expectation with regard to this region.

The differential between the evaluations of the region (expectation) and the product under full information (perceived quality) R-F, reveals whether the assimilation phenomenon is partial or full, providing that the effect of the region is significant (F-B). A significant differential is a sign of only partial assimilation. A non significant differential indicates full assimilation whereby the brand (expectation) is significantly similar to perceived quality. From this point of view, one can note that assimilation is partial for experts in the case of St Emilion, and Crozes Hermitage. For the non experts, one observes partial assimilation for the St Emilion and a negative one for the Fitou. Moreover, the significant differential R-F associated with the non significant differential F-B indicates that there is no assimilation effect at all, despite that observed for the region, which applies to the experts for Gaillac, Beaujolais and Fitou and which reveals the experts' capacity to evaluate products on the basis of their intrinsic properties, for these three regions at least.

There remains to interpret the negative disconfirmation observed in the case of Fitou. As we have seen, there are two possibilities: assimilation and contrast. The $(F-B)/(R-B) < 0$ produces a contrast effect, and an assimilation effect when the ratio is positive. In the case of Fitou, there is assimilation and not contrast. To put it another way, the negative expectation of non experts for this region pulls the perceived quality of the product down.

In order to analyze the relative effects of the region (extrinsic cue) and the product (intrinsic cue) on product quality perception, we calculated the regression lines corresponding to the models $(Full - Blind) = \alpha + \beta(Region - Blind) + \varepsilon$, for each type of wine and for each of the two groups, expert and non expert. These lines are graphically presented in figure 1. The statistical tests are presented in the annex.

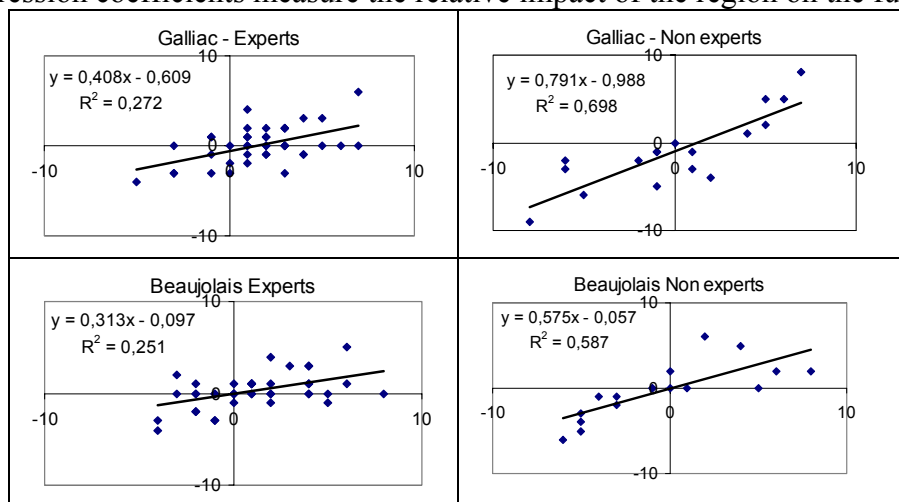
First, one can observe that for all the wines considered (with the exception of Fitou), the slope is steeper for the non experts than for the experts, which suggests that the region has a stronger effect on the first group than on the second. Moreover, for the non experts the value of this slope is close to or exceeds 0,5, which confirms the prevalence of the region in the creation of perceived quality of these wines.

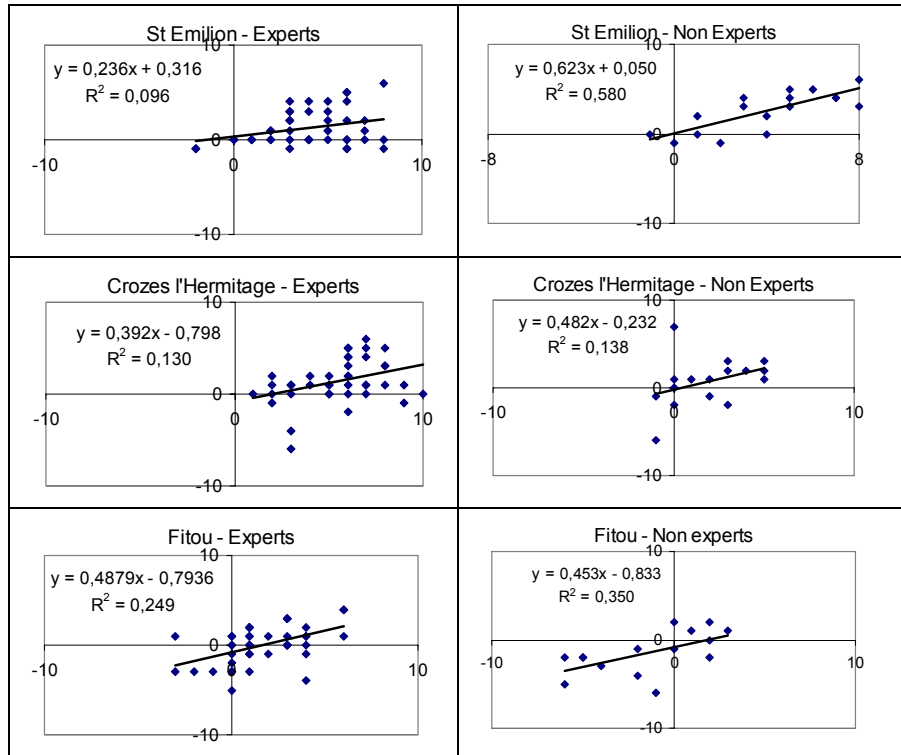
We can also note that for St Emilion and Croze Hermitage, the observations plotted on the graph are nearly all positive, suggesting that assimilation is generally positive, almost as if brand notoriety were to stop the testers from contradicting themselves in the overall evaluation. The opposite can be observed for Fitou with the non experts.

The spread of the scatter plot on the x axis indicates the dispersion of the region's impact. We observe greater dispersion in the case of Gaillac and Beaujolais, even more so given that it concerns the group of non experts.

Moreover, the R^2 are higher for the non experts than the experts, which implies that for the latter, other variables in addition to the R-B differential must better explain the F-B differential.

Figure 1 Linear model $(Complet - Aveugle) = \alpha + \beta(Marque - Aveugle) + \varepsilon$, for each type of vin. The regression coefficients measure the relative impact of the region on the full evaluation.





Discussion

The experimental approach can be criticized on several points. First, there is no test sample to ensure that the gustative evaluation of the respondents is stable from one tasting session to another. It is therefore difficult to confirm the stability of the sensory evaluation of wines. Moreover, the choice of wines could also interfere with the analyses. For example, it would appear that Fitou gets better ratings in blind tasting, whereas Crozes Hermitage turns out to be rather disappointing. There is therefore an untested product effect. If we were to pursue this research, it would be interesting to compare regions represented by two products that are well differentiated in terms of quality.

Our overall results, summarized in figures 2a and 2b, nonetheless confirm, quite unsurprisingly, that perceived quality, when measured by tasting scores with a region of origin cue, depends on the organoleptic quality of the product, but also on the expectation of the region.

figures 2a and 2b are on appendix

The theory of disconfirmed expectancy and the analysis of assimilation and contrast show that the effect a region can have on perceived quality can vary considerably depending on the wine, but also on the degree of expertise of individuals.

We note for example that expert individuals are more capable than non expert individuals of differentiating their preferences in blind conditions. We therefore find results similar to those obtained by Lange (1999) with orange juices, i.e. a partial assimilation phenomenon, whereas with champagne, it would seem that in the first case (champagne) the individuals were inhibited by a lack of gustative reference, and in the second (wine), more frequent and less socially-loaded consumption released their freedom of judgment. However, expertise seems to contribute to the independence of that judgment. One can interpret this result by suggesting the theory that purchase risk, identified by the following components: likelihood of risk and importance of risk (Laurent and Kapferer, 1985) prevents individuals from using gustative testing as a means to dispel uncertainty about quality. This would imply that one of the effects of taste-training reduces the « risk » factor of purchase involvement.

Nevertheless, when high-profile regions are involved (Saint Emilion, Crozes Hermitage) the assimilation produced by the brand is experienced by all individuals, but even more so by the less specialised consumers. An Anova test performed between the two groups shows that the difference between experts and non experts is significant at $p=.061$. This differentiated result between experts and non experts recalls research conducted by Gawel (1997), Perrouty et al (2005) who show that experts are inclined to look for coherence in the different components of a wine brand by combining the various cues provided, whereas the non experts will refer to one cue or another without attaching any particular importance to their interactions. In the case of Saint Emilion, we can consider that the expert tasters recognized some of the qualities of the wine, especially the expected “typicity” of the region. The assimilation is only partial, probably because the tasters expected better. The non experts on the other hand, confirm their expectations perfectly in an approach similar to that observed for champagnes. The results for Crozes Hermitage are less prevalent, even if they do tend toward assimilation. This can be

explained by the intrinsic quality which experts deemed to be low and which was confirmed in the second tasting session. This brings us to the limitations of our study and the lack of control in terms of the quality of the wines on offer.

The cases of Beaujolais and Fitou are interesting insofar as they proffer hypotheses concerning the strength of these regions as « brands ».

In the first case, the region is very well known. One might expect, as for St Emilion or Crozes Hermitage, an assimilation or contrast. But the « Beaujolais » brand generates low expectations, which suggests a considerable deficit of image. Even though it is very well known, Beaujolais behaves like a weak brand, with negative assimilation (albeit not significant in our experiment). It would be interesting for future research to see whether a superior quality Beaujolais would produce a contrast effect.

The case of Fitou is quite different: even though it is well evaluated in blind tasting by both expert and non expert groups, the latter devalue the product in presence of information about the region of origin (negative disconfirmation of brand expectation). However the experts, who apparently appreciate the value of the region, maintain their evaluation, but no assimilation effect is observed. This result suggests that in the case of Fitou, the weakness of the brand stems more from a lack of notoriety than from a lack of image, since, even when known (by the experts), levels of perceived quality do not rise.

The analysis of the regression line slopes $(C - A) = f(M - A)$ completes our diagnosis. Remember that our theoretical model postulated that slopes higher than 0,5 revealed the predominance of the brand in perceived quality and a slope below 0,5 was an indication of the prevalence of intrinsic properties. From this point of view, our model is only confirmed for the non experts in their evaluation of Gaillac, St Emilion, and to a lesser extent, Beaujolais.

This therefore begs the question of the representative value of the line slope, according to whether it is situated on the positive or negative side of the ordinate. In the case of St Emilion, all of the individuals attribute an expectation score higher than the blind score. In other words, the disconfirmations are positive. But what happens when a large number of individuals give scores with negative disconfirmation? Our results permit us neither to suggest a pertinent theoretical interpretation nor shed light on the contradictory results (Lange, 2000). Schifferstein et al. (1999) put forward the idea that the effects of positive or negative disconfirmation are not symmetrical, and that, when a product does not come up to expectations, a loss of assimilation should be observed. Deliza (1996), Siret and Issanchou (2000) observe the opposite result. In our case, we cannot say that the negative assimilation effect observed for Fitou is more pronounced than the positive effect observed for St Emilion. In our opinion, the experiment depends too much on the choice of products and brands to be considered in any kind of perspective. More comprehensive information would be required on the tasters' perceptions of brand images and regions.

By drawing a comparison between those individuals trained in sensory analysis and those without any particular experience, our results provide one answer to the question raised by Deliza et al (1996) who put forward the unconfirmed hypothesis that individuals « with strong sensory skills are less influenced by their expectations than individuals with weaker sensory skills » (Lange, 2000, p. 166)

Conclusion

Our study pursues a line of experimental research that seeks further understanding in the notions of perceived and expected quality. We have endeavored to shed light on the notion of « brand equity » by studying five French regions of origin which, a priori, are considered to have unequal levels of notoriety. The analysis of disconfirmed expectancy with respect to the region of origin, in terms of assimilation or contrast, provides the conceptual framework by which we sought to clarify the question of the relative importance of extrinsic and intrinsic properties in the quality perceived by consumers.

An analysis of the regression line slope (Full – Blind) = $\alpha + \beta$ (Brand – Blind) + ε synthesizes the effect of expectations produced by a region of origin on perceived quality. The analysis of the positive or negative disconfirmation offers interesting possibilities in terms of how to interpret the strength of a region as a brand.

The merit of this approach lies in the fact that we measured a behavioral dimension of brand strength. According to Sattler (1994), research on measures of brand equity is generally underpinned by the cognitive dimensions of attitude (notoriety) and emotion (positive or negative notoriety). Kapferer (2000) confirms this analysis: he recognizes a strong brand by its notoriety, the strength and precision of its positioning, its visible signs of recognition and the authority it exerts over consumers (p.31). Our study proposes a behavioral measure, by combining the dual emotional/cognitive dimension of the brand and confronting it with product consumption.

Our results appear to be contrasted, partly due to the inherent limitations of our experimental approach, but also because of the ambiguities in the notion of «brand strength » or « brand equity ». We suggest for example (especially in the case of Beaujolais) that the notoriety and the reputation of a region function independently. It would be appropriate to test these factors and perhaps other dimensions of brand equity, in order to improve our interpretation of certain results. In pursuit of this study, it would also be appropriate to substantiate the results obtained by more unified theories, or to the contrary, change the experimental approach in order to confirm several different theories.

References

- Aaker D. (1996) Building strong brands, New York, The Free Press
- Anderson R.E. (1973), Consumer dissatisfaction: the effect of disconfirmed expectancy on perceived product performance, *Journal of Marketing Research*, 10, 1, pp 38-44.
- Cardello A.V., et Sawyer, F.M., (1992), Effects of disconfirmed consumer expectations on food acceptability, *Journal of Sensory Studies*, 7, pp 253-277
- Deliza R. and MacFie H.J.H. (1996), The generation of sensory expectation by external cues and its effects on sensory perception and hedonic ratings: a review, *Journal of Sensory Studies*, 11, pp. 103-128.
- Deliza R., Mac Fie H.J.H., Hedderley D. (1996) Information affects consumer assessment of sweet and bitter solution, *Journal of Food Science*, 61, 1080-1084.
- D'Hauteville F., Perrouty J.P., Intrinsic and extrinsic quality cues : the mediating effect of expertise on consumer judgments about the quality of wine, 2nd International Wine Colloquium, Sonoma, July 2005
- Festinger L. (1957), *A theory of cognitive dissonance*, Row and Peterson, Evanston, Il.
- Helson H. (1964), *Adaptation level theory*, New York, Harper and Row.
- Hovland C.I., Harvey O.J., and Sherif M. (1957), Assimilation and contrast effects in reactions to communication and attitude changes, *Journal of Abnormal Psychology*, 55, pp.244-252
- Kapferer J.N.(2000), *Les marques*, éditions d'organisation, 3^o édition, Paris
- Laing D.G. and Francis G.W. (1989), The Capacity of Humans to Identify Odors in Mixtures, *Physiology and Behaviour*, 46, pp 809-814
- Lange C., (2000) Etude de l'effet des caractéristiques sensorielles des attentes induites par l'information et du prix sur l'acceptabilité et le comportement d'achat du consommateur, Thèse de doctorat, UFR Sciences de la Vie et de la Santé, Université de Bourgogne.
- Lange C., Rousseau F., Issanchou S. (1999) Expectation, liking and purchase behaviour under economical constraints, *Food Quality and Preference*, 10, pp 31-39.
- Lange C., Martin C., Chabanet C., Combris P., Issanchou S. (2002), Impact of the information provided to consumers on their willingness to pay for Champagne : comparison with hedonic scores, *Food Quality and Preference*, 13, pp 587-608
- Laurent G., Kapferer J.N. (1985) Measuring consumers involvement profiles, *Journal of Marketing Research*, 22, 41-53
- Merunka D. (2002), Recherches sur la marque : quelques dangers, quelques directions, *Recherche et Application Marketing*, 17, 3, pp. 1-6.
- Morrot G, Brochet F., Dubourdieu D. (2001), The color of odors, *Brain Lang*, 79, pp309-20 .
- Pangborn Rosemary (1960), Influence of Color on the Discrimination of Sweetness, *The American Journal of Psychology*, 73, pp229-238
- Perrouty J.P., D'Hauteville F., LockshinL., The influence of wine attributes on region of origin equity : an analysis of the moderating effect of consumers perceived expertise, 2nd International Wine Colloquium, Sonoma, July 2005.
- Schifferstein H.N., Kole A.P.V., and Mojet J. (1999), Asymmetry in the Disconfirmation of Expectations for Natural Yogurt, *Appetite*, 32, pp 307-329
- Siret F., Issanchou S. (2000), Traditional process: influence on sensory properties and on consumers expectation and liking. Application to "pâté de campagne", *Food Quality and Preference*, 11, pp 217-228
- Sattler H. (1994) Der Wert von Marken, Institut für Betriebswirtschaftslehre, report n° 341, Januar.

- Tuorila H., Meiselman H., Bell R., Cardello A.V., Johnson W. (1994) Role of sensory and cognitive information in the enhancement of certainty and looking for novel and familiar foods, *Appetite*, 23, pp 231-246
- Vickrey W. (1961), Counter-speculation, auctions, and competitive sealed tenders, *Journal of Finance*, 16, pp 8-37.

Figure 2a. Results concerning the experts group.

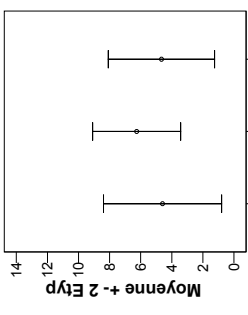
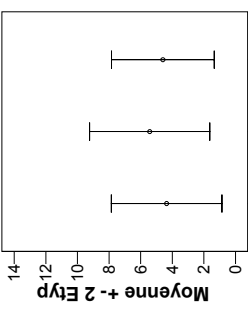
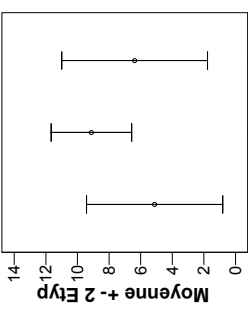
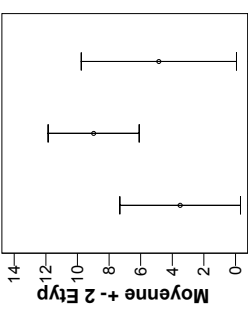
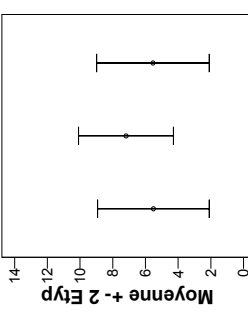
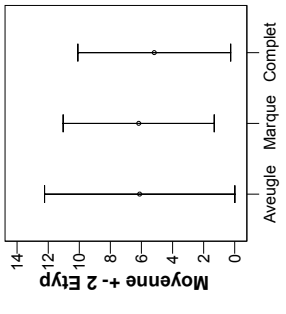
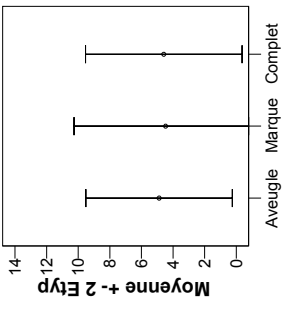
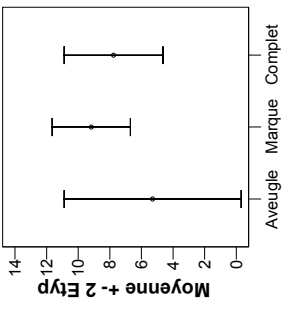
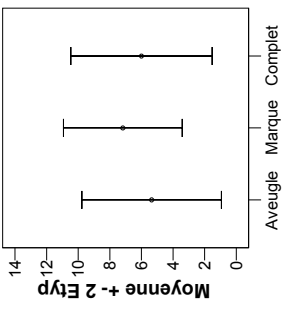
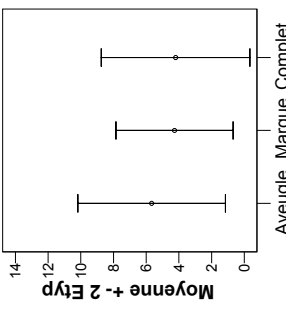
	Gaillac	Beaujolais	Saint Emilion	Crozes L'Hermitage	Fitou
Evaluations' comparaison					
Disconfirmation	Oui, positif	Oui, positif	Oui, positif	Oui, positif	Oui, positif
Assimilation/ Contrast	R-B significatif	R-B significatif	R-B significatif	R-B significatif	R-B significatif
Brand strength mesure (slope)	Pas d'assimilation b=0,408 (p=0,000) Effet-marque < effet-produit	Pas d'assimilation b=0,313 (p=0,001) Effet-marque < effet-produit	Assimilation partielle b=0,236 (p=0,046) Effet-marque < effet-produit	Assimilation partielle b=0,392 (p=0,022) Effet-marque < effet-produit	Pas d'assimilation b=0,488 (p=0,010) Effet-marque < effet-produit

Figure 2a. Results concerning the non experts group.

	Gaillac	Beaujolais	Saint Emilion	Crozes L'Hermitage	Fitou
Evaluations' comparaison					
Disconfirmation	Pas d'effet	Pas d'effet	Oui, positif	Oui, positif	Oui, négative
Assimilation/Contrast	R-B non significatif	R-B non significatif	R-B significatif	R-B significatif	R-B significatif
Brand strength mesure (slope)	Pas d'assimilation	Pas d'assimilation	Assimilation partielle	Pas d'assimilation	Assimilation négative
	b=0,791 (p=0,000) Effet-marque > effet-produit	b=0,575 (p=0,000) Effet-marque > effet-produit	b=0,624 (p=0,000) Effet-marque > effet-produit	b=0,482 (p=0,142)	b=0,453 (p=0,020) Effet-marque < effet-produit