

## **The greatest French AOCs: A signal of quality for the best graduated wines**

David Menival

Contact: [david.menival@reims-ms.fr](mailto:david.menival@reims-ms.fr)

### **Abstract**

Consumers' perception of quality depends on the available information. Therefore, suppliers develop signals of quality. Among them, the AOC regime has strong role in France. Faced with the international challenge to this system, the issue of this paper is to measure the efficiency of AOCs as signal of quality. To do this, we firstly constituted a vertical differentiation between the Burgundy' AOCs from the measure of their degree of *typicité*. Then, we compared this hierarchy with two experts' ratings. This allows us to detect the relation between the degree of *typicité* and grades of both experts but this link only seems to operate between the highest level of *typicité* and the most highly rated wines. Thus it seems that the French AOC can be used to signal the best quality only when the wines have a high degree of *typicité*.

**Key word:** AOC, Signal of quality, *typicité*, *terroir*.

**Topic area:** Geographic indications, legal or marketing implications

## Introduction

The question of the signals of quality has always been a source of complexity in the European wine industry. Whilst all these signals try to simplify information for the consumer, their great number has led to misunderstanding by consumers who prefer more and more the simplicity of approach of the new producing countries.

The reason for this complexity comes from the diversity of European cultures (Sylvander, 1996; Peri and Gaeta, 2000). For Mediterranean countries, the notion of terroir became the main in promoting the quality of their wine. This role was especially developed with the creation of the Appellation d'Origine Contrôlée (AOC) regime (Caput, 1947). However, whilst the European Union harmonised this in 1992, with a set of rules to promote and protect agricultural products linked to a specific place of origin, the notion remained confused for the international market and is often considered as an unjustified obstacle to competition. Indeed, AOCs are used to constitute a vertical differentiation with non-AOC wines. Vertical differentiation occurs when every consumer will choose the product with the greater value of Q (quality) when faced with a free choice between several products of different objective qualities (Lancaster, 1996). At first developed to distinguish between the French quality and ordinary wines (*vins de table*), this differentiation was then legitimated in 1935 (Boulet and Faillenet, 1973) and led to the legal categorisation of ordinary wines as inferior (Lagrange, Marsat and Trognon, 1999)<sup>1</sup>.

However, the notion of terroir is presently too confused and undefined to be accepted beyond the European Union and explain the characteristics of AOCs. Therefore, the INRA (Institut national de la recherche agronomique) and INAO (Institut national des appellations d'origine)<sup>2</sup> adopted the idea of an interaction between two factors to clarify the term (Béranger and al. 2005):

- **Natural Factors** which are geographical, geological and climatic characteristics considered as objective variables.
- **Human factors** which are the human know-how used in the production of the product. For AOCs they refer to restrictive conditions of production, especially maximum yields.

Consequently, they assumed that the interaction of these factors defines the *typicité* of AOC wines. This is only possible when these factors and their interaction are irreproducible beyond the AOC considered. Therefore, an AOC should be the signal of the *typicité* of a specific wine thanks to its terroir defined by the Natural and Human factors.

Based on this relationship, the idea of vertical differentiation between AOC and non AOC wines is reinforced; wines without the AOC could not have *typicité* due to the absence of *terroir*. In addition, the idea constitutes a horizontal differentiation<sup>3</sup> between AOC wines of different classes.

However, the development of generic AOCs (produced from a wide area) can be seen to challenge this theoretical differentiation. Indeed, among the great number of AOCs, some show human and natural factors with a weak *typicité*. According to the previous definitions, human factors have a weak *typicité* when scarcity is minimal due to limited production controls and the natural factors have a weak *typicité* when the distinctive geographical, climatic and geological characteristics are not present in only one AOC but Fallback is useful when the specific conditions or the practices of a grower prevent him/her adopting a small, localised AOC. In this case rather than complying with a very limited yield for a localised AOC, a producer can claim a higher yield for a more generic AOC. Thus a producer located in Gevrey Chambertin can have a higher yield for a generic AOC Bourgogne than for AOC Gevrey Chambertin – which is in turn lower than the yield for a *grand cru* wine from the same commune – if the INAO agrees (CIVB, 1997).

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<sup>1</sup> Today, this theoretical vertical differentiation is harder and harder to maintain due to the development of the French country wines (*vins de pays*) which use more and more the idea of a specific *terroir* without being AOC wines (Menival, 2005)

<sup>2</sup> This definition can be considered as the French official definition according to the use by the INAO.

<sup>3</sup> This has produced the situation where, for the same apparent objective quality, two goods may have a different number of characteristics (Barberis, 1995)

The presence of such AOCs, termed generic can challenge both vertical and horizontal differentiations and eventually undermine the effectiveness of AOCs as signals of quality

## Method

To check the impact of these generic AOCs, we have to create a hierarchy of AOCs based on their *typicité*, a hierarchy of the wines according to their perceived quality, and then we have searched for the link between these two hierarchies.

### *a) The construction of a hierarchy of AOCs from typicité.*

For this step, we have used the AOCs of Burgundy. The choice of this region is due to both the wide set of AOCs and the ease of using quantitative information about them.

To check the hypothesis, we firstly have to search the AOCs with the weakest specific human factors. Therefore, we use a PCA (Principal Components Analysis) of the conditions of production defined within the application regulations. We have only used five variables due to the lack of variability of other conditions: authorized yield per hectares, maximum legal appellation yield, minimum sugar per litre (in gram), minimum natural alcohol (in percent), maximum authorized alcohol (in percent).

Then, we analyse the AOCs with the weakest specific natural factors and the weakest specific human factors. Subsequently, we incorporate into the result of the PCA the possibility of 'fallback' (see below) for each AOC in order to create a hierarchy based on the degree of *typicité*.

### *b) The construction of a hierarchy from the perceived quality.*

We use experts' ratings to measure perceived quality – particularly as critics have more and more impact on modern economic decisions (Ginsburgh, Van Ours, 2003, 1) and can give partial or total information about the intrinsic quality of a product (Wolinsky, 1993, 1).

However as for all products, the issue of an expert's grading of wines is about the objective information of their intrinsic quality. For Lecocq and Visser (2006), the jury grade is primarily determined by sensory characteristics and could generate a bias in the experts' evaluation. Whilst this bias has to be considered, it can be reduced with clearer methods of evaluation (Benjamin and Podolny, 1999). Therefore, we selected two guide books: *Le guide Parker des vins de France* and *Guide Gilbert & Gaillard des vins*. Both use an international rating and points system to create a hierarchy of evaluated wines. They also use sensory characteristics but with a transparent method: the range of points depends on the characteristics found. Furthermore, Parker is American while Gilbert & Gaillard are French. Therefore we assume that they do not share the same taste in wines but they should find the same hierarchy.

### *c) Some more precautions.*

Firstly, we aim to reduce the possible impact of climatic accident on the evaluation of intrinsic quality. We use the Parker Guide of 2001 and the Gilbert & Gaillard Guide of 2006. Consequently, the points come from different vintages<sup>4</sup>.

Secondly, we try to avoid the possible impact of the personal techniques of producers. To achieve this we use the ranking of each AOC evaluated by Parker and Gilbert & Gaillard who evaluate different samples of growers of same AOCs.

### *d) The comparison between the experts' rating and AOC hierarchies.*

We are trying to establish if there is a relationship between the grades of AOC and the degree of *typicité* of the wine. Thus, we make a comparison of the ranking of the AOCs belonging to three

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<sup>4</sup> For Parker, vintages are between 1995 and 2000. For Gilbert & Gaillard, they are between 2000 and 2004.

groups of *typicité*: weak, standard and high. In this way, we use the non-parameter test of Kruskal-Wallis to compare the median of each subgroup to the significance level of 95%.

This test must be realised for the points of Parker and for those of Gilbert & Gaillard in order to confirm the objectivity of their position.

## Results

From the PCA, we find two factors which give a mean around 96.61% of all the variables, after a Varimax rotation. Thanks to these factors, we can define three groups of AOCs according to their position within the mapping.

1. The first one has small maximum authorized yields and high required grape maturity. It is categorised by AOCs with a high *typicité* of human factors.
2. The second has small maximum authorized yields and low required grape maturity. It is typified by AOCs with a medium *typicité* of human factors
3. The third has high maximum authorized yields and low required maturity of grapes. It comprises AOCs with a weak *typicité* of human factors

These three groups are not sufficient to determine the hierarchy of AOCs according to the degree of *typicité* as they are only based on the human factors. Thus, we have to assess the groups with a potential fallback position. This assessment of fallback position consists in doing a count of AOCs which contain others within their vineyard area. Then, we check their position according to previous hierarchy of *typicité* of their human factors and move them down to the weaker group of *typicité* if necessary.

### Example:

Gevrey Chambertin (including *premier crus*) has a standard *typicité* for human factors. However, it contains eight other AOCs within its area: Chambertin, Chambertin-Clos De Beze, Chapelle-Chambertin, Charmes-Chambertin, Mazis-Chambertin, Ruchottes-Chambertin, Griotte-Chambertin and Latricières-Chambertin. Thus it is transferred to the group of weak *typicité* for its *terroir*.

Finally, we can determine three groups of AOCs from high *typicité* to weak *typicité*.

Our purpose is then to show that the degree of *typicité* can be considered as a good signal of perceived quality by the experts. Thus, we use the non-parameter test of Kruskal-Wallis

The first step of this test confirmed this association of *typicité* to perceived quality for both Parker's evaluation and Gilbert & Gaillards' evaluation (table1)

Table 1  
Test Statistics (a,b)

	Parker's notation	Gilbert & Gaillard notation
Chi-Square	28,423	11,700
df	2	2
Asymp. Sig.	,000	,003

a Kruskal Wallis Test

b Grouping Variable: Degree of *typicité*

The second step showed a real and ordering gap of mean rank between each subgroup (table 2). However, as the table shows, the degree of *typicité* is a good signal only for the highest level of wines of Burgundy but it is not enough to distinguish between standard and the weak intrinsic quality.

*Table 2*  
**Gap of the Means Rank**

	Degree of <i>typicité</i>	N	Mean Rank
Parkers' means	High <i>typicité</i>	18	30,50
	Standard <i>typicité</i>	12	11,58
	Weak <i>typicité</i>	9	10,22
	Total	39	
Gilbert & Gaillard means	High <i>typicité</i>	6	16,50
	Standard <i>typicité</i>	8	7,00
	Weak <i>typicité</i>	5	7,00
	Total	19	

Consequently, it can be seen that the AOC is a good signal of perceived quality only when the *terroir* has a strong *typicité* but it does not give real information when the *typicité* is moderate or weak.

### Conclusion

In this paper we used a statistical test to confirm the link between the degree of *typicité* and the grading of Burgundy's AOCs. From this study, it appears that a relationship only exists between the highest degree of perceived quality and the best vineyards. Consequently, the AOCs can be considered as a good signal of quality only when they have a *terroir* with high *typicité*.

But, this conclusion is limited because we do not know if it can be generalized to all the AOCs in the country. This study must be supplemented with statistical tests for all the French vineyards governed by AOCs.

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