4th International Conference of the Academy of Wine Business Research, Siena, 17-19 July, 2008

Stopping Rules in Information Search Applied in Web Site by Wine Purchasers

François DURRIEU
BEM- Bordeaux Management School
Chair Wine Management Castel "Creative industries"
Domaine de Raba - 680, cours de la Libération – 33405
Talence Cedex FRANCE
francois.durrieu@bem.edu

Tatiana BOUZDINE-CHAMEEVA†
BEM- Bordeaux Management School
Research centre "Decision, Management and Performance"
Domaine de Raba - 680, cours de la Libération – 33405
Talence Cedex FRANCE
tatiana.chameeva@bem.edu

Stopping Rules in Information Search
Applied in Web Site by Wine Purchasers

Abstract

During the recent years, the World Wide Web has become a major source for purchasing consumer products, and the wine industry has benefited from the advantages of e-commerce. Understanding consumers' buying behaviour in online purchasing has become important for wine producers, wine boutiques, and wine website designers. Wine presents a complex product possessing tangible and intangible characteristics. However, very little is known about how people *stop* searching for information about wine and what *affects* online wine purchasing decisions. In this paper, we focus on the stopping behaviour in online wine purchasing. Based on theoretical development concerning cognitive stopping rules, we conducted an experiment with 38 participants, each performing a wine search on the World Wide Web site "Nicolas" (www.nicolas.com) after purchasing the wine. Our findings show that people utilize several different stopping rules in wine search, with a strong preference for the single criterion rule for experts in wine and an emphasis for the two other rules (the representational stability rule and the mental list rule). We suggest an identification of customer profiles based on individual expertise, age and stopping rules applied. Our analysis of consumer behaviour and purchasing decisions during wine search on the web can assist wine sellers in improving the design of their websites.

Key Words: Online Wine Purchasing, Stopping Rules, Information Search, Online Search Behaviour

Introduction

The World Wide Web has provided a completely new mechanism for the sale and purchase of wine. Online wine sales grow daily (30 % annual growth during the last years[1]), and the number of websites selling wine has grown from virtually none to thousands during the last five years. Electronic availability of wine has benefited consumers by increasing their choice in wines and providing access to a wider variety of products and prices than previously available. Consumers can purchase many wines online that are not available in nearby stores, and have access to thousands of labels from small wineries all over the world. The shift from off-line to online grows when the delivery time decreases, when purchasing is facilitated, and when the evaluation effort is easier (Gupta et al., 2004). This is consistent with the fact that wine is an information and price sensitive product when it comes to retailing online (Bruwer and Wood 2005).

How do people perform online wine purchasing? Wine purchasing is a decision-making activity, and most decision-making behaviour relies on information search that has a cost for a consumer. Reducing this cost is a general goal of consumers, and the transparency of quality information on sensory issues describing wine will be maximised if the consumer is allowed to make easy comparisons and evaluations (Lynch and Ariely 2000). If product information is different at another site, this can lead to a decrease in price sensitivity. The quality of

[1] e-barometer: BRESSOLES Gregory, "Palmarès international des meilleurs sites de vente de vin", conférence Vinexpo, Bordeaux, Juin 2007.

information search in wine online purchasing affects the quantity of wine sold. Quality of search also has an impact on loyalty of the consumers (Bruwer and Wood 2005).

Understanding the reasons people stop web searches in online wine purchasing is of particular importance for wine producers and wine boutiques on the web. It is important to identify what kinds of information a customer needs, how the information search is performed, and what leads ultimately to a purchase. Further, understanding stopping behaviour in web-based wine purchasing search can be used to help in the design and browsing features of wine websites. Armed with such information, website designers in the wine industry can better organise their sites, design features to entice consumers to stop on their sites, and ultimately increase wine sales.

This paper analyses consumers' stopping behaviour during information search in online wine purchasing and investigates the preferable stopping rules in this web search context. The remainder of the paper is structured as follows. The next section reviews theoretical background on online search and the use of stopping rules. The second section presents the research design and the hypotheses of the study, and the third section describes the results of a practical study. The last section concludes the paper with a discussion of the findings, their implications and contribution, and limitations and perspectives of the study.

1. Online Search Behaviour and Stopping Rules in Information Search

People who purchase wine online have different individual itineraries that reflect their preferences, their competences and their requirements, and, more generally, their information search processes. The challenge is to "extract" these itineraries to understand whether there exist specifically preferred stopping rules that consumers use in this process.

In most cases the process of information search in online purchasing is characterized by divergent thinking, in which a person discovers new features, new possibilities, new products, and/or new services. The person terminates the search process at some point, and either makes a purchase or gives up the search (either temporarily or permanently). In terminating the search process, the person utilizes what is known as a *stopping rule* (Pitts and Browne, 2004).

Five stopping rules have been proposed to describe how decision makers gauge sufficiency and terminate search behaviour: the Mental List Rule, the Magnitude Threshold Rule, the Difference Threshold Rule, the Representational Stability Rule and the Single Criterion Rule (Browne, Pitts, and Wetherbe, 2005). Table 1 presents descriptions of these five rules.

Rule	Description	Example
Mental List	Person has a mental list of items that must be satisfied before he will stop collecting information.	In searching for information concerning renting an apartment, a person continues until he satisfies all the elements on his mental list (e.g., number of bedrooms, price, and quality of neighborhood).
Magnitude Threshold	Person has a cumulative amount of information that he needs before he will stop searching.	When perusing a magazine article, a reader may skim the article until he has enough information to develop a "sense" of what it is about.
Difference Threshold	Person sets an a priori difference level to gauge when he is not learning anything new. When he stops learning new information, he stops his information search.	When interviewing people for a story, a newspaper reporter interviews eyewitnesses until he is no longer learning new information. At that point, he terminates the requirements elicitation process.
Representational Stability	Person searches for information until his mental model, or representation, stops shifting and stabilizes.	To understand how a machine works, a person gathers information by asking experts and by reading materials. When his mental model of how the machine works stabilizes, he stops gathering information.
Single Criterion	Person decides to search for information related to a single criterion (typically the most important one) and stops when he has enough information about that criterion.	When searching for a new bicycle to purchase, a person looks for the one that is very light weight. He stops when he has enough information about light-weight bicycles.

Table 1: Cognitive Stopping Rules (adapted from Browne et al., 2005)

Recent empirical research has shown how stopping rules are used in several information search contexts (Browne et al., 2005, 2006; Pitts and Browne, 2004). Two elements of context, the degree of structure of the task and how the information sought is represented mentally, have appeared to be important in determining stopping rule use (Browne et al., 2006).

High or low task structure refers to the degree to which the necessary inputs and outputs are known and recognizable to the decision maker (Simon, 1981). The nature of the decision maker's mental representation can either be decomposable or holistic. According to Browne et al. (2006), in some tasks various task elements or attributes can be individually identified and represented in a decompositional manner. In other tasks, a person represents the task as a whole and acts based on his "sense" or "image" of the situation rather than on individual attributes. Thus, the representation he builds is a holistic one.

Our study focuses on an analysis of stopping rules applied in information and decision-making search in the specific context of wine purchasing. Wine is a complex product possessing both tangible and intangible characteristics. It is easy to describe a wine using a list of tangible features (price, colour, appellation, year, region, chateau, etc.). At the same time, wine possesses particular intangible characteristics that are difficult to articulate (smell, taste, bouquet structure, etc.). The information on wine websites often proposes selective descriptions of wine's intangible characteristics (maturity, grape variety, freshness, taste' structure, etc.). Below are examples of intangible features found on wine websites:

- *"This wine truly respects the grape variety…"*
- *"A wine that displays good balance between maturity and freshness of structure…"*

- *"On the palate the wine has a supple, fruity attack with lovely freshness in mid-palate and flavours that are a bit more exotic (passion fruit and kiwis) than were apparent in the nose… "*
- *"The nose is perfumed and seductive with notes of lemons, hawthorn, yellow plums … "*
- *A lovely wine that combines freshness, finesse and seductiveness.*
- *"The wine displays the mineral aspects of a region known for its hot conditions..*
- *A good length of wine is a sign of the richness of the substance…"*
- *"A wine is full of freshness and vivacity given the hot weather of the vintage…"*
- *"This cuvée shows good potential for the future. A noble, racy character calls for fine cuisine."*

A range of research has investigated wine purchasing behaviour (Gabbot 1991; Lockshin and Hall 2003) from a pure marketing orientation. Researchers have examined the specificities of wine as a product and considered its intrinsic (e.g., origin, color, and wine grape) and extrinsic characteristics (e.g., price, packaging, and brand). The extrinsic characteristics can be modified without affecting the intrinsic characteristics. These characteristics (intrinsic and extrinsic) make it possible for consumers to evaluate the quality of the product. This quality thus goes beyond only the tangible elements of the product.

Therefore, wine product search may be a well-structured search for some purchasers (some buyers understand the inputs to the process, what they need to do to complete the task, and what they will receive from the process), but a poorly-structured search for others (who are novices in wine purchasing). Further, the wine search task seems to be more holistic than decomposable. Although individually identifiable elements such as price, year, and vintner are of course of concern to the shopper, the intangible factors described above seem likely to lead to a holistic search and evaluation by purchasers. Thus, in the present research, we investigate information search in a task for which the structure is indeterminate but that we assume will be holistic for purchasers.

2. Hypotheses

Browne et al. (2006) have argued that for well-structured, holistic tasks, people will utilize the mental list rule for stopping information search (see Table 2).

Degree of Structure Nature of Mental Representation	High	Low
Décomposable Eléments	Single Criterion, Mental List	Difference Threshold
Holistic	Mental List	Representational Stability, Magnitude Threshold

Table 2: Task Elements Causing Stopping Rule Use (adapted from Browne et al., 2006)

For tasks that have a low degree of structure and that will be represented holistically by information searchers, these authors argued that the magnitude threshold and representational stability rules will be utilized. Thus, we assume in the present research that searching for wine online will involve either a decomposable highly structured representation by purchasers who are wine connoisseurs, or a holistic mental representation by purchasers, who are novices in wine. However we do not have adequate knowledge at this point to determine whether the task

will be well structured or poorly structured for novice purchasers, we test to see whether the mental list rule, the magnitude threshold rule, and the representational stability rule will be used by wine purchasers more than the other stopping rules. The following hypotheses (stated in the alternative form) were tested:

H1: More participants will use the mental list stopping rule than will use the difference threshold stopping rule (ML>DT).

H2: More participants will use the single criterion stopping rule than will use the difference threshold stopping rule (SC>DT).

H3: More participants will use the magnitude threshold stopping rule than will use the single criterion stopping rule (MT>SC).

H4: More participants will use the representational stability stopping rule than will use the single criterion stopping rule (RS>SC).

H5: More participants will use the representational stability stopping rule than will use the magnitude threshold stopping rule (RS>MT).

Further, we tested the following hypotheses as a purely exploratory investigation. They were based on our belief that people who shop for wine online are unlikely to be novice purchasers. In such a case, the purchasing task should be well structured for them, and the single criterion stopping rule or the mental list rule are more likely to be utilized than the magnitude threshold and the representational stability rules.

H6: More participants will use the mental list stopping rule than will use the single criterion stopping rule (ML >SC).

H7: More participants will use the mental list stopping rule than will use the magnitude threshold stopping rule (ML>MT).

H8: More participants will use the mental list stopping rule than will use the representational stability stopping rule (ML>RS).

3. Methodology

3.1. Sample

Thirty – eight buyers of Nicolas.com Web site[2] (see Exhibit 1) served as participants in this study. The buyers completed wine purchases on this Internet site during a one- week period before the Father's Day. We will describe our sample more in details below.

One third of the participants were females. 24% of participants are less than 34 years old, and for the 35% of participants age ranges between 35 years and 44 years. They represent a younger target whereas the two third of the traditional wine consumers are older than 45 years[3]. A comparison of the sample' characteristics with the age of the people who buy on Internet reveals that, on average, the purchasers of this sample are older because 60% of the purchasers have less than 35 years[4]. Half of the respondents have a relatively high education level (Bac +5 years of studies and more), are executives, represent liberal professions or intellectuals and possess annual income exceeding 45.000 euros. 75% of the respondents live

[2] **Description of the web site Nicolas.com :** Creation of the site : 1999 – 2000. Turnover 2006 : > 1 million €. Average purchase: between 100-150 €. Traffic: 1200-2000 visitors per day. Customer Profile: Similar to a store customer (65% of the web consumers have bought in Nicolas's store). However the attitudes of Internet customers are different: in store, the customers practice the picking (a bottle for a meal), and on the Internet, they search a gift, and an average purchase is more capacious (2-5 cardboards). Two peaks of activity: December (Christmas) and June (Father's Day).

[3] ONIVINS INRA Survey on wine consumption in France in 2000.

[4] e-barometer: BRESSOLES Gregory, "Palmarès international des meilleurs sites de vente de vin", conférence Vinexpo, Bordeaux, Juin 2007.

in couple and 30% have a child. The 80% of respondents indicated that they use Internet for five years and more whereas according to e-barometer source[4], 65% of the people use Internet for 5 years and more (Table 3.)

	% size
Once and twice	29,6
Three and five times	40,7
More than five times	29,6

Table 3: The frequencies of the participants' purchases on Internet over the last year

The wine expertise of buyers was evaluated by using the following question "For how long do you buy wine on Internet?" We can say that the wine purchase on Internet is quite recent. Indeed, close to 50% use internet for wine buying since less than one year whereas 80% of participants indicate using Internet to carry out purchases (Table 4.).

	% size
Less than one year	42,9
Between one and three years	28,6
More than four years	28,6

Table 4: Wine expertise - for how long do you buy wine on Internet

It is important to give more insights on the nature of Nicolas.com site[2]. Nicolas.com is not a pure Internet player. The sale is only one part of his site's goals (with a turnover of more than 30%). The major objective of the site is to serve as the window of the 450 stores of its network. Nicolas is foremost a whole physical retailer. The objective for Nicolas is to preserve on the site those human and cordial aspects asserted at the points of sale: "Our positioning, our image and awareness related to our network contribute to reinsure the web consumer when it buys on our site. He finds on the site the atmosphere of our store (colours, local information on the stores, simplicity of navigation and order)".

In the present study, we investigate how the site design affects the information search in a task for which the structure is until now indeterminate, a task on wine purchasing.

3.2 Coding

Participants' written answers to the questions about stopping behaviour were used to analyze the stopping rule use. Two research assistants who had no knowledge of the study were used to code subjects' answers. The assistants were given descriptions of the five stopping rule categories and coded the answers into those categories. We checked for interrater reliability between the two coders and found that they agreed on 33 of the 35 participant responses, for an interrater agreement of .94. Cohen's kappa was calculated to be .91; this value is considered "almost perfect" agreement using the standards established by Landis and Koch (1977). For the codes on which there was disagreement, a third coder coded the responses. This coder agreed with one of the original coders on all nine of the disagreements.

4. Results and discussion

All respondents were determined by the coders to have used one of the five stopping rules. To investigate our research questions, we first grouped analysts by the stopping rule utilized.

Below in Table 7 we present several examples of buyers' expressions explaining their decision to stop information search and buy the product.

Stopping Rule Use	**Wine Search**
Mental List	• When I have found the one with all characteristics that I look in wine • I have compared 4 wines and then I have chosen basing on the criteria of a region, price and taste qualities
Representational Stability	• When I feel in agreement with the evaluation of a wine expert on the value of the wine • When I have got a more clear vision of my present thanks to a wine expert opinion
Magnitude Threshold	• Comparing the prices on 4 different sites I have decided that I have sufficient information • Scrutinising wine characteristics after reading experts opinions I have thought that I have enough information for buying
Single Criterion	• I know this wine • As I agreed on the price proposed I have stopped my search

Table 7: Examples of Stopping Rule Use Expression to explain an Online Wine Purchasing

The number of respondents using each stopping rule was as follows: Difference Threshold = 0; Representational Stability = 7; Mental List = 5; Magnitude Threshold = 3; Single Criterion -= 20. Table 5 shows the percentage of participants coded into each stopping rule category for the online wine purchasing task. For purposes of comparison, we show the stopping rule usage for the wine purchasing task and the two product search tasks investigated by Browne et al. (2005, 2006)[5].

[6] Note that both of these products used in the product search task described in Browne et al. (2006) are different from wine product and seem to possess fewer "intangible" characteristics.

	Product Search (a 32" television) (from Browne et al., 2006)	**Product Search** (a 5-Mgapixel digital camera) (from Browne et al., 2005)	**Wine Search**
Mental List	54%	51%	14%
Representational Stability	9%	6%	20%
Difference Threshold	0	2%	0%
Magnitude Threshold	14%	11%	9%
Single Criterion	15%	28%	57%
Other	8%	2%	0%

Table 5: Stopping Rule Use Results in Online Product Search Tasks

To test hypotheses H1- H8, which involved testing numerical counts of stopping rules used without a dependent variable in the traditional sense, we conducted χ^2 tests for the various comparisons of interest. In each case the expected value of each rule in the χ^2 test was .50 (the null hypothesis).

The results of the tests appear in Table 6. Participants in this study used the single criterion stopping rule much more frequently than any other stopping rule. The mental list and the representational stability stopping rules were also used while the differential threshold stopping rules were never used by the participants. The preference of the single criterion stopping rule over the other stopping rules was supported.

Test	**χ^2 (dif=1))**	**p-value**	**Decision**
H1: ML > DT	5	0,0253	Supported
H2: SC > DT	20	0,000	Supported
H3: MT < SC	-17		Non Supported
H4: RS < SC	-13		Non Supported
H5: MT < RS	-4		Non Supported
H6: ML< SC	-15		Non Supported
H7: ML > MT	2	0,1573	Rejected
H8: ML > RS	2	0, 1573	Rejected

Table 6: Results of Hypothesis Testing: Comparison of Stopping Rules Used

(ML = Mental List; DT = Difference Threshold; RS = Representational Stability; MT = Magnitude Threshold; SC = Single Criterion. All hypothesis tests assumed $\alpha = .05$, and decision refers to support for the alternative hypothesis.)

Content analysis has been used further on to shed light on information needs of the participants. Five themes have been ascertained: "occasion", "pleasure", "price", "knowledge and offers' diversity". These needs are defined per stopping rules by using the chi square analysis. The dependence is not very significative (chi2 = 11,14, ddl = 8, 1-p = 80,61%). However it brings forth the hypothesis on possible associations of information used with the stopping rules.

To analyze simultaneously the effect of the stopping rule and analyst experience variables on the requirements variables, we used a correspondence analysis procedure with

stopping rule as the factor and analyst experience as the covariate. The correspondence analysis was used because of the nature of the relationships hypothesized to compare stopping rules with five retained themes. The figure 1 below reveals the associations between these variables by using factorial correspondence analysis.

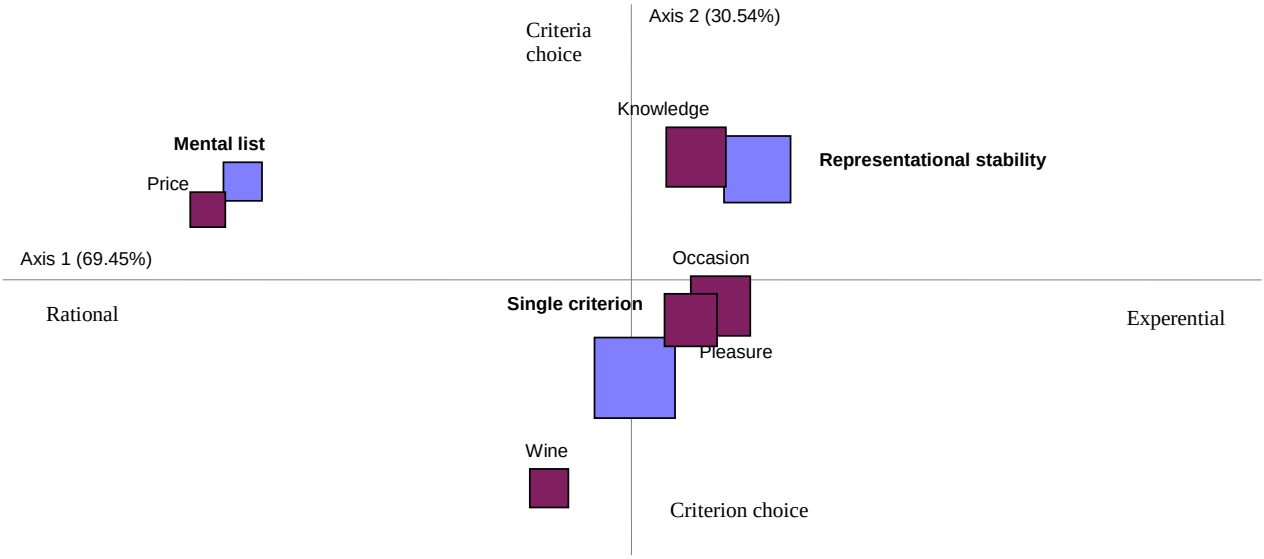

Figure 1: The associations between stopping rules and five themes

This map is structured by two axes: for the first axis, experiential (pleasure, occasion and knowledge) is the opposite of rational (price) and for the second axis criteria choice (representational stability) is the reverse of criterion choice (single criterion). The price is strongly associated with the mental list stopping rule. For the respondents who have a list of criteria, price is frequently determinant in their choice. The pleasure and the occasion seem to relate more to the rule of single criterion. The site www.nicolas.fr impels visitors to undertake impulse pleasure purchases. A choice of a Representational Stability stopping rule is apparently linked with knowledge the respondents possess on wine in general. We describe below those respondents who expressed preferences for these rules in their information search.

An examination of the answers on the question: "Why did you stop collecting information on the wine?" contributed to a better understanding of the stopping rules use through a thorough analysis of each choice. Simple criterion is used much more frequently than any stopping rule, in 57% of the cases. Among those who preferred this rule, a criterion of "wine taste" was mentioned in 20% of cases, a criterion of "price" is quoted by 18% of the respondents. The price is not associates with the choice as show in figure 1. The idea of a gift and the diversity of an offer guide 13% of the respondents. The pleasure ratio/price under tightens the criterion used. 50% of the visitors among the respondents come on the site for a precise and well defined purchase. The analysis of the answers to questions 11 - 15 (see Appendix for Questions) confirms this assumption.

The second mostly used by respondents rule is the representational stability rule, 20% of the respondents. The majority of these respondents arrive on the site to search gifts (25%) however they do not have a precise idea of a gift. Surfing the site they meet diversity of offers (19% of the quotations) and find pleasure in this walk (19% of the quotations). The two themes of pleasure and offers' diversity recurrently appear when the RS criterion is used.

The mental list rule was used by 14% of the purchasers. Among these users, the price is quoted by 33% of the individuals whereas the idea of a gift is mentioned by 17% of the respondents. A rational approach prevails in the choice for this rule: the purchaser is interested

in an important gift in accordance with the price, and is tempted to minimize a risk of a mistake.

The magnitude threshold rule was only used by three people, and then it could difficult to describe this rule in terms of the five retained themes.

The difference threshold rule was not used by the respondents. The site does not have redundant information; navigation on the site is pleasant. Visitors find information on the products which interest them and come to the decision of purchase.

We analyze below (see Figure 2) the choice of stopping rules with the visiting behaviours.

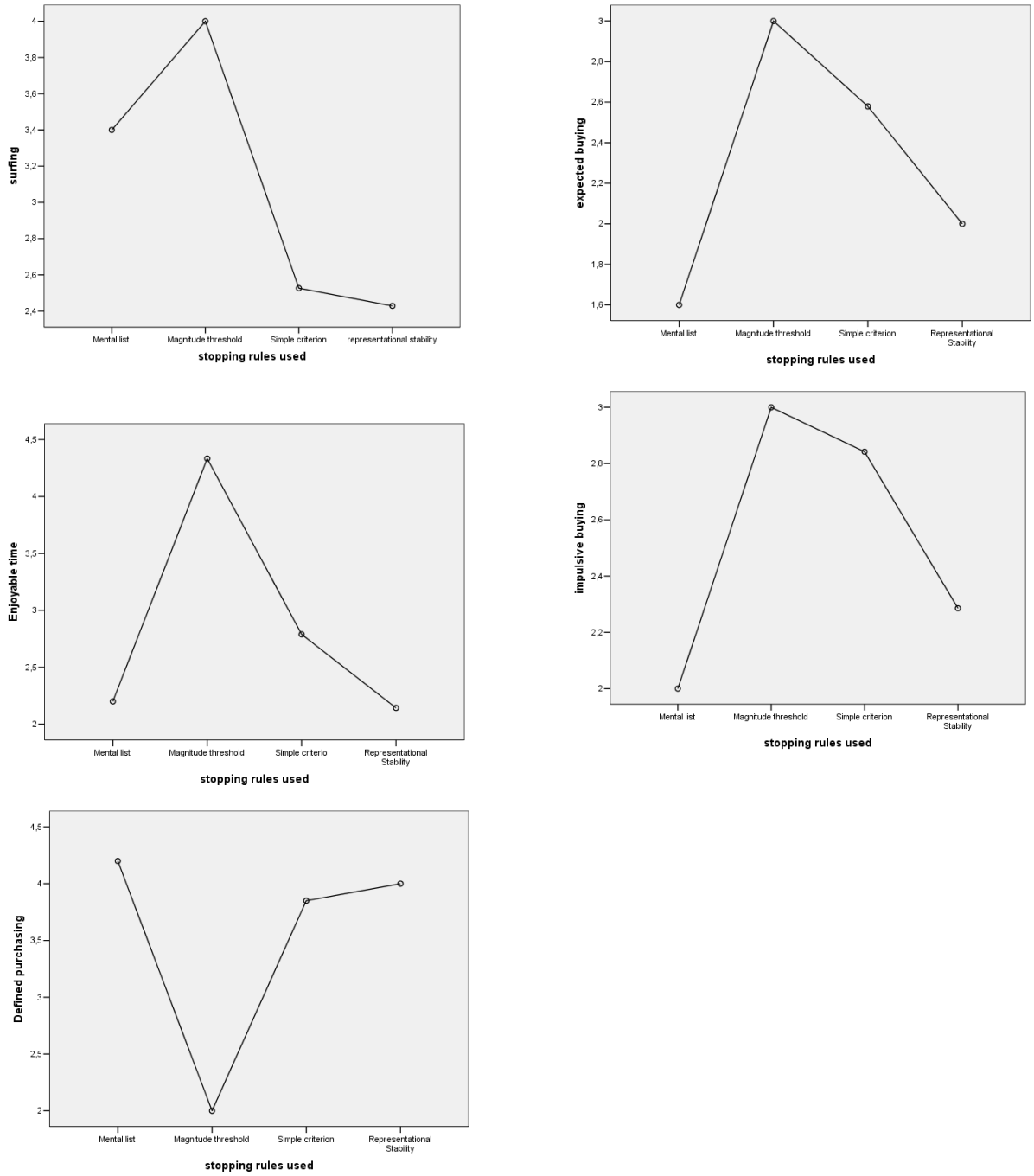

Figure 2: The comparison of visiting behaviours and a choice of stopping rules used.

We observe that the impulsive buying behaviour and the expected buying should be associated the magnitude threshold stopping rule and the single criterion. These rules permit to leave a rational logic and to experience more a pleasure of buying. Concerning the magnitude threshold rule, we observe that a purchaser has no precise idea of what to buy. There is a major difference with the case of the respondents using the single criterion. On the other hand, our results show that a visitor passes more enjoyable moments when his information search is stopped according to the magnitude threshold rule that with the other rules.

We have been interested to analyse the eventual relations between the age of participants, their experience in wine and the use of any particular stopping rule. We observe that people older than 45 years use more the single criterion and the mental list rules whereas the visitors younger than 35 prefer the representational stability rule. Moreover those who use either the mental list or the representational stability rule buy more than those who stop their search and make purchasing using a single criterion. The frequency of purchase on Internet affect the search behaviour of buyers, they prefer more complex rules. Half of people, who use the single criterion, buy on Internet since one year (novices) whereas those whose search is stopped by the representational stability rule or the mental list rules can be considered more as experts on Internet purchasing. Another particularity concerns the sex of buyers - men use more frequently the single criterion or the mental list rules while the representational stability rules become more often a characteristic of a woman's stopping behaviour.

The elements described above bring forward an idea to constitute web consumer's profiles based on the differentiation of the stopping rules use (see Table 8).

Mental List	**Magnitude Threshold**	**Single Criterion**	**Representational Stability**
Price		Best buy (taste and offers' diversity)	Offers' diversity and pleasure to offer
Defined purchasing Surfing	Impulsive buying Expected buying Surfing Enjoyable time	Impulsive buying Expected of buying Defined purchasing	Defined purchasing
Wine connoisseurs Men		Old novices (older than 45 years) Men	Young experts (less younger than 35 years) Women

Table 8: Web consumer's profiles based on the differentiation of the stopping rules' use

Several recent research studies (Pitts and Browne, 2004; Browne et al., 2005, 2006) identified stopping rules' use during information search in different types of online tasks, and found differing usage depending on the task. The contribution of this study in the specific context of online wine purchasing improved the theoretical understanding of stopping rule use in purchasing behaviour related to the complex nature of wine products and the knowledge of the consumer in the specific domain. The results appear to be consistent with the theoretical framework grounded in information search theory and in wine consumer behaviour studies.

For initial research on any general topic, it has been argued that people attempt to gain a holistic sense of the topic (Browne et al., 2006). Thus, they can be expected to use the three stopping rules (mental list, magnitude threshold, and/or representational stability) tested in the

present research. We found strong support for the use of the single criterion stopping rule during the wine online purchasing search task (Intrinsic quality). Familiarity with the shopping online apparently leads people to a good sense of structure for the task, and they develop a holistic sense of the wine by combining criteria (price, offer's diversity, occasion) related essentially to the extrinsic characteristics of wine.

Such criterion as a price appeared to be preferable in the use of the single criterion stopping rule and as one of criteria used in the mental list stopping rule approach. The single criterion stopping rule appeared to be linked either with possessing a personal experience (Mitchell et al., 2000), or with some particular wine attribute (as price attribute cited above). Reducing the amount of information that a person needs to make a choice is often explained through a particular personal experience an individual holds in memory ("I knew before that château with a good reputation"). Visiting the wine chateau or turning to souvenirs of preferences/appreciations of those to whom a gift will be addressed lead to an immediate holistic single criterion decision on wine to purchase, and people stop their wine search on meeting the criterion they have. In some cases it is a particular year (a year of a person's birth or marriage or other particular personal event of a person realising a wine searching or of a person to whom a wine gift is addressed).

Mental list use in information search on wine purchasing is supported by several research studies on the utility of wine cues (extrinsic) in a consumer choice of wine (Lockchin et al., 2004). (See Table 7 for some examples).

Use of the representational stability rule in information search means that a person's mental model of a product (a wine gift in our study) stops shifting and stabilizes. However, rather than assessing the discrete individual elements in some way to stop his wine search, the person performing a search for a wine gift attempts to develop a mental representation for what it will be like to give this present and to develop a feeling of how the person to whom a gift is addressed will react (Holbrook and Hirschman, 1982). Tangible characteristics of wine such as promotional "Best Buy" kits, year or chateau name, and intangible factors such as personal preferences become important.

Both intrinsic and extrinsic features of wine affect the buying behaviour of people. Based on the arguments presented earlier, wine product search is assumed to be a well-structured decomposable search task for some consumers (mainly wine connoisseurs) and a poorly-structured holistic task for others (mainly novices). The single criterion and representational stability rules were used more frequently by consumers than the other rules, reflecting their theorized use in well-structure decomposable tasks and poorly-structured holistic tasks, respectively.

5. Limitations, contributions and perspectives

The proposed study has several limitations. First, it is an exploratory research and the sample of participants can be improved in future research. The characteristics of the respondents should be compared with the profiles of the customers buying on the Nicolas site. This would make possible to know if the respondents are representative of Nicolas.com' customers.

The differential threshold rule had never been used by the participants, which confirms our hypothesis that if wine search could be considered as a decomposable process then it is high-structured. In the future studies it is necessary to elaborate specific tasks or improve a sample of participants for whom wine search could be a less –structured though decomposable task.

We were unable to support the four hypotheses on the preference of the magnitude threshold rule, the representational stability rule and the mental list over the single criterion. In future studies it might be interesting to verify whether the inverse hypotheses are supported. The fourth hypothesis on the magnitude threshold and the representational stability rule preferences has to be analysed in consequent studies as well.

We observe also the problems with measuring knowledge in wines. We used frequency of wine purchasing to measure this variable however this approach does not appear to be pertinent. Taking into account other variables to explain expertise in wine purchasing online may have an impact on buyers' behaviour and the use of stopping rules.

We have to accept that the choice of the site for wine purchasing might be also considered as a limitation. The design of Nicolas.com site might have an impact on the use of stopping rules in two ways:

- price details indicated at each product at first glance might contribute into the fact that price becomes a dominant criterion in making decision on purchasing.
- this site is not a pure Internet player (see Appendix 2 for the economic data on the pure players of online wine commerce), therefore customers who buy on this site frequently has their previous experience of purchasing in Nicolas stores.

These first results concern a sample of 35 people: the results should be generalized on a more important sample. However, the simple criterion is not only the price. The buyer follows his tastes even if he associates it to the price and the idea of gift. The diversity of the offer proposed on this web site permits this kind of tasting experience. Thus, it is rather the pleasure which guides these choices than rational criteria. This is also underlined by the use of "Representational stability" which defines a decision less rationalizing that the mental list.

Nicolas.com website is well designed to facilitate use of the mental list stopping rule indicating for each wine the region, the millesime, and price. The customers are inclined to perform their search mainly in sequential process, which brings to a more frequent use of a single criteria or a mental list stopping rule (known for high-decomposable tasks) ;

Another important characteristic of the Nicolas.som site is a rich choice and the emphasis on promotional kits with price and region indicated. The customer is inclined to choose the kits that corresponds more or less his/her needs. The approach the customer implies is again more frequently mental list or a single criterion due to the site' design

It is theoretically important to continue to test the hypothesized use of stopping rules under differing levels of personal knowledge in the wine context to understand stopping rule use in online wine purchasing search performed by customers better "educated" in wine.

Bibliography

Bouzdine-Chameeva, T., Browne, G. J. & Durrieu F. (2006). Stopping rules in information search in online wine purchasing decisions, Working Paper CEREBEM, N° 111-06, 19p.

Browne, G.J., Pitts, M.G. & Wetherbe, J.C. (2005), Stopping Rule Use During Web-Based Search. *Proceedings from the Hawaii International Conference on System Sciences*, Hawaii, Jan, p.271.

Browne, G.J., Pitts, M.G. & Wetherbe, J.C. (2006), Stopping Rules for Terminating Information Search in Online Tasks. Working Paper, Texas Tech University, May.

Bruwer, J. & Wood, G. (2005), The Australian Online Wine-Buying Consumer: Motivational & Behavioural Perspectives, *Journal of Wine Research*, 16(3), 2005, 193-211.

ComScore Media Metrix. Marketers Take Note: The Elusive 18-34 Year-Old is Habitually Online, Available at http://www.comscore.com/press/release.asp? press=445

Federal Trade Commission for the Consumer (2003), Extracts from the Report *Possible Anticompetitive Barriers to E-Commerce: Wine* at **http://www.ftc.gov/opa/2003/10/ecommercewine.htm**

Gabbot, M. (1991), The Role of Product cues in Assessing Risk in Second-h& Markets, *European Journal of Marketing*, 32(4), 35-81.

Gupta, A., Su, B. & Walter Z. (2004), An Empirical Study of Switching from Traditional to Electronic Channels: A Purchase-Decision Process Perspective, *International Journal of Electronic Commerce*, 8(3), 131-161.

Holbrook, M. B. & Hirschman, E. C. (1982), The Experiential Aspects of Consumption: Consumer Fantasies, Feelings & Fun, *Journal of Consumer Research*, 9(2), 132-140.

Landis, J.R. & Koch, G.C. (1977), The measurement of observer agreement for categorical data. *Biometrics*, 33, 159-174.

Lockshin, L. & Hall, J. (2003), Consumer Purchasing Behaviour for Wine: What We Know & Where We are Going, *Proceedings from the International Colloquium in Wine Marketing*, Adelaide, July.

Lockshin, L., Wady J., Perrouty J-P., d'Hauteville, F. (2004), Using simulations from discrete choice experiments to measure consumer sensitivity to br&, region, & awards in wine choice, *Proceedings from the 7th Annual Sensometrics Conference*, California, July.

Lynch, J.G. & Ariely, D. (2000), Wine Online: Search Cost Affect Competition on Price, Quality & Distribution, *Marketing Science*, 19(1), 88-103.

Mitchell, R.D., Hall, C.M. & McIntosh, A.J. (2000), Wine tourism & consumer behaviour. In Eds Hall, C.M., Sharples, E., Cambourne, B. & Macionis N., *Wine Tourism Around*

the World: Development, Management & Markets. Butterworth-Heinemann, Oxford, 115-135.

Perrouty, J., d'Hauteville, F. & Lockshin, L. (2005), The Influence of Wine Attributes on Region of Origin Equity: An Analysis of the Moderating Effect of Consumer's Perceived Expertise, *Proceedings from the 2nd Annual International Wine Marketing Symposium*, Sonoma, California, July.

Pitts, M.G. & Browne, G.J. (2004), Stopping Behavior of Systems Analysts During Information Requirements Elicitation, *Journal of Management Information Systems*, 21, 213-236.

Appendix 1: Experiment Task and Questions

You have just purchased the wine on the site www.nicolas.com , we would like to express our gratitude to you. To improve online purchasing and meet better your requirements we would like to invite you to participate in our study on "Online wine purchasing decisions". This will not take more than 12 minutes of your time.

You have browsed the site for searching information and make your choice concerning the wine or wines you have purchased. Your choice has been given to (please indicate the name (s) of the wine(s) you have bought)

Nicolas would like to know:

1. *How did you decide to stop searching for information?*
2. *Why did you stop searching for information about the wine when you did?*
3. *Why did you choose that particular wine?*

To make better acquaintance with you could you be so kind and answer the following questions:

1 – How long do you use Internet?	Less than on year ; 1 to 2 years ; 2 to 3 years ; 4 to 5 years ; more than 5 years ;
2 – For how long do you buy wine on Internet?	Less than on year ; 1 to 2 years ; 2 to 3 years ; 4 to 5 years ; more than 5 years ;
3 - Over the last 12 months, how many times have you purchased on Internet?	One to twice ; three to fives times ; 5 to 10 times ; more than 10 times ;
4 – What is your sex?	Male, Female
5 - What is your age?	18 to 24, 25 to 34, 35 to 44, 45 to 54 , 55 to 64, 65 and over
6 – What is your profession?	Tradesman, retailer, businessman; Engineer; Executive, professional, university teacher; Middle-ranking professional (technician, supervisor); Employee/worker; Retired; Student
7 – At what age did you finish your studies?	16 years old; 18 years old; 2 additional years of studies ; 3 or 4 years further studies; 5 or more years further studies
8 – What is your marital status?	Single; Couple; Couple with children
9 – What is the size of the city you live in?	Town less than 1 000 people ; 1 000 to 10 000 people ; 10 000 to 100 000 people ; More than 100 000 people
10 – What is annual revenue of your household?	Less than 9,000 euros; 9,000 to 15,000 euros; 15,000 to 30,000 euros; 30,000 to 45,000 euros; 45,000 euros or more
11 - You have visited the site in order to surf on the pages which interest you	Strongly disagree 2 3 4 Strongly agree
12 - When you have seen this product, you could not resist to buy it	Strongly disagree 2 3 4 Strongly agree
13 - You have visited the site in order to buy something definite	Strongly disagree 2 3 4 Strongly agree
14 - You have visited the site in order to spend one pleasant moment	Strongly disagree 2 3 4 Strongly agree
15 - When you have seen this product, you have suddenly decided to buy it	Strongly disagree 2 3 4 Strongly agree
16. In which occasion have you bought this wine?	Gift ; To store; For a particular event; Others

Appendix 2: Economic Data on the Pure Players of Online Wine Commerce[6]

Wine Web Site	**Target**	**Assortment**	**Percentage of foreign wines presented (compared to French ones) in sales value**
1855	Connoisseurs, amateurs of grands crus	Very large: 15 000 references; Average Consumer basket : 1000 euros	Very weak 3%
Wine and Co	Amateurs of high purchasing capabilities	Average:2500 references Average Consumer basket : 300 euros	Weak 10%
Château OnLine	Amateurs and connoisseurs and	Large : 5 000 references. Average Consumer basket : 250 euros	Important 20%
Rouge et Blanc	"Neophytes" information search and good quality/price ratio	Short: 500 references. Average Consumer basket : 150 euros	Important – 20% to 25%
ChâteauNet	Amateurs and connoisseurs and consumers	Short: more than 600 references. Average Consumer basket : more than 300 euros	Very weak
Nicolas	The same as store customer(65% of the web consumer bought in Nicolas's store)	Less than One Thousand references Average Consumer basket : 100-150 €	Very weak 5%

[6] Economic Report on Wine Distribution in France, October 2005 at http://www.xerfi700.com/