

Chapter 8

Research Intentions are Nothing without Technology: Mixed–Method Web Surveys and the Coberen Wall of Pictures Protocol

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ABSTRACT

The chapter is aimed at showing the Wall of Pictures Web protocol for conducting mixed research in social sciences. There is a rising interest in some alternative research protocols integrating qualitative and quantitative approaches. However, what is missing are concrete illustrations and some methodological guidelines. Thanks to recent Internet survey technologies, we are able to “bridge the quantitative-qualitative divide” and benefit from the blending combination of spontaneous unstructured data, which is later recoded and processed on a large number of cases. Implemented within the Coberen European consumers’ survey, and utilising a combination of multimedia and interactive technological devices, the wall of pictures outcomes has shown some promising perspectives, which are presented and discussed in the chapter.

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INTRODUCTION/BACKGROUND: WEB SURVEYS AS A SOLUTION FOR OPTIMISING MIXED METHOD POSSIBILITIES

There is a growing interest in both the academic and business worlds for mixed-method research protocols. Especially for social science questions, these approaches efficiently combine the advantages of qualitative and quantitative techniques (Tashakkori and Teddlie, 2003). Among the social sciences, for example, consumer behaviour is a field in which it has lately been admitted that eclectic research methodologies are needed to properly address recent and growing theoretical perspectives, such as experiential aspects of consumption (Brakus et al., 2009) or “consumer culture” phenomena (Dittmar, 2008). *“After a vigorous debate about where we are heading during the end of the 1980s and beginning of the 1990s, the discussion has lately been less heated. The two predominant paradigms, positivistic and interpretive consumer research exist side by side, each including a number of different approaches for conducting research”* (Ekström, 2003, p. 1). If the development of knowledge about social sciences topics matters for a researcher, it is now quite obvious to advocate methods-pluralism which can be supported by proponents of different research traditions.

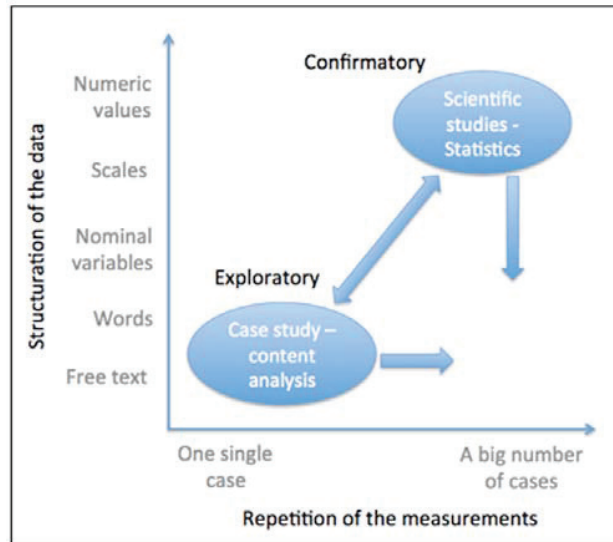
Thus, various mixed methods are possible. Qualitative and quantitative protocols may follow each other, or better, take place simultaneously, which—according to some experts—may lead to extracting far more meaningful data (Onwuegbuzie and Teddlie, 2003). In this regard, Creswell and Plano Clark (2007) have isolated six types of mixed methods based on the nature of their implementation (sequential or simultane-

ous), their priority (qualitative, quantitative, or equal) and their level of integration (analysis or interpretation). Our chapter will focus on a class of methods (“simultaneous triangulation”), for which the integration of qualitative and quantitative approaches is very strong and appears at the levels of data collection, data analysis, validation, and interpretation of results.

Mixed methods are promising—firstly—because they give more attractiveness to data collection protocols and are able to immerse the respondents more thoroughly into the topic being studied. From this perspective, compared to some pure quantitative studies, they should be able to increase the perceived ease of use and enjoyment of the interviewees (Thompson, Vivien & Raye, 1999). Secondly, thanks to some “triangulation” (Jick, 1979) opportunities, they may produce more valid conclusions. The interpretation of the results may be based both on some numerical objective measurements and on some more subjective observations.

Because of their multimedia and interactive characteristics (Ganassali, 2008; Bouzidi, 2011), Web survey technologies offer new perspectives for developing typical mixed protocols for which interviews can be conducted partly according to some qualitative approaches - for example virtual focus groups (Sweet, 2001) or collective photo albums (Vernette, 2007). Given Internet capabilities, dissemination can clearly be quantitative and may generate a large amount of data on which statistical analyses can be accurately performed. These techniques try to “bridge the quantitative-qualitative divide” (Bolden and Moscarola, 2000), in a way that researchers would benefit from the mixture of spontaneous unstructured data, later recorded and processed on a large number of cases (See Figure 1) (Moscarola, 1993).

Figure 1. The “qual-quant” approach according to Moscarola (1993)



MAIN CHARACTERISTICS OF THE COBEREN PROJECT: METHODOLOGY AND OPERATIONAL IMPLEMENTATION

The Wall of Pictures

As a relevant example of a Web-based mixed method, we had the opportunity to implement a *wall of pictures* protocol within the context of an international consumer behaviour study. This technique can be considered as a good illustration of integrated mixed methods.

The wall of pictures can be considered as a derivative of visual anthropology methods. This wide family of methods is concerned with the study and production of ethnographic photography, film, and new media (Dion, 2007). Among the various projective protocols, researchers study and discuss some visual materials produced by the subjects, like “collages” (Davis and Butler-Kisber, 1999) or like the “Zaltman Metaphor Elicitation Technique” (Zaltman and Coulter, 1995). They may also use some prepared documents for interacting with them. Some authors (see Harper, 2002) refer to

the concept of “photo elicitation”; when subjects are asked to speak or write on the basis of some pre-defined images presented to them—see the “auto-driving” protocol (Heisley and Levy, 1991), as an example. The technique of “photolanguage” (Baptiste et al., 1991) is also very popular in social sciences. This method consists of asking participants (in groups or individually) to express themselves by selecting images proposed by the research team. One example would be a sensitive topic like teenagers on the matter of sexuality.

According to the *wall of pictures* protocol (Albert et al., 2008), the respondent is asked to choose a limited number of images from a wide selection arranged on a “wall”, and to justify their choices with a few short sentences. That can be done via a face-to-face interview or—in our case—through an Internet based questionnaire (See Figure 2). After the introduction of the survey, the consumer is asked more classical questions using scales, numeric or closed unique or multiple-choice questions.

Using that triptych, we get a triple measurement of the respondents’ points of view; a perspective that is thus much richer. As far as the

Figure 2. Screenshots of the Coberen's wall of pictures



visual variables are concerned, when confronting the chosen images and their justifications, we can verify the meaning of the pictures for the majority of our respondents and reduce the subjectivity of our interpretation. By cross-tabulating responses to closed questions, visual and textual variables, we can corroborate the interpretation of the results according to the principle of triangulation.

The Coberen Programme

Consumer Behaviour Erasmus Network (Coberen; <http://www.coberen.eu>) is a network developed to analyse consumption culture, consumer behaviour and the linkages among them in 30 countries in Europe. In this project, the similarities and differences in the European countries are highlighted. To succeed in this project the network is composed of experts (and their research groups) from 30 countries, with a unique (remarkable) trajectory and experience in consumer behaviour, market research, statistics, and international marketing.

The network was developed to contribute to a fuller understanding of Consumer Behaviour and Culture in Europe. This knowledge is essential from an economic and civic point of view. When we talk about these issues, there is neither a common conceptualisation nor a homogeneous measure. Moreover when dealing with an international

perspective, the issue is even more complicated, as, without a general framework for consumer behaviour analysis, the comparison of local studies is not possible. Thus, when data about consumer behaviour is needed, there are contradictions and a lack of a general pool of knowledge that facilitates a general view of the market—something that is vital for making economic decisions. On the other hand, many studies dealing with these concepts in a cross-cultural context compare the similarities and differences in a reduced number of countries (Engelen and Brettel, 2011).

Regarding culture, a key point in the discipline of consumer behaviour is the analysis of the cultural base of such similarities and differences in consumer behaviour in different countries. Culture is the “prism through which people view products and try to make sense of their own and other people’s consumer behaviour” (Solomon et al., 2006). But culture is a crucial variable not only for economic studies but also for social studies. Thus, “without cultural patterns—organised systems of significant symbols—people would have difficulty living together” (De Mooij, 2004). Culture defines a human community, being individuals is the “result” of their culture.

Despite its importance, currently no studies exist that are related to culture and involve a sample, which although exploratory, follows the crucial characteristics of the population analysed. This

concerns as many as 30 countries and is regularly updated. Filling these gaps was the goal of the network. Thus, we established as the main reasons for this network the development of a measure (as a reference in the discipline) to analyse culture, given the criticisms that exist concerning these measures. This measure will be applied in 30 countries, generating a pool of updated data on culture that is valuable for the academic and business worlds. Furthermore, this cultural description will be analysed with reference to the different consumer behaviour displayed in each country, a complete framework that is essential to update teaching material, improve research, and to take and implement economic and social decisions in the business and civic worlds.

Thus, specifically for these first three years of work, the aims of the network were quite ambitious. First, we created profiles of the 30 countries, that is, a “picture” with some information about demography and education, economy and industry, health, lifestyles, and finally consumption patterns, so that we could highlight the similarities and the differences among the European countries. Then, we analysed the consumption culture in Europe. In this area, Coberen tries to develop a new methodology to study in detail topic so controversial as culture. The final purpose was to develop a methodology to be implemented regularly in order to maintain updated culture analyses in the European countries. Then, we researched the behaviour of the consumers in each of the 30 countries considered. The purpose was to analyse the behaviour of the consumer in a general approach, but also, and in the first three years of work of Coberen we analysed in detail the behaviour of the consumer in the beverages sector. The aim of the network is to extend the field of analysis and each year to analyse consumer behaviour thoroughly in a different sector. Finally, we aimed to contribute to cross-cultural research methodology. The network is composed of specialists in consumer behaviour, market research and

cross-cultural market research, making it possible to develop a guide for carrying out cross-cultural research in Europe and mixing qualitative and quantitative approaches.

The work to be done was distributed in ten work packages:

1. Management and Coordination
2. **Development:** Report on Indicators and Descriptors
3. **Development:** Tool Measure
4. **Development:** Market Research Design
5. **Development:** Data Collection
6. **Exploitation:** Reorganising Knowledge and Academic Theory
7. **Exploitation:** Promoting Improvements in Teaching and Research
8. **Exploitation:** Promoting Improvements in the Economic World
9. Control and Quality Evaluation
10. Dissemination

Through these work packages, the outputs that Coberen will provide are numerous. First, we aim to update the material used for research and teaching in the diverse disciplines for which this knowledge is relevant. An academic conference was held in June 2012, the proceedings of which were subsequently published on the network Website. Access to the Coberen database will be facilitated but remain subject to certain requirements. During the academic conference, parallel seminars were held on different tracks and issues, with the aim of contributing to the development of student research, by using both the results of the project and the knowledge of the experts. The first “Entrepreneurial congress on cross-culture in Europe” was organised. One deliverable was developed on the basis of these workshops. From the first congress, a network goal was to provide this service in the future, ensuring continuity through the development of a European Institute of experts on Consumer Behaviour.

The Coberen Web Survey

As presented above, among the various network activities, we conducted one common Web survey, based on the same questionnaire translated into twenty-three languages. The Coberen survey principles and objectives were defined in such a way that we had to select and implement a typical methodology—according to the available resources—that are described by the following specificities:

- Mixed methodological approach combining advantages of qualitative and quantitative techniques - use of a large range of numerical, verbal and pictorial measurements.
- Largeness of scope for covering different aspects/dimensions of the consumer culture but necessity to remain in an acceptable format from the point of view of our respondents (a maximum of 20 minutes to be dedicated to the survey).
- Coordination and centralisation of the process but a need for local flexibility to reach the defined targets.
- Combination of some *a priori* instructions/guidelines and some *a posteriori* adjustments/adaptations because Web surveys are quick, flexible and (from a certain point of view) cheap.

Powered by the *Sphinx* software platform, the survey was disseminated from January to March 2011 through the Internet, mainly via access panels and pre-recruited respondents (recruited by students – research assistants). More than 13,500 “good-quality” answers were collected. The questionnaire first addressed beverage consumption representations and patterns. Then, some more global questions were asked, dedicated to general consumption attitudes and preferences. The survey was composed of 120 questions, covering a dozen pages. (See <http://www.sphinxonline.net/>

coberen/drink_uk/quest_uk.htm to visualise the questionnaire in English). The median input time was 19 minutes.

The final structure of the Internet questionnaire was defined as follows:

- Beverage Consumption
 - Wall of pictures and word associations
 - Picture scales for drinking preferences
 - Preferred alcoholic and non-alcoholic beverages, consumption patterns (volume, expense, places, brands, distribution channels...) and motives
 - Beverage consumption situations
- General Consumption Culture
 - **The Consumer “Mind Set”**: Overt and covert dimensions
 - Consumer practices
 - Consumption contexts
- Others
 - National culture dimensions
 - **Socio-Demographics**: Country, age, gender, education and income levels

Designing the Wall of Pictures

In this section, the principles of the construction of an on-line wall of pictures will be explained and described, including pre-tests and internal/external validity verifications.

Selection of the Pictures

The 36 pictures proposed to the respondents were selected after a long specification process. Initially, the Coberen researchers designed a preliminary version in which the selected images were chosen so that - apart from representing some different beverages, such as water, wine, beer, coffee or tea - they would cover the different theoretical dimensions provided by the academic literature about beverage (or more generally food) consumption motivations. Among the very large





number of proposed frameworks (see Kuntsche et al., 2005, for a review), we decided to refer to Graham’s (1988) model, because it was not too specifically targeted to addictive behaviours and could consequently be applied to our larger scope of alcoholic and non-alcoholic beverages. The author described four types of motives: two social (“sociability” and “beverage”) and two personal effects (“stimulant” and “relief”). The “*beverage*” dimension refers, for instance, to intrinsic properties of the products such as the taste, the ability to quench thirst, or the habit. Our wall of pictures was designed so that at least three or four pictures would be related to each dimension. Table 1 shows some of the pictures aimed at representing the various dimensions of the model.

Then, we conducted a search on the Internet, using the Google search engine and its section dedicated to image searching functionalities. Several requests were launched to cover the different aspects of the topic. Using search engine

algorithms such as “beverages,” “drinking,” “thirst,” in this way is both efficient and can highlight the most popular responses.

Several pre-tests were conducted in five of the Coberen countries (Austria, France, Germany, Spain and the United Kingdom, for a total sample of 1,000 respondents). Apart from checking the overall process (consistency of questionnaire structure, understanding of questions, and instructions, etc.) we tested, in particular, the composition and the validity of the wall of pictures. We were especially interested in identifying some potential missing topics. Thus during that pre-test, and after the screens dedicated to the wall of pictures protocol, we asked the respondents whether they felt that some pictures were missing, and which ones. As a result of the pre-test, for example, some people proposed that an image of a fountain was missing; others mentioned that there were too many pictures representing the concept of “binge drinking.”

Table 1. Theoretical dimensions and selected pictures

Dimension	Description	Pictures
Sociability reasons	The image refers to the circumstances of consumption e.g. being sociable, with friends, polite, part of a social activity, etc.	 ...
Beverage reasons	The picture is centred on the beverage itself, its properties, the taste, the ability to quench thirst, habit, etc.	 ...
Stimulant reasons	The image is about the stimulating effects of the beverage: e.g. when feeling tired, to pep up, to keep from slowing down, etc.	 ...
Relief reasons	The image refers to the relaxing effects of the beverages, celebration, to help concentrate, when feeling upset, to relieve pain, etc.	 ...

The Sphinxonline Platform

The *Sphinxonline* Internet platform is a full-Web application (see <http://www.sphinxsurvey.com>) entirely dedicated to online surveys. It offers all the useful functionalities at each of the various stages of the survey:

- **Questionnaire Design:** We used a desktop module (*Sphinx iQ*) making it possible to create an elaborated Internet form including some classical closed questions and a wall of pictures protocol.
- **Online Translation:** Some links were created to give online access to the partners for the translation activities.
- **Questionnaires and Responses Hosting:** Because of some minor particularities in each of the local surveys, it was decided to have one file for every national study. The merge took place at the very end of the data collection stage.
- **Emailing Dissemination:** This functionality was used to contact the pre-recruited respondents. A full emailing module is included in the *Sphinxonline* platform where we have input our invitation message, uploaded the list of recipients, and programmed the transmissions.
- **Campaign Monitoring:** Within the various platform features, we had access to some monitoring functionalities from which it was possible to follow the number of responses, the undeliverable messages, the number of drop-outs, etc., so that we could react quickly and ensure a good campaign progression.
- **Basic Data Analysis:** Some first-level data analyses are available “live” on the *Sphinxonline* platform such as one-way analysis and cross tabulations. Most of the data analyses conducted for the chapters of this book were conducted with the *Sphinx iQ* desktop module, especially when some textual analyses were necessary or with other statistical packages like *SPSS*.

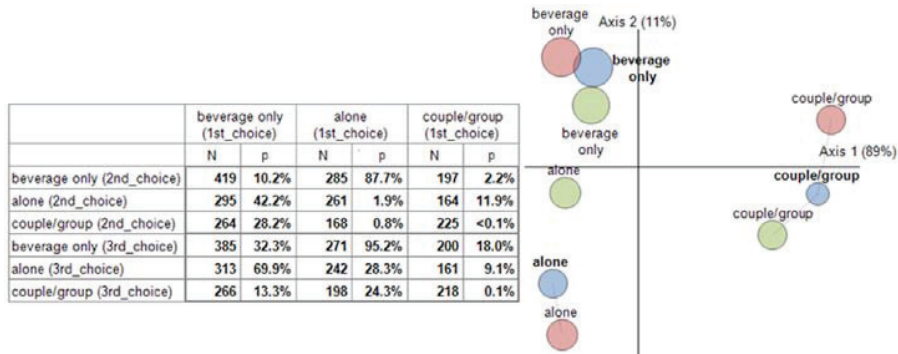
Assessing the Validity of the Wall of Pictures

On the basis of this final version, we could assess the validity of the wall of pictures according to a specific procedure that we have designed. We started to evaluate the internal validity by looking at the consistency between the first, second and third choices of pictures. More specifically, the aim was to study the statistical correspondences between the three chosen images—after grouping them into logical categories. If there were a sound cognitive process within any individual choice of three pictures in a wall—which was our hypothesis—then, the probability of choosing a second specific picture after choosing a first one could somehow be predictable. In order to test these correspondences, a group of Coberen professors divided the 36 pictures into three basic categories, according to the number of person(s) represented on the picture: (1) images with beverage(s) only, (2) images with just one person, or (3) images representing a couple or a group. Then, we cross-tabulated the three variables, recording the three choices and observing the partial chi-square tests values. The factorial map displayed below shows that there is a very good correspondence between the three choices, as far as the number of represented people is concerned. For example, respondents choosing a picture representing a couple or a group as their first choice tend to choose the same category for their second ($p < 0.001$) and third ($p = 0.001$) choices. However, the correspondences are less significant for “*only beverage*” images (See Figure 3).

(*) p is calculated for partial chi-square tests for each cell of the contingency table.

Internal validity can also be evaluated when reading the explanations given by the interviewees for justifying their choices and matching them with chosen pictures. Can we ensure a stable and common meaning for the pictures within the whole sample of respondents answering from different countries? For this, we needed to recode the justifications formulated by the consumers,

Figure 3. Correspondences between first, second, and third picture choices



according to a *code-book* that was discussed and designed within the group of the Coberen professors. During a full-day meeting in Pavia (Italy), the group designed a code-book for interpreting the semantic contents of the justifications (See Figure 4).

We designed an on-line coding platform so that every Coberen partner could access a sample of their national responses, read and code them according to the general *code-book* (See Figure 5 representing the coding of a French respondent's justification). They first had to click on the quoted themes, for example beverage, people, time, or circumstances; and then, they had to specify the quoted elements for each theme. For

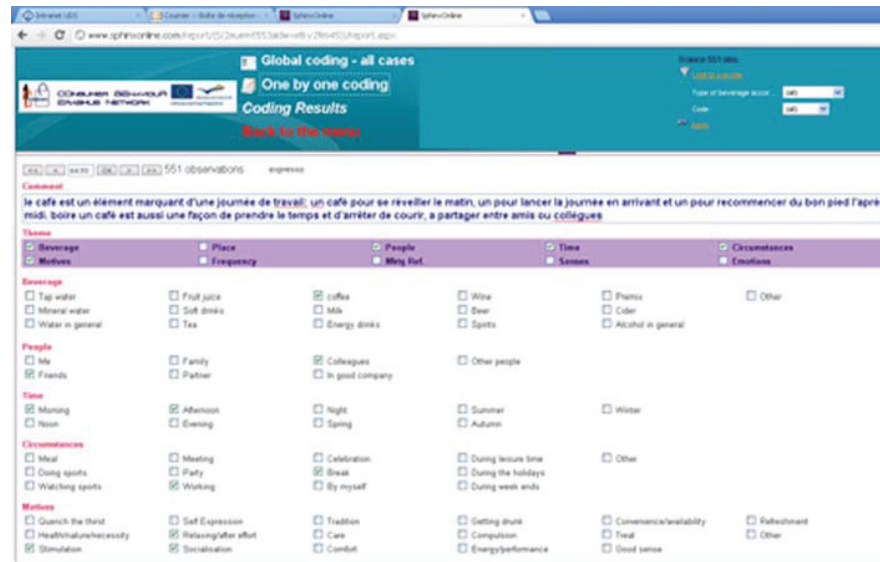
“beverage,” it was “coffee” in our case. For “people,” it was “colleagues,” and “family,” etc. Partners had to code a “calibrated” sample of national respondents. That sample was comprised of the same number of respondents per country (around 180), the composition of the national samples being identical as far as gender and age groups are concerned. That procedure (for international samples) is recommended by Green and White (1976) and evoked by Malhotra et al. (1996). Since every respondent generally formulated three comments, each partner had to code from 500 to 550 verbatim comments. A comprehensive “coding guide” was provided to the partners. It described the coding process stepwise and used

Figure 4. The Coberen code book for picture selection justifications

Beverage	Places	People	Time	Circumstances	Motives
Tap water Mineral water Water in general Fruit juice Soft drinks Tea coffee Milk Energy drinks Wine Beer Spirits Premix Cider Alcohol in general Other	At home At friends At work Moving travelling In bars pubs discos In restaurants In cafés Sports music events Other Marketing_references Brand Price Quality Distribution channels Trends/fashion Promotional events (incl wine testing) Advertising Package	Me Friends Family Partner Colleagues In good company Other people	Morning Noon Afternoon Evening Night Spring Summer Autumn Winter	Meal Doing sports Watching sports Meeting Party Working Celebration Break By myself During leisure time During the holidays During week ends Other	Quench the thirst Health/nature/necessity Stimulation Pleasure Self Expression Relaxing/after effort Socialisation Cost Tradition Care Comfort Intimacy/love Getting drunk Compulsion Energy/performance Novelty Convenience/availability Treat Good sense Having fun Refreshment Other
			Frequency Addiction Habit Occasionally One off	Senses Taste Sight Smell Sound Touch Emotions Scaring Anger Sadness Happiness Excitement Tenderness	

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Figure 5. The Sphinxonline coding platform



screenshots to increase the degree of usability of the *Sphinxonline* platform. This thoroughly compiled manual should be the basis for the securing of intra- as well as inter-coder reliability by increasing the awareness of quality criteria for the qualitative analysis. In detail, the manual was aimed at offering illustrative coding examples per category, pointing out do's and don'ts in the analysis process, and offering a conversation partner from the team to share opinions and to answer questions.

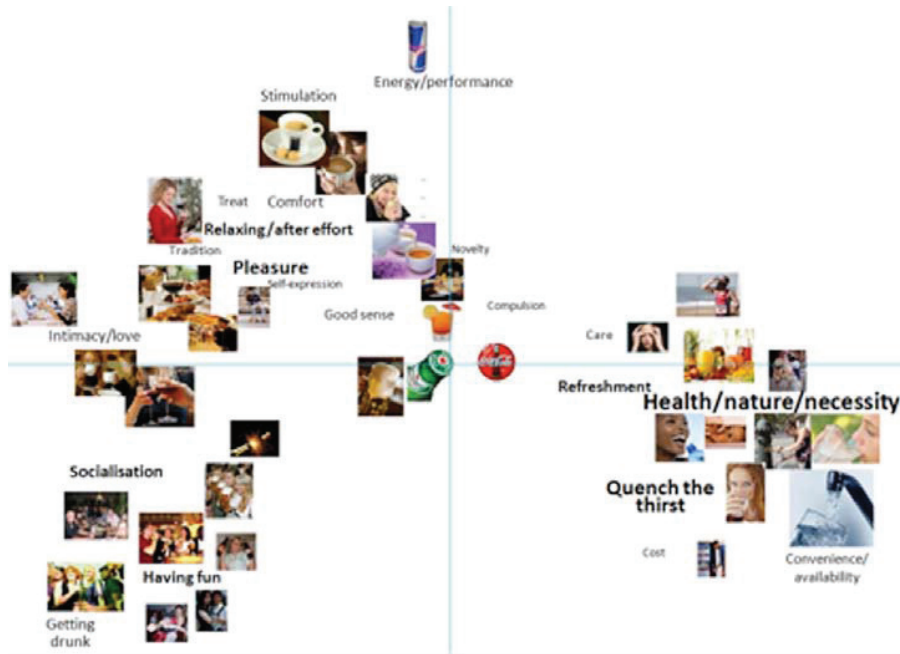
Thanks to the protocol of the *wall of pictures*, we can connect the images selected by our respondents with the choice justifications they have expressed. After the coding operations were completed, we could check the consistency of meaning between the researchers' and the respondents' views. Hence, the choice justifications expressed by many different consumers after selecting the same picture would be consistent and similar.

This is what we wanted to check, producing another factorial map and plotting the images with the recoded drinking motives expressed in the justifications. For the analysis below, we only

used the coding of the consumer justifications that was given for identifying the consumption *motives* (only one of the ten recoded thematic categories). The map shows quite clearly the associations between chosen images and verbatim-based consumption motives. It is to be noted that the images and word sizes are related to their frequency. For example, we can see—on the south-east of the map—that the image of water pouring from the tap into a glass is clearly associated with the motives of “convenience” and “availability”, but also with “quenching thirst”, like some other images of water. The picture of a smiling group of people drinking beers in a pub—on the south-west of the map—is significantly associated with “fun” and “socialisation.” Images of hot drinks are related to “stimulation” for the image of the *espresso*, or to “comfort” and “relaxation” for the “tea time” picture. The results of the analysis of correspondences largely confirm the consistent semantic content of our proposed pictures and their ability to be used for expressing consumption patterns (Scott and Vargas, 2007) (See Figure 6).

External validity can be determined by cross tabulating the wall of pictures' variables with

Figure 6. Correspondences between chosen pictures and motives



some subsequent quantitative measurements of the Coberen surveys. In order to check the external validity of the wall of pictures, we analysed some potential correspondences or correlations between chosen pictures and other consumption pattern measurements such as beverage preferences, expressed by the respondents later in the survey. If the wall of pictures is a reliable instrument for identifying consumption patterns and attitudes, there should be a strong uniformity between the choices of pictures and the declared drinking preferences expressed through other classical closed questions. After the screen for the wall of pictures, for example, respondents were asked place themselves on five visual differential semantic scales representing their ideas of drinking—one of them was “intimate” versus “others.” In Figure 7, we can see that there is an excellent correspondence—chi-square is significant with $p = 0,015$ —between the categories of selected pictures and the position on the differential semantic scale “intimate” versus “others.” Respon-

dents positioned on the “others” pole tend to select 2 or 3 group pictures. Interviewees placed on the other pole (“intimate”) tend to choose 2 or 3 pictures in which the consumer is represented alone (See Figure 7).

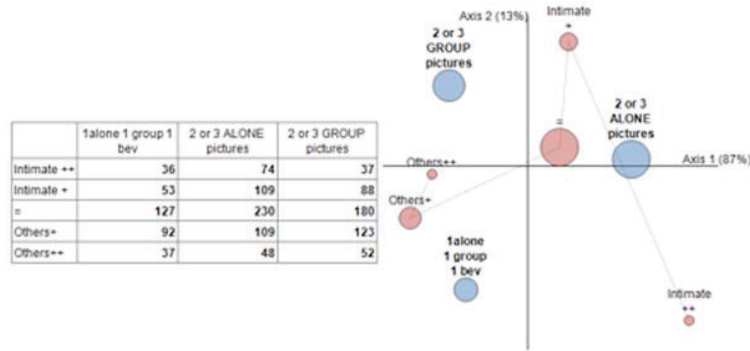
To conclude this section, we can see that it is possible and even recommended to test and assess the validity of the wall of pictures, so that the researchers can rely on the variables extracted from that protocol and can use them—confidently—as relevant measures of consumption representations and attitudes for future analyses.

Results for Illustrating Potentialities

In the next session, we introduce some promising results, obtained from descriptive and multivariate statistical analyses. Picture selections, verbatim and quantitative items are equally considered and elaborated as relevant measures of the respondents’ representations and opinions towards beverages consumption. These results can be very useful

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Figure 7. Correspondences between selected pictures and position on a differential semantic scale



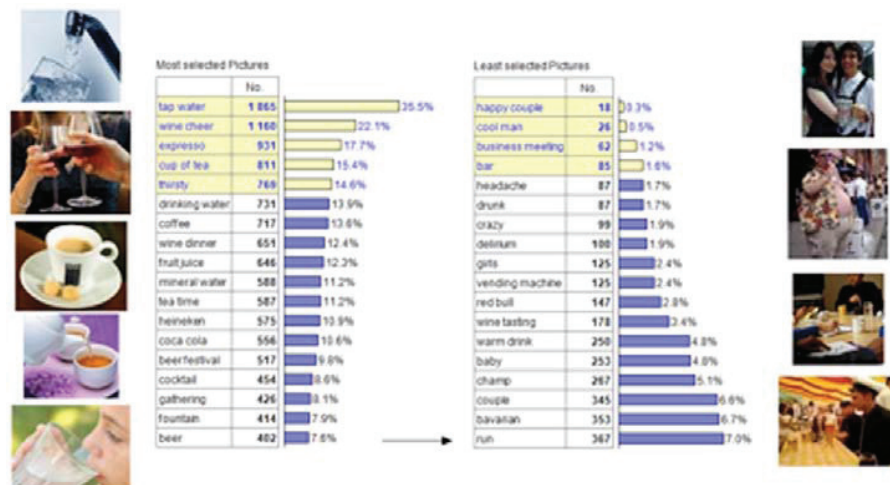
for addressing the network research questions aimed at understanding the similarities and differences amongst European consumers’ cultural representations of beverages consumption. The European Coberen final survey was mainly conducted through a common on-line questionnaire from January to March 2011, in 30 countries. A total number of approximately 12,600 responses were finally obtained when we decided to close the survey. The following results are presented on the basis of our “calibrated” sample, composed of sub-national samples, possessing exactly the same structure. Let us recall that the calibrated sample was made of the same number of respondents per

country (around 180), and the composition of the national samples is made identical as far as gender and age groups are concerned (See Figure 8).

Picture Choices: Descriptive Data

The most frequently chosen pictures refer to the more widespread representations of drinking and beverage consumption within the whole European continent. It is really surprising to see that the most chosen picture (by more than 1/3 of the respondents) is the *pouring tap water*. Drinking seems to be related to water first—and more specifically to tap water: a free resource, not a marketed

Figure 8. Most/least selected pictures



product. The “wine cheer” picture is placed in second position, chosen by more than 22% of the respondents. Probably the idea of intimacy and affection (See Figure 6) were appealing to the respondents. Then, as the third and fourth most selected images, were pictures of the “espresso” coffee and the “famous” *cup of tea*, which may represent stimulating or relaxing moments (or even routines) of the day. Pictures of the young and smiling couple showing a mug, of the fat man in the street, of the business meeting, or of the young sailor drinking beer alone at the bar, were generally not chosen; probably because of their bad fit with any attractive beverage consumption motive and situation.

In order to discern a more global view of the choices made by our European consumers, we

grouped the 36 images into six main “consumption situations” types, considering, for example, the number and the quality of people involved.

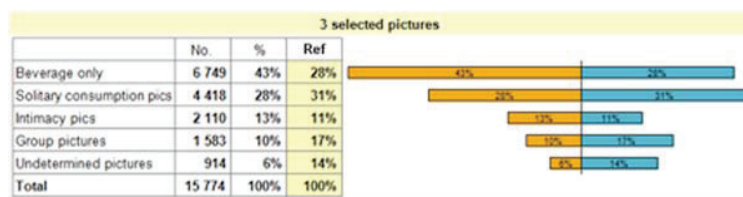
These semantic categories were identified and validated (by an internal group of Coberen professors) thanks to another interesting functionality of the *Sphinxonline* platform. Via an Internet questionnaire (See Figure 9), it was possible to ask all the Coberen professors to group the 36 pictures directly on-line, creating from two to ten categories and also to name them. They were also requested to name their classification. The most frequent classifications were created according to the drinking “motives” and to the “consumption situations” (alone, in a group, etc.)

Figure 10 shows that pictures representing “beverages only”—without any people—were

Figure 9. The classification on-line module



Figure 10. Pictures situations categories descriptive analysis



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chosen much more often (43% of the selections) than expected (28% of the possibilities), while images symbolising group consumption were somehow neglected—only 10% of the choices versus 17% of the proposals. It is surprising to see that beverage consumption is in fact not as social or relational as first imagined?

Textual Data Analysis

One of the major interests of the *wall of pictures* protocol is the opportunity for producing textual expressions. Exploiting the recoded textual variables led us to some very interesting perspectives. Taking into consideration only the coded subthemes resulting from our content analysis, we are able to picture the correspondences between the various justifications. The map below is the outcome of a multiple correspondence analysis performed on nine subtheme variables, namely *motives, places, people, time, circumstances, frequency, marketing references, emotions and senses* (only sub themes quoted more than 30 times are displayed) (See Figure 11).

Some clear differences are shown between:

- Having fun and partying on the west of the map, and drinking for rational reasons such as refreshment or health on the eastern side.
- Social circumstances on the west and individual objectives on the east.
- Positive emotions like love or tenderness on the north and negative feelings like sadness, addiction, getting drunk on the south.

Matching Quantitative Measures with Textual or Pictorial Variables

For triangulation purposes, it is particularly relevant to match our three types of measurements obtained from the wall of pictures protocol: chosen pictures, textual explanations and numerical data. This procedure would allow the researchers to “cross-validate” the interpretation they would make of the observed results and often to refine them. This principle is very helpful for avoiding

Figure 11. Correspondences between the justifications' subthemes



misinterpretations, but also for supporting the conclusions of a study. To illustrate the concept, we matched three variables:

- The types of the three selected pictures that respondents chose divided the 36 pictures in three basic categories (according to the number of person(s) represented on the picture): images with beverage(s) only, images with one person only, or images representing a couple or a group.
- The recorded drinking motives they have quoted in their textual justifications, expressed after the choices were made.
- The clusters in which our respondents were inserted, as a result of a cluster analysis that was processed on seven numerical consumption variables in the survey. This analysis was conducted on the variables measuring the respondents' weekly consumption volumes for *wine* (number of glasses of 12 cl or 125 ml), *beer* (glasses of 25 cl or 1/2 pints), *spirits* (number of glasses of 12 cl or 125 ml), *water* (bottles of 1 liter), *soft drinks* (glasses of 25 cl or 250 ml), *coffee*, and *tea* (number of cups).

Four groups were identified through a K-means procedure (See Figure 12):

- **The “Reds”:** They are the “heaviest” drinkers of alcoholic beverages, they tend

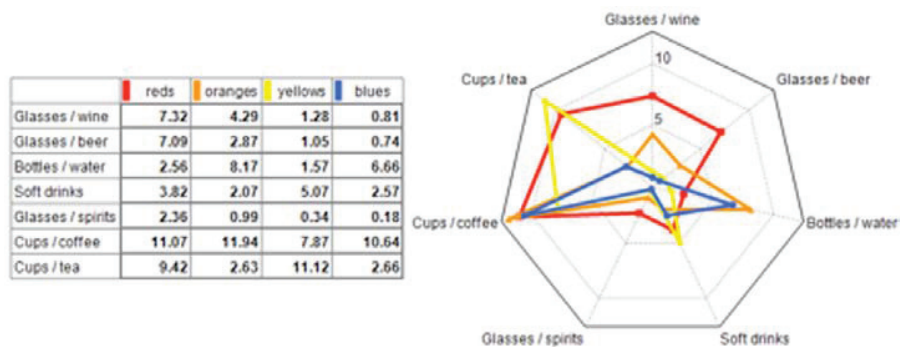
also to drink a lot of coffee, tea and soft drinks. They are low on their water consumption level.

- **The “Oranges”:** They are ranked second on alcohol consumption, but are quite far from the reds, they “compensate” with a high consumption of water.
- **The “Yellows”:** They are strong tea and soft drinks drinkers, low alcohol consumers.
- **The “Blues”:** They are the lowest for alcohol intake and the highest for water consumption (See Figure 13).

From the map above, we can see that there is a very good correspondence between the cluster interpretation and the types of pictures they have selected on the one hand, and the themes they have quoted on the other hand. For instance, on the eastern part of the map, the “red” (and also the “orange”) consumers have chosen pictures of groups much more often than the average. The reds have referred to the “bar/pub,” to the “night,” to “celebration,” and “socialisation” in their justifications. The oranges have quoted the “party.” In the western part, the blues have tended to choose pictures representing a lonely consumer and they have specifically mentioned some themes like “energy,” “sport/effort,” the “break,” or “quench thirst”.

We think that our analysis is a very good example of the types of “multi-angle” results that

Figure 12. Values of the four groups on beverages consumption volumes



tions, and closed questions (sometimes numerical), can reduce misinterpretation and support the reliability of conclusions. The interactive and multimedia collection protocol introduces involvement, immersion, and a sense of pleasure in going through the survey questions. It is supposed to reduce the dropout rate and convey a positive image of the issuing institution (Ganassali, 2008).

But this cannot be concretised without some tailored tools, based on some specific information and communication technologies—mobilised at different stages of the study: preparation (pre-tests), dissemination, monitoring and analysis (coding). The necessity and the relevance of mixing qualitative and quantitative approaches is not new in the social science academies, but practical applications and pre-defined protocols are not so numerous and not so popular, probably because the bridge between the two banks has not been built or completed yet (Bolden & Moscarola, 2000). We believe that the divide is to be partly bridged thanks to the advent of ICTs in research methodologies. The interactive and multimedia characteristics of the Web tools allow researchers to implement very interesting protocols that are qualitative in nature. Their deployment and dissemination through the Internet—via access panels, for example—is offering great opportunities, to collect large samples, representative (if necessary), and for generating data (we prefer the term “responses”) of very high quality (Ganassali, 2008). The Coberen wall of pictures protocol was implemented successfully in 30 countries, with a total number of approximately 12,600 respondents, spending a median input time of 19 minutes, thanks to the following technological devices:

- A multimedia Internet form, with interactive features (see Bouzidi, 2011 for the relevance of interaction in the Web surveys).
- An online translation module, deployed in 23 different languages, and able to centralise all the information in English.
- An emailing dissemination component into which hundreds of thousands of contacts were uploaded.
- An Internet survey server hosting all the responses from the 30 European countries involved in the programme.
- A campaign monitoring module, for following the number of responses, the undeliverable messages, the number of dropouts, etc., and being able to react quickly and ensure a good campaign advancement.
- An Internet categorising form (internal use), for grouping pictures into clusters.
- An on-line coding platform, so that every Coberen partner could access a sample of their national textual responses (choices justifications) and code them according to our common code-book.

Without all these elements, the Coberen wall of pictures experience could not have been either achieved or even designed, and our good research intentions would not have led to those remarkable results.

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