

**I Spy With My Little Eye:
a comparison of manual versus computer-
aided
analysis of data gathered by projective
techniques**

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Paper originally produced December 2010.

INTRODUCTION

Commercial qualitative market researchers are faced with the challenge of how to capture the essence of their subjects' viewpoints, with all the hidden nuances and subtleties presented by language, actions and behaviour and how to best distil and present this to answer their clients' briefs. The challenge is further intensified when we consider that different market researchers may view the same data completely diversely, given their own subjective experiences and level of expertise and that these viewpoints may even change as a project progresses, as further knowledge is added. There may not therefore be one perfect answer for the client. Nevertheless, the research findings may still be highly influential in directing future marketing strategy and activity within an organisation. Far from being a daunting prospect however, this flexible, evolving approach seems quite fitting to a discipline which is open to the possibility of multiple realities and which adopts an interpretivist viewpoint, compared to the positivist viewpoint often associated with its counterpart, quantitative research.

This study arose from one qualitative market researcher's personal desire to challenge her own working methodologies in analysing and interpreting data for commercial clients. A key question was how to gauge the influence of one's own subjective view of the world on these inductive processes, to understand if what one person 'sees' in the data can be considered a worthy interpretation, or if there are other potential methodologies that can be employed to sharpen the same researcher's 'vision', to bring it further into focus and to potentially add value for the client.

While there is increasing use of projective techniques in qualitative research (Boddy, 2005; Miller, 1991), there remains a lack of published papers that explore issues surrounding the analysis of data gathered using projective techniques (Boddy, 2005; Valentine, 1996). This paper will therefore

compare the results of projective techniques of qualitative data collection analysed manually with computer-aided analysis of the same data.

QUALITATIVE RESEARCH PROCESSES

The qualitative research process can be separated into key stages, which the commercial researcher may often undertake without being aware of them as distinct processes. After the initial stage of data assembly or collection of information, there is a shift to data reduction, which involves organisation and the provision of structure and which is likely to include some form of data coding, or breaking the data down into meaningful and referenced sections. This is then followed by data display, to enable conclusions to be drawn, which may be further supported by data verification, where alternative explanations are sought through additional data or theories, the latter often being a continuous process throughout the research project (Malhotra and Birks, 2007). The role of the qualitative researcher would therefore appear to be quite diverse and multi-tasking.

Of particular interest to this study, Shankar and Goulding (2001) point out how the interpretivists' openness to accept the possibility of multiple realities must itself result in a subjective interpretation of behaviour where the researcher forms part of the research.

Shankar and Goulding (2001, p.2) also suggest that the interpretive researcher presents only one interpretation at that point, not the only interpretation and that "the choice of interpretive technique will guide the entire research process from research design...through to data collection, analysis and finally interpretation." This is an area of direct relevance to this study, which involves exploring the influence of particular methods on data collection, analysis and interpretation and the degree to which choice of

method may guide and influence the research process or indeed the researcher's viewpoint in that instance.

It would seem that to some degree, the analysis of qualitative data can appear to be shrouded in mystery, often referred to as a "dark art" (Maclaran and Catterall, 2002), which has led to concerns over its validity and the robustness of the findings. Nevertheless, "validity" and "reliability" of data are key concerns amongst qualitative researchers (Kirk and Miller, 1986; Silverman, 1998;). The latter authors define reliability as "the extent to which a measurement procedure yields the same answer however and whenever it is carried out" and they define validity as the "extent to which it gives the correct answer" (Kirk and Miller, 1986, p.19).

Boddy (2005, p.242) provides a very useful critique of the value of projective techniques, distinguishing "enabling techniques" where "the research participants are talking as themselves", from projective techniques where "the research participants are talking as someone else and the researcher makes the interpretative assumption that they are talking as themselves". This is therefore particularly useful "when research participants have difficulty expressing opinions or feelings and researchers need some way of accessing these from the participants' minds" (Boddy, 2005, p.243). While projective techniques have been criticised for lack of reliability and validity (Yoell, 1974; Anderson, 1978), the use of such techniques to gather deep understanding and insights can actually be seen to strengthen the validity of their use, as participants can respond in a way more comfortable to them, rather than, for example, responding to a method such as direct questioning which may sit more comfortably with the researcher (Levy, 1985; Boddy, 2005).

Manual compared with computer aided analysis

To date, it can be said that many analytical tasks have been carried out manually by commercial, qualitative market researchers, involving reference to audio recordings, visual recordings and paper. The use of specialist computer software within qualitative research (CAQDAS) appears to have been more widespread in the academic field, particularly social sciences (Nancarrow *et al.*, 1996; Lee and Esterhuizen, 2000; Dolan and Ayland, 2001; Richards, 2002; Wickhams and Woods, 2005), rather than in the sphere of commercial market research. However, the latter is of particular interest to this study, as the lead author of this article is a market research practitioner. It is also recognised that the introduction of computer-based analysis into qualitative research since the 1980s may be seen as an attempt to introduce an element of scientific objectivity into what is often regarded as purely subjective interpretation (Catterall and Maclaran, 1998; Lee and Esterhuizen, 2000).

Researcher experiences of working with technology and CAQDAS

Many of the issues in the literature refer to how the researcher interacts with the computer to analyse data, from a practical point of view (Connell *et al.*, 2001; Wickham and Woods, 2005). Certain bodies of literature highlight that the personal experience of the researcher should not be understated. Maclaran and Catterall (2002) reiterate the transition from novice to expert whereby the greater the competence, the less the reliance on explicit rules which can be seen as being similar to the intuitive interpretation of more experienced qualitative researchers.

Gibbs *et al.* (2002) point out that some of the earliest applications of technology to qualitative research might be seen to be the use of tape recorders to record interviews in field studies. As an extension of this, they add, technology continues to develop by providing new ways of recording

and collecting data and of undertaking analysis, which includes CAQDAS. Gilbert (2002, pp 216-217) refers to a "tactile-digital" divide which involves adapting to working on screen instead of paper and which, she highlights, tends to involve "a temporary period of discomfort". Gilbert then describes how the next stage in adapting to software may be the potential danger of falling into "a coding trap" where endless and often needless codes are assigned to the data. Similar aspects of "data fragmentation" and "decontextualisation" have also been identified as potential problems of CAQDAS software (Welsh, 2002; Ereaut, 2003). Gilbert (2002, p.220) further highlights that the process of switching from manual to computer-based analysis involves a "metacognitive shift", which explores monitoring how the researcher works with a particular "tool" and to what degree the tool influences their working practices. At the same time, she reveals a need to be aware of the potential to make mistakes with the software and the need to improve skills in order to use the tool more effectively. Researchers experienced in qualitative research, she continues, may be best placed to guide use of the software tool than novice researchers, since they know what they wish to achieve and are less likely to be led by the software. Expertise with cognitive tools, she continues, is achieved through a combination of resource recognition, ability to use those resources (skill) and goal identification, all of which requires reflectivity (Gilbert 2002, p.225). These issues are at the heart of this study.

Two articles have considered some issues similar to those explored in this paper. Dolan and Ayland's (2001) article involved experienced market researchers working on a commercial pharmaceutical project. The study compared three different qualitative analysis approaches using the same dataset, involving a cut and paste method where transcripts or tapes are cut down into segments and pasted to particular codes or themes; an holistic and interpretive method, with no pre-set format, where the transcripts are gradually annotated without cutting and pasting; and a CAQDAS methodology. Although the authors partly wished to assess the value of

using CAQDAS for analysis, their approach also focused on the impact of the individual analyst on the process and the findings. They judged it necessary to utilise different, but experienced, researchers for each of the three separate exercises and even two separate researchers for the holistic methodology, for additional comparison, as they wished to ensure that the outputs of one holistic method did not influence the other.

Rettie *et al.* (2008) evaluated the use of CAQDAS, but as a supplement, rather than alternative, to paper-coding in the market research industry. In analysing the usage of CAQDAS, Rettie *et al.* (2008) approached full service agencies rather than more specialist qualitative researchers. As with Dolan and Ayland (2001), separate analysts were used; however, the authors did not seek to make a direct comparison between the experience of the two methods, believing that CAQDAS should be examined in terms of its additional contribution to the research, not instead of an existing manual method.

The results of Dolan and Ayland's (2001) analysis revealed that the outputs were broadly similar for each of their methodologies, with the exception that the holistic analysis had provided insights into respondent types and the importance of beliefs, which had been missed in the cut and paste and CAQDAS analysis, where texts were effectively cut up.

Rettie *et al.* (2008) also found synergy of outputs in most areas between their two methods of analysis, manual and computer based. They argue that the software should be used alongside other traditional methods and that it keeps a transparent file for potential future use that might otherwise be lost in verbal presentations, concluding that: "the software assists the management and retrieval of data, but does not replace the intuitive, interpretive aspects of analysis" (Rettie *et al.*, 2008, p.85).

METHOD

Undertaking manual analysis and interpretation away from the dynamics of a busy office environment, although admittedly with lots of researcher notes and telephone contact, the lead author would traditionally make decisions about what represents an appropriate picture of the data and what should be ignored in the final report. Rarely is the thought process actually documented to understand which routes had firstly been examined and then discarded before deciding upon the best interpretation(s) to present to a client.

For this study it was deemed essential that the same researcher collected all the data and also undertook both the manual and the computer-based analysis. This was to ensure that the same "eye" would use both sets of tools, to highlight any differences in the processes and findings, as well as actually subjectively experiencing an alternative working methodology. While the objectivity of this approach may be questionable, using a separate researcher to undertake different methods was not deemed to enable a direct comparison of the process nor the experience as seen reflectively through the eyes of the same researcher. Additionally, it was judged that the results may even be adversely affected by using a different researcher.

And so the exploration began and the researcher prepared, not without some trepidation, to learn more about her own analytical and interpretive skills and just how "insightful" her vision really is in the face of contemporary research tools.

Data collection

To eradicate any bias from previous research projects, it was judged necessary to generate some original data which simulated, as much as possible, a commercial market research project. Following some initial desk research to understand key shopper segments for clothing, four focus groups

were set up on the subject of "Attitudes to Shopping for Clothing And Retail Brand Experiences", consisting of one mini-group, each of males and females (age 40+) and one mini-group, each of boys and girls (pre-teens, age 10 - 11) with 3 participants in each group. These age groups were felt to offer the most potential for comparison, since they were outside the core fashion conscious youth market and the researcher also had access to respondents. Using creative qualitative methods offers a more child centric research approach, providing when projective techniques are used that stimuli are relevant to children's lives, and adult pre-determined categories of response are minimised to facilitate active participation of the children (Bannister and Booth, 2005). This issue was paid close attention when choosing the projective cues for the research, hence such methods can "prompt insightful data without being intrusive" (Bannister and Booth, 2005, p.171). Moreover, projective techniques have been widely used in uncovering participants' attitudes and feelings towards consumer brands (Hussey and Duncombe, 1999).

The groups were of 1½ hours duration each and were conducted at the researcher's office between late December 2007 and early February 2008. All groups were audiotaped.

To ensure that the analysis and interpretation of the data would be stretched to the full, a variety of qualitative research techniques were included in the focus groups, comprising creative and projective techniques such as thought bubbles (featuring pictures of each peer group shopping either alone or with friends and family; collage work (depicting ideal shopping experiences); sentence completion ("shopping is as enjoyable as...") and brand mapping and positioning exercises, (where up to 12 core retail brands were plotted against a series of positive and negative axes, the latter conducted on flipcharts). This therefore provided a variety of audio, textual and visual data for analysis. The 12 brands featured a cross-section of retail outlets that would be likely to be known to and frequented by boys, girls, men and

women in the local area and which included a mix of department stores, specialist clothing and sports shops and supermarkets - Debenhams, BHS, Marks & Spencer, Next, Principles (since closed), Matalan, Primark, TK Maxx, GAP, JJB Sports, ASDA and Tesco.

Data Analysis

A software package was chosen for the comparative analysis – QSR's XSight program. This was selected since it has apparently been developed specifically for commercial market researchers faced with tight deadlines and potentially lower volumes of data than large scale and longer term academic research projects. It therefore appeared to provide a simpler software package with a shorter learning curve, whilst still allowing sufficient functionality to query data and to enable the researcher to experience using CAQDAS for the first time. A demo disc was obtained with a 3 month license. Some of the alternative packages did look technically daunting and gave the impression of a significant time investment to get up and running, which may therefore have influenced the decision to adopt XSight. This could of course also be an influential factor for other commercial market researchers wishing to trial CAQDAS for the first time.

Before using the software program for analysis of the data, the researcher recognised that there would be a necessary learning curve which may bias any comparisons, given a lack of technical expertise in using the package. Therefore, she firstly undertook the tutorials to familiarise herself with the software and excluded this element from the overall time comparison in the evaluation of findings. The researcher is also aware that this project represents first time live use of XSight and that additional use could potentially result in greater competency and a more efficient way of working, which may affect time and process comparisons. However, it was judged

critical to document the novelty of using the software and any perceived initial differences in working methods, especially since these may become less obvious and more 'mechanical' (Malhotra and Birks, 2007) upon additional use of the software.

Since the research project involves a personal, reflective documentation, all the groups were moderated by the author and a reflective log was kept of the experiences of analysing, both manually and on the computer. The following methods were used:

Manual analysis and interpretation

The researcher's manual analysis involved playing back all tapes, referring to flipchart notes and visual stimuli created during the groups and making notes progressively for each group. The collages and flipcharts were all stuck on the office wall for a few days. (This process would normally be employed by the researcher). The researcher then read several times through all the notes for each group and started to formulate some overall ideas and key insights, whilst highlighting verbatim quotations with a highlighter pen. Any points of synergy across groups were also noted in a red pen. A typed summary report of findings was then prepared, which featured bullet point notes of key insights, as well as summary tables of brand perceptions, comparing participants' impressions of particular retail brands and with polar positions of positive and negative brand attributes highlighted in different colours for ease of comparison.

The key headings used for the manual analysis, consistent across groups, were as follows. These headings were not formulated clearly until after the analysis had been undertaken and the structure was allowed to emerge naturally:

- Participant background
- Shopping habits

- Attitudes to shopping
- Experience of last purchase
- Sentence completion and thought bubbles - where participants completed speech bubbles of shoppers in the same age group, either shown alone or with a peer or parent (a selection of data from the girls' responses is shown below: Fig. 1). (Pictures have not been shown in full due to copyright).
- What shopping means to them personally
- Attitudes to retail brands - "happy", "neutral" and "sad" (they chose a particular face spontaneously) and reasons why.
- Brand positioning exercise against the following axes:
 - o Fun/cool versus serious/boring;
 - o Good service versus bad service;
 - o Fashionable clothes versus boring clothes;
 - o Expensive versus good value; and
 - o Good quality versus lower quality.
- Ideal shopping experience - collage work - where participants were allowed to choose their own selection of photos and text from a cross-section of magazines (one of the men's collages is shown below in Fig.2 and one of the girl's collages in Fig 3.)

Figure 1. Thought Bubbles: Girls' Group (3 respondents)

Descriptions of participants' selected images and their respective comments. Please note that images have been omitted given copyright

Girl shopping on own, carrying bags

Clothes! Bags and bags of them. Can't wait to go to the next shop. Can't wait to put them on.

I wonder what my mum's getting.

I've got lots of clothes today.

Two girls discussing clothes, looking serious

Which one shall I choose! ?? Too many.

Do you like this?.. Do I need another bag?

Wow, these are nice!

Three girls shopping, laughing

This would look strange on me!

This looks ridiculous! Go on try it on!

I'd look funny in this

Girl shopping with mum

Finally, I can open my favourite things.

Did you like that shop then?

Don't you just love what I bought?.

Figure 3: Collage Work: Ideal Shopping Experience – Girl’s Group (1 respondent)

Key respondent thoughts: “Having fun, smiling”; “Having a great time”; “spending”; Going in my favourite shops”; “loads of things to choose from. Everything”; “Buying loads of things”.



The findings of this first manual analysis exercise were then set aside for a month, after which time the researcher commenced the computer-based analysis.

Computer based analysis and interpretation

All the tapes were sent to an audio-typist to be transcribed (with suitable confidentiality clauses, since this involved working with children's data). This was itself a novel approach for the researcher, who would normally only listen to the tapes herself and make notes. In the meantime, the researcher worked her way through the XSight tutorial to gain an overview of the functionality of the software and how it might be applied to analysis of focus groups. This took around 10 hours in total, although the researcher found it necessary to refer back frequently to the tutorials at various points during the actual analysis to refresh her memory. A reflective journal of the researcher's experience of working with the software for the first time was made. This included the experience of the software tutorials and the actual analysis as well as the experience of working on screen, compared to on paper.

The researcher used the format of the original discussion guide to set up the analysis framework headings within XSight in advance, before loading all transcribed documents into the system. Working through each group in text format systematically on screen, the researcher copied the relevant points to these headings as they appeared on the screen and as they occurred to the researcher. Additional headings were added throughout the analysis. Sections of text were marked as either respondent "verbatim" or "articulations" (with the researcher paraphrasing the respondents' words) or project "interpretations" (the researcher's own ideas), as the analysis progressed. The software package automatically highlighted the source of a verbatim, articulation or interpretation by group type and also provided a link back to the original text, providing the flexibility to compare data between

groups and between different categories or headings. The brand mapping tool was used to record the number of mentions of each brand against either a positive or negative axis only i.e. fun/cool versus serious/boring. (There was no apparent facility to enter those in the mid ground). The collages and thought bubbles were also individually loaded into the system files and reference was made to these either on screen or on paper, with comments being added where appropriate. Once this process had been followed for all four groups, the researcher then went back into the analysis framework to raise "queries" against the various headings, for example "Attitudes to Shopping – positives and negatives". This drew out key points for each area which could be copied into a word document and formatted to provide an initial draft report. These queries therefore formed the basis of the initial XSight analysis.

The key headings used for the XSight analysis framework were:

Shopping Habits

- Frequency
- Accompanied/alone
- Average Spend

Attitudes To Shopping

- Positives
- Negatives

Thought Bubbles – introspection

- Positives
- Negatives

Most Recent Purchase

- Environment
- Mood
- Outcome

Ideal Shopping Experience

- Environment
- Mood
- Outcome

Retail Brand Perceptions

- 12 core brands throughout all groups
- Comparative categories as in the manual analysis e.g. fun/cool vs boring

Finally the researcher then read through all the queries and made notes on key insights, which would form the basis of a client topline report.

Comparison of manual and computer based analysis and evaluative criteria

The researcher compared the findings of both the manual and the computer-based analysis. Since the researcher was already, by this stage, highly familiar with the research data, the key area of investigation focused upon any differences in the findings. In other words, did use of a software package uncover aspects that had not even occurred to the researcher using the traditional manual analysis?

An evaluative framework for comparison was established which included the researcher's reflective experience of the learning curve and process involved in the computer based analysis; and the value added aspects of the findings, such as the thoroughness of identification of key themes in line with the discussion guide; the ease of highlighting relevant/supporting verbatims for key themes and highlighting respondent types; the evaluation of visual stimuli; the overall manageability of data; the mechanical analysis time compared to quality thinking time; and finally cost.

ANALYSIS AND DISCUSSION

The cost difference (less than £100) between the two types of analysis was, in this instance, negligible and would not strongly argue in favour of either method of analysis. There were however some key differences in process, researcher experience and outputs.

Table 1 shows the positive and negative aspects of the analysis performed in the opinion of the researcher, based upon the evaluative framework outlined earlier in this article (Dolan and Ayland (2001); Rettie *et al*, 2008).

Table 1: Comparing Manual and Computer Based Analysis

Comparative Criteria For Alternative Analysis Methodologies	Manual Analysis by Moderator	Computer Based Analysis - XSight
<i>Initial Report of findings</i>	<p><i>Manual analysis undertaken first – topline summary of findings</i></p> <p>+ Gained a good overview by reading through all texts</p> <p>+ Easy to flip backwards and forwards to see connections between groups</p> <p>+ Still able to highlight</p>	<p><i>Computer analysis undertaken second – draft notes, emerging differences and value added?</i></p> <p>+ Easy to think out analysis framework in advance to organise data e.g. where to place quotes from full transcriptions</p> <p>+ Query facility excellent for easily</p>

	<p>key quotes by listening to tapes (without transcriptions)</p> <p>+ Worked easily with collages and bubble drawings on wall.</p> <p>- Lots of paperwork (46 pages)</p> <p>- Had to undertake several read throughs to find similar quotes across groups.</p>	<p>finding and extracting quotes across groups to back up key points.</p> <p>+ Visual presentation of report relatively attractive. (e.g. headings style and layout).</p> <p>- Tended to want to place quotes in particular frameworks to ensure balanced view, rather than taking a step back to judge if necessary.</p> <p>- Still tended to print off to organise report rather than on-screen alone.</p> <p>- Still needed to spend time organising all selected queries to make sense of report (experience may facilitate this process).</p>
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<p><i>Researcher's reflective experience of the learning curve and process</i></p>	<p><i>Relationship with the data from audio tapes</i></p> <ul style="list-style-type: none"> + Felt very "familiar" with the data as a whole. + Tended to pick up laughter, tone of voice, timidity and to reinforce the way that something was said. + Able to write down interpretations from what I heard. 	<p><i>Relationship with the data from transcriptions/on-screen – value added?</i></p> <ul style="list-style-type: none"> + Very user friendly software + Good integrated filing system (56 pages of transcripts). + Tended to concentrate more on the words and style of language used to describe things rather than tone. + Able to easily see comparisons in terms of language used. -Did not obtain a sense of overview immediately; working on isolated sections. - Needed to revert to offline for visual items.
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<p><i>Thoroughness of identification of key themes in line with discussion guide</i></p>	<p><i>Notes/report</i></p> <ul style="list-style-type: none"> + Key themes highlighted + Potentially some different insights identified as an overview across groups. 	<p><i>Queries of data</i></p> <ul style="list-style-type: none"> + Most of same key themes highlighted - Potentially missed some of overview insights that were gleaned from manual analysis (not taking a step back) - Potentially too much data emerged initially, relative to insights/interpretations.
<p><i>Ease of highlighting relevant / supporting verbatims for key themes</i></p>	<p><i>Notes/report</i></p> <ul style="list-style-type: none"> + Good - Required frequent "cut and paste" activity in word document to organise. 	<p><i>Computer based data</i></p> <ul style="list-style-type: none"> ++ Excellent for highlighting verbatims both within and across groups - Researcher tended to overuse the tool and break it down into too

		much initial detail.
<i>Ease of identifying respondent types</i>	<i>Notes/report</i> + Good	<i>By querying data</i> ++ Excellent (especially if had large volumes of data)
<i>Evaluation of visual stimuli such as collage work / projective techniques</i>	<i>Working with stimuli manually</i> + Good	<i>Working with stimuli on screen</i> - Found it difficult to manipulate scanned pictures from collages and thought bubbles on screen and tended to refer to originals off-screen.
<i>Overall manageability of data</i>	<i>Reference to pages/tapes</i> + Good. Manageable.	<i>Reference to computer screen</i> + Good; could close windows easily and pull up when needed. Felt manageable and "neat". All files together.
<i>Overall Mechanical analysis time</i>	<i>Replay and note taking of all audio-visual tapes and referral to interviewer notes and time sheets.</i> 16 hours researcher time from listening to	<i>Professional transcription time, data entry and analysis.</i> 27 hours (11 hours typist time to

	<p>tapes to topline bullet point format, which would serve as a client interim report.</p>	<p>transcribe; 16 hours researcher time (14 hours going through each transcript on screen to researcher's first print out as illustrated above; then a further 2 hours needed to tidy up this draft to achieve a client topline, interim report).</p> <p><i>(This time also excludes XSight tutorial time for learning curve, to ensure fair comparison)</i></p>
<p><i>Overall quality thinking/ analysis time</i></p>	<p><i>Identifying emerging patterns</i></p> <p>++ Excellent + A sense of knowing the data</p>	<p><i>Identifying emerging patterns</i></p> <p>+ Good</p> <p>- Tendency to spend time on mechanical analysis, via query tool, rather than taking a step back - Less sense of knowing the data</p>

<i>Overall Cost</i>	<i>Management time</i>	<i>Management time and cost of transcription (excluding software license)</i>
	16 hours researcher time to client topline report	16 hours researcher time to client topline report
		£1,120 + Vat
		Plus transcription cost £92.50
	Total £1,120 + Vat	Total £1,212.50 + Vat

The process of analysis began with an attempt to provide organisation and structure to the data (Malhotra and Birks, 2007). In the case of the manual exercise, the researcher listened to each tape, which had followed the format of the discussion guide and the structure therefore appeared to evolve naturally without any direct conscious effort on the part of the researcher, at this stage. Final headings were not applied until data from all groups had been considered and grouped accordingly. The manual analysis resulted in 46 pages of typed notes drawn from the tapes, flipcharts, thought bubbles and collages, which required several read-throughs to understand the broader trends and to highlight relevant verbatim quotations, as well as providing a pile of paperwork on the researcher's desk. This was however summarised into a 5 page client topline document.

The computer-based analysis, on the other hand, captured all data on-screen from the transcripts, equivalent to 56 typed pages. The query tool within

XSight was then used to generate 19 pages of key comments, interpretations and quotations in line with the headings in the analysis framework. However, given this more mechanical approach to data analysis (Malhotra and Birks, 2007), the researcher found it difficult to gain an overview of trends from the ad hoc selection of notes. Additionally, this first draft also required a further two hours to print off, read through and then to re-organise the data on-screen into a suitable format for client presentation. In the case of the computer-based analysis, the headings were set up in advance, so that there was already a visual structure provided on-screen and the researcher was therefore much more conscious of this process. This could of course have been influenced by the fact that it was a novel experience; nevertheless, it felt like an overt operation to manipulate the data (Spiggle, 1994).

It is interesting to note that whilst most of these insights within the manually prepared topline report were also flagged up by using the XSight software, there are a few points which emerged from the manually interpretive method of analysis which did not jump out from the computer based analysis.

The method used for analysing perceptions of brands in the manual analysis facilitated easy comparison between groups for each of the core retail brands, since it was presented with perceived positive attributes shown in yellow and perceived negative attributes in red. This also enabled the relative strength of feeling to be gauged, since brands could be placed in the middle between the two extremes. The opposite poles could also be easily visually compared at one glance.

The approach used in the computer-based analysis for brand positioning differed significantly from that adopted by the researcher in the manual analysis. The software tended to list the number of brands mentioned in each category, without reflecting if any brands were placed in the mid-ground; consequently, it proved difficult for the researcher to obtain an overview comparison between the different categories at one glance. An element of

this may however have been due to the researcher's lack of experience in using this tool within the XSight package, but it was also partly due to the fact that the researcher felt less able to work from number counts than with the colour chart, which reflects her preferred working style.

The use of XSight was more difficult for the visual rather than textual data. When analysing and interpreting the collage work, visual images were scanned into XSight. However, the researcher found it extremely difficult and impractical to look at the collages in their entirety on screen and in the end had to refer to print outs and to the originals on the wall, as had been the case with the manual analysis, in order to complete the XSight analysis. However, it did prove useful to have a reference to all files neatly in one place within the software package. The researcher's own experience of outputs is therefore quite similar to that of Dolan and Ayland's (2001) where the manual analysis enabled the overview to emerge more readily compared to the computer based analysis (and their cut and paste analysis), where the researcher tended to look at isolated sections, initially at least.

Patterns, themes and ideas emerged intuitively from the manual exercise (Lindlof and Taylor, 2002), whereas decisions about where to place individual chunks of text had to be taken there and then during the read through of each transcript on screen, although there was great flexibility to manoeuvre text afterwards. By contrast, the process felt less defined and more random in the manual analysis, referring repeatedly to points in the tapes, re-reading notes and using highlighter and coloured pens to indicate areas of perceived importance; the cut and paste facility in word was however then used to re-position some of these thoughts in order to provide a degree of structure. The coding process within XSight, on the contrary, felt very linear, as the researcher systematically worked through each transcript. This method can again be contrasted with the more abstract, holistic and emergent approach of the manual analysis (Spiggle, 1994). This is not however a criticism, since working with XSight did feel very orderly and neat and gave the researcher

the impression of moving slowly in a purposeful direction, which made the process feel highly organised. This also affected the researcher's working method since everything at this stage was captured on screen and consequently the work desk was uncluttered, whereas normally it would be full of papers.

A further and unforeseen advantage of the computer-based methodology was noted in that the researcher found it easier to pick up on the XSight analysis at any point, even after a break of a few days, since a clear audit trail was provided. In the manual process however, the researcher had to go back to the beginning of the notes each time to remind herself of the point that she had reached previously in her own mind and to plan where to go next. This was a surprising finding and the researcher became aware that it had not even occurred to her previously that this could be a disadvantage of her current working methodology, since it may in fact lose precious time.

The overall presentation style of the output of the computer-aided analysis was also quite different to the manual analysis, being "raw" in nature. Since it is based upon querying the data under key themes or headings, it tends to reflect the *ad hoc* analytical and interpretive "decisions" that the researcher made as she read through the data on screen, rather than providing a holistic overview (Dolan and Ayland, 2001). Consequently, the points were somewhat disjointed and needed tidying up considerably prior to providing the client with a topline report that the researcher felt comfortable with. The manual bullet point format however, would prove much more acceptable for prompt client feedback. It is of course entirely feasible that the computer process could be improved with greater researcher experience of XSight, for example re-querying the data to select verbatim quotations by theme, across groups, rather than by each individual group, which is likely to have produced less "clutter".

Nevertheless, this example highlights a potential trap that the researcher fell into on first time use of XSight; that of using the query tool to its extreme to question every possible aspect of the data, simply because it provided the facility to do so. The researcher is reminded here of Gilbert's (2002) "coding trap", where queries were run against data which, initially at least, potentially overcomplicated matters and made interpretation more difficult; a case of not being able to see the wood for the trees.

It is also interesting to note how setting up the descriptions of the respondent types is down to the consistency (or inconsistency) of the researcher e.g. "Female over 40's" and "Over 40, Female - Adults". Again, this would no doubt be improved with experience of the XSight software and its outputs. However, it also demonstrates how researcher judgement can be affected by returning to data after a break. Similarly, different headings were used for the manual analysis compared to the computer-based analysis (e.g. "Pre-Teens, Under 12s" versus "Under 11, Female- Girls"), the latter being relatively significant in the description of age, since it could potentially have repercussions for how it is perceived by clients.

Encouragingly, the overall topic findings in both exercises proved to be quite similar, although the manual, holistic analysis revealed a few points that had not emerged from the XSight analysis. For example, the clear appeal of hobby or activity based shopping for males (i.e. motorbike and sports gear) and the influence of older children in the household on adults' perceptions of fashion.

The combination of projective techniques suggested some fundamental differences between the four respondent types (men/women/boys/girls). For example, the thought bubbles and word associations highlighted the males' (particularly the men's) greater lack of confidence in their own judgement in choosing clothes for themselves, as well as, for some, a sense of embarrassment at trying clothes on, with the comparison to shopping being

“as enjoyable as having your teeth pulled” and “a big chore”. This was in contrast to the generally more enjoyable, sociable activity of most of the women and girls, who chose largely positive verbal associations and imagery (“relaxing”; “a buzz”), although having a favourable self-image played an important role here and there were a couple of exceptions. Like the women, the boys and girls both enjoyed shopping with their friends, rather than parents, especially since shopping could be focused upon their own needs and their own choices. The men however could not imagine shopping with a male friend and some portrayed themselves as being out of their comfort zone whilst shopping, with imagery of their ideal experience reflecting the need for home comforts (e.g. Yorkshire puddings) and a relaxed, pub-like atmosphere. These insights were gathered primarily via manual analysis of the images, although the computer based analysis was used to verify the textual data.

Both manual and computer-based processes resulted in printed outputs and therefore a degree of “transparency” (Wickham and Woods, 2005). However, the researcher felt that the computer-based analysis provided greater transparency since the thought process of working through the transcripts was highly visible, with icons highlighting selected extracts and providing a link to the original text, even after querying. In the manual process however, the researcher simply noted down a thought as it occurred to her, with the reasons why that thought had occurred, at that point in time, being potentially lost forever. This made the researcher aware of the need to make more detailed notes about her actual thought processes when listening to tapes, potentially mapping out and laddering the thought, so that this would be available in the event of a client querying something months later.

CONCLUSION

The researcher found that the ability to use XSight as an integrated electronic filing system had the effect of making working practices seem neater, since it kept all documents together. XSight also proved highly user friendly, providing structure and facilitating the identification of useful verbatim quotations with links back to the individual respondent and group. However, the structure was set up in advance and may have guided the researcher's thinking to some degree. There was therefore a loss of overview through the tendency towards a more mechanical analysis (Malhotra and Birks, 2007). This reinforced the need for the researcher to employ cognitive processes to remain more in control (Lewins and Silver, 2006) and consequently the researcher now documents any analytical and interpretive processes in a project journal in order to allow greater transparency, in the style of Patterson's (2005) researcher diaries.

The researcher also experienced what Gilbert (2002, p.216) terms the "tactile-digital" divide. Gilbert's (2002, p.217) reference to a "period of temporary discomfort" was however minimal given the user-friendly nature of the XSight software and the fact that the researcher judges herself to be relatively computer literate. Nevertheless, the divide proved insurmountable in the case of the collages and these had to be pinned to the wall, since viewing them on screen proved impractical and actually seemed quite futile in the end. The only limitation to the use of CAQDAS for the researcher therefore would seem to be when any projective technique resulted in visual rather than textual data being collected. Analysing data gathered through the use of speech bubbles and sentence completion posed no problems, while visual collages designed to elicit the subjects' "ideal shopping experience" did prove difficult to analyse in this way.

Overall, the researcher emerged from this introspective journey feeling more comfortable with her own judgement and usual approach to analysis. Faced with tight commercial timescales and costs therefore, the manual analysis remains her first choice of methodology. Nevertheless, the researcher will consider use of CAQDAS for projects where there is time for a lengthier analysis, enabling data to be reviewed from different perspectives. This may be for multi—stage research or even multi-researcher projects, where building upon and sharing previous files may be of benefit (Ereaut, 2003; Rettie *et al.* 2008). Greater use of CAQDAS would also provide an opportunity to assess if the researcher’s increasing proficiency with the software may add further value.

Whilst this study undoubtedly resulted in some personal development on the part of one researcher, it is also felt that the findings may prove valuable to other independent qualitative market researchers internationally. Since the comparison of manual and computer-based analysis has been undertaken through the eyes of the same person, rather than separate researchers or on separate research data, it is felt that it may encourage others to question their own existing methods and even to undertake a similar, comparative test, a process that will enable them to challenge their own practices, whilst potentially building up an alternative, additional skill set.

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Further reading

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