

A very long engagement: Visualising research methodologies from data collection to reporting.

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Abstract

In the present article, we develop arguments to show that audio visual data encourages varying levels of engagement (from micro to macro levels) of varying actors in the research process. First, gathering of visual material allows participants to play a more active part in the self-collection of data about themselves. Secondly, the process of data analysis can also involve participants by encouraging them to share their insights and further develop them to a deeper level of analysis. Hence at the level of data collection and analysis, visual research methods foster participants engagement in the inquiry process. Engagement is present again at the third level of data reporting, with visual reporting fostering this time the potential for stakeholders engagement with visual reporting disseminated via the Internet or screened in the community.

Introduction

Early signs of human activity can be traced as far back as the drawings on cave walls to represent scenes of their artists everyday life. Humans have recorded information for generations to come in visual form originating from disparate cultural environments. Visual data collection methods have been used by scientists as far back as ancient astronomers up to contemporary scientists see for example (Greene & Alevizon, 1989; Harel, 1987; Lowe, Hoffman, DeLong, Patz, & Coleman, 1994; Pfaller, Messer, & Coffman, 1995; Rangayyan & Das, 1998). While visual methods have been widely used and accepted in the exact sciences publications (i.e. photos of plant pathogens, bodies with ailments, picture of liquid chromatography tests, Xrays and CAT scan representations), the social sciences have been slower to accept them as valid evidence. Gibson (1950; 1966; 1979) has explored visual perception in psychology. In the 1960s, John Collier Jr (1967) used photography as a research method in the field of visual anthropology.

According to Fisher and Fowler (1995, p. 31), images and image-making support the cultural turn to postmodernism in social science research. Within premodern and modern culture, images are seen as representing a hidden, permanent reality: a true world, as opposed to a world of 'appearances' (Fisher & Fowler, 1995, p. 31). In the postmodern world, visual images are rapid and shifting, with a tendency to replace, or at least greatly enhance, verbal expression. Images dominate the senses, and the primary reality in which persons live is defined by images (Fisher & Fowler, 1995, p. 32). Visual methodologies provide appropriate tools for exploring many aspects of our rapidly changing, complex and image saturated postmodern society.

Where the modern image focuses on the purity of a single meaning, inviting distance, awe, and respectful acknowledgment of a life of accomplishment, the postmodern combination of changing pictures, music, spoken words and text implies a multiplicity of referents (Fisher & Fowler, 1995, p. 32).

The use of visual methods also raises important epistemological issues, such as how researchers collect, analyse and report visual data, and how visual methods can contribute to the construction of valid knowledge (Gibbs, Friese, & Mangabeira, 2002). This article reviews some of the contributions that visual and audio-visual methodologies have made in social science research, with reference to some relevant examples of our own work in context.

Engagement theory as a framework for technology based teaching and learning also creates a firm epistemological foundation for visual methods in leadership research, specifically in the areas of leadership data collection, analysis and reporting. Although engagement theory has only been empirically tested in a few studies, we further that base of knowledge through some examples of our own research.

Today, visual methods are being used more often, and more widely, within social science research. This methodology used in this paper is a review of the literature from a range of sources and disciplines, which, despite some potential weaknesses in its approach, reflects the nature of this emerging research direction. Because there is no single approach to new uses of the visual in social science research, a diverse overview such as one this is necessary to demonstrate that reality.

Visual methods and engagement theory

When people are engaged in learning, they are involved in cognitive processes such as reasoning, problem solving, creating, decision-making and evaluation. These cognitive processes are not always linear, nor are they necessarily unimodal. We propose, then, that by incorporating visual methods into these processes, learners engagement will be enhanced, and a more meaningful cognitive connection promoted.

Engagement theory, which has emerged primarily through the disciplines of psychology, education and computer science, is the idea that students must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks (Kearsley & Shneiderman, 1998). The authors apply three components to engagement theory which they term 'Relate-Create-Donate', and which imply that learning moments occur in a group context (i.e. collaborative teams); are project-based; and, have an outside (authentic) focus (Kearsley & Shneiderman, 1998). 'Relate' refers to team efforts in learning, which involves planning, management, communication and social skills. This collaborative learning process forces students to communicate their problems clearly, making it easier to find solutions. The authors also describe this key principle as enhancing understandings of multiple perspectives and diversity, a notion entirely congruent with postmodern epistemologies.

The second principle, 'Create', involves making learning moments creative and purposeful through a problem-based learning approach. Kearsley & Shneiderman (1998) explain this as a process where students define a project and then concentrate their efforts on applying their ideas in a specific context. The project approach is interesting; not only do students define their own project (even if the topic has been chosen by the instructor), the students have a sense of control over their learning that is too often lost in a traditional classroom environment.

'Donate', the third principle in engagement theory, emphasises the importance of making a contribution to an outside 'customer' while learning at the same time. These customers can range from community groups, campus organisations, local businesses or government agencies to individuals. Kearsley & Shneiderman (1998) refer to this principle as making the project 'authentic', a notion that is consistent with many school-to-work programmes, and other 'service' ideas of contemporary corporate training efforts.

In the following paragraphs, we suggest that visual methods enhance engagement in the creative process of research. We make the argument in the context of data gathering, data collection and data reporting. Hence at the level of data collection and analysis, visual research methods foster participants engagement in the inquiry process. Engagement is present again at the third level of data reporting, with visual reporting fostering this time the potential for stakeholders engagement with visual reporting disseminated via the Internet or screened in the community, thus 'a very long engagement'.

Data collection

Social scientists engage in varied qualitative and quantitative data collection methods. Some of the more common qualitative methods include interviews, focus groups and participant observation.

Much of the earliest work in visual data collection in the social sciences was done in anthropology by John Collier Jr (1967) in the form of photography. Collier identified the photographer as participant observer and the camera as the research tool. John and Malcolm Collier (1986) collected data in photographic form to produce inventories of material culture in anthropology. Data collection through photographs and film has been used to portray social relationships, people and landscapes. Photo-journalists and documentary film makers use visuals to add aesthetic and evidential weight to their work.

Why is it particularly important to collect data in visual form? There are a few answers to this question. One perspective is that certain data is best left for the subjects of the study to collect themselves (see Bolton, Pole, & Mizen, 2001). In certain cases, the researcher does not have control over when the desirable data to be collected is visible: take for example the case of self development. During the course of a self development programme, participants may experience insights outside of planned data collection episodes. Admittedly some of this information may be picked up elsewhere, such as during scheduled interviews with participants, but this is not verifiable.

We have carried out projects where participants collate their personal visual diaries with a video camera left with them for the duration of the project. Participants have made various uses of the video cameras; some have recorded themselves reflecting, arguing that the visual media afforded them more spontaneity than the written media for recording their thoughts and feelings (My experience of filming is that when I am talking to someone else and the camera is rolling, I am free and I make more sense.) More importantly, going into the interpersonal field of study, these video cameras allowed participants to record scenes with multiple actors in ways they would not have been able to master with pen and paper. One participant reminisced: I just needed to record how one teacher communicated her passion to her student 'it was an inspirational moment and nothing I would have jotted down on paper could come close to what the camera could capture. In other instances, participants have

analysed a topic in small groups and when reporting to the whole cohort, have chosen to do so using no words whatsoever, arguing that the use of words would have dampened the message they wanted to convey.

The incorporation of visual data into the research process, as described in the case study above, is supported by Knowles and Sweetman (2004). They have put together a collection of essays that go beyond a discussion of visuals as evidential data, or the subject of critical analysis, but argue for making visuals an integral part of any research process. Acknowledging the growing literature on visual methodologies in research, Knowles and Sweetman (2004) discuss the value of visuals in research and presentation, but they also seek to understand what is behind the current visual agenda, particularly in social science research. They emphasise that visuals are not just another form of data to collect and analyse, but can be part of the entire research process; they are one form of data, they can be a method for creating more data, and they can be used to represent research results (Knowles & Sweetman, 2004, p. 5). Unlike many contemporary authors whose primary interest lies in the sociology of visual culture (Banks, 2001; Emmison & Smith, 2000; Pink, 2001; Prosser, 1998) where the focus is on the image, Knowles and Sweetman try and emphasise how visual methods can form an integral and core component of an entire research project, from collection, to analysis, to reporting.

Embracing visuals as an integral component of the research process supports notions of engagement theory. Photographs, video and Web-based visual technologies are applicable to collaborative learning, as illustrated in the example above. This example supports (Kearsley & Shneiderman, 1998) relate concept of engagement, demonstrates a team effort in learning, involving planning, management, communication and social skills.

Shneiderman (2002) describes the Relate-Create-Donate philosophy as representative of people working in teams to create ambitious and meaningful projects. One of the ways in which he describes students expressing this is through performance. Visual media is a perfect vehicle for capturing such performance, and establishes a creative interpretive space between the performer and audience, with the potential to enhance engagement.

Hence, depending on the context of the topic researched, there are cases in which audio visual data provides a unique way to archive and store data, a unique source of information where data is generated outside of scheduled research collection times, and a unique way to engage participants in collecting self-generated data. From this perspective, it is also evident that in some cases, data collection for visual material overlaps with text-based data collection and in other cases it does not, providing a distinctive entry into the topic researched.

Data analysis

Several authors have used visual analysis to reflect a deeper and broader understanding of research data. Analysis of visual data can be found in Banks (1995) and Rose (2001), for example. Banks explains that visual sociologists or anthropologists are concerned with both the content (the meaning of the image, the substance of the image) and the context (who produced the image, why this particular image was chosen) of any visual representation. He cautions, however, that images produced by the researcher can sometimes result in the privileging of content over context. In reference to documentary filmmaking, this has been overcome through a deliberate inclusion of the filmmaker and/or the filmmakers tools as part of the film. Banks explains that these techniques have been incorporated into ethnographic filmmaking to bring the film subject, and the film viewer, closer together. With still photography, a combination of image and text has been adopted.

Visual data analysis is still not entirely unproblematic, as Banks illustrates:

It is important to remember, however, that all visual representations are not only produced but are consumed in a social context, one which invokes a family resemblance to similar representations television and cinema in the case of film and video. Members of an audience will bring to a screening certain expectations of narrative form, plot development, good and bad composition, and so forth, however unconscious or inchoate their understandings. Nor can a single reading of a film necessarily be presumed (1995, p. 3).

Likewise, Rose (2001) raises issues about visual methodology. In her book she establishes a framework from which readers can defend their use of particular visual methods, and also understand their respective limitations. Three areas are included in her framework: production, the image, and the audience. She discusses where particular methods might be appropriate. Similar to Banks (1995), Rose gives emphasis to the importance of the affect of the wider context has on the reading and use of images.

One example of data analysis of visual data is Fields (2002) interpretive study comparing over 360 images on leadership and management collected on the Internet (**Illustration 1**).



Illustration 1: Example of visual data analysis raw material (from Field, 2002).

Fields visual analysis provided him with robust evidence with which to differentiate between leadership and management. The former was significantly associated with images of taking action and expressing values in the context of a relationship whereas management images were more about justifying a status quo and existing hierarchical relationships.

Daniels (2003) further analysed leadership concepts with a study that focussed on identifying the ways in which women defined their leadership and their role in building community. Photography and drawing were used alongside more traditional qualitative methods of interviews and observation. She credits these visual methods with revealing more about the complexity and richness of the womens lives than she would have obtained just through observation and interviewing. Daniels describe photographs as "pedagogical tools for use by the women themselves to provide[d] ways for them to participate in the construction of that knowledge (2003, p. 190).

In Daniels' study (2003), the women created learning moments through their use of visuals (photographs) through a "problem-based learning approach, a component of Kearsley & Shneiderman's (1998) second principle, "Create. As the women had to choose the visual data (their own photos or drawings) to illustrate their understandings of about leadership and community building, they were "engaged and experienced a "sense of control, over their learning.

The photographic and artistic analysis used in Daniels study helped to bring out an "authentic dimension in the community leaders, an example of the "donate dimension of engagement theory (Kearsley & Shneiderman, 1998). The photographs provided a rich source of data for illuminating the womens passions about their community, and revealing some of their innermost feelings, data that would not have come out through a non-visual medium. Daniels describes the photographs as elaborators of verbal dialogue so that the participants innermost feelings about community could be exposed (2003, p. 203).

Daniels further acknowledges the importance of the participants self-analysis of their own work. If it had been up to the researchers to interpret this visual data, it would have been through the lens of the researchers experience, rather than the participants experience.

(W)e could miss the drama, quality, or bravery in peoples lives when we analyze and interpret their photos without their input. Photographs and drawings created the opportunity for the women to give better expression to their thoughts. The images potentially served as stimuli when the participants explained to the other women what their drawings and photographs represented. More important, the drawings and photographs created opportunities for the women to introduce issues that they considered important for inclusion. Some of these issues were supportive of themes that were evident in the observational or interview data, whereas others were new perspectives on existing data(2003, pp. 203-204).

Gregg (2004) used painting as a foundation for analysis and a complementary method to participants verbal explanations of femininity, identity and racism in her research on the concerns of a group of young women (aged 13-16) in New Zealand. She describes a painting created by one young woman of herself and four other young men. Through her visual work, the young woman expresses stereotypical images of young men (short hair) and young women (long hair), and presents a variety of male facial expressions which the participant explains as indicating gender differences between the characters in the painting. The painting depicts tensions around gender and identity, which she explains later in a focus group (**Illustration 2**):

Its about guys and girls and like, you dont know who to hang out with. You dont know which girls to hang out with and the guys these days are all . . . stupid (Gregg, 2004, p. 64).



Illustration 2: Painting by Alyssa, a 13 year old participant, 2003.

Another participant emphasises similar tensions around gender differences in describing her painting (**Illustration 3**).

Ive got hot and cold because, and a black stripe in the middle, because Im kinda in the middle because its about guys and girls (qtd. in Gregg, 2004, p. 65).

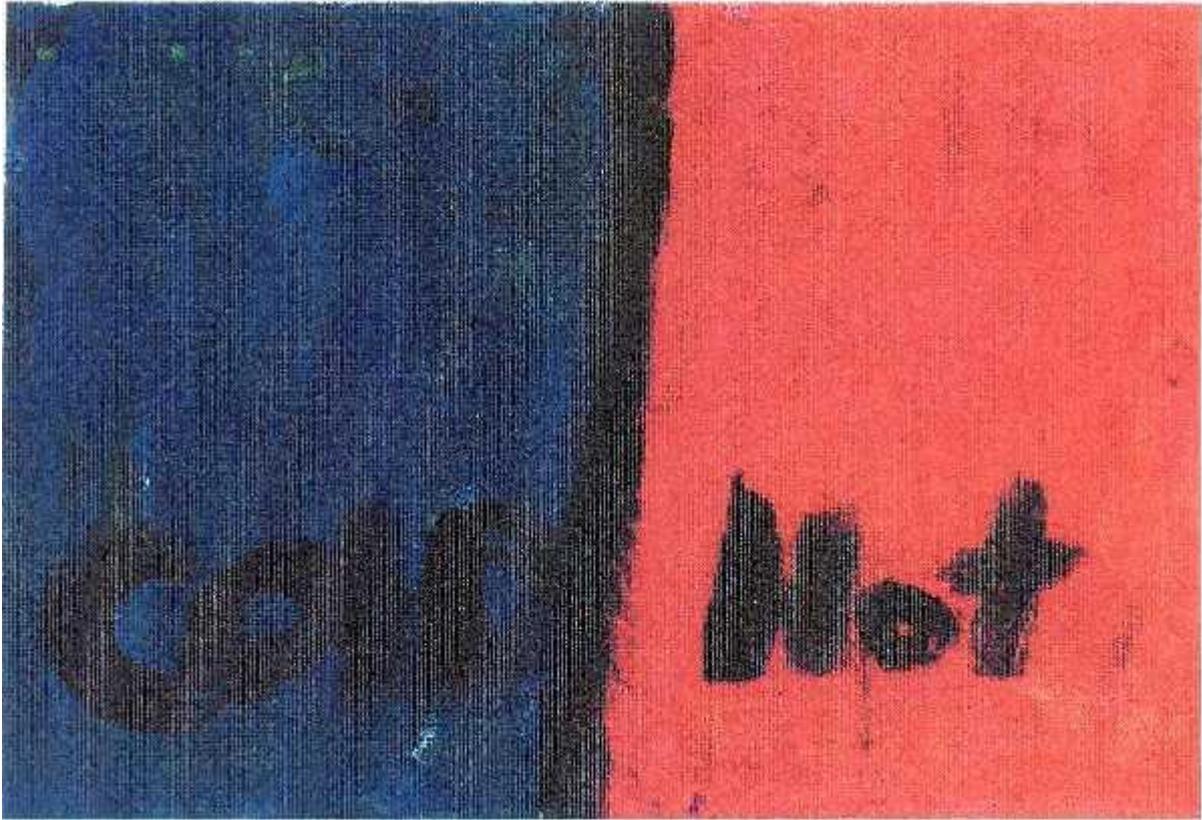


Illustration 3: Painting by Winona, a 13 year old participant, 2003.

Gregg uses the participants description of her painting, as well as her verbal descriptions, to theorise how young people can occupy places of ambiguity, or liminal spaces (Sibley, 1995) in their depictions of self. Gregg describes the participants anxiety about being in the middle, feeling hot and cold, being neither a child nor an adult. As confirmed by Daniels(2003) in her use of photographs and drawings to bring out participant expression, the paintings in Greggs thesis act as an important catalyst for encouraging more meaningful verbal expression in focus groups.

Both Daniels (2003) and Greggs (2004) research confirms how instrumental visuals can be in illuminating issues that the researcher would not normally have focused on in an interview situation. Visual methods not only instigated critical discussion in both of these studies, but more importantly, that discussion was brought on by the women themselves, through their own self-analysis of the data that they had personally created:

Although these methods could be perceived as simplistic, they aimed to generate different thoughts and perspectives on the womens daily life experiences and challenges. In the reflection process, their images served as the mechanism for them to look at their reality and assisted them in defining their own world (Daniels, 2003).

In contrast, Guthey and Jacksons (2005) article explores how visual material can act seemingly in an opposite way, where CEO portraits brought out an authenticity paradox (pp. 1077-78) with their respective organisations. In their examination of CEO portraits, they conclude that, although the portrait helps cement an authentic presence for the corporation, the CEOs personal authenticity can become somewhat ambiguous. In other words, the CEO is just as much dependent on the image of the corporation to authenticate their corporate authority, as the corporation is dependent on the image of its CEO. This co-dependency creates a paradox over individual and corporate identity construction.

Ambiguity arises because none of the three--corporations, CEOs, or portrait photographs--"just are". They do not simply exist:

in any self-evident or ontologically privileged sense. All three are social institutions or constructions, the seemingly natural presence of which depends on a sustained coordination of sometimes contradictory activities, not just commercial, legal and managerial activities, but also representational and symbolic activities (Guthey & Jackson, 2005, n.p.).

The authors recommend that more studies of symbolic construction of organisational leadership should incorporate theory of photographic representation and visual culture. Interpretive methodologies and aesthetic insights drawn from the humanities, art history, photographic theory and criticism can be explored to more fully understand the photographic representation of corporate leadership (Guthey & Jackson, 2005, p. 1078), but this will require researchers to stretch beyond the comfort and confidence of empirical data into less tangible, but perhaps more illuminating, avenues of inquiry.

Recent technological developments have allowed for the social sciences to receive great impetus from visual data analysis with computerised data analysis software. Computer Assisted Qualitative Data Analysis Software (CAQDAS) packages have developed in the past decade to include the capability to process visual data in addition to text data. Perhaps it is important to mark here a distinction between types of visual data: photographs, traditional video, and audio are analogue technologies that have been researched broadly in many scientific disciplines. Digital films, on the other hand, allow more flexibility than analogue technologies as they do not necessitate linear thinking and the constraints that go with it. One can either go forward or backward while viewing a traditional VHS, whereas one can interact with the contents of and select specific chapters or parts of a DVD far quicker and more accurately than with the former technology. This also has implications for the types of data archiving and retrieval enabled by digital forms of data.

In filming and analysing workplace conversations with the THEME visual data analysis software (Magnusson, 1983), Koch and Zumbach (2002) were able to surface gender interaction and construction processes. This evidence brought out, for example, power-related and support-related behaviour. Such qualities of participants' behaviour appeared not only in verbal but also in non-verbal patterns. The researchers built observations on verbal evidence to describe complex and thematic support and on non-verbal evidence to describe evaluative affect. In other words, analysis of non-verbal material did not just support evidence from verbal material, it complemented and enriched it.

Using the visual modelling properties of ATLAS (Muhr, 1997), Friese (2000) illustrated the highly individual influences on customers resulting in impulse buying. Another novel tool is Transana (Woods, 2005). Developed by the Wisconsin Centre for Education Research (WCER), Transana is a programme designed to help transcribe and analyse video imagery. This open source free software allows researchers to identify, organise, and attach key words to video data, combining the value of written transcripts and visual observations while tying the analysis results to their original digital source for easy subsequent retrieval.

In summary, because visual material can capture multidimensional social situations, its analysis helps deepen understandings of communication, quantity and quality of interactions and collaborative patterns (such as problem-based learning processes and co-construction of knowledge) and engagement in small groups. The capability to capture and analyse such material is a significant advance from that of earlier voice recording of such interaction or individual interviews. Indeed, as pointed out by Paterson, Bottorff, and Hewatt (2003), blending observational methods (i.e. video recording and participant observation) and triangulating data (Bolton et al., 2001) carries with it the potential to extend our knowledge of relational dimensions in important ways. Hence visual analysis can serve either to clarify and give more depth to data or surface deep-rooted phenomena by moving in and out of the context of the social interaction situations analysed. In the example of the CEO portraits (Guthey & Jackson, 2005) for instance, visual analysis helped uncover an authenticity paradox that would not otherwise have been apparent.

Data reporting

In the process of data analysis, it may sometimes appear that partial data items reported in numerous isolated episodes would be best reported as a new visual representation:

After reviewing all the clips that make up my visual diary and making choices about what I want to include in my final report and what is less relevant in the bigger picture, I have decided to re-tape myself reflecting on the topic. All small bits of seemingly disconnected thoughts are now hugely making sense, but this would be best reported in one new message (Janson & Jackson, forthcoming).

Once data is collected and analysed, what are the advantages of using visual means to report on empirical results? Hughey (2002) for instance used video images of facial expressions and body movement to measure participants' engagement in e-learning. Hughey determined that, in order for an e-learning task to be effective, the learners must be "engaged" (2002, p. 4) in what they are doing.

Engagement theory can be applied in many areas of the social sciences, and is particularly interesting when applied to visual methodologies of reporting. However, engagement has only been investigated

by a few authors, explained in a small number of articles, and therefore, is not yet clearly defined nor comprehensively theorised (Hughey, 2002, p. 4).

Nevertheless, Hughey combined quantitative observations of facial and bodily expression with qualitative assessment of video clips to determine levels of engagement by participants in her study. Ultimately she suggests that one potentially successful way of measuring an individual's actual engagement is by implementing in-depth post session interviews (including playback of video or screen capture) (Hughey, 2002, p. 22).

Hughey's interest in engagement resonates with questions we are considering around 'impact'. In other words, do visuals add 'impact' to the non-visual material being presented? Like Hughey, we are curious as to whether visuals enhance an audience's engagement with the presentation, and whether and in what ways they have greater impact on an audience.

Banks (2001) considers the audience to be the most important consideration in presenting research results visually, and highlights some of the complexities around these issues. Firstly, some academic disciplines do not consider visual images as valid research, which creates a fundamental obstacle for any visual presentation to be taken seriously. Secondly, visual images can ultimately be interpreted differently by different people (although this can be said of verbal and written data as well). Banks cites MacDougall as bringing the critical issue of the audience to the attention of anthropologists, primarily in regard to ethnographic film. MacDougall (1978) argues that the meaning of an ethnographic film is negotiable, lying within a conceptual triangle formed by the (film) subject, the filmmaker and the audience (in Banks, 2001, p. 141). Therefore visual images (in this case film), become interpretive spaces, rather than illustrations of empirical truth. Martinez (1992) argues that the more didactic a film is, the more likely that it will be 'read' in an unusual way by an audience. In contrast, films that allow for more interpretive license by the viewer result in more sophisticated and thoughtful responses from the audience (in Banks, 2001, p. 141).

According to Banks (2001, p. 141), Martinez is alone in having studied the pedagogic value of ethnographic film empirically, although he and others have attempted to create criteria by which visual materials can be evaluated. Two models that Banks cites are those of Heider (1976) and the ChildCare Action Project (CAP).

Heider's (1976) book deals with how to define 'ethnographic film'. He developed what he called an 'attribute dimension grid', a graphic representation of 'ethnographicness', or the degree to which a film successfully conveys an ethnographic understanding of the people and activities represented (Banks, 2001, p. 141). The grid charts fourteen properties, ranging from technical and production aspects of the film, to the film's relation with other written sources (study guides, written ethnographies) (**Illustration 4**). The higher the film scores on all fourteen properties, the more 'ethnographic' the film is deemed to be. Although open to criticism on many levels, Banks (2001) describes Heider's grid as having the ability to define clearly, albeit subjectively, through a graphic depiction, what he believes to be important in visual ethnographic presentation.

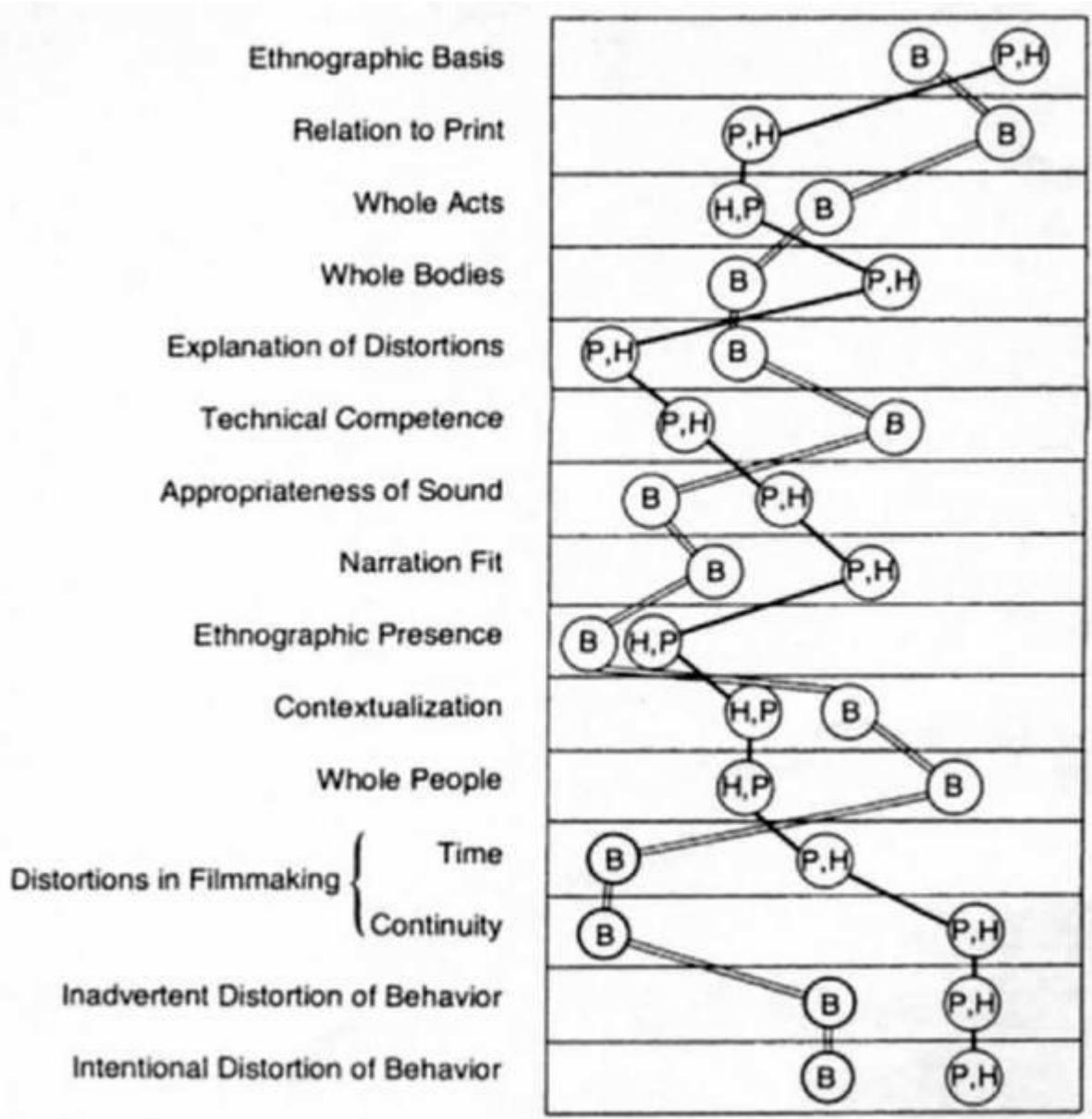


Illustration 4: Karl Heiders attribute dimension grid, used to plot attributes of three films (identified as ?B, ?H and ?P) (Banks, 2001, p. 143).

CAP, an American Christian organisation, has developed a methodology to evaluate the moral content of mainstream feature films according to seven criteria (?wanton violence/crime, ?impunity/hate, ?sex/homosexuality, and so on) (Banks, 2001, p. 143). The methodology employs a points system where one to three points are deducted from 100 each time one of the named behaviours in the diagram is recognised in the film (Illustration 5).

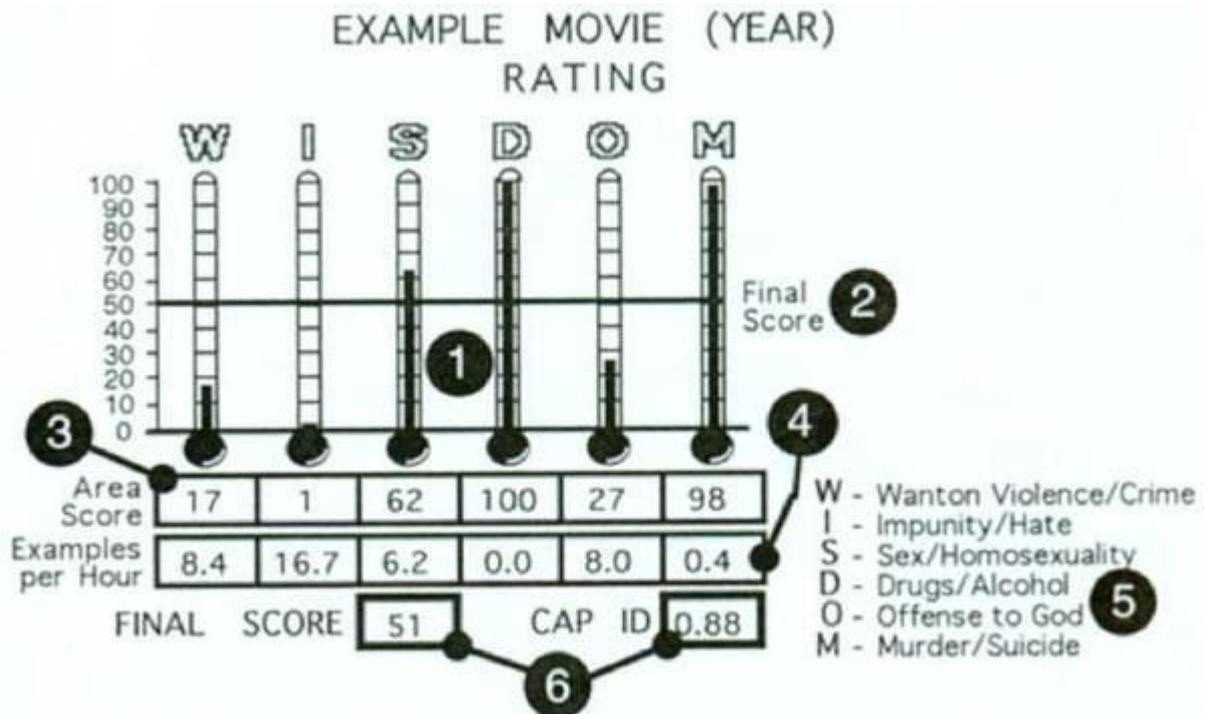


Illustration 5: ChildCare Action Project (CAP) Graphic Data Display (Banks, 2001, p. 143).

Both Heider and the CAP authors give a clear starting point from which to create a model whereby specific visual narratives, whether ethnographic film or entertainment media, can be assessed. Although these types of formulaic representations may be unattractive to qualitative researchers, Banks concludes that they serve a purpose in clarifying an otherwise loose and formless discussion (2001, p. 143):

Martinez's work, and the two models above, all seek to assess the textual encounter between reader-viewer, author and subject, that is, the three points of MacDougall's triangle; in doing so such approaches can be useful in helping a social researcher consider why she is using visual media, what she hopes to achieve by doing so, and whether in fact she has achieved it (Banks, 2001, pp. 143-144).

It is our belief, therefore, that the use of visuals has as-yet-untapped potential for engaging audiences. There is huge scope for further theorising engagement, but also for practically measuring engagement as an indicator of social impact.

How visual methodologies enhance existing qualitative research reports

The use of visual methodologies has allowed social researchers to reach new epistemological frontiers by defining new data sets and creating new forms of knowledge. The following section describes different aspects or uses of research projects' visual reports.

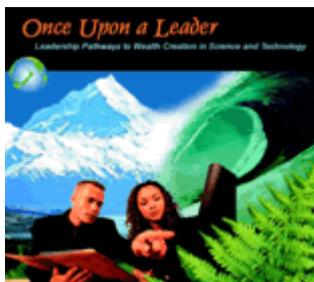
Firstly, the Paris: Invisible City project is proof that certain theories, Actor Network Theory in this case, can come alive through the Internet. Since Actor Network Theory is about the interaction of people and technology and is researched while following the actors throughout multilevel interactions, the technology afforded by the World Wide Web, such as via hotlinks, is particularly well suited to represent these activities. Bruno Latour, the French sociologist who, with Michel Callon, developed the Actor Network Theory (Latour, 1984, 1987), achieved a unique effect by first publishing his work in book form, then on the Web. The author outlined four dimensions of his analysis as traversing, proportioning, distributing and allowing. Clicking on the image below will transport you into a cyber-voyage that uses these four dimensions to take you beyond the known, and visible, aspects of this city through its networks in an interactive way not possible with paper books (**Clip 1**).



Clip 1: Paris: Invisible City project web page. Click the image to go to Latour's original visual display.

Latour's web-based interactive research report followed his book form by six years and was named a sociological web-Opera by its author, marking the fact that it has a spirit of its own and outside of its paper version. The Internet and its particular mode of information presentation allow for concurrent partial and manifold modes of illustration and examination.

In New Zealand, the Once Upon a Leader project produced a written report and a visual clip with excerpts of interviews of 31 New Zealand leaders who had successfully commercialised innovation. The visual clip presented a leadership pathway featuring seven developmental stages. The research team noted that a visual compendium of interview excerpts could convey the main messages in a more effective way than written case studies for particular target audiences (for instance, emerging leaders who could benefit directly from the leaders messages to them) and posted access to the compendium on the webpage of the New Zealand Royal Society (**Clip 2**).



Clip 2: Excerpts from the Once Upon a Leader story.

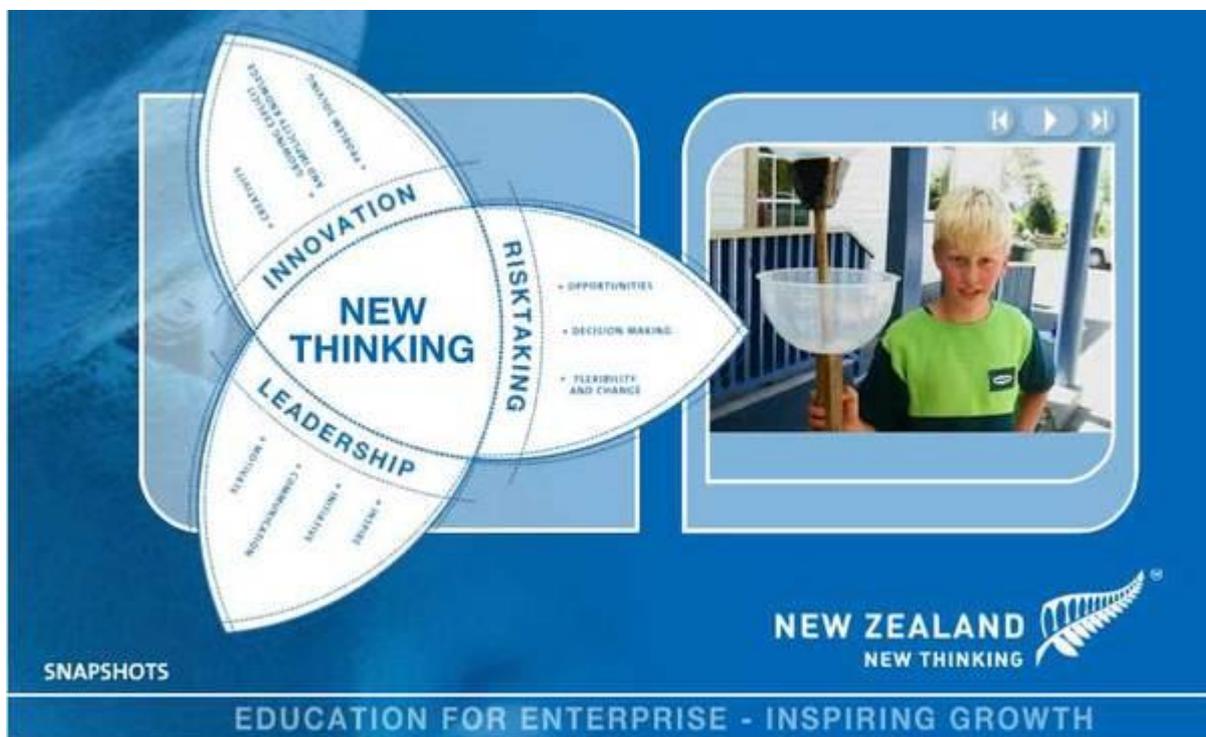
Click on the image at left to start media player. If you don't have Real Media installed on your computer to play the clip, you can download it free at: <http://www.real.com/freeplayer/?rppr=rnwk>

While both previous examples of visual reports had text-based clone counterparts that were published in conventional paper forms, **Clip 3** represents a research project that culminated in a visual-only report in DVD format. The rationale of the researcher for convincing the funding body to accept a visual-only report related to stakeholder engagement (see Hughey, 2002). Since the report was aimed at the educators community (principals and teachers) and research material was collected through 25 interviews with principals, teachers, project facilitators, children, and parents, it was thought of ultimate importance that results of the project be communicated visually to the audience. It was thought crucial that target audiences see and hear their colleagues verbalise their perceptions of the impact that the evaluated project had on the children. Furthermore, it was

imperative that audiences be able to interact with the results and view them in an order that most facilitated their sensemaking.

According to Kearsley & Shneiderman (1998) the third principle in engagement theory, 'donate', involves an aspect of service, or making a contribution to an external body while keeping an emphasis on learning. So far this article has provided several examples of how visuals enhance research reports with a very practical, community oriented focus. For example, the 'customers' of the 'Education for Enterprise' project are the education community--students, parents, project facilitators, teachers and principals--supporting Kearsley and Shneiderman's (1998) notion of 'authenticity' in engagement theory.

Interactivity is a unique contribution the Internet can make to the treatment of visual data 'as opposed to more static forms of visual analysis. We contend here that interactivity is one engagement enhancing factor. Reporting was done in a way that maximises stakeholder engagement with the results in a combination of primary (excerpts of original interview clips) and secondary form (themes and sub-themes organisation). Thematic analysis surfaced three main themes: innovation, risk taking and leadership. Each main theme was further subdivided into secondary themes. The audience wishing to view the results of the research report could choose which main theme they wanted to view in a non linear manner (Clip 3).



Clip 3: The Education for Enterprise visual research report.

For clarity's sake, one still needed to add words to the images, so that the audience not lose track of the main issue being addressed at any point in time in the interview montage. Our own learning, accumulated while carrying out projects involving audio visual data, was that from the initial data collection stages to the reporting stages, the visuals may need to change. That is, while certain learning about a topic may have been recorded visually, reporting and concluding may need a different type of visual, perhaps the second order data type; at some other times, what was formulated in many isolated and unrelated episodes may be best summarised in a totally new visual item that maximises clarity of message, thus impact. So we have learned that visual reporting may involve re-recording some messages.

Conclusions

In the present article, we have developed arguments to show that visual data encourages varying levels of engagement (from micro to macro levels) of varying actors in the research process, both participant and audience. First, gathering of visual material allows participants to play a more active part in the self-collection of data about themselves, especially when relevant data occurs outside of data collection episodes. Secondly, the process of data analysis can also involve participants by encouraging them to share their insights and further

develop them to a deeper level of analysis. Hence at the level of data collection and analysis, visual research methods foster participants engagement in the inquiry process. Engagement is present again at the third level of data reporting, with visual reporting fostering this time the potential for stakeholders engagement. We showed how the use of visuals to enhance engagement can be understood through Kearsley & Shneiderman's (1998) notion of 'Relate-Create-Donate', the key components of engagement theory?.

Though reporting back to the community is the primary responsibility of researchers the latter may invest most of their efforts in publishing in peer-reviewed periodicals to keep up with the pressure of their jobs. One of the results of the pressure academe is under is that there is little incentive and few outlets to disseminate reports visually. Reporting back to the community as a way of engaging the community itself is possible through visual reporting. Allowing audiences to interact with the results of the research and as a means of generating greater engagement from stakeholders is here to stay? even if the struggle to legitimise this means of interaction of research with the community at large is only starting.

Hence, as seen above, the visual research process takes us on a voyage that delves in memory (data collection) towards deeper introspection and insight towards action (data analysis) to end by making a greater impact on the wider community through greater engagement.

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