TRIANGULATING RESEARCH METHODS IN CASE STUDIES: AN EMPIRICAL REPRESENTATION

A FREE RESEARCH PAPER

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ABSTRACT

This paper presents convincing argument supporting the need for a combined approach to data elicitation, with illustration of how this can be achieved. Drawing on empirical evidence from recent research, it explores the different stages of the process, demonstrating how quantitative and qualitative data can enhance each other's effectiveness. Locating ethnography in a historical context, it presents a variety of approaches, focusing on the value of the 'complete participant as observer' role in eliminating some inherent difficulties.

Key Words: qualitative, quantitative, triangulation, research, participant, data.

1. Introduction

Implicit in the term methodology, is an incorporation of all research activities, from the formulation stage to data elicitation and analysis. It "refers to the way in which we approach problems and seek answers" (Taylor and Bogdan 1984, p.1). It encompasses all theoretical considerations, enlisting details of the actual procedure of each aspect of the research process, (Brown, 1978; Doxiodes, 1986) different methodologies producing varying aspects of the truth - necessitating a combination to improve validity of findings.

The broad empirical methodologies, qualitative or ethnographic (see e.g. Broadbent and Laughlin, 1997; Boote and Mathews, 1999; Parker and Roffey, 1997; Leonard and McAdam, 2001; Gilmore and Carson, 1996; Perry, 1998) – that Mitchell (1978) would classify as social exchange theory - and quantitative methods, (see e.g. Morris, 1996; Wisniewski and Stead, 1996) employ a somewhat different data elicitation techniques that can be combined or triangulated, (see Denzin, 1978; Colgate, 1998). These include experimentation, observation, interviewing or questionnaire administration, critical incident, conversation analysis, story telling and documentary analysis – the last although capable of standing alone as a data elicitation and analysis technique, is usually combined with others.

Despite some scepticism, many researchers, (e.g. Blake, 1985), have found ethnographic studies not only interesting but also a basis for generalisations. Since the 1960s, and at the instance of the qualitative methodology, a wealth of brilliant studies has been produced.

These researchers include Stacey (1960), Rose (1952), Gans (1967), Bell and Newby (1977), Wax (1971), Tipton (1973), Douglas (1976), Newby (1977), Gleeson and Mardle (1980).

This paper discusses pertinent aspects of research methodologies, highlighting their interdependency, placing them in a historical context, where appropriate. It provides a practical guide, to the process, giving examples of triangulation (Denzin, 1978).

2. Research Methodologies and Techniques

Qualitative methodology "field work, interpretive research, case study method, ethnography" (Burgess, 1982, p.1), emerged in fifth century B.C. As Douglas (1976) observe, 'on the spot' reports were provided of foreigners, and of the Peloponnesian Wars, evidence that there was descriptive reporting. It developed into a more formal approach to social research, popularised in Britain and France in the latter part of the eighteenth century (Wax, 1971); Burgess (1982), Wax (1971)

According to Burgess (1982), Urray made reference to the 1874 publication of *Notes and Queries,* which spotted shortcomings in the questionnaires that were prepared for travellers, and suggested that the information be gathered by observation, setting the stage for the ensuing debate between positivists and non-positivists (Bottomore, 1972). The development of the Interpretive Paradigm must have taken place latter, though, because phenomenology, from which qualitative methodology gains its theoretical base, developed as a school of philosophy- through Edmund Husserl's inspiration (Garfinkel 1967) - did not emerge until the eighteenth century (Townley and Middleton, 1986).

Although having been in use for centuries, the term participant observation was only coigned in 1924, by Edward Lindeman (Stacey, 1969). Just over forty years after the original usage of the term, and in an attempt to re-establish its popularity, Louch (1966) was rather persuasive of his readers, when he declares that: "… the sciences which deal with human action are moral sciences, which require not measurement and experiment but appraisal, reflection and detailed accounts of action in popular contexts" (Bottomore, 1972, p.50).

Ethnography is, at a state of increasing popularity and credibility, after having moved slightly away from the centre stage in the 1950s, giving rise to the systems theory (see Parsons, 1951) and quantitative methodology. Nevertheless, there was still a wealth of activities, which later brought much substance to the field. *Research Methods In The Behavioural Sciences,* for example, was first published in 1953 (Festinger and Katz, 1954), with six direct contributions. It was also in the 1950s that Young and Wilmot (1954) produced the results of their popular study on *Family and Kinship In East London.*

2.1 Ethnomethodology

Ethnomethodology, an extension of the phenomenological perspective (Pfohl, cited in Keel, 1985; Coulter, 1979) was developed by Garfinkel in the 1950's, the term having been coined by him, while he was writing up a study of jury deliberations (Heritage, 1984).

It is not "a body of findings, not a method, nor a theory, nor a world view …. but a form of life" (Mehan and Wood, 1975, p.3). Therefore it is not as simplistic as is viewed by Thomsen, Straubhaar and Bolyard (1998), suggesting that it is a study of communities. Pfohl, (cited in Keel, R. 1985) clarifies that unlike symbolic interactionists, ethnomethodologists do not assume that people share common symbolic meanings, but share a ceaseless body of interpretive work to convince themselves that they share the same common meanings. Keel (2001), regarding situational context, actors' biographies and organisational demands as significant, sees ethnomethodology as an extension of Labelling Perspective, focusing on how labels and symbolic meanings are attached to behaviour

Where ethnomethodology differs from other methodologies, such as symbolic interactionism, is that it does not necessarily deliver, with precise observable sequence but relates to its history in people's lives and times. Its wide-ranging application includes the analysis of suicides contributing to its prevention (Hilbert, 1992). Boden (1994) states that 'all actions are embedded in a continuous stream of social relationships, which, in turn, are framed by a historical context'.

> Ethnomethodology can enhance an understanding of the interactions between individuals within particular settings, requiring that the researcher not only takes the place of the observed, but to go beyond the spoken words and actions so as to derive the meanings and significance of actions. For example, within an organisation an individual might refer to a situation, which might be taken as clear-cut and simple, but has underlying and alternative meanings.

The situation, exemplified by the context below, is indicative of the incompleteness of the 'picture' that is presented by the absence of the historical contest. What is the reason behind the infuriation, of the informant in the excerpt below.

> "There is no justification in attending these meetings! What is the point of attending and only listen to people talk and make decisions? Is it democratic for one to make a point, which is paid no attention, and which is later hijacked by those who claim to power-share. As far as I am concerned it is their show and we must let them get on with it without interfering. Why do they invite us there if they do not really want us? We must be seen and not heard! They 'will' see me there again!" (Crawford, 1994 p.216).

The historical context of the above situation is that the participant was a member of a matrix type of organisation, wherein he was accustomed to participating in decision making at both corporate and operational levels. Therefore, an unexpected change in the situation had affected his role and perception of reality. An observer, not understanding this context, will find it difficult to realise why an individual within such an apparently normal situation should find this degree of passivity offensive.

2.2 Symbolic Interactionism

Blumer (1969, p. 2), suggests the symbolic interactionism rests on three simple premises; "human beings act toward things on the basis of the meanings that the things have for them." "The meaning from which such things is derived or arises out of, the social interaction that one has with one's fellows." These meanings are handled in, and modified through, an interpretive process used by the person in dealing with the things he encounters. It does not necessarily relate to specific organisational or operational roles Kaarst-Brown (1999) suggests.

2.3 Discourse Analysis

What appears to be a variant of symbolic interactionism is discourse analysis (Clark-Carter, 1998; Elliot, 1996; Shaw and Gould, 2001). It is concerned with the natural occurrence of speech and its "social rather than linguistic organisation …, variability in accounts which may reveal the situated functional character of different versions, and with "interpretive repertories"….." (Elliot, 1996, p. 2). What distinguishes this approach from others with similar technique is that it uses intervention to generate diversity of response, rather than ensuring consistency. It assumes that conversation does not contain pure facts but that participants express views representing a choice from known alternatives (Clark-Carter, 1998). For Shaw and Gould (2001) applied discourse analysis, like conversation analysis and membership categorisation, is the analysis of 'talk-in-interaction' within formal and informal settings.

2.4 Conversation Analysis

Boden and Zimmerman (1991) observe that, conversation analysis is a derivative of ethnomethodology, and is an analysis of the organization of conversational interaction of endogenously generated sequential opportunities and constraints different participants. Its central concern is with elucidating the mechanisms of sequential organization of interaction, that is, the way participants construct their interaction turn by turn over its course (see also Boden, 1994) to accomplish an accountably coherent exchange.

3. The Place of Gesture Studies – Kinesics and Kinesiology- in Empirical Research

Both kinesics (unconscious gestures) and kinesiology (conscious and controlled gestures) play an important part in research, particularly qualitative techniques. A researcher might deduce from gesture the seriousness of a threat posed by one participant to another. For example, the pointing of the index and the rapid up and down movement of the hand, 'eye fixity', bodily stance and physical proximity (see e.g. Niles, 1994) might provide an indication of its deep-seated anger and seriousness of the utterance. This is opposed to the same words being spoken within the context of a calm and relaxed posture, which is indicative of a friendly humorous engagement (see Sundaram and Webster, 2000). Through gesture studies, an interviewer will be able to detect when an informant or a respondent might be reluctant to engage in a particular line of conversation or to discuss specific issues (see Jolly, 2000; Fast, 1970). On the other hand, the observer will be advantageously placed in noticing that an informant is issuing a non-verbal invitation to a dialogue (see Givens, 2001; Sternberg, 1998). These observations will not only be beneficial in continuous data elicitation but are also key ingredients in ensuring objectivity and the maintenance of an effective ‘observer-observed relationship’.

4. Managing The Research Process

We might regard the research process as being divided into five distinct stages: design; data elicitation; analysis; interpretation and reporting. Two or more stages may, however, be effected simultaneously. In conformance with the word limitation of this article, the suggestions that are provided under these subheadings will be necessarily brief – often bullet points. While much of the discussion in relates to quantitative type instruments, advice will also be given on the qualitative aspects.

4.1 Research Design

While all stages are important in meeting the research objectives, the design style sets the tone for the rest of the project. Even though adjustments can be made to any tentative aspects, a carefully thought out plan saves scarce resources including time. The following are a few points worth noting.

- Never start this exercise by writing the questions first
- Make a list of things that you would like to find out
- Make the list as precise as possible
- Arrange the list into groups – according to their similarity. This group will form a guide to analysis and presentation of findings.

- Decide on the method or a combination of methods that you will use to collect the information that you require
- Now, try to construct questions for the information requiring interviews or questionnaire.

You might find the following activities useful:

4.1.1. As individuals, think of a 'topic area' that presents research possibilities within your organization. In the columns provided, (Figure 1) record your thoughts on the following, in the appropriate column:

- In the left hand column of the grid (see example) list, as precisely as possible, the information that you would like to find out
- In the second column, record the data-gathering techniques that you would like to use
- In the third column, write down the difficulties that you are likely to encounter with the information that you will attempt to elicit
- In the final column, indicate how each of these anticipated problems might be overcome

4.1.2. Individual members of each learning set should read and comment on the information that others have written – offering insights, where possible

4.1.3 Open the discussion to other members of your learning set

4.1.4 Select one proposal to present to the plenary

4.1,5 Each learning set should then prepare and present the selected proposal.

Figure 1: Data Elicitation Guide

SPECIFIC INFORMATION SOUGHT	DATA GATHERING TECHNIQUES	POSSIBLE PROBLEMS	HOW PROBLEMS MIGHT BE RESOLVED
1. The number of male, female and members of different ethnic groups who have applied for promoted positions, over the past 2 years, and the number of these groups who have been successful.	1. Questionnaire 2. Interview 3. Documentary analysis	1. Lack of co-operation of respondents 2. Managers' reluctance to grant permission for research into a sensitive issue. 3. Difficulty gaining access to personnel records	1. Assure potential respondents of confidentiality. 2. Try to convince managers of the contribution that your study will make to their effort to improve diversity management. 3. Seek manager's approval to view these records before approaching the personnel department.
2. Whether there is parity in the extent to which managers and team leaders utilise members of the workforce – on the basis of their gender, race and ethnicity.	1. Interview 2. Questionnaire 3. Conversation analysis		

4.2 Data Elicitation

Data elicitation involves the use of the instruments or strategy, previously designed to collect information from and about the subjects of your research. You might administer questionnaires, or conduct interviews, stage focus groups or make observations or a combination of these and other techniques.

The process might also involve the analysis of reports and published works, which may include research findings. However, it may be a comparative analysis of several research findings on one subject - i.e. meta-analysis (secondary sources of information). Meta-analysis is becoming increasingly popular, particularly in areas of controversy such as gender and leadership effectiveness and others that have seen exhaustive research efforts.

4.3 Data Analysis

Now that you have collected your data, it is time for us to analyse, interpret and present the information. At this stage of your research, you, in effect, sort out the data – deducing the relevant information, presenting it in a meaningful way. The way in which we undertake this task will depend largely on our data elicitation technique. The examples that I will provide are suitable for most, including documentary analysis, interviews, questionnaire administration, and observations.

There are several ways of achieving the first stage of this exercise. My earlier suggestion for emphasis on closed ended, but not forced choice, questions was given partially to facilitate computer analysis. Several software packages are available, including the various versions of SPSS (now Version 10) and most relational databases, such as Oracle. However, as applies to the 'other' response in closed ended questions, qualitative data – incorporating statements (string) – can be effectively dissected and coded, facilitating computer analysis. Because computer analysis requires specific treatment, this discussion on data analysis will assume that the activity is being carried out manually.

We might take a step back to the design of our instruments, when we specified the information that we needed from the investigation. At this stage, we will ascertain the information that we would like to obtain from the data by simply reviewing the specific objectives that we established earlier (the 'What I would like to find out?'). One practical way to approach the analysis is to record the information in tabular form, as illustrated by Tables 1 and 2, below.

Table 1: Gender Representation of the Sample

Number Of Female	**Number of Male**	**Total Number Of Informants**
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20	30	50

Table 2: Age-range & Gender Representation of the Sample

Age-range of Respondents	**Number Of Female**	**Number of Male**	**Total Number Of Respondents**
18 – 25	2	8	10
26 – 33	3	5	8
34 – 41	3	6	9
42 – 49	4	4	8
=50	8	7	15
Total	20	30	50

4.4 Interpretation

Having undertaken a thorough analysis of the data, we can now attempt to contextualise the information. This means interpreting the information or situation as it prevailed during the data elicitation period. One simple example is that if you are analysing the gender composition of your sample, not only do you need to present the actual figure, in numeric or percentage value but you also need to affirm whether or not your sample, in gender terms, is representative of the population. For instance, in our current example, 40% of our sample is female - is this the gender representation of your population?

4.5 Reporting

The following excerpt is an example of the contextualised interpretation and reporting of empirical findings. Tables 3 & 4, to which the excerpt refers, are chi-squared – with actual calculations. The level of significance is set at $p < 0.05$. This means that there is only a 5% chance of the null hypothesis being incorrectly rejected. In Table 3, the null hypothesis (H_0) is: *There is no difference between the areas that workers in Matrix Organisation and Hierarchic Organisation perceive as advantageous.* The test statistic supports the rejection of the null hypothesis and the acceptance of the alternative hypothesis (H_1): *There is a difference between the areas that workers in Matrix Organisation and Hierarchic Organisation perceive as advantageous.* The test statistic, therefore, suggest that there is a 95% chance that there is a difference between the way that the two sets of workers perceive their organisation (for clarification, see e.g. Lapin, 1990; Kanji, 1993 and Barrow, 1995). Although the excerpt does not refer to the chi-squared distribution, it provides a basis for assessing the validity of the argument being proposed. While explanation of, and justification for, the use of statistics is generally expected in empirical discussions, one often assume that the reader is able to make an independent judgement of these issues. It is outside the remit of this paper to enter this discussion but it needs to be dealt with separately.

Table 3: Areas of organisational structure workers perceive to be Advantageous in Matrix & Hierarchic Organisations (Power relations)

Features	MATRIX	HIERARCHIC	TOTAL
Clear lines of authority	0 (5.59)	15 (9.41)	15
Individual decision responsibility	0 (1.12)	3 (1.88)	3
Instant decisions	0 (1.49)	4 (2.51)	4
Quick actions	0 (1.12)	3 (1.88)	3
Clear lines of communication	0 (2.61)	7 (4.39)	7
Clarity of responsibility	0 (9.31)	25 (15.69)	25
Worker autonomy	2 (1.12)	1 (1.88)	3
Less power struggle	0 (0.37)	1 (0.63)	1
Democratic	16 (6.33)	1 (10.67)	17
Alternative power source	1 (0.37)	0 (0.63	1
Less rigid identity	4 (1.49)	0 (2.51)	4
Power equalisation	6 (2.24)	0 (3.76)	6
None	9 (4.84)	4 (8.16)	13
Total	38	64	102

Null hypothesis	No difference
Alternative hypothesis	There is difference
Test statistic	χ^2
Significant level	0.05
Degree of freedom	13
Critical value	21.03

χ^2 = 12 df =å (0-E)^2

E

= 5.59 +1.12 + 1.49 + 2.61 + 9.31 + 0.69 + 0.37 + 14.77+1.07+4.23+6.31 3.58 + 3.32 + 0.67 + 0.88 + 0.67 + 1.55 + 5.52 + 0.41 + 0.22 + 8.76 + 0.63 + 2.51 + 3.76 + 2.12. χ^2 = 83.28

Decision: As calculated χ^2 > critical value, we reject the null hypothesis and accept the alternative hypothesis.

Table 4: Areas of Organisational Structure Workers perceived Disadvantageous (Power relations

FEATURE	MATRIX	HIERARCHIC	TOTAL
Lack of accountability	3 (1.91)	0 (1.09)	3
Co-ordination	1 (1.28)	1 (0.72)	2
Role confusion	18 (11.48)	0 (6.52)	18
Low managerial control	5 (3.19)	0 (1.18)	5
Role conflict	1 (0.64)	0 (0.36)	1
Difficult to manage	6 (3.83)	0 (2.17)	6
Communication problems	6 (7.02)	5 (3.98)	11
Don't know who is in charge	6 (3.83)	0 (2.17)	6
Don't understand structure	3 (1.91)	0 (1.09)	3
Role dodging	16 (10.20)	0 (5.80)	16
Lack of discipline	2 (1.28)	0 (0.72)	2
Too many managers	3 (2.55)	1 (1.45)	4
Former structure better	2 (1.28)	0 (0.72)	2
None	0 (5.74)	9 (3.26)	9
Possible abuse of power	0 (2.55)	4 (1.45)	4
Unhealthy competition	0 (1.91)	3 (1.09)	3
Hierarchical dependence	0 (1.28)	2 (0.72)	2
Inflexible	0 (0.64)	1 (0.36)	1
Management isolated	0 (1.28)	2 (0.72)	2
Decisions may be unpopular	0 (0.64)	1 (0.36)	1
Elitist	0 (1.28)	2 (0.72)	2
Total	81	46	127

Null hypothesis	No Difference
Alternative hypothesis	There is difference
Test statistic	$\chi 2$
Significant level	0.05
Degree of freedom	23
Critical value	35.17

χ^2 = 23 df = å(0 - E)^2

E=0.62 + 1.09 + 0.06 + 0.11 + 3.70 + 3.70 + 1.03 + 1.81 + 0.20 + 0.36 + 1.23 + 2.17 + 0.15 + 0.26 + 1.23 + 2.17 + 0.62 + 1.09 + 3.30 + 5.80 + 1.45 + 2.54 + 0.20 + 0.36 + 8.30 + 14.60 + 0.41 + 0.72 + 0.08 + 0.14 + 0.14 + 0.72 + 0.57 + 10.11 + 2.55 + 4.48 + 1.91 + 3.35 + 1.28 + 2.23 + 0.64 + 1.14 + 1.28 + 2.28 + 0.64 + 1.14 + 1.28 + 2.28

χ^2 = 97.81

Decision: As calculated χ^2 > critical value, we reject the null hypothesis and accept the alternative hypothesis.

In presenting your findings ensure that you:

- Write in direct speech – this will improve the impact of your argument
- Always refer to the sources that will support any claim that you make – e.g. tables, graphs, documents (such as memoranda, letters, notices). This will improve its credibility.
- Complete your write-up, and then revisit it within a few days. Most likely, you will discover flaws or find more effective presentation techniques for your information.
- Where possible, use a variety of visual forms of presentation – tables, graphs, charts, and pictorials.
- Distinguish between tables and figures. Tables have numeric and percentage representations in a tabular form. All other forms of visual representations are figures.
- Tables and figures must be numbered separately and consecutively; for example; Table 1; Table 2; Table 3; Figure 1; Figure 2; Figure 3.
- Place tables and figures near the point of discussion where you refer to them – as soon as it convenient to do so.
- Keep each table and figure on the page – do not allow them to run-off the page.
- Start the whole presentation with a general introduction, but also introduce and conclude each section or chapter
- Try to summarise your work, providing the basis for your conclusion (your final word on the subject).

5. Using Qualitative And Quantitative Techniques To Complement Each Other.

Using different techniques, simultaneously, enhance reporting effectiveness and generate some level of objectivity. For example, one could use both quantitative and qualitative methods incorporating documentary analysis and interviews. The interviews themselves could consist of both closed ended and open-ended items, combined with observation. Kaarst-Brown (1999) for example has used different data collection methods during her research. These included participant observation; documentary analysis; semi-structured interviewing; focus groups and informal meetings. While using quantitative, data appears to present a sense of objectivity, the tables and figures, might not bring the situation to life, in a way that qualitative methods can. Lets follow the discussion below, without the qualitative element, and then add the relevant statements including the verbatim.

> As in the case of race and ethnicity, there is disparity in the extent to which the sexes perceive managers as helpful. Just over 17% male and no female perceive their managers as extremely supportive. 90% of the female respondents and less than 30% of the male, describe their managers as unsupportive, these differences in perception being significant. The least that can be expected is that a table is presented (Table 5).

Table 5: Perception of Assistance From Managers By Sex

			Sex		
			Male	Female	Total
Assistance from Managers	Extremely Supportive	% within Assistance from Managers	100.0%		100.0%
		% within Sex	17.3%		12.4%
		% of Total	12.4%		12.4%
	Supportive	% within Assistance from Managers	91.4%	8.6%	100.0%
		% within Sex	42.7%	10.0%	33.3%
		% of Total	30.5%	2.9%	33.3%
	Fairly Supportive	% within Assistance from Managers	61.5%	38.5%	100.0%
		% within Sex	10.7%	16.7%	12.4%
		% of Total	7.6%	4.8%	12.4%
	Unsupportive	% within Assistance from Managers	51.2%	48.8%	100.0%
		% within Sex	29.3%	70.0%	41.0%
		% of Total	21.0%	20.0%	41.0%
	5	% within Assistance from Managers		100.0%	100.0%
		% within Sex		3.3%	1.0%
		% of Total		1.0%	1.0%
Total		% within Assistance from Managers	71.4%	28.6%	100.0%
		% within Sex	100.0%	100.0%	100.0%
		% of Total	71.4%	28.6%	100.0%

$\chi^2 = 23.837$, df = 4, $p < 0.000$

Could any quantitative representation bring to life solution as they report below:

"Welcome to Cuckoo Land!

"Is it that they really do not understand, or are they just trying to be obstructive? Every day, weekends inclusive, I have to take home boxes of files – not for the show".

Pausing briefly, he grasped his attaché case, snapped it open, documents flung in, and in 'lightning swift' succession securing the 'flip locks' – unscrambling their combination. Shrugging his shoulders vertically, smiling broadly, he becons to the researcher – a signal to leave the room. Slamming his office door – locking it 'ratchet quick' – he turns to the long corridor ahead, nods to the researcher, and in a most apologetic voice, suggests:

> "Lets' go!"

Having walked across the annex, overlooking the car park, the researcher enquires:

> "Are you on your way home?"

His unexpected response bellows as we advanced towards the car park:

> "I wish I could really say! – Home or work!"

Then pointing to the vacant lot, towards the sunset, exclaimed:

> "There goes my social life! My family life is already gone! My …… was right – I 'aam' married to 'mmy' job.
>
> "But is ….. not the only one who thinks so!?
>
> "I do believe that there is a limit, a time separation between work and leisure! That work-life balance!
>
> "I must be daft! Very daft!"
>
> Then in an instant, after biding:
>
> "Cheers!"
>
> "He deactivated his security system, prized his front door open, and offloaded his luggage. Entering his car with a smile, he soon fastened his safety belt and turned the ignition on. Affording a final but firm wave, he started the ignition, and with an instantaneous movement, sped off as though to 'ride into the sunset' or 'meet one's destiny" (Crawford, 2001a, p. 68).

On the other hand, we might add some objectivity to qualitative elements of a report, through quantitative aspects. For example, the following excerpt is an illustration of point being made regarding communication frequency in specific divisional and matrix structures, but which the accompanying table enhances.

> "Matrix and Hierarchic Organisations, respectively, required a high degree of communication, thereby creating the problem of overload. This is demonstrated in the perceived frequency with which workers receive communication. When asked "How often do you receive information from others within the organisation?", Almost 75% of informants in Matrix Organisation, compared with less than 60% in its Hierarchic counterpart, receive information infrequently Table 6 below – (Crawford, 1994).

Table 6: Levels of Information in Matrix and Hierarchic Organisation

Frequency	Matrix Organisation		Hierarchic Organisation	
	Number of Informants	Percentage Response	Number of Informants	Percentage Response
Very Often	37	74%	30	59%
Often	11	22%	20	39%
Seldom	2	4%	1	2%
Total	50	100%	51	100%

(Chi-square = 7.1 (df = 2) P = 0.0288 = Significantly different at 0.05 level)

Not only verbatim enhance the meaningfulness of quantitative data but so also can documentary analysis. Memoranda, minutes of meetings, letters and reports are very good source of 'rich' information, from which excerpts can be drawn, to add a spark of light to an otherwise dull report. Table 7, below, brings to our attention the low rate of meeting attendance of workers in Matrix Organisation (a case study setting). Although it brings out the important point of low attendance, the following excerpts from three memoranda from its chief executive can further enhance this factor.

Table7: Attendance at Specialist Team/departmental meetings

Frequency	Matrix Organisation		Hierarchic Organisation	
	Number of Informants	Percentage of Informants	Number of Informants	Percentage of Informants
Always	27	54%	34	68%
Often	14	28%	12	24%
Seldom	8	16%	4	8%
Never	1	2%	0	0%
Total	50	100%		100%

[Chi-square = 3.29 (df = 3) p = 0.3490, No significant difference at 0.05 level]

> "It is very important that you attend, I shall be reporting back information I have received about the quality assurance visit on 3 - 7 October. All workers will be affected by the visit and it is likely that most of us will have inspectors visiting our workstation. We therefore all need to discuss what will be expected of us, strategies, etc" (Crawfprd, 1994 p. 210).

> "… Any worker who thinks he/she can operate in a vacuum without attending any meetings is out of touch with reality, training and developments ….. attend and vote for change …. Do not just ignore them because they are major centres for dissemination of information and debate within this organisation……" (Crawford, 1994 p.208)

> "Meetings are a major factor of workers involvement in the decision making process of the organisation …" (Crawford, 1994, p. 208).

6. The 'Complete Participant as Observer': A New Ethical Dimension of the 'Participant Observer Relation Continuum.'

There are different levels of participant observation, representing a researcher's varying degrees of involvement in the groups' activities. The level of involvement of a researcher in the work of a group is directly related to the extent with which its members perceive him or her as part of that entity. These perceptions are implicit in the five levels of involvement. They are: the complete participant; the participant as observer; the observer as participant; the complete observer (Stacey, 1969; Krusz & Miller, 1974; Denzin, 1978; Bulmer, 1982; Cuff & Payne (eds), 1984; Mann, 1985) and the complete participant as observer (Crawford, 2001b).

The last of these participant observer levels, devised by the current researcher, supersedes the complete participant, which totally conceals the research activity (Denzin, 1978; Mann, 1985; Cuff and Payne (eds.), 1984; Stacey, 1969; Krusz and Miller, 1974; Bulmer, 1982). At this new level, the researcher generally participates in the activities of the group under investigation, while taking advantage of its members' position as informants.

Relieved of the usual façade, the participant observer, at this level, tries to establish a reasonable level of relationship with respondents. However, the researchers will find it necessary to balance her observer role with that of a participant. This is necessary because, although they seek to gain information, they need it to be untarnished by their 'role interchange'. This means that their acceptance by group members, as incumbents, will improve the process of information gathering, rather than impairing their interpretation of the behaviour of others. The participant-observer relation's continuum (appendix 1) has been designed by the current researcher to illustrate this new level of relationship.

7. Eliminating Some Inherent Problems Of Research

Whatever research methods are used, a number of problems are likely to occur; some although relating specifically to ethnography, include ethics, analysis, validity and subjectivity. Ethics is a problem for the complete participant, where, at this level of observation, the researcher's role is characterised by total secrecy. It neglects the right of individuals to agree to participate in any research. The role of a 'complete participant as observer' provides for the traditional level of participation but without the element of secrecy. Being formally engaged in organisational activities – paid or voluntary should reveal the researcher role. The potential informants agreement is then sought before any attempt is made to include data gathered from them and, or, about them, in the research. As was the case of the current research, other members will provide information because of the trust and responsibility, which they accorded the researcher.

Researchers, particularly participant observers' face the dilemma of moral commitment as a worker and research efficiency – assuming that increased involvement in one role (researcher or participant) results in a decreased effectiveness in the performance of the other. The new role, complete participant as observer, facilitates effective observation, while enabling the researcher to actively participate in group activities. The continuous presence of the researcher did not alter the natural setting, assuming the maintenance of participants' 'normal' behaviour, ensuring that colleagues react normally to the various 'stimuli'.

Data, which is collected through participant observation, is generally difficult to analyse, because of the mass of information, which is generally available. The current researcher has averted this problem by collecting and arranging materials in time sequence, in the first place, then ordering them according to the research outline. The interview materials and other documents, which related to particular aspects of the scheme were marked and tucked away in separate slots of a portfolio. Quite often materials, which are needed in one section, are also required in another. In this case, photocopies are made, to alleviate the problem of missing these important inclusions. Flat files, with treasury tags (strings), and pocket files were often used, so as to separate the different sections. These facilitated other insertions in the desired order.

In an effort to keep the past in perspective, the researcher needs to read each section through periodically, linking the past, present and future. Gradual analysis is thereby facilitated. This is in preference to collecting the data over a long period, then attempting to analyse them at the end (Evans 1987) of the observation. The Continuous analysis serves the purpose of providing further bases for data collection. Working in this way can also enable a researcher to modify or abandon the original hypotheses.

While in the field, the researcher should make deliberate attempts to analyse the data. One way in which this was done is to identify the social interactions and relationships, then relate to the setting (Oreinston and Phillips, 1978), enabling the researcher to view these interactions and relationships (see Thompson, 1980), not as the concrete and specific behaviours they are, but as instances of more abstract and general concepts. In other words, the events were abstracted and treated as encounters which had specific meanings for the participants (Oreinston and Phillips, 1978). The current researcher also found it useful to have had a complete picture of the research parameter, which was in the form of a tentative outline. This provided the flexibility for widening or narrowing its scope, whilst providing a relatively firm basis for data collection. Most importantly, though, this scheme conserves the much needed energies (physical and inspirational).

Validity is seen as one of the major problems of research regardless of the methodology employed. However, the *intense* knowledge of the subjects, facilitated by participant observation, specifically the 'complete participant as observer' is an aid to *validity.* According to Taylor and Bogdan (*1984,* p.7): "if you know a person well enough, you can usually tell when he or she *is* evading a subject or 'putting you on".

Changes *in* the observer's level of objectivity are a common feature of field research. The long period spent *in* the field generally results in the researcher becoming a full participant, thereby losing his or her position as an analyst. *This* is the idea of 'going native'; the observer becomes insensitive to crucial events within the field setting. In a number of ways, the *role* of the 'complete participant as observer' helped the researcher to alleviate this problem by afforded him the opportunity to function without pretence, as a constant reminder of his role. *Reminders* often came from colleagues who asked questions such as: "How *is* it going? - I mean your research".

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APPENDIX' Participant- Observer Relation Continuum'

PARTICIPANT ⟷ **OBSERVER**

Complete Participant	Complete Participant As Observer	Participant As Observer	Observer As Participant	Complete Observer
Researcher is closely associated with informants and is generally regarded as a member of their group. Highly subjective assessment. Researcher activity has clandestine slant.	Researcher and participant roles enacted consciously & openly. Clandestine element absent. Objectivity made possible.	Participant embraces the researcher role, but is usually detached enough to make objective observations.	Little time spent with subject. Focus is on observation with informant. Low level of interaction with subjects increases objectivity.	Detached, with little interaction with subjects. 'Distance' facilitates a high level of objectivity.

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With Kindest Regards,

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