

Why would I tell you? Perceived Influences for Disclosure Decisions by Senior Professionals in Inter Organisation Sharing Forums

".. industries can, if they have the will, overcome the natural tendency to avoid sharing of potentially embarrassing information."

*Alan Paller, Director of Research,
The SANS Institute
<http://www.wwisac.com/about.htm>*

Mandy Messenger
August 2005

MSc Organisational Behaviour
Supervised by Gillian Symon

Abstract

Information sharing in organisational relationships is key and is the main purpose of knowledge sharing forums. Here it plays a critical, but problematic, role in inter organisation collaborative environments. This research considers what factors influence, if the decision to disclose is complex, and focuses on identifying and understanding an emerging set of factors.

This study used an interpretative paradigm with 12 qualitative, one-to-one interviews, focusing on individual self reported reflections of disclosure decisions, drawing from a diverse set of varying perspectives or 'voices'. Local theoretical reflection was achieved using thematic analysis in parallel to a literature review of emerging concepts.

Awareness of motivators to both disclosing and withholding were perceived, and the actual decision was mediated by expectancy on the ability of self and others. This included the need for empowerment and knowledge of sharing tactics. Sufficient trust was considered an important enabler, and criteria for the bases of trust were reported. The interpretation highlights the critical role of the salient social identity in bringing focus and awareness to particular motivations and barriers, thus influencing the final disclosure decision. The results may be used as a stepping stone for future empirical research.

Key Words

INFORMATION, SHARING, DISCLOSURE, DECISION MAKING, TRUST, MOTIVATION, SOCIAL IDENTITY.

Contents

Abstract.....	1
Key Words	1
Contents	2
1.0 Introduction	3
2.0 Literature Review	4
2.1 Knowledge Sharing	4
2.3 Decision Making.....	4
2.3 Disclosure and Secrets	6
2.4 Information Security	7
3.0 Research Question	7
4.0 Method.....	9
4.1 Organisational Environment	9
4.2 Overall Approach.....	9
4.2 Unit of Study.....	10
4.3 Sample	10
4.4 Data Collection	11
4.5 Researcher Influence	12
4.6 Data Analysis	12
4.7 Ethics and Confidentiality	13
5.0 Results.....	15
5.1 Motivation.....	15
5.2 Social Identity Processes	18
5.3 Trust.....	20
5.4 Sharing Tactics.....	22
6.0 Emerging Literature Review and Discussion.....	26
6.1 Motivation.....	26
6.2 Trust.....	27
6.3 Social Identity Processes	28
6.5 Decision Making.....	28
6.5 Disclosure.....	29
6.7 Information Sharing and Cybercrime.....	30
7.0 Critical Self Review	31
7.1 Method	31
7.2 Epistemology.....	32
7.3 Discipline	33
8.0 Conclusion	34
References	35
Appendix A: Coding Scheme	43
Appendix B: Briefing Sheet.....	44

1.0 Introduction

The role of information sharing in many organisational relationships is paramount. In some situations, like knowledge sharing forums, it is the main purpose (Abrams et al 2003). But, whilst the disclosure of information can be straightforward; what if the decision to disclose is more complex? Lui & Chetal (2005) highlight the critical, but problematic, role that information sharing takes in inter organisation collaborative environments, such as defence against terrorism.

Findings show that many factors influence the decision to disclose, such as the content, the characteristics of the recipient, and environmental factors (Omarzu 2000). Much research on information sharing and disclosure is focused on general social settings or in health care fields (Cravens 1975, Hill & Stull 1982, Vrij et al 2002). Yet, it has such a significant role to play in the field of organisational behaviour and, in particular, the effectiveness of knowledge forums. Recent works have started to consider the role of disclosure in quite specific situations (Kim 1999, Abrahamson & Park 1994). This study aims to continue this trend; firstly by considering disclosure in a situation where the decision was likely to be less than straightforward (having a number of influencing factors), and secondly by doing so in a rich and urgent inter organisational context.

One such situation exists within the increasingly pertinent field of electronic network security. Forums focus on sharing best practise but also aim to share information on cyber attacks or network vulnerabilities in order to help other members to improve their own defences. What factors influence the decision to share in such an environment? This is our key focus.

This study used a method where a review of literature continues in parallel to the data collection and analysis (Charmaz 1995, 31). Therefore, the next section presents the brief review of the literature that sets the context to the research question. This was conducted prior to data collection. After detailing our research method, we describe our results which also briefly reference the emerging theories and literature as identified during data analysis. We then discuss and reflect on these emerging topics and findings in the context of our research question. We close with a self review critiquing our work and reflecting on our learning about research practise.

2.0 Literature Review

This section outlines the review of literature setting conducted prior to data collection. This review defined key constructs and informed the context of the problem and focused the research question.

2.1 Knowledge Sharing

Knowledge is recognised as an important weapon for sustaining competitive advantage, and many companies are beginning to manage organisational knowledge (Lee 2003, Abrams et al 2003). Many have sought to establish the credibility between knowledge creation and performance (Lee 2003), and its importance as an inter organisational activity has long been established (Schermerhorn 1977).

Researchers have investigated knowledge management factors such as enablers, processes, and performance. However, most current empirical research has explored the relationships between these factors in isolation. To fill this gap, Lee (2003) develops a research model that interconnects knowledge management factors. While much of this work is at the organisational level, it highlights the importance of the knowledge sharing activity and the multitude of relevant influences. Our focus is on the individual deciding to disclose or sharing information within the context of these sort of knowledge sharing forums.

Van Baalen & Bloemhof-Ruwaard (2005) show that pre-conditions for the emergence of a network of practice are a sense of urgency and fragmented awareness. They also highlight the important role of a knowledge broker in enabling the sharing and development of a body of knowledge. While Bates (2005) describes two categories for stumbling blocks for knowledge sharing, the first is the ability of communication technology while the second covers social factors i.e. that sharing is not encouraged within organisations and the presence of 'an unspoken belief that one loses power by sharing'. Other works have focused on particular social/psychological factors. For example, Pantelia & Sockalingam (2005) asserts that trust is 'central for knowledge sharing'. Abrams et al (2003) identified ways that interpersonal trust was developed in the context of knowledge sharing and described it as an 'elusive concept' that is difficult for managers to influence.

2.3 Decision Making

Before the disclosure act can take place, an individual undertakes some form of cognitive processing in order to select an behavioural option; to disclose or not. This cognitive process we term 'decision making' and it is a critical part of the focus of this research.

Beach & Connolly (2005, 4-6) highlight that decision making has been considered from a number of disciplines and eludes that this is with little synergy - for example, Prescriptive Theory, used by economists, where the aim is to assert what should be done rather than what is actually done. This is essentially a rational model, whereas Behavioural theory (Wright & Bolger 1992) is more descriptive and aims to describe what is actually done. Our research is thus within the Behavioural approach.

Koehler & Harvey (2004) have edited a handbook on decision making which demonstrated the rich body of thinking on this area in that they cover strategies such as loss avoidance and goal maximisation as well as exploring social and cultural influences.

Others have highlighted more of the social psychological process involved in decision making. Koehler & Harvey (2004) report how instinct based reasoning can lead to biased thinking. Beach & Connolly (2005, 22-23) highlight the role of 'frames' in influencing the salient, and interpretation of information as part of decision making. A frame 'guides the decision makers interpretation of what is going on'. They assert framing as a term that encompasses the significant research on schema, scripts, scenarios, mental models, causal models, stereotypes, prototypes and knowledge partitions.

Decision making has a long heritage and broad body of theories. We are more specifically considering the individual making a decision in the context of representing an organisation, in an inter-organisation setting.

Simon (1945) recognised that the behaviour of a person is constrained by the position they hold within an organisation. He believed that people have limited cognitive capacity and so try to simplify their representations of a problem, thus limiting their rationality (known as 'Bounded Rationality'). He also observed 'Satisficing' which is where a person has a set of standards and, so long as a solution meets these standards, it is selected.

Beach & Connolly (2005, 22-23) describe the influences of others on decision making, such as 'fairness' considerations (118) and social dilemmas such as the classical issue of the 'dilemma of the commons' (Hardin 1968). This is where a common resource limits the total available gain so an individual must temper their actions striving for personal gain in order that all achieve some gain. This might also be expressed in terms of common contribution and the issue of free loaders. In our information sharing situation, this relates to the need for forum members to contribute information. Members withholding information constitutes 'free loading' and, if enough members employ this strategy, the value of forum membership is eroded. At the same time members wish to minimise the degree to which they share sensitive information about the organisation they represent.

There is also significant work on how organisations make decisions, which is based on the premise that organisational members work together to construct shared frames for decisions (Koopman & Pool 1991). However, as our

research is focused on the individual level rather than the collective, we only highlight its existence for completeness in our review.

Pantelia & Sockalingam (2005) assert that Trust, along with conflict, are fundamental for knowledge sharing and are an issue for any organisational structure, but they find that they have received 'limited attention' in decision making literature particularly in the context of 'virtual alliances'. Our research aims to address this limitation.

2.3 Disclosure and Secrets

Having considered the decision making, we now turn our attention the specifics of the action being selected. In this case the action is to disclose sensitive organisational information. Self-disclosure was defined as 'personal information verbally communicated to another person' (Omarzu 2000, 175). In this study we are studying information not just of the person but also of their employing organisation as so we extend Omarzu's definition to include such organisational information. Much of this work is at the individual level and considers individual factors influencing disclosure. A number of factors influencing disclosure have been researched.

Early work by Jourard (1971) believed that disclosure behaviour was determined by personality, however situational factors might influence, and personality determined behaviour. Omarzu (2000, 174) also noted that disclosure is an interpersonal behaviour and is normally a discretionary behaviour. What influences a person to elect to engage in such a discretionary behaviour?

Baumeister (1982) present a theory of self presentation where, if no other rewards are present, then the default goal is that of social approval. In addition, Dindia and Allen (1992) meta analysis found consistent evidence that men disclose less than women. Yet, in an experiment with 60 undergraduates, Young (1978) found no gender effects in the disclosure of information that was both pertinent to organisational effectiveness as well as personally threatening. More recently, Omarzu (2000) finds that there are 'few connecting principles' from research on disclosure. We aim to provide a better understanding of these factors in an inter organisational context.

In our study we are considering a specific type of disclosure, one where the information is sensitive. Abrahamson & Park (1994) used automated analysis of corporate correspondence to provided evidence that negative organisational outcomes are intentionally concealed. Therefore, we propose that this information type could be considered a type of organisation secret. In Vrij et al's (2002, 56) on secrets in every day life they recognised there is limited empirical evidence available. Although their work was on students, rather than the work place, and had a small sample of 70, of which only 41 held secrets, they attempted to predict who would disclose their secret. Vrij et al (2002; 65) found that secret disclosure was more likely to occur with someone they felt emotionally close to, but that was less likely if the secret

was initially kept to avoid disapproval. The secrets in this study included a high frequency of sex related secrets and so these results might not be applicable to the domain of professional sharing in the work place.

The experimental work of Lane and Wegner (1995) predict positive cognitive consequences from secret disclosure and negative consequences from secret keeping. This finding was not supported by Vrij et al (2002) empirical evidence. Lane and Wegner (1995) notice pre-occupation of the secret when withholding the information. As this work was conducted in an artificial environment, their findings might be an artefact of the restricted social setting.

Finkenauer & Rimé (1998) recognised that keeping secrets might have social consequences. For example, withholding information restricts the social interaction with others. Again, this work was with emotive and personal secrets and its generality is questioned. Our research aims to understand the impact of the disclosure of sensitive information as a type of organisational secret.

2.4 Information Security

The content of the type of information to be disclosed is also worth understanding. The information is organisationally sensitive. In this research, the domain is information about the security of computer networks and systems. This is a domain that is growing in importance for contemporary organisations. Bielski (2005, 8) represents the view from the financial industry, reinforces the increasing importance of electronic security and quotes statistics from Celent Research, Boston, which estimate that IT security spending by North American banks will reach \$1.8 billion in 2005, a 12.2% increase over 2004. Newman (2005, 68) highlights that this increase is a global problem when he refers to a Gartner Group survey that spans 30 countries and ranks 'security as the number-one technology priority for 2005.'

The application of knowledge sharing initiatives to enable the development of better security is critical to the success of the member organisations. In turn, the disclosure of organisationally sensitive information by forum members enables the success of the knowledge sharing initiative.

3.0 Research Question

Now that we have briefly understood the research in this area, and proposed working definitions of some relevant terms, we introduce our research aim in the form of a question.

The disclosure of information between organisations is highly valuable to the success of knowledge development. Understanding the factors that pertain to the decision to share information, particularly when the information is organisationally sensitive, is critical to the success of any such forum's objectives. Thus our research question is:

‘What factors do people recognise as influencing the decision to disclose sensitive organisational information in inter-organisation forums?’

In considering this question we explored ‘What do people think motivates them to disclose?’ and ‘What are the barriers that they recognise?’

The reference to ‘people’ within this research question needs to be clarified. We include in this term those who potentially might disclose, as well as those who might be expected to influence that disclosure, for example knowledge sharing forum brokers and facilitators, and line managers of the forum members. This wide definition has been selected to gain perspective from a broad set of voices.

4.0 Method

This section describes how the research was conducted, including the practical and ethical considerations. The study used an interpretative paradigm with qualitative, one-to-one interviews, focusing on self reported reflections of disclosure decisions, drawing from a diverse set of people with varying perspectives or 'voices' in this situation. The research question focuses on identifying and understanding an emerging set of factors. To this end, the interviews were distributed over a year allowing analysis in parallel to the on-going review of current academic literature in order to achieve theoretical reflection (Charmaz 1995, 31).

4.1 Organisational Environment

Our research question required a forum where members need to make challenging disclosure decisions, in a professional, inter organisational sharing forum.

The UK government has a department (known as NISCC – www.niscc.gov.uk) that focuses on encouraging and facilitating such forums for the security of critical infrastructure, including electronic information and computer networks. Forums cover a diverse range of industries, including corporate as well as SMEs, and the government has formulated a universal toolkit to support the set up and maintenance of these forums. This includes terms of reference and membership contracts as well as links with valuable sources of information on vulnerabilities to the electronic information networks.

Membership of the forum is typically a senior information security professional responsible for the integrity of all business information on electronic information networks. Their responsibility covers protection from hostile attacks and the eradication of any vulnerability. Active membership provides information about the sort of problems or attacks they need to be able to mitigate, but it also risks exposing their organisation by the sharing of sensitive information. For example, in highly competitive environments such as banking the knowledge that a competitor's electronic network has been violated is knowledge that could be misused. This environment is one where professionals need to make challenging disclosure decisions.

4.2 Overall Approach

Experimental, direct observation and participative based approaches were considered but rejected on practical grounds and limited access to the domain. For example, direct access to the sharing forum was not feasible as the sensitive nature of electronic security information means sharing forums are closed meetings and exclude outsiders. This precluded directly observing the sharing process. Experimental approaches were rejected as, not only are they expensive but they artificially limit the social context which is not sufficiently understood to ensure that all the pertinent factors would be

reproduced. Participative research would have required the researcher to take a role as a security professional with one organisation. While the researcher does have the technical background necessary to perform adequately in this role, no role was available and the time investment was not practical. In addition, membership qualifications include a career history in the specific field, something which would have required years to establish.

The practical alternative involved interviewing individuals to explore, retrospectively, their perspectives upon the act of disclosing sensitive information. This method has the benefit of enabling a number of voices with differing perspectives to be explored in a practical and efficient manner. However it is recognised that there is an inherent paradox in investigating a disclosure act through an interview, which is itself a disclosure act. This implies that some of the factors that might influence the disclosure decision might also influence what is disclosed in the research interview.

Given the importance of the social context of any disclosure decision (Omarzu 2000), and recognising that each person has their own interpretation of any situation, an Interpretative paradigm (Alvesson & Deetz 2000) was used. As the research question is aimed at 'what factors are influencing the decision?' the study is essentially exploratory (Sekaran 2000, 123-4). The objective was to identify emergent factors and explore the potential relationships through the method. The data collected was qualitative in order to yield the deep and rich information (Bachiochi and Weiner 2002, 163) essential to the nature and assumptions of this; an exploratory, interpretative study. The findings that emerged from this study could, in the future, be investigated to understand any effect size, using a positivist approach.

4.2 Unit of Study

The disclosure decision was studied at an individual level. While it is recognised that some decision making can be an interpersonal, organisational or group activity (Beach & Connolly 2005, 115-136), there are two reasons for the individual approach. Firstly, as we were at the stage of identifying emerging influencing factors, we do not know if others actually are an influence. Thus, an individual focus remains the appropriate first step, and group and interpersonal decision making might be identified as appropriate for a follow on study. Secondly, the practical challenges of studying the group or interpersonal decisions are recognised i.e. increasing the problems of access to interviewees.

4.3 Sample

This was a 'one shot' study (Sekaran 2000, 138) where individuals were interviewed, over a period of 12 months, in order to allow for simultaneous analysis and theoretical reflection (Charmaz 1995, 31).

Interviewees were selected in partnership with the organisational 'gatekeeper' (Cresswell 1994, 148) which, in this case, was the UK government lead for the promotion of the inter organisational forums. Achieving coverage of as

many different perspectives, or voices, as possible was the key criterion for interviewee selection. The initial interviews started with facilitators for the forums and forum members that had a positive disclosure experience. Over interview role out, interviewees were selected to cover: those that had a negative view on the viability of sharing information, academics in the industry, industry consultants, representatives of SME and large corporations, US and UK forum members, as well as the managers of forum members. Ideally, the number of sessions would be enough to 'achieve theoretical saturation' (Lee 1999) – a state where no new constructs are observed. Coverage and practical limitations meant that 12 interviews were conducted.

Only two females were interviewed, so the majority were male. This was confirmed, in discussions with the forum facilitators, as gender representative.

4.4 Data Collection

The method of data collection was the qualitative interview (Kvale 1983). Cresswell (1994) notes that with qualitative designs the researcher is interested in 'meaning - how people make sense of their lives'. Thus face-to-face interviews were used to bring the researcher close to the participants and to facilitate the interviewee's reflection of their experiences of disclosure decisions. The majority of interviews lasted just over an hour. The shortest was just over half an hour and the longest an hour and a half. All interviews were recorded and fully transcribed. Tape recordings and transcriptions were stored anonymously.

The interview design was intended to facilitate a 'self reported' account from the participant. It was recognised that 'self-report' of essentially 'mental processes' is reliant on the ability of the individual to articulate their thoughts and may be distorted by post-hoc rationalisation and social desirability (Cresswell 1994). Participants were senior technical professionals who were predicted to have effective communication skills. However, it is recognised that describing cognitive processes and/or personal reactions may need to be supported. The design supported in two ways: first with the environment and secondly with the questioning style.

In order to make the setting as comfortable and as natural as practical, the interview was conducted in a private room in the participant's normal work environment. As for the questioning style, this went beyond just asking the interviewee to describe their experiences; the interviewee interpreted and reflected back that interpretation for confirmation or refinement. This technique is defined by the 'on-line interpretation' interview on Kvale's (1983, 181) continuum between the 'description and understanding of themes in the life world of the interviewee'. This provided an additional level of interpretation to the post-interview interpretation that was conducted as part of the analysis activity (see below).

The design of the interview content evolved over the series of interviews as analysis identified emerging themes. This allowed the later interviews to include more focused questions (Charmaz 1995, 31) while balancing the need

to explore any unique themes from the particular perspective of that interviewee.

4.5 Researcher Influence

Auerbach & Silverstein (2003, 27) promote that 'researchers' subjective experience can be a source of knowledge about the phenomenon'. So, rather than attempting to minimise researcher influence as in a positivist study, here the researchers' values/judgements/biases will be considered valuable (Charmaz 1995, 32) and thus made explicit in the results. As suggested in Cresswell (1994, 147), we explicitly declare the researchers' past, related experiences. The researcher had a previous career as a software engineer and project manager and had worked with two of the interviewees, although not in an immediate working relationship, for 4 years about 10 years previously. This meant the researcher was comfortable with the technical terminology. In addition, the researcher had worked on classified government projects and had been professionally vetted by appropriate government agencies. These characteristics meant that the researcher was able to build rapport with the interviewees as well as having an understanding of their workplace environment. There was no previous knowledge of the inter organisation sharing forums or of a specific role as a security lead.

4.6 Data Analysis

The data analysis considered what was observed, within and between interviews, with what was found in current literature. This technique is termed 'Local Theoretical Reflection' (Pidgeon & Henwood 1997, 267) and is a form of analysis derived from Grounded theory (Glaser and Strauss 1967).

In order to provide an initial technique for identifying concepts, a simple form of thematic coding was used. King (2004a) recognises that codes can be either simply descriptive or interpretive, where the researcher has interpreted what the interviewee means. The coding allowed both types.

The analysis was an iterative refinement process, so the coding scheme evolved as each interview was analysed, compared with data from other interviews and with theory from the indicated literature. Codes were clustered and merged as the themes evolved. Due to financial constraints, no software was used in the analysis.

The initial coding of the first interview was simple and represented the high level interests of the research which, at that time, focused on aspects of trust. As advised by Charmaz (1995, 32-33), the analysis was not restricted to the initial focus but 'followed the leads defined in the data'. Thus the concept of trust was joined by motivation, social identities and tactical strategies. The purpose of the analysis was not merely descriptive but also to construct the overall picture. This meant that interview transcripts needed to be repeatedly analysed as the coding evolved to understand contrasting data or, in the later stages, compared with a theory identified in the literature review. Comparison between the themed data and existing theories for the emerging phenomena

is considered 'Theoretical Comparison' by (Pidgeon & Henwood 1997, 267). Appendix A contains a list of the final coding scheme. Data was coded in parallel (King 2004b, 258) as aspects of different clusters of categories were present in the same segment of text.

Cresswell (1994) asserts that, with qualitative designs, the researcher is the 'primary instrument for data collection and analysis', so the same researcher conducted the data analysis as completed all interviews in order that the 'primary instrument' remained consistent. Traditionally the 'Reliability' of the analysis would be determined by judging the reproducibility of inferences from the data using inter coder reliability (Bachiochi and Weiner 2002). King (2004b, 256) notes that in the contextual constructivist approach there are 'always multiple interpretations' and, as such, coding reliability is irrelevant. In fact, Pidgeon & Henwood (1997, 269) argue that 'there are no methodological criteria for guaranteeing the absolute accuracy of research' and propose 'keeping close to the data' and reflexivity as demonstrations of the 'rigour' of the research while still recognising the constructivist view that the activity of research 'inevitably shapes and constitutes the object of inquiry'.

King (2004b) recognised that stopping the evolution of the themes is 'one of the most difficult' decisions, and that an ideal template required unlimited time. Thus, while recognising that a template is not the theoretical final version, each of the interview transcripts had been revisited sufficient times and the rate of suggested alterations to the template had reduced sufficiently for it to be considered sufficient.

4.7 Ethics and Confidentiality

As this research explores the self reported reflections of those who may have been placed in situations that created a challenging disclosure decision, the research was conducted in a manner that ensured the interviewees were protected from harm, and that their rights were fulfilled (Aguinis & Henle 2002).

A briefing document was provided (Appendix B) and signed informed consent was collected. In addition to details of the purpose and method for the research, the briefing included the background and experience of the researcher. The briefing included details of where to access a copy of the final research documentation.

In order to gain deeper levels of honesty and co-operation (Boruch & Cecil 1979), participants were assured, as part of the informed consent, that they would not be identified. Recording and transcriptions were stored appropriately and identifiable details, like proper nouns, were not transcribed. This was particularly important as interviewees shared information not only on their actions but also the actions of their organisation.

Care was taken to respect the interviewee's right to control the amount of information they shared by briefing them on their rights at the outset and by the researcher recognising these rights while conducting the interview.

(Aguinis & Henle 2002, P40). Only one interviewee requested the tape to be turned off for a period and this right was fulfilled.

Sieber (1992) highlighted the importance of researcher competence in the collection and analysis techniques involved, both to ensure the validity of the results but also to ensure that the impact on participants is not harmful. The researcher has experience in exploratory interviewing as well as having a practical competence in qualitative analysis, having worked for the last 4 years in HR consultancy for a FTSE 100 company. Using Grounded Theory (Pidgeon & Henwood 1997) was a new, but over arching technique.

5.0 Results

In the interviews, professionals were asked to reflect on their thinking around an information sharing opportunity. Analysis through coding the emerging themes revealed that the cognitive processes and content reported by these senior professionals are complex, rich and multi-dimensional. Their perceptions covered beliefs, attributions and values as well as strategies and elements of procedural knowledge i.e. 'how to' knowledge. This section describes these themes, how they compare to key theory and the hypothesis they raise.

The interviews were designed to access individuals with a variety of perspectives on the opportunity to share information. There was significant agreement as to the challenges and benefits of sharing. However, some advocated sharing (for example stating that it was "necessary for the greater good"), whilst others held more cynical views (for example stating that it "is more trouble than it is worth!").

To analyse these diverse perspectives, the interview scripts were reviewed in an iterative process which evolved the coding framework alongside reviewing related theory. Interviews were evenly spaced out over 12 months. This duration, and the iterative process, allowed for theoretical review of the emerging themes and refinement of the coding schema.

Two themes emerged early in the process, motivation and trust. They describe the perspectives of the professionals at a general level. As the interviews and the themes progressed, aspects emerged that built on this foundation: social identity processes and sharing tactics. A full list of the coding scheme can be found in Appendix A.

5.1 Motivation

Interview responses provide support for elements of general motivation theory. Theorising around motivation focuses on both the content of motivation and how the cognitive process unfolds. In other words, different theories focus on the 'what' and the 'how' to differing degrees. The interview data, grounded with motivation theory, demonstrated two key points.

Firstly, interviewees reported consideration of the different categories of content theories and the context highlighted the balancing of factors motivating individuals to withhold against those factors motivating them to share.

Secondly, instances of interviewees considering elements of expectancy theory were found and this consideration indicated that, for the interviewees, barriers can be perceived as proximal, while the rewards are perceived as either distal or proximal.

Data from the interview transcripts has been selected to illustrate how these points emerged.

Interviewees reported various aspects of needs that motivated them. In order to organise this data, the ERG theory of work-related needs (Alderfer 1972) was used as a coding theme. The ERG has three main classifications which are Existence, Relatedness and Growth.

Existence is 'all the forms of material and physiological desires'. A typical example from the interviews would be

'I rather suspect that your career as a security professional, um, would be fairly short [mmm] if you were found to have leaked information'

Here the interviewee is declaring a concern that sharing information inappropriately would lead not only to job insecurity but also to career insecurity, as the behaviour is believed to be unacceptable. The awareness of this risk indicates an Existence need – the professional is motivated to ensure their career remains viable.

These professionals also reported a preference to having got things under control, or to having understood the true scope of a problem before sharing. An experienced member reflected on his strategy of getting things in order before sharing, even within his home organisation.

"You have to make sure you have got your facts right ... (if you are going to say) 'hey guv, I have found something, that ... you are gonna have to take right to the top to resolve', you wanna make sure you are on safe ground"

He refers to "safe ground" indicating that sharing without getting 'the facts right' would put him in a situation that is in some way unsafe. To share a problem and then to eventually have been mistaken or poorly informed would be damaging to both his career in the organisation and, if shared outside, his reputation as a professional within the forum. This preference for certainty was also reported by others as well as expressing a desire to have stemmed any impact from a security breach before sharing with others.

Next, Relatedness as defined by Alderfer is 'relationships with significant other people'. In the following extract the professional is unable to get clearance from his executives but is torn, as he is aware of the value of his information to his peers in other companies.

'...because those two individuals were not around to ask, so if I am going to share this information, you know for the benefit of others, there is a feeling I would be doing that on my own'

This demonstrates two Relatedness motivations in conflict with each other, relationship with superiors and relationship with other security professionals. The former motivates withholding information while the later motivates sharing information. Also, note the resulting awareness of the responsibility of resolving that conflict.

Finally, Growth would 'impel a person to make creative or productive effects on himself and his environment'. This seems to be the category that

encapsulates the fundamental motivator for sharing sensitive security information as it was frequently cited by interviewees. For example:

‘The best way of improving society’ and ‘[it is about] demonstrating corporate and social responsibility’ and ‘About helping others to grow.. (it’s the journey not a destination)’

Reflecting on these ERG categories, we note how Existence can motivate withholding while Growth can motivate sharing, and that Relatedness can generate a withhold-share conflict. Although this sounds like an even match, it is not clear how different motivators work together. Alderfer recognised that Growth is a weaker motivation than the others, whereas for these professionals it was reported as a key goal for members of these sharing forums. This raises the question of how these needs work together.

So, let us consider how the process of motivation unfolds over time and the needs work together. Interviewees reported aspects of evaluating risks and predicting outcomes so the coding evolved to us Expectancy Theory. Tolman (1932) defined behaviour as a function of Expectancy, (the subjective perception of the probability that a particular action will result in an outcome), combined with Valence (the anticipated satisfaction of these outcomes).

Although the theory was refined by Vroom (1964) to apply to the workplace, we will code using the Porter and Lawler (1968) model, as a review by Locke and Henne (1986) propose it as the most valid of the general theories.

Porter & Lawler (1968) defined Expectancy to have two components. Firstly, the perception that effort will lead to successful task performance. Interviewees declared factors indicating they considered barriers to successful task performance. Here the interviewee was clear about the decision to disclose, but was not clear how best to proceed.

[E] ‘When was the best time to share that information... do I do a running commentary because we are having this disaster...Do I wait until we’ve got a fix on the problem?’

Porter and Lawler (1968) propose ability as a mediating variable and this, too, is recognised but only in one interview. This was with the least experienced professional...

‘sharing .. is already done by better people (than me)’

Speculation could be made as to why ability was only reported by the least experienced.

Secondly, Expectancy also includes the perception that success will lead to, or be instrumental in leading to, some form of reward. This was reported in the interviews repeatedly. In this extract the reward is altruistic - helping others. This extract demonstrates the link between expectancy of a reward and recognition of a Growth need.

‘[sharing is] only done if the sharer believes this will be useful’

Note that this extract also indicates a Relatedness motivator, as it expresses a desire to help peer professionals. This indicates that the motivation is altruistic or at least about developing their professional standing - a topic we will explore in more detail when we look at social identities.

Having coded the interviews with a motivational process, the results highlighted an interesting pattern. Factors around Expectancy like 'should I trust, how should I control this' as well as the barriers to Valence can appear proximal. For example,

'you have to continuously be aware of the sensitivity of the information that you're sharing and you have to make it clear to the people who are involved in the conversation exactly under which terms you are sharing that information.'

Issues around who to trust, how to control the information and how to manage the amount of information shared are prominent in the thinking of these professionals. We will consider these strategies in more detail later.

In contrast, the value of the reward can be perceived as distal. For example, helping others who you may not know, or be aware of what help they need. This is demonstrated by one interviewee who narrates his thinking as an incident unfolded. At several separate points in the chronology, he recalls the value of sharing - but backs off from sharing in the light of other factors. First, he has concerns about how to share, then about having corrected the computer system problems before letting others know, then about who to share with in order to maintain his professional representation. We will explore these concerns individually later. Each of these concerns gained priority over the value of sharing until they were mitigated in some way.

However, this is not always the case. In this extract a different professional highlights how, if the reward is proximal, then the motivation is clear.

[A] it's easier if there is a recognised clear and present danger

Even this quote recognises that the 'danger' is not always so immediate, just that when it is recognised then? the motivation is more powerful.

Now, that we have looked at the results using the emerging motivation theory coding, which explored the balance of motivations, as well as the perceptions of proximity, we describe some of the other emerging themes. The three main areas are social identity processes, trust and sharing tactics.

5.2 Social Identity Processes

Throughout the interviews, professionals referred to considerations relating to the different roles they fulfil. While each individual had specific role names to enable a parsimonious coding schema, three categories of social identity (Tajfel 1978) were used. The resulting coding highlighted that when different identities are in the front of a professional's mind, different aspects of the disclosure decision become, in Gestalt terms, figural and the others ground (Nevis 1998, 6).

We will introduce these three categories...

5.2.1 Home Organisation Identity

The first identity refers to the individual's home organisational role which includes a sense of their responsibilities to their employing organisation. This might include their contractual responsibilities as well as any organisational citizenship behaviours. When identifying with this role, interviewees frequently expressed barriers to sharing. Two extracts illustrate this. In the first, an awareness of the competitive nature of organisation is a particular problem of inter organisational sharing forums.

'(sharing) is hard for individuals to do without feeling they are betraying their company's secrets'

In the second, a member of a large organisation reports awareness of the scale of the impact of sharing in comparison to others in the sharing forum.

'Almost the bigger the organisation the more it feels it has to lose.... could also be, slightly, that it feels that it , it would not get as much benefit back, if it's a large organisation with lots of resources'

In addition to identifying with their employing organisations two other categories of identities emerged as important.

5.2.2 Professional Identity

The second identity describes the individual's identification as a professional in a particular field in this community; Information Security or Information Assurance. This provides a focus on best practise and professional reputation. This identification was reported to be necessary in order to share.

"(sharers) needed to be able to look beyond the specific functions of their job descriptions, and see larger contexts for these things"

But interviewees also reported barriers or problems to be solved in order to be able to share. Here professional consideration for their career confidence is considered necessary before sharing can continue.

"(those that share) feel confident enough about themselves in their career"

Finally there is an altruistic identity where the individual identifies with the need to share and support others. This is a fundamental aim of the sharing forums and so this identity could be considered analogous to identifying with the sharing community. When this identity is, in Gestalt terms, figural then the rewards are clear. Here the interviewee reports being aware of the importance of what they had discovered – beyond his organisation but to other organisations.

"(the finding) we know was significant. Not just to the company.. but to ... the wider, urm..... users, of this particular technology"

As we described earlier, these rewards from a motivational need perspective are reported as either Relatedness or Growth focused.

The coding and analysis using these emerging social identities have indicated a possible pattern where the figural social identity also focuses either barriers or rewards for the sharing activity. When the home organisational role is figural, barriers are also figural, whereas when a sharing community identity is figural the rewards from a relatedness or growth need motivation are also figural. When the professional identity is figural, then both rewards and expectations of barriers are reported.

This notion of Gestalt focus could be considered to reinforce the analysis that identified the proximal or distal perception of motivational needs, as described earlier.

Having considered findings related to the differing role identities, we now consider the development and maintenance of trust, and explore the relationship between trust and the social identity in focus at any moment.

5.3 Trust

Trust was a dominant narrative in the interviews. It was often referred to, and believed to be, critical in enabling disclosure. In some situations it was referred to as a construct in its own right.

However, interviewees referred to trust in a number of different forms. As the coding schema emerged, Shapiro, Sheppard and Cheraskin's work (1992) was used as they focus on how relationships develop within the workplace. They suggest three bases for trust, each of which was identified in the interviews and provided a framework for more detailed understanding.

Firstly, **Deterrence-Based** trust which is that you can trust someone to do as they say they will as they 'fear' a punishment. Others have extended this to include the motivation to obtain rewards as Calculus-Based (Lewicki & Bunker 1996,120).

Structure had been created to establish this form of trust through the use of contracts and non disclosure agreements (NDA). This was reported as a common and valuable part of the structure, to enable the professional disclosure, but this form of trust was not considered sufficient. They showed awareness of the challenges in implementing any deterrent. While describing concerns over sharing, an experienced professional highlights the lack of confidence in non disclosure agreements as sufficient reassurance **“you have some recourse ... but that really works? It's slightly out of context, but the same thing, the Data Protection Act gives me some assurance if somebody copies my information I get compensated, there is no comfort at all! I want the information kept secret, not the compensation”**

This initially appears related to the expectancy theory we explored earlier however there is a distinction. In expectancy theory the interviewee was the subject of the calculus but, in this case, the subject of the calculus is another person as perceived by our interviewee.

Secondly, the professionals referred to various aspects of **Knowledge-Based** trust, which is about knowing another person well enough to predict their behaviour and is likely to develop over time, through interacting with the person. In this extract it is the personal relationship that has the weight, not an organisational role.

“(a call from X) will raise huge red alarm bells for me... because of their role and because of their background ... but (if they) went to a different role if that call still came in I would I’d still take it very seriously”

The theory of Shapiro et al (1992) identified that the key processes to trust development are regular communication and courtship. Reflection on the data highlighted that, although most interviewees reported the need for consistent attendance in the forum membership, it was not reported that the communication had to be constant.

Here the interviewee stresses the importance of continuity. Note also how he identifies this as an aspect of importance to his home organisational identity.

“extremely difficult to go in there and talk about things which potentially, say, could be embarrassing to your organisation, if you’re going to have different people showing up every time there’s a meet, so the continuity of the membership and the presence, the continuity of presence was a major, major factor”

Courtship, the second of Shapiro’s key processes, was not as immediately apparent in the interview data. However, in its broadest form, ‘learning more about a possible partner’ courtship was reported. For the professionals interviewed this could be through watching them in social situations and experiencing them in a variety of emotional states.

“P: I guess I’d need to see them in action.

I: What do you mean action?

P: See them in, insecurity, seeing them handling questions, handling discreetly, basically seeing them not give away information. If a man comes to me, and says I’m going to tell you something, but please don’t tell anyone. I don’t tell them”

The evaluation of other forum members extends not just to individual acts but also to the equality of treatment of other members. For example, one professional reflected on a sharing event they witnessed and expressed

“I’ve certainly been in the room where A has poured his heart out to B, and thought B was pouring his heart out back and in reality was one way traffic”

Trust theory considers that knowledge-based trust has a level of resilience. ‘At this level, trust is not necessarily broken by inconsistent behaviour’ Lewicki & Bunker (1996,122) but that the trustee needs to be able to explain the behaviour and so can then attribute it without undermining the existing trust relationship. In the following extract, the interviewee describes this favourable attribution process. **“[the security professionals I have] worked with in my entire career, um have always had a high degree of integrity, um, so I’ve yet to come across somebody that has .. that low degree of integrity so I tend to be pretty good in sort of saying ok I’m going to accept that,**

that trust relationship unless I see I see something go slightly awry and when I do, the situations when they go awry, it's generally not because ... that individual has a low degree of integrity but because we haven't been very clear in our communication [mm] about what should be disclosed what should not be disclosed “

This extract also highlights that the individual is reporting factors from a professional social identity and this is a perspective where sharing is a manageable activity. The notion of social identity is key to the last of Shapiro's types: **Identification-Based** trust. This is where one can “identify with the others desire and intentions” to the extent that they can act as your proxy.

While this theory was originally based on individual relationships, Kramer (1993) proposed that this can exist as group-based trust where the identification is with the stated group's goals. Interestingly, one advocate of sharing reported that sharing was an interpersonal relationship and seemed to express a rejection that group or a company identification would have been sufficient.

“Absolutely it it's always between individuals never between companies [mm] never”

However, group identification was articulated through descriptions of in-group/out-group expectations (Brewer 1996) such as the attributions of high integrity mentioned earlier.

The interviews report that trust is formed from identification with individuals primarily, but also that group identification does ‘speed up’ the development of trust. This paints quite a cautious picture of the professionals' trust development process.

In contrast to this cautious approach, for some professionals a well-respected peer was able to introduce and recommend another person. This would provide an initial level of trust.

“I trust you, you trust somebody else, so there is a good chance I will trust that somebody else because you trust them”

Coding identified this as Kramer's (1999, 576) notion of third parties as conduits of trust where people are able to ‘diffuse trust-relevant information’.

In summary, trust for these security professionals needs to be based on more than just deterrents, is evolved over time through knowledge of specific members, but social identification can enable pre-emptive trust if facilitated through an established trust relationship.

5.4 Sharing Tactics

The motivations, role identities and trust bases that have already been described were reported to result in some specific approaches, tactics or processes for disclosure. These could be considered the procedural knowledge required for successful sharing. Understanding this information gives us a richer understanding of how the factors we have already described might work together. These approaches consider the dual role autonomy, risk reduction and how information is utilised as an exchange commodity.

5.4.1 Dual Role Autonomy

Perrone, Zeheer & McEvily (2003) considered the buyer-supplier relations and found that expression of trust is mediated by role autonomy. They define this as 'the discretion that agents have in interpreting and enacting their roles'. They highlight three influences: functional influence, tenure and clan culture.

The autonomy of a security professional was reported to be critical.

“a representative in any information sharing forum they have to be in the right position in the company. They have got to have a voice. Two things... not only to share information ... also are empowered to use whatever information they receive...otherwise it's a waste of time”

This extract highlights that the members need to be empowered by their organisation to share but also by the forum and their organisation to use the information they receive. This sets up a requirement for dual role autonomy. While this reinforces the element of ability already introduced under the motivation process of expectancy, it also introduces the notion that the individual's ability to act is a consideration in two different domains: that of the sharing forum and that of the home organisation.

The ability to use shared information requires empowerment in both domains - empowerment from the forum, to make use of what has been shared, but also to be empowered back in the work place, or home organisation, to make changes or investments in response to that information. This research is focusing on the issues for the sharer rather than the issues for the receiver. The belief that these two domains of empowerment are necessary has implications for the sharer too. Why would one bother sharing and potentially exposing one's organisation to someone if they can't make use of the information to achieve the sharing forums' aim of a more secure national infrastructure?

The expectancy of being able to share information, as one is empowered by one's employer, is a consideration brought into focus by the home organisation social identity. The expectancy of another being able to make use of any information shared, as that person is empowered by their employer, is brought into focus by the community social identity. This demonstrates how Expectancy can work with different social identities - for the Expectancy of results versus the Expectancy of achieving value for those results.

Empowerment needs to be established beforehand so that the individual can act when an unexpected opportunity arises. Interviewees reported that this unexpected situation was a natural part of the initial stage of information sharing.

“Somebody else in the party might say 'oh I had a problem last week and you suddenly realise – so did you and you have not got that (authority to share) brief and have to make that decision”

Not having the pre-established authority creates a barrier to sharing, particularly if the home organisational identity is figural. Those that overcame that barrier used specific tactics which we will now look at in more detail.

5.4.2 Risk Reduction

The interviewees recognised that shared information has value to the recipient as well as a risk to the sharer. The forum members seek ways to maintain the value while reducing the risk.

One approach considered is anonymising the data, but one experienced professional highlighted a paradox. Anonymising information will defend the sharing organisation but it also reduces the weight or authority of the information to any recipients.

'Some of it you can't anonymise, can you? If you try to anonymise it and, kind of, leave a letter in a letterbox, um, kind of um, with no name, it loses some of its [laugh] validity'

In this situation, the sharer is hoping to defend their organisation by minimising the exposure. While, in contrast, any recipient is hoping to use the reputation of the sharing organisation to add credibility to the information. Credibility is required, as defending against a potential violation would require a proposition to invest significant resources. As a professional, they would want to justify their proposition. Partial anonymisation, or the brokering of information via mutually trusted 3rd parties, are other techniques reported.

This could indicate that, for the sharer, the home organisation identity, in Gestalt terms, is figural while for the recipient the professional identity is figural.

5.4.3 Sharing as a Commodity

While professionals are motivated to share as part of identification with the community's altruistic goals of helping others and defending the nation's critical infrastructure, they also report their expectation that they, in return, will receive some information of value and recognise that the timing of any return might be considerable. This appears to indicate that equity of the exchanges is very loosely considered.

However, this is only the case at the macro level. At the micro level, a carefully evaluated series of information exchanges are reported to characterise the gradual sharing of information about a particular event.

One professional described a highly controlled process of sharing a little, receiving a little, estimating what the other party had of value and how they had conducted themselves before sharing a little more. This highlights a process of establishing knowledge based trust, but also a series of social exchanges where the valuable behaviour is to reveal information. They used an analogy with a game of poker and, at a later point, describe how, although committed to the community's goals, they wished to restrict what they revealed.

"there are some collective aims that you are trying to meet ... but at the same time you want to reach those collective aims without disclosing ... every card you have in your hand"

So, while sharing is initiated under the loose understanding that reciprocation may not be imminent, the actual degree of sharing is carefully controlled and evaluated over a number of steps.

Interestingly, even at the macro level there are limits as to what would be shared. Here, an executive highlights how they are aware of a threshold of what they would share and how that conflicts with the mutuality of community membership.

"... which might sound ridiculous but, um, it also sounds cheap because we are expecting information out of it, but there is certain information we are not prepared to put in. But then I would expect that, um, a lot of other organisations are doing the same thing."

This demonstrates the conflict between the home organisation identity role expectations and the community role expectations, as well as an evaluation of equity in contributions.

Empowerment, risk reduction and these exchange strategies complete our description of the enablers and motivators for the sharing information on cyber security issues. The emerging characteristics describe role conflicts and need conflicts, as well as complex risk expectations.

6.0 Emerging Literature Review and Discussion

This section considered the literature relating to topics that emerged through the data collection (as introduced in the results section) and discusses their value in the context of our research objectives. This review of literature was conducted in parallel to, and following on from, the data collection and analysis. This section includes a discussion of the results in the context of decision making and disclosure.

6.1 Motivation

There is a significant history of research into motivation. Originally defined by Jones (1955) as 'how behaviour is energised, sustained, directed and stopped' he also recognised it was a subjective reaction. The theory around motivation covers two questions - firstly what motivates and secondly the process of motivation. Katzell and Thompson (1990) characterised these two when they described motivation as a broad construct that covered the 'conditions and processes' that influence the intention to act. Cherrington (1991, 32) was focusing on what motivates when defining 'needs' as an 'Internal disequilibria...that triggers a behavioural response'. Cherrington (1991) describes the range of theories relating to the conditions for motivation covering instinct, needs and learnt needs. Alderfer (1972) provided a work place focused theory with a set of need categories which emerged from the interviews. These categories received moderate support from empirical studies using MBA students (Wanous & Zwany 1977). Locke & Latham (2004, 30) recognised that, although these theories have 'dropped by the wayside,' they still provide useful insights. Under Alderfer's theory, needs are innate rather than 'learned needs' (McClelland 1953). The distinction indicates the deterministic nature of Alderfer's needs, however this does not mean that other needs will be easy to change as McClelland and Winter (1969) find that they are established early and recommend considering motivations in selection processes.

However, Locke & Latham (2004) highlighted that 'A value or motive must presumably be applied ... to each specific task and situation' thus indicating their role in a context dependant process. Considering the process of motivation, research (Deci 1975) has questioned support for the expectancy based theories of Porter & Lawler (1968). But interviewees reported considering elements of expectancy theory, indicating that some evaluation of the probability of results and rewards, and the value of those rewards, were consciously considered from a subjective, context dependant viewpoint. This reflects recent work, which has raised renewed interest in the theory, recognising the limitations of earlier methods (Ilgen & Klein 1988) but the influence of other factors like dispositional differences, social norms and the behaviour of others (Miller & Grush 1988).

In our findings, motivation provided a simple, first interpretation of the cognitive content and processes, yet was only an initial basis for

understanding. Other topics were needed to enrich the understanding required for a context rich study.

6.2 Trust

The various roles and aspects of trust emerged early and, where reported consistently, it was one of key the influencing factors for disclosure decision making. Robinson (1996, 576) described Trust as “expectations, assumptions, or beliefs about the likelihood that another’s future actions will be beneficial, favourable or at least not detrimental to one’s interests”. This definition aligned with our findings, as it included expectancy and allows for both positive actions by another, as well as the active option of refraining from detrimental actions. Research considered trust both as a psychological state (Barber 1983, 310) and as a choice to act (March 1994). In our consideration of disclosure decision making, although we are considering the intention to act, we focus on the choice to act rather than the (potentially) unexpressed psychological state of trust.

Trust has been considered in many settings but we are focusing specifically on the work or organisational setting. The significant theory and research for this setting has been presented in Kramer & Tyler’s (1996) volume. Williamson (1993) reasoned the importance of trust in the organisational environment as part of the healthy and effective exchange of ‘valuable resources’ between actors. Our findings support the importance of trust, although the ‘valuable resource’ in this situation is information and the exchange process the disclosure act. Kramer (2001) recognises that the decision to trust in work situations is more problematic than in other social situations. He considered that organisational life challenged the development of trust in three ways. Firstly, it afforded little opportunity for the ‘incremental and repeated’ exchanges that Rotter (1980) considered necessary for the development of trust in dyadic relationships. Secondly, the competitive nature of careers and the reduction in job security increase the impact of any violated trust. Finally, as organisations become more diffuse, the interpersonal processes that develop trust are less effective. Inter organisation sharing forums, it would seem, make the development of trust even more problematic. Yet our findings highlight a number of ways that trust was reported to have been established.

Shapiro et al (1992) proposed trust hierarchy, used in our thematic coding scheme which highlights Identification-based trust (P317). This builds on group identity and trustworthy behaviour between members in comparison with those not in the same group. They highlight ways that this type of trust base can be built (P372-373) from joint goals, a common name, proximity to having explicit, shared values. This particular paper is from the negotiation journal and, while it draws from a range of prominent research, it is important to recall that its core aim is to encourage managers to invest in developing trust (P376). In contrast, Kramer (1999), in his review of the topic, identified a richer set of trust forms: Dispositional, History based, Conduits of trust, Category-based, role based and rule based. The third party as a conduit of

trust was identified as an important enabler to the rapid establishment of trust in the professional knowledge sharing forum. However, Burt & Knez (1995) highlight that in these accounts other people only share part of the information resulting in a skewed or incomplete description of a person's trustworthiness. They hypothesized that this was motivated by 'what the other person wanted to hear' and/or was influenced by the existing relationship with the potential trustee. So, although this might be an effective way to establish early trust, the erosion or violation of trust might be potential downfalls. Hirschman (1984) highlights that trust is increase rather than depleted with use.

6.3 Social Identity Processes

In the interpretation of the interview reports, a number of social identities were identified. Tajfel (1972, 292) describes Social Identity as 'an individual's knowledge that he belongs to a social group together with some emotional and value significance to him of his group membership'. Ashforth & Mael (1989, 20) highlight that social identity is often confused with organisational commitment and internalisation. Research into the perceptions of group membership has some biases toward positive perceptions of 'in-group' members and an expectation of more favourable social exchanges than compared with 'out-group' Brewer (1996). Social identity and trust formation is core to the influences on disclosure decisions that emerged.

Kramer (2001) proposes that actions are more than calculative decisions about risk, but that acts of trust have a 'symbolic and expressive meaning'. In other words the trust act might be used to affirm commitment to membership. In addition, Turner et al (1987, 53) proposed that when an individual identification moves from the personal level to the collective level there is a reduced sense of members as individuals and a 'shift towards the perception as an interchangeable exemplar of some social category'. Brewer (1981, 356) argued that individuals with awareness of a shared social identity might be the basis for a de-personalised trust based on shared membership of a social category.

All individuals have several social identities, each relating to the different social categories and groups to which they belong. Ashforth & Mael (1989,29) describe a person's identity as an 'amalgam of identities' that could set up demands that conflict, Seeman (1953, 373) defined role conflict as 'incompatible behavioural expectations' and Merton & Barber (1963) define the experience of being pulled in psychologically opposite directions as 'Ambivalence'.. Nesting of roles within organisational forms has been known to constrain this conflict (Ashforth & Mael 1989, 32). The sharing forum being inter organisation could mean that the lack of hierarchical nesting of demands leaves members exposed to ambiguous demand conflict, similar to that experienced in forms of work life conflict.

6.5 Decision Making

Our core findings support for the role of frames within the decision making process (Beach & Connolly 2005, 22). Here the frames are the various categories of social identities (Tajfel 1978). Beyond just instigating conflicting role demands (Ashforth & Mael 1989, 29) these make, in Gestalt terms (Nevis 1998 6), different rewards and barriers appear figural and thus influencing the balance of factors in the decision making process. Thinking as a member of a home organisation, the professional is less likely to disclose than when their thinking is in the context of their role as a security professional, and as a member of an altruistic knowledge sharing community.

Beach & Connolly (2005, P115) highlight that the decision process is rarely made entirely by the individual. They highlight the influence of others and of group membership. In addition, the individual may consider factors around the effect of any selected action on others they are related to and those necessary to co-operate in the implementation of that action. Given our findings about the need for dual empowerment, we recommend future research consideration of dual organisational influences on cross organisational board decision making.

Blau (1964) defined a social exchange as 'actions that are contingent on rewarding reactions from others' and Omarzu (2000, 174) noted that 'receiving disclosure also seems to be an experience that produces a sense of obligation'. Social Exchange Theory was considered by Emerson (1976) as a mutually reinforcing exchange. Thus, active membership of an information sharing forum may be predicated on the active membership of others present, or the expectation that others will also disclose. In other words the decision to disclose would be motivated by a sense of debt to the group. While this describes a rational model for motivating the exchange, the uncertainty and likelihood of infrequent exchanges of information make it unlikely to be the core motivation.

6.5 Disclosure

Now, considering the findings as a cluster in their environmental context, what has this research shown? Our results have partially reinforced the goal based framework from Omarzu (2000, 177). In predicting disclosure it considers the subjective risk and utility of disclosing. Where we have identified the importance of expectancy calculus, this can be equated to the risk and utility in the Omarzu mode. The 5 goals Omarzu (2000, 178) asserts of social approval, intimacy, relief of distress, social control and identity clarification have also been reinforced. Omarzu's model requires at least one goal to be active. Goals or motivators reported in our research include identity clarification as a member of the sharing community, as well as motivational rewards of Relatedness as a goal of intimacy or even social approval. Omarzu (2000) is based on personal disclosures and has not been explored in the work place environment or within an inter organisation disclosure.

The emerging findings from this research have reinforced the key elements of Omarzu's model but, before asserting the validity of this model in the environmental setting studied, the links and effect sizes between these

elements would need to be researched. We recommend following up with an experimental, positivist study, using Omarzu's model and drawing from the qualitative data of this study to ensure the authenticity of the operationalisation of the model components.

A particular focus of this recommended study would be to identify areas that could increase the rate and/or extent of disclosure. For example, Cravens (1975) found that emphasizing the value of disclosure significantly increase the disclosure activity. Understanding the type and size of impact for these sort of interventions could potentially aid in the effectiveness of knowledge sharing forums.

6.7 Information Sharing and Cybercrime

Van Baalen & Bloemhof-Ruwaard (2005) argue that a shared belief system is the result of knowledge sharing and not a necessary precondition as many believe. Our findings are unable to resolve this chicken or egg question but does reinforce the relevance of a shared belief system for professionals at the moment of sharing organisationally sensitive information.

Gal-Or & Ghose (2005) recognised the importance of information sharing in the cyber security and used game theory to understand the economic issues influencing the sharing of vulnerabilities and technological solutions. Their approach is normative to our interpretive and is based in the US to our UK focus. In the US, the establishment of the sharing forums is driven by a presidential directive. Their results highlight that the sharing of information is more valuable when a technological product is in a more competitive market place (where one company's product can be substituted for another). They describe this as a 'strategic complement'. This work considered the organisational and industrial level, and it expects rational and financially motivated behaviour. It is a useful complement to our work, which considered the individual and social-psychological perspective. We assert that, from the self reports of the security leads, sharing is motivated by identification and enabled by socially framed perceptions and expectations of ability, empowerment and trusted relationships.

Bates' (2005) second stumbling block for the sharing and the development of knowledge focuses on the social influences, as we have in this study. Her first block, technology, enables the ability to communicate but this only removes a barrier that might de-motivate sharing. We concur that understanding the rich social and psychological environment is necessary to ensure the development of shared knowledge.

7.0 Critical Self Review

Cassell & Symon (2004, 6) argue for reflecting on how the research was conducted. Hardy et al (2001) promote, in particular, considering 'how the process of doing ... shapes the outcomes'. We follow Cassell & Symon's (2004, 6) suggestion and briefly reflect on three domains: the method, the epistemology and the discipline and hope to achieve a balance where we improve future research practise without 'over indulging' in an overwhelming dialogue (Weick 1999).

Seale (1999) recognised that this sort of reflection is difficult as some processes might be operating at a subconscious level. While this may limit the extent of our reflexivity, we hope our endeavours will, at least, demonstrate an awareness of our 'intellectual responsibility' (Johnson & Dudlerley 2003, 1280).

7.1 Method

Yardley (2000) suggest 4 criteria for assessing the method of qualitative research: commitment, rigour, transparency and coherence. With this as guidance, we reflect on the research experience.

One critical concern with the data collection method is that we are investigating disclosure through an interview, which is itself a disclosure act. Although less than ideal, it was a practical compromise as a result of considering the limitations of exploring such an unpredictable event in a group with restricted membership. In addition, some of the emerging factors, for example motivation, is recognised as an internal, invisible and hypothetical construct (Ambrose & Kulik 1999) and it is recognised that not all motivations are easily accessible to the individual experiencing them. Self reported methods are acknowledged as a practical compromise, but the interpretation of self reported motivators will always be limited by the method.

Next, we consider the relationship between interviewee and researcher. The interviewees were all highly qualified and competent in their field. The researcher has similar mature age profile and competence in their profession, which enabled access to the interviewees as well as supporting a frank dialogue. For most, the relationship was only for the duration of the interview. In our opinion, they felt the researcher was an equal and could help them.

There were exceptions: The executive manager proved a difficult interviewee to schedule and was the shortest. One interviewee, it seemed, focused on demonstrating their reputation while another, for whom there was an existing relationship, appeared tease the researcher, although the main dialogue was frank and honest. In both cases, attempts at re-contacting had little impact.

We recognise that an interview is a social interaction and the researcher is female and that the domain is male dominated, so gender issues related to

interview disclosure might have influenced the results. In addition, the sample was quite male dominated (10 out of 12) which means any female specific factors may not have emerged. Further studies might profit from exploring these issues explicitly.

The actual progress of coding was long and cyclic. Many annotated printouts were produced, which became out dated and were replaced as the coding scheme evolved. This was a highly resource intensive process. We would highly recommend the use of specialist software for a research project with any more interviews than the number used in this one. The coding scheme was deemed 'final' although recognised as not ideal (King 2004b, 263) because a) of the practical limitations of the academic timetable and b) changes to the scheme had slowed sufficiently.

On reflection, we note that hierarchy of the scheme could be organised from a number of different start points. For example, an alternative approach could have been to consider all facets as aspects of trust.

The extraction and selection of narrative required challenging decisions: 'How to best represent the phenomena in a social interaction that has developed over the duration of the interview with a small number of words?' Our challenge has been to present, concisely, our understanding of the context and meaning of an utterance while still retaining meaning and the transparency of the process. We recognise that taking any utterance out of context increases the likelihood that others might hold alternative interpretations.

King (2004b, 266) highlights the 'trap of un-selectivity'. In the early stages, we attempted to 'examine all codes to equal depth' but as the interview data accumulated, issues of identity, motivation and trust developed as those of most relevance. This meant issues of procedural knowledge and empowerment might remain interesting areas to explore in more detail for this context. In spite of our attempts at selectivity we find, upon reflection, that our account of this work still includes a broad and rich set of findings.

7.2 Epistemology

Holland (1999) recommends making explicit the 'underlying assumptions on which arguments and stances are built'. It is based on the assumptions of an interpretive study (Guba & Lincoln 1994) and so our focus is on an understanding of what happened as opposed to the realist approach which lays claim to what actually happened. Being highly context dependant, this research focused on local theoretical reflection (Charmaz 1995, 31) and so this explicitly precludes making any generalised statement.

Spreading the interviews out over a year, and exploring the literature as constructs emerged, enabled us to invest in our understanding of the topic. However, the process of on-going literature review does have some limitations. For example, the paper by Omarzu (2000), which specifically proposes a disclosure decision model, was not reviewed until late in the

research process. This paper is highly relevant to the topic and could have shaped the method.

Locke & Latham (2004) state that 'it is undeniable that people can act without being aware of the motives and values underlying their behaviour'. Our method accesses the motives through a conscious, self reporting process. Therefore, it is possible that relevant but unconscious motives have not been accessed. This should be an explicit caveat to our findings and addressed as part of any future dependant work, for example examining subconscious effects through priming techniques (Bargh et al 2001).

7.3 Discipline

Hardy et al (2001) propose that reflexivity includes 'examination .. of the community... Recognising that we operate in complex networks that hold in place certain approaches to representation' so we consider this research in the context of the domain of work psychology.

Work psychology is a discipline that can pull from any domains, but psychology and the social sciences are a major contributor. As our background is psychological, our focus was more on the personal or interpersonal aspects that influence the disclosure decision. Although some procedural knowledge was studied, other approaches could have focused on external supports or structures such as legal and contracting influences.

What is the value of this research question to work psychology? Many theories strive to establish a generalised?? theory or model. This endeavour can be at odds with the embedded nature of psychological phenomena. In the development of knowledge, reflecting on existing theories alongside emerging facets of particular phenomena has the effect of re-grounding theories in a social, psychological and environmental context. These reflections can then allow the refinement, clarification or reinforcement of those theories.

Part of the research design was to include a diversity of voices, hoping to hear about the disclosure act from as many different perspectives as possible. While the selection did cover different roles, and both positive and negative viewpoints, the sample was not a balanced representation. Sample representation is normally a positivist criterion, however we would expect value from a follow on study focused solely on negative views.

In summary, we believe this research to have been a practical and rigorous approach to a challenging area of study that yielded valuable insights into context specific reflection of related theories.

8.0 Conclusion

Information sharing is critical, but problematic, within inter organisation collaborative environments such as defence against terrorism (Lui & Chetal 2005). Bates' (2005) highlighted social influences as a core stumbling block for information sharing. From the analysis of diverse, self reported perspectives on the sharing of sensitive Information Security knowledge within inter organisation forums, a number of social psychological influences emerged.

Awareness of motivators to both disclosing and withholding were perceived, yet the actual decision was mediated by expectancy on the ability of self and others. This included the need for empowerment and knowledge of sharing tactics. Sufficient trust was considered an important enabler and criteria for the bases of trust reported. The interpretation highlights the critical role of the salient social identity in bringing focus and awareness to particular motivations and barriers, thus influencing the final disclosure decision.

Local theoretical reflection highlighted that social identities not only instigated conflicting role demands but made, in Gestalt terms (Nevis 1998,6), different rewards and barriers appear figural and thus influencing the balance of factors in the decision making process. When a person's salient identity is that of a member of their home organisation, the professional is less likely to disclose than when their thinking is in the context of their role as a security professional and as a member of an altruistic knowledge sharing community.

We assert that, from the self reports of the security professionals, sharing is motivated by identification and enabled by socially framed perceptions and expectations of: ability, empowerment and trusted relationships. This work, which considered the social psychological perspective at the individual level, hopes to increase the understanding of the importance of specific context characteristics in inter organisational disclosure decision making, as well as to support the good works of those striving to defend the electronic computer networks that form part of our critical national infrastructure.

14,237 Words

References

- Abrahamson, E. & Park, C (1994)** Concealment of Negative Organizational Outcomes: An Agency Theory Perspective, *The Academy of Management Journal*, Vol. 37 (5), Pages 1302-1334.
- Abrams, L.C., Cross, R., Lesser, E. & Levin, D.Z. (2003)** Nurturing interpersonal trust in knowledge sharing networks, *Academy of management executive*, Vol 17 (4): Pages 64-77.
- Aguinis H and Henle C.A. (2002)** 'Ethics in Research' in Rogelberg S. G. 'Handbook of Research Methods in Industrial and Organisational Psychology', Malden, MA: Blackwell, Pages 39-45.
- Ambrose, L.M. & Kulik, C.T. (1999)** Old friends, new faces: Motivation Research in the 90s. *Journal of Management*, 25(3), Pages 231-292.
- Alderfer, C. P. (1972)** Existence, Relatedness and Growth: Human Needs in Organisational Settings. New York: Free Press.
- Alvesson & Deetz (2000)** "Doing Critical Management Research" London: Sage.
- Ashforth, B. E. & Mael, F. (1989)** Social Identity Theory and the Organization, *Academy of Management Review*, Vol. 14 (1), Pages 20-39.
- Auerbach C.F. & Silverstein L. B. (2003)** 'Qualitative Data' New York: New York University Press.
- Bachiochi P.D. and Weiner S. P. (2002)** 'Qualitative Data Collection and Analysis' Page 177 in Rogelberg S.G. (ed) 'Handbook of Research Methods in Industrial and Organisational Psychology' Malden, MA : Blackwell.
- Barber B (1983)** 'The Logic and Limits of Trust', New Brunswisk, NJ: Rutgers University Press.
- Bargh, J., Goldwitzer, P., Lee-Chai, A., Barndollar, K. and Troetschel, R. (2001)** The automated will: Non conscious activation and pursuit of behavioural goals. *Journal of Personality and Social Psychology*, Vol 81, Pages 1014-1027.
- Bates, M. E. (2005)** When Knowledge Sharing Works, *EContent*, Vol. 28 Issue 6, Page 17.
- Baumeister, R. F. (1982)** A self-presentation view of social phenomena, *Psychological Bulletin*, Vol 91, Pages 2-26.
- Beach, L. R. & Connolly, T. (2005)** *The Psychology of Decision Making*, Thousand Oaks, CA: Sage.

Bielski, L. (2005) Security breaches hitting home, ABA Banking Journal, Vol. 97, Issue 6, Pages 7-10.

Blau, P. (1964) Exchange and Power in Social Life. New York: Wiley.

Boruch R. F. and Cecil J. S. (1979) 'Assuring the confidentiality of research data' Philadelphia, PA: University of Pennsylvania Press.

Brewer, M. B. (1996) In-group favouritism: The subtle side of inter-group discrimination. In Messick, D.M. & Tenbrunsel, A. (Eds.) Behaviour research and business ethics, Pages 160-170, New York : Russell Sage.

Brewer, M. B. (1981) Ethnocentrism and its role in Interpersonal Trust. In Brewer, M.B. & Collins, B.E. (Eds), Scientific Inquiry and the Social Sciences (Pages 345-360). New York: Jossey-Bass.

Burt, R. & Knez, M (1995) Kinds of third party effects on trust, Journal of rational Sociology, Vol 7, Pages 255-292.

Cassell, C & Symon, G. (2004) Essential Guide to Qualitative Methods in Organizational Research, SAGE: London

Charmaz, K. (1995) Grounded Theory in Smith, J.A., Harré, R. and Van Langenhove, L. (eds.) Rethinking Methods in Psychology, London : Sage.

Cherrington, D. (1991) Need Theories: The Content of Motivation. In Steers, R. M. and Porter, L.W. (eds) Motivation and Work behaviour, New York: McGrawHill, Pages 31-44.

Cravens, R. W. (1975) The need for approval and the private versus public disclosure of self, Journal of Personality, Vol 43, Pages 403-514.

Cresswell J. W. (1994) A Qualitative Procedure. Chapter 9 in Research Design: Qualitative and Quantitative Approaches'. Thousand Oaks, CA: Sage.

Deci, E. L. (1975) Intrinsic Motivation, New York: Plenum Press.

Dindia, K. & Allen, M. (1992) Sex differences in self-disclosure: A meta-analysis, Psychological Bulliten, Vol 112, Pages 106-124.

Dorweiler, V. P. & Yakhou, M. (2005) A Scorecard on Intellectual Capital Performance in the Economy, Journal of American Academy of Business, Cambridge, Vol. 7 (1), Page 322.

Emerson, R.M. (1976) Social Exchange Theory, Annual Review of Sociology, Vol. 2, Pages 335-362.

- Finkenauer, C. & Rimé, B. (1998)** Keeping emotional memories secret: health and subjective well being when emotions are not shared, *Journal of Health Psychology*, Vol 3, Pages 47-58.
- Gal-Or, E. & Ghose, A. (2005)** The Economic Incentives for Sharing Security Informatio, *Information Systems Research*, Vol. 16 (2), Page s186-209.
- Glaser B.G. and Struass A. L. (1967)** 'The Discovery of Grounded Theory: Strategies for Qualitative Research' Chicago: Aldine.
- Guba, E. G. & Lincoln, Y.S. (1994)** Competing paradigms in qualitative research, In Denzin, N.K. & Lincoln, Y. S. (Eds.), *Handbook of Qualitative Research*. Thousand oaks: Sage.
- Hardin, G. R. (1968)** The tragedy of the commons, *Science*, 162, Pages 1243-1248.
- Hardy, C., Phillips, N and Clegg, S. (2001)** Reflexivity in organisation and management theory: A study of the production of the research subject, *Human Relations*, Vol. 54, Pages 531-560.
- Hill, C.T. & Stull, D.E. (1982)** Disclosure reciprocity: Conceptual and Measurement Issues, *Social Psychology Quarterly*, Vol 45 (4), Pages 238-244.
- Hirschman, A.O. (1984)** Against parsimony: Three easy ways of complicating some categories of economic discourse. *American Economic Review*, Vol 74, Pages 88-96.
- Holland, R. (1999)** Reflexivity, *Human Relations*, Vol. 52, Pages 463-483
- Ilgen, D.R. & Klein, H.J. (1988)** Individual motivation and performance: Cognitive influences on effort and choice. In Campbell, J.P. & Campbell, R.J. (eds.) *Productivity in Organisations*. San Francisco, CA: Jossey-Bass.
- Johnson, P. & Dudlerley, J. (2003)** 'Reflexivity in management research', *Journal of management studies*, Vol 40 (5), Pages 1279-1303.
- Jones, M. R. (1955)** *Nebraska Symposium on Motivation*, Lincoln: University of Nebraska Press.
- Joni, S. (2004)** 'The Geography of Trust', *Harvard Business Review*, March 2004.
- Jourard, S. M. (1971)** *The transparent self*. New York: Van Nostrand.
- Jungermann, H (1996)** Ethical Dilemmas in Risk Communication, In Messick, D.M. & Tenbrunsel, A. (Eds.) *Behaviour research and business ethics*. Pages 300-317, New York : Russell Sage.

Katzell, R.A. & Thompson, D.E. (1990) Work motivation: theory and practise. *American Psychologist*, Vol 45 (2), Pages 144-53.

Kim, O. (1999) Discussion of the Role of the Managers Human Capital in Discretionary Disclosure, *Journal of Accounting Research*, Vol 37, Pages 183-185.

King, N (2004a) 'Using interviews in qualitative research' in Cassell, C & Symon, G. (Eds.) *Essential Guide to Qualitative Methods in Organizational Research*, SAGE: London

King, N (2004b) 'Using templates in the thematic analysis of text' in Cassell, C & Symon, G. (Eds.) *Essential Guide to Qualitative Methods in Organizational Research*, SAGE: London.

Koehler, D.J. & Harvey, N (2004) *Blackwell handbook of Judgment and Decision Making*.

Koopman, P. & Pool, J. (1991) Organisational Decision Making: Models, Contingencies and strategies. In Rasmussen, J., Brehmer, B. & Leplat, J. (Eds.) *Distributed Decision Making: Cognitive Models for Cooperative Work*, Pages 19-46, Chichester, UK: Wiley.

Kramer, R.M. (1993) Co-operation and Organizational Identification, in Murnighan (ed.) *Social Psychology in Organisations: Advances in theory and research* (pp 244-268) Englewood Cliffs, NJ: Prentice Hall.

Kramer, R.M. (1999) 'Trust and Distrust in Organisations: Emerging Perspectives and Enduring Questions', *Annual Review Psychology*, Vol. 50, Pages 569-98.

Kramer, R.M. (2001) Identity and Trust in Organisations: One Anatomy of a Productive but Problematic Relationship, in Hogg, M.A. & Terry, D.J. (eds.) *Social Identity Processes in Organizational Contexts*, pp167-180, Philadelphia, PA: Psychology Press.

Kramer R. M. & Tyler T. R. eds. (1996) *Trust in Organisations: Frontiers of Theory and Research*. Thousand Oaks, CA: Sage.

Kvale, S. (1983) The Qualitative Research Interview - A Phenomenological And A Hermeneutical Mode Of Understanding. *Journal of Phenomenological Psychology*, 14 (2), Pages 171-196.

Lane, J.D. & Wagner, D.M. (1995) The cognitive consequences of secrecy, *Journal of Personality and Social Psychology*, Vol 69, Pages 237-253.

Lee, H (2003) Knowledge Management Enablers, Processes, and Organizational Performance: An Integrative View and Empirical Examination. *Journal of Management Information Systems*; Vol. 20 (1), Pages 179-219.

Lee T.W. (1999) 'Using Qualitative Methods in Organisational Research' Thousand Oaks, CA: Sage.

Lewicki, R.J. & Bunker, B.B. (1996) Developing and Maintaining Trust in Work Relationships in Kramer R. M. & Tyler T. R. (eds.) Trust in Organisations :Frontiers of Theory and Research'. Thousand Oaks, CA: Sage.

Lewicki R.J., McAllister D.J. & Bries R.J. (1998) 'Trust and Distrust: New Relationships and Realities', Academy of Management Review, Vol. 23(3). Pages 438-458.

Locke, E.A. & Henne, D. (1986) Work Motivation Theories. In Cooper, C. L. and Roberston, I. T. (eds). International Review of Industrial and Organizational Psychology. Chichester: Wiley.

Locke, E.A. & Latham, G.P. (2004) What should we do about motivation theory? Six recommendations for the twenty first century, Academy of Management review, Vol 29 (3).

Loewenstein, G. (1996) Behavioural Decision Theory and Business Ethics: Skewed Trade-offs Between Self and Others. In Messick, D.M. & Tenbrunsel, A. (Eds.) Behaviour research and business ethics. Pages 214-227, New York; Russell Sage.

Lui, P. & Chetal, A. (2005) Trust-based secure information sharing between federal government agencies, Journal for the American Society of Information Science and Technology, Vol 56 (3), Pages 283-298.

March J G (1994) A Primer on Decision Making, New York: Free Press.

McClelland, D. C., Atkinson, J.W., Clark, R.A. & Lowell, E.I. (1953) The Achievement Motive, New York: Irvington.

McClelland, D.C. & Winter, D.G. (1969) Motivating economic achievement. New York: Free Press.

Merton, R. & Barber, E. (1963) Sociological Ambivalence, In Tiryalcian, E. A. (Ed.) Sociological theory, values and socialcultural change, Pages 91-120, New York: Free Press of Glencoe.

Miller, L.E. & Grush, J. E. (1988) Improving predictions in expectancy theory research: effects of personality, expectancies and norms. Academy of Management Journal, Vol. 31 (1), Pages 107-122.

Mintzberg, . (1983)

- Morgeson, F. P. & Campion, A. C. (1997)** Social and Cognitive Sources of Potential Inaccuracy in Job Analysis, *Journal of Applied Psychology*, Vol 82 (5), Pages 627-655.
- Newman, K. (2005)** Risky Business, *New Zealand Management*, Vol. 52, Issue 6, Pages 68-70
- Nevis, E.C. (1998)** *Organisational Consulting: A Gestalt Approach*, Cambridge, MA: GICPress.
- Omarzu, J. (2000)** A Disclosure Decision Model: Determining How and When Individuals will self-disclose, *Personality and Social Psychological Review*, Vol 4, No 2, Pages 174-185.
- Pantelia, N. & Sockalingam, S. (2005)** Trust and conflict within virtual inter-organizational alliances: a framework for facilitating knowledge sharing, *Decision Support Systems*, Vol. 39 Issue 4, Pages 599-618.
- Perrone, V., Zeheer, A. & McEvily, B. (2003)** 'Free to be trusted? Organizational constraints on trust in boundary spanners', *Organisational Science*, Vol 14(4) Pages 422-439.
- Pidgeon, N. & Henwood, K (1997).** Using grounded theory in psychological research. In N. Hayes 9ed), *Doing Qualitative Analysis in Psychology*. Hove: Psychology Press.
- Porter, L.W. & Lawler, E.E. (1968)** *Managerial attitudes and performance*. Homewood, IL: Irwin Dorsey.
- Robinson, S.L. (1996)** Trust and Breach of the Psychological Contract, *Administrative Science Quarterly*, Vol. 41, p574-599.
- Rottor, J. B. (1980)** Interpersonal Trust, Trust Worthiness and Gullibility, *American Psychologist*, Vol 35, Pages 1-7.
- Rotter J. B. (1971)** 'Generalised Expectancies for Interpersonal Trust' *American Psychologist*, Vol 26 Pages 443-53.
- Seeman, M. (1953)** Role Conflict and Ambivalence in Leadership, *American Sociological Review*, Vol. 18 (4), Pages 373-380.
- Schermerhorn, J. R. (1977)** Information Sharing as an Interorganizational Activity, *The Academy of Management Journal*, Vol. 20 (1), Pages 148-153.
- Seale, C. (1999)** *The Quality of Qualitative Research*. London: Sage.
- Sekaran (2000)** 'Research Methods for Business' (3rd Ed). New York: Wiley.
- Shapiro, D., Sheppard, B. H. & Cheraskin, L. (1992)** Business on a Handshake, *Negotiation Journal*, Vol 8(4), Pages 365-377.

Sieber J. E. (1992) 'Planning Ethically Responsible Research: A Guide for Students and Internal Review Boards' Newbury Park, CA: Sage.

Simon, H (1945) Administrative Behaviour: A study of decision-making processes in administrative organization. New York: Free Press.

Spector, M. D. & Jones, G. E. (2004) 'Trust in the workplace: Factors affecting trust formation between team members', The Journal of Social Psychology, Vol.144(3), Pages 311-321.

Tajfel, H. (1972) Social Categorisation. English manuscript of 'La categorisation sociale', In Moscovici, S. (Ed.) Introduction á la Psychologie Sociale, Vol 1, Pages 272-302.

Tajfel, H. (1978) 'The achievement of group differentiation' In Tajfel, H (Ed.) Differentiation between social groups: Studies in social psychology of inter-group relations, Pages 77-98, London: Academic Press.

Tolman, E.C. (1932) Purpose Behaviour in Animals and Man, New York:Appleton-Century-Crofts.

Turner, J.C., Hogg, M.A., Oakes, P.J., Reicher, S.D. & Wetherall, M.S. (1987) Re-discovering the social group: A self-categorisation theory, Oxford, UK: Blackwell.

Van Baalen, P. & Bloemhof-Ruwaard, J (2005) Knowledge Sharing in an Emerging Network of Practice: The Role of a Knowledge Portal, European Management Journal, Vol. 23 Issue 3.

Vrij, A., Nunkoosing, K. Paterson, B., Oosterwegel, A. and Soukara, S. (2002) Characteristics of Secrets and the Frequency, Reasons and Effects of Secret Keeping and Disclosure, Journal of Community and Applied Social Psychology, Vol 12, Pages 56-70.

Vroom, V.H. (1964) Work and Motivation. New York: Wiley.

Wanous, J. P. & Zwany, A (1977) A cross sectional test of need hierarchy theory, Organisational Behaviour and Human Performance, Vol 18, Pages 78-97.

Weick, K (1999) Theory construction as disciplined reflexivity: Trade offs in the 90s, Academy of Management Review, Vol. 24, Pages 797-806.

Williamson, O (1993) Calculativeness, trust and economic organization, Journal of Law and Economics, Vol 34, Pages 453-502.

Woolger, S (1988) Reflexivity is the ethnographer of the text. In Woolger, S. (ed.) Knowledge and Reflexivity. London: Sage Publications.

Wright, G. & Bolger, F. (1992) Expertise and decision making, New York: Plenum.

Yardley, L (2000) Dilemma's in qualitative health research, Psychology and Health, Vol 15, Pages 215-228.

Young, J.W. (1978) The Subordinate's Exposure of Organizational Vulnerability to the Superior: Sex and Organizational Effects, The Academy of Management Journal, Vol. 2 (1), Pages 113-122.

Appendix A: Coding Scheme

This appendix describes the 'final' scheme used for thematic coding. The coding scheme evolved as each interview was conducted and analysed.

The scheme is shown as a hierarchy, yet some items link to more than one theme. This is shown by the superior item number in brackets.

1.0 Motivation

1.1 Needs

- 1.1.1 Existence
- 1.1.2 Relatedness
- 1.1.3 Growth

1.2 Process

- 1.2.1 Expectancy of Success
 - 1.2.1 Ability
- 1.2.2 Expectancy of Reward
- 1.2.3 Valence (1.1)

2.0 Social Identities

- 2.1 Home Organizational Identity
- 2.2 Professional Identity
- 2.3 Altruistic Identity

3.0 Trust

3.1 Development

- 3.1.1 Deterrence-Based
 - 3.1.1.1 Calculus-based trust
- 3.1.2 Knowledge-Based
 - 3.1.2.1 Communication
 - 3.1.2.2 Courtship
 - 3.1.2.4 Resilience
 - 3.1.2.3 Transference
- 3.1.3 Identification-Based (2.0)
 - 3.1.3.1 Individual Identification-Based
 - 3.1.3.2 Group Identification-Based
 - 3.1.3.3 Pre-emptive Trust
 - 3.1.3.4 Conduit Trust
 - 3.1.3.5 Violation

4.0 Sharing Tactics

- 4.1 Empowerment Dependencies
- 4.2 Reputation Maintenance
- 4.3 Social Exchange

Appendix B: Briefing Sheet

Introduction

The National Infrastructure Security Co-ordination Centre (NISCC www.niscc.gov.uk) is promoting Information Sharing and working to provide assistance to those who would like to set up or join an information sharing community. A toolbox has been developed to support those setting up such a community. The WARP (www.warp.gov.uk) toolbox provides technical, commercial and procedural tools and guidelines. In addition, it is recognised that success in information sharing communities also depends on the other more human factors.

NISCC wish to complement existing components of the toolbox with guidelines which focus on these human factors found to influence when people feel able and motivated to share sensitive information. The aim is for these guidelines to be used when choosing the information sharing communities and offer advice on the approach to adopt for different types of people in different roles in different organisations.

In order to define these NISCC guidelines this project is looking into 'What makes people feel able and motivated to share sensitive information such as IT Security data?'. A senior HR manager, Mandy Messenger, who has experience in various IT Security fields, has offered NISCC the opportunity to base her post graduate project for the University of London on this research. Mandy will be responsible for the end-to-end research project.

You have been identified as a member of an information sharing community and your views on situations where you had the opportunity to share security related information would inform this study. Information is pertinent both on situations where information was shared and also situations where information was not shared.

What will be involved.

- The content of the interview will focus on your thinking about the choice to share (or not), rather than on a description on the situation itself.
- Mandy will conduct your interview personally and it will take less than an hour.
- As the sole researcher, Mandy will ensure that individuals cannot be identified from the data. Information is held as confidential.
- The first section of the interview will ask you to start thinking about what sharing IT Security information means to you. This is a simple paper exercise.
- The core section of the interview will involve discussing your thought processes at the time when you had the opportunity to share sensitive information. The decision making factors involved are of interest rather

Interview Consent

I have read the Pre- Interview Briefing Sheet and I give my consent for an interview to be conducted.....

Signed : _____

Name : _____

Dated : _____