

Inciting Advanced Levels of Practitioner Reflection Through Progressive Graphic Elicitation

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Abstract: Qualitative research routinely requires experienced practitioners in a given field to be interviewed, and there are a range of methods known to elicit dialogue. The method for elicitation presented in this paper, however, goes a stage further it seeks not only to elicit dialogue but to provide subjects with additional knowledge, which they are encouraged to use as a lens for reflection on their own experience. Using a progressive series of related information graphics, accompanied by explanations, subjects are quickly taught a new topic and are asked to reflect on their own practice while the learning occurs. The research project is described to contextualise the elicitation method within the wider engagement. The approach was tested with a number of Information Technology (I.T.) specialists, each with extensive experience of encouraging users to participate in new I.T. environments. Subjects were provided with information graphics that incrementally increased their understanding of psychological theories related to attitude change, namely cognitive dissonance and the elaboration likelihood model. As their knowledge increased, they were guided to reflect on occasions where they had encountered phenomena related to such psychological theory, its effect and affiliated best practice. Over all, this approach was effective, with over 130,000 words of relevant, advanced discourse forthcoming. In this paper, the elicitation method, its affiliated epistemology, an overview of the project and the research methodology are presented, along with some early results.

Keywords: infographics, graphic elicitation, inter-disciplinary, inductive

1. Introduction

It is well understood that diagrams and other forms of imagery can assist communication and learning (for example, Nelson et al. 1976; Paivio 1971, 1986). Despite this diagrams have seen relatively little use as stimuli in research interviews. Given the current trend of seeking out new imaginative approaches to stimuli (e.g. Allett 2010; Bragg and Buckingham 2008) this is surprising. Photographs have been commonly used, but diagrams have not (Crilly et al. 2006). The aim of presenting this method is to explore the ways in which knowledge elicitation can be improved. The interviewees for this research have significant experience, many years of practice and deeply tacit understanding, described as a 'special form of experience-based expertise' or 'deep smarts' (Leonard and Swap, 2005). When graphics have been used for elicitation during research interviews, the benefits have been apparent, they have proven to be: a) effective in eliciting dialogue and reaction from interview subjects (e.g. Woolner et al. 2009; Umoquit et al. 2008; Crilly et al. 2006; Törrönen 2002); b) intuitive and easily understood by respondents (Umoquit et al. 2008); c) able to invoke 'contemplative verbal responses' (Umoquit et al. 2008); and d) capable of focussing interviewee attention on the issues in question (Umoquit et al. 2008). The method presented in this paper takes the use of diagrams a stage further; first of all it employed a type of diagram known as an infographic (information graphic) and uses them in a progressive series to introduce the interviewee to a new topic. As the subjects gained new theoretical knowledge they were encouraged to use that perspective as a lens for reflecting on their own professional practice and experience. This method is situated within the wider methodology adopted and the research project is described for the purpose of contextualisation. Some results of the study to date are presented and conclusions are drawn.

2. Motivation

The aim of presenting this method is to explore the ways in which knowledge elicitation may be improved during the interview process within the context of this research project. This project itself arose from a determination to see the process by which new I.T. systems are introduced change, influenced by the social and cognitive psychologist's understanding of attitude. Attitudes affect a person's intentions, opinions and behaviours (e.g. Krosnick and Petty 1995; Petty, Haugtvedt, and Smith 1995) and attitudes related to new I.T. environments are no exception to this rule (e.g. Angst and Agarwal 2004; Zhang and Sun 2009; Kim et al. 2009). It is reasonable, therefore, to suggest that an advanced understanding of attitude change theory, as found in social and cognitive psychology, could improve the user acceptance of new I.T. systems. Research into this disciplinary intersection, although embryonic, has already been beneficial and has exposed significant empirical deficit (e.g. Bajaj and Nidumoli 1998; Angst and Agarwal 2004; Bhattacharjee and Sanford 2006; Shumarova and

Swatman 2006; Zhang and Sun 2009; Kim et al. 2009). This is a largely un-researched and relevant field that could yield substantial social and economic benefits.

Existing studies, with few exceptions, have been deductive and far from being policy driven, have intended to critique or demonstrate theory. Empirical work has generally revolved around case studies with an action research overtone. This paper does not seek to criticize such works on the contrary their contribution is invaluable. However, far from exposing just a few lacunae, previous work has instead shown the role of attitudes in I.T. acceptance to be an area of substantive empirical deficit. Accordingly, it is proposed here that a series of policy-driven inductive research projects are now merited. Such projects should propose investigations that are wide-ranging, focused on making a high level and relevant contribution that can support those responsible for introducing new I.T. environments. The project described in this paper, has such an inductive research approach. Whilst the method presented is a tool, which demonstrates an affective approach to gather meaningful data from high-level engagements.

3. Epistemology

This method is based on an epistemic assumption that significant understanding and best practice is found in the oral traditions of experienced and affective practitioners, and in this case those experienced in encouraging users to participate in new I.T. environments; an assumption reflected in the remuneration packages such people demand. The backdrop against which these highly paid experts sit is that of a public perception of the world of IT failure, where large costly projects are dropped after public spending has failed to deliver (Jones, 1995), yet large systems are successfully implemented demonstrated in patterns of complex global trade which deliver the trimmings of modern life.

Commercial and industrial sectors clearly respect systems integration experience and the wisdom of those with a history of successful delivery. With respect to attitude change psychology, although unfamiliar with specific theory, this study confirms that affective practitioners tend to be familiar with the phenomena that such theory seeks to explain. Most have encountered manifestations that have led to problems and/or have developed techniques for cultivating user attitudes. This paper presents an approach by which aspects of that learning can be reflected on, captured and reviewed, allowing best practice to be distributed and scholarly debate encouraged.

4. Research paradigm

This inter-disciplinary research area combines elements of computer science/engineering, psychology, sociology and information systems. Stereotypically, these areas are associated with different research paradigms and this merits a special mention. Although the research topic is inter-disciplinary, the research paradigm associated with the method is not, it lays clearly in the information systems tradition, in particular with the sociology of information systems.

As already stated in section 2, this approach arose from a determination to see I.T. acceptance influenced by the work of social and cognitive psychologists. Such work can nearly always be classed as positivist or, at the very least, alienable with a descendent of positivism such as behaviouralism or operationalism. However, this research is not psychology, the objective is not to contribute to a psychological conversation but to extract learning from such research that might positively influence the manner in which I.T. environments are introduced. Consider for example the causes of cognitive dissonance (discussed later), our intention is not to contribute to a debate about what the causes are, that would be psychology, the intention is instead to 'stand of on the shoulders' of psychologists to provide a viewpoint from which to consider I.T. implementations. Likewise, this work should be distanced from computer science and its related rationalist, technocratic and scientific paradigms (Eden 2007). As it happens, the focus is I.T. based systems, however the exact same method could equally be used to investigate the acceptance of other systems, such as regulatory frameworks or quality systems.

This approach is interpretive, and when implementing it the researcher in keeping with interpretive principles, should be aware of, but not confused by, other paradigms found in the papers that provide supporting evidence. This paper in no way seeks to be critical of these other paradigms; it is the output of such research that has brought knowledge to the level that calls for the approach outlined in this paper. The simple proposition is that another phase of research is merited, one that is interpretive and, perhaps most importantly, inductive.

With respect to the project for which this approach was developed, the active intention is to get into the everyday 'grime' of user acceptance, to mine the oral traditions of effective practitioners capturing 'whatever they have to tell us'. There is no desire to be abstract, or clinical. Indeed, the researchers involved in this particular case are unashamedly practitioners of significant commercial and industrial experience.

As is often the case with interpretive research, this work does not seek to be explanatory but descriptive. A later reflection on how findings relate to the underpinning psychological theory could allow explanatory discussions to follow but this is not the objective. The intention is to consider how I.T. implementations might be beneficially influenced by attitude change psychology.

5. Infographics and their role in elicitation

Modelling our epistemology on the famous 'four stages of competence model' (often attributed to Maslow) and Kolb's (1984) experimental learning theory, it could be said that affective practitioners have significant *unconscious* and *conscious competence* that causes them to recognise, understand and manage phenomena that affect user attitudes. This is *concrete experience* (Kolb 1984) that, although present, subjects may or may not have reflected on or conceptualised. If *reflective observation* (Kolb 1984) and *abstract conceptualization* (Kolb 1984) can be facilitated during an interview, such experience can then be verbalised, recorded and discussed. Such a process should also benefit the subjects' understanding of their own practice.

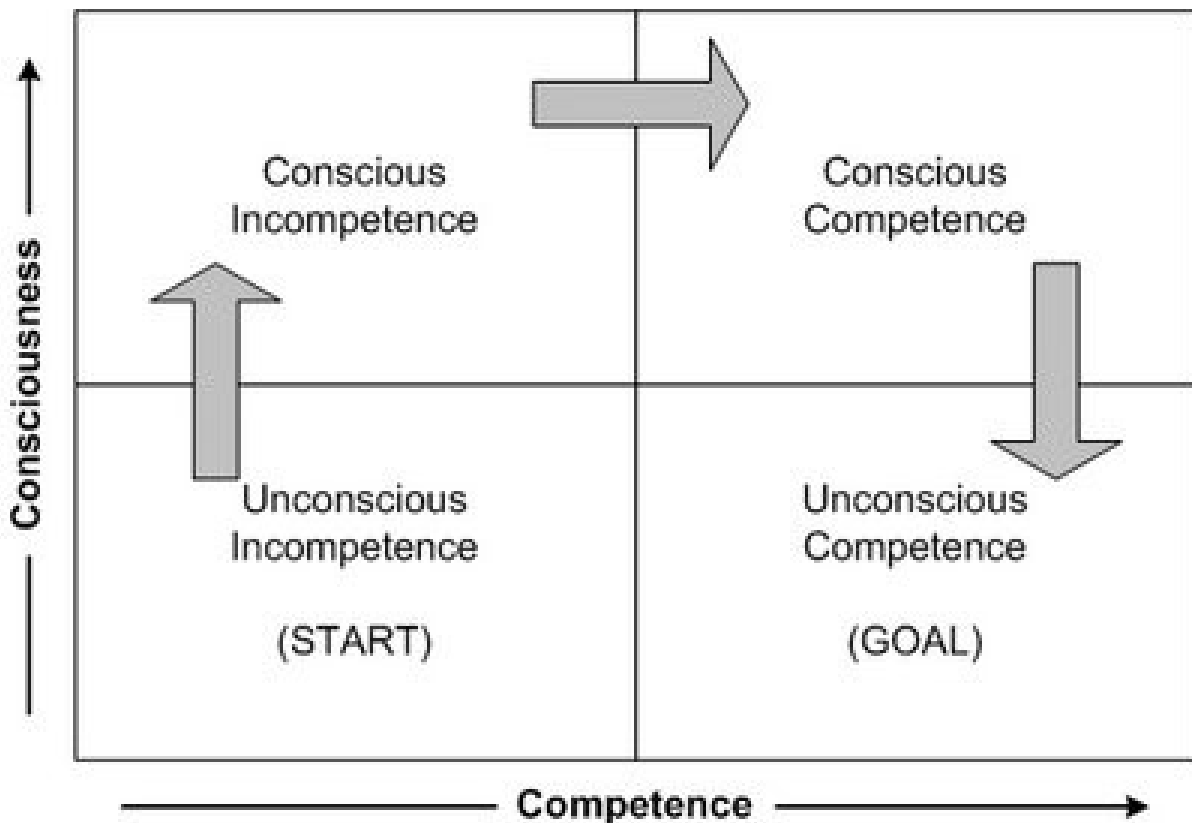


Figure 1: Diagrammatic representation of the four stages of competence model (Mackinnon 2007)

This presents two fundamental challenges:

- *Reflective observation* and *abstract conceptualization* need to be facilitated during each interlocution;
- General *reflective observation* and *abstract conceptualization* is not sufficient, it must be from the perspective of a particular attitude change theory.

To achieve these goals, a progressive series of infographics are presented to the subjects. Infographics are diagrams (and other graphics) specifically developed to portray information. A famous example is the London Underground map. Infographics intend to provide simple access to just the information that people need for the time that they need it. Infographics need not be

memorable, educational, entertaining, artistic or impressive. In the London underground example, information is particularly fleeting and superficial, passengers ignore the great complexity of an underground rail system and extract from the graphic, just the information they need at that moment (e.g. which train on which platform). In this method, subjects are provided with a progressive series of infographics accompanied by explanations and guidance that *incrementally* built their understanding of the relevant theory, sufficient to invoke reflective observation and abstract conceptualization. Their understanding of the theory is neither deep and durable nor precise, but it is adequate. As the interview proceeds, new infographics supported by dialogue incrementally provide additional new knowledge. As subjects learn, they are encouraged to reflect on their practice; considering where related phenomena have occurred, their impact, cause and appropriate responses.

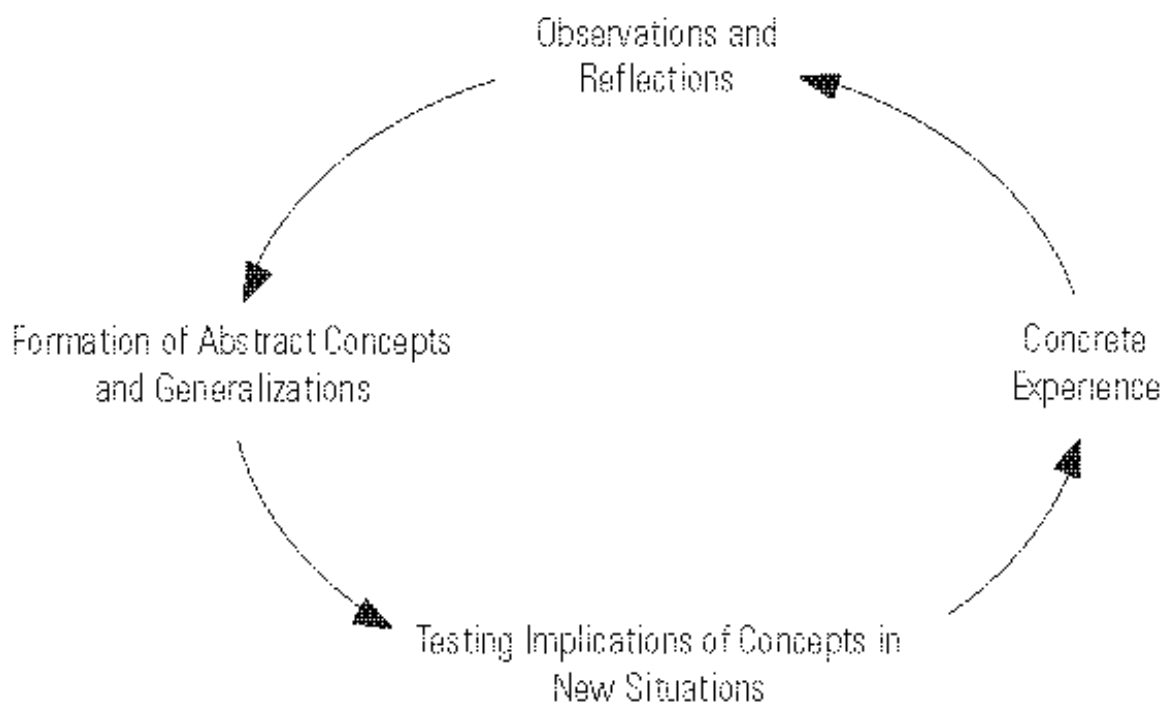


Figure 2: Diagrammatic representation of Kolb's experimental learning theory (Kolb 1984, p21)

The attitude change theories used to test the approach, were Cognitive Dissonance (Festinger 1957) and a dual-mode processing theory known as the Elaboration Likelihood Model (Petty and Cacioppo 1986). For illustration purposes, the following section introduces cognitive dissonance and examples of the infographics used to explain it. As appropriate, it also includes further discussion about the usefulness of infographics.

6. Infographics and cognitive dissonance

An initial adequate understanding of cognitive dissonance can be achieved through the following infographic (figure 3) and accompanying simple explanation:

"Cognitive dissonance refers to any uncomfortable mental state that could cause attitudes or behaviours to change. For example, anger, disappointment, embarrassment, confusion, shock, moral dilemma and so forth. It is a generic term for uncomfortable cognitive experiences that cause one to reconsider. As an example, consider a parent who discovers that an activity is hurting their child. According to the diagram, the parent starts in the green area, their thoughts are consistent and they are comfortable, when they discover that 'sugar for breakfast' is harming their child, they enter the red uncomfortable area, one way out of this red area is to change their attitude toward 'sugar' (move into the red square box), if they then change their behaviour and stop given their child 'sugar for breakfast', comfortable (green) cognitive consistency is restored."

Crilly et al. (2006) warned that when using diagrams, responses might differ dependent on how subjects relate to them, to avoid this they suggest that users should comment on what the diagram means to them at the outset. In this scenario however, the diagrams are not the heart of the stimuli,

they are designed to invoke an understanding that is the stimuli. Accordingly, extensive discussion of the diagram is not appropriate as it would be focused on the psychology, these infographics play an almost pedagogic role and as subjects learn the interviewer needs to guide their understanding, clarifying points and providing more information as required.

Cognitive Dissonance

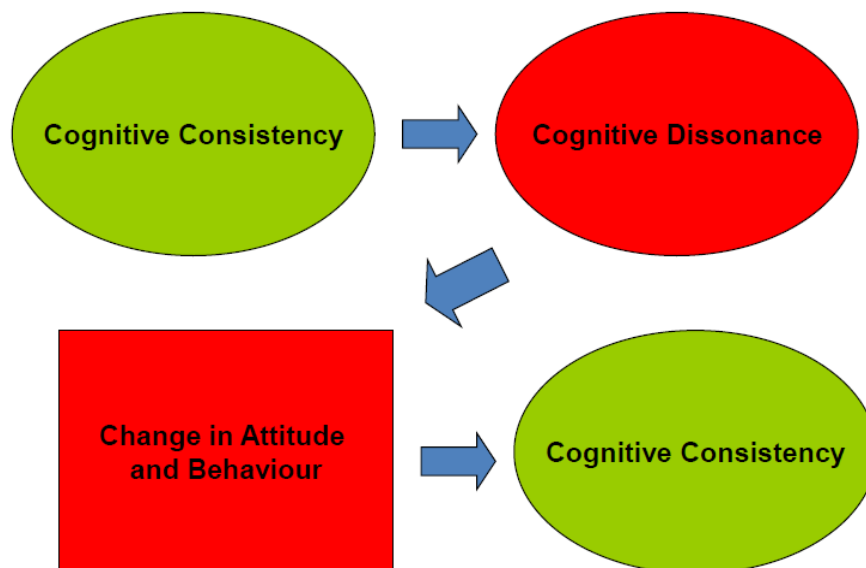


Figure 3: Infographic used to introduce the concept of cognitive dissonance

By way of example, figure 4 is the infographic used for the 'causes of dissonance'. It intends to present only the summative information. To understand its degree of saliency, the reader is encouraged to read a review of cognitive dissonance's evolution, such as Harmon-Jones and Harmon-Jones (2007). For illustration purposes, a few points from this paper are summarised and critiqued in the following paragraphs.

At its most basic, cognitive dissonance theory proposes that people are inclined to change behaviours and attitudes to ensure consistency with beliefs, values and perceptions. Failure to acknowledge this consistency of perception causes dissonance', Festinger, and some of those who followed him, actually created formulae to define its impact and scale (e.g. Sakai 1999). The greater the dissonance the greater the motivation to resolve it and the probability of change, likewise in a dissonance situation, change usually involves weaker attitudes giving way to stronger attitudes. Since the late 1960s, researchers have attempted to understand what motivates dissonance, and three dominant revisions have been proposed with supporting evidence (Harmon-Jones and Harmon-Jones 2007) namely, Self Consistency Theory (Aronson 1968, 1999), Self-affirmation theory (Steel 1988) and a 'new look at dissonance' sometimes called aversive consequences (Cooper and Fazio 1984):

- *Self Consistency Theory* proposes that the self concept (or a violation thereof) is the primary cause of dissonance; people suffer dissonance if they compromise their own self image.
- *Self Affirmation theory* proposes that people uphold a set of values and thus maintain an overall self image. Simon et al. (1995) performed significant interpretive work and found that when suffering dissonance, if subjects confirm a value (any value, relevant or otherwise) then attitude change does not occur, they are effectively distracted from the dissonance and its affect is subdued. The Self Affirmation premise is that dissonance is caused by the disruption of the holistic self-image, if something then confirms the self-image (anything) consistency is restored.
- *A new look at dissonance* was published after Cooper and Fazio (1984) repeated some of Festinger's original experiments and concluded that dissonance is invoked when a subject feels responsible for possible *aversive consequences*. When people are paid substantially to tell a lie,

they avoid dissonance because the perpetrator of the bribe is the originator but, when the pay is low, the subject has no one else to blame and becomes dissonant.

Causes of Dissonance

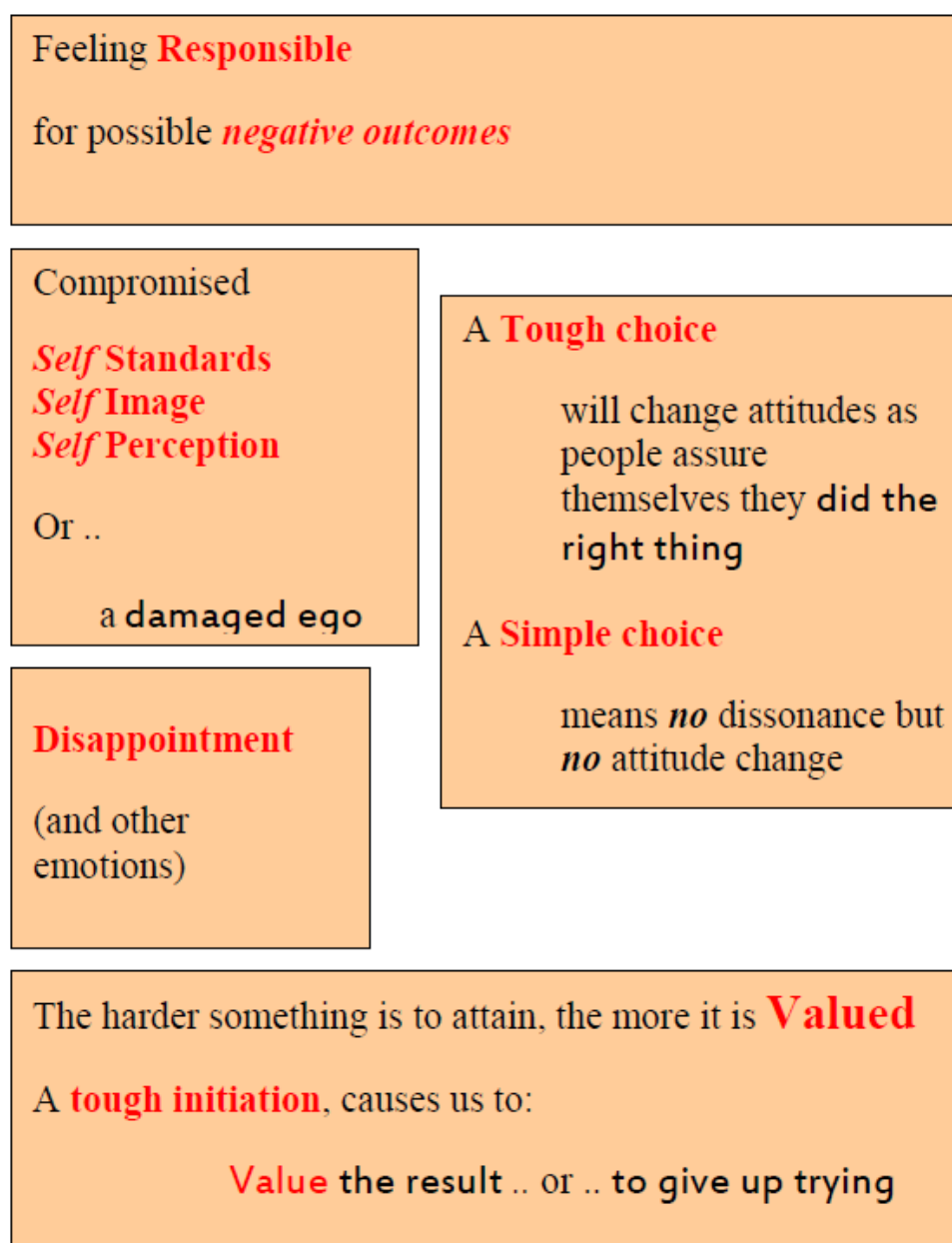


Figure 4: Infographic that aids discussions about the causes of cognitive dissonance

In an early experiment (Aronson and Mills 1959), women underwent a severe or mild initiation to join a group and the severe initiation subjects were subsequently found to value group membership more. The discomfort of the initiation had invoked dissonance which formed their attitudes. This is a notion that is now well established and employed for various purposes (e.g. Beauvois and Joule 1996 Axsom and Cooper 1985; Draycott and Dabbs 1998; Wicklund and Brehm 1976) an extreme witness to this would be gang initiations.

In another example, Festinger and Carlsmith (1959) paid people to lie, claiming that a tedious task was interesting. When the fee was high, people did not experience dissonance (they did it for the money and felt fine), but when the fee was low there was significant dissonance. Unable to justify their lies, their attitudes about the job changed and the proclamations thus ceased to be lies and

became genuine representations of belief. This can all be aligned with Brehm's (1956) findings that cognitive dissonance is greater when a choice is hard. It stands to reason: if multiple options appeal then choosing can be difficult, conversely, if given the choice between something pleasant and something horrible, the choice is simple.

The intention behind the preceding section was to provide some idea of the complexity of the 'causes of dissonance conversation'. The other two streams investigated were equally complex. The infographics serve to protect subjects from such debates providing only the information they need in a clear and accessible form. If individual interviewees require additional information it is then provided by the interviewer as required through the ongoing dialogue.

One might suggest that figure 4 appears amateur and simple. It contains minimal text enhanced with simple colours and typography. Such suggestion would not be received negatively but as support that the objective has been achieved. To quote Keyes (1993 p1): "When we're confronted with a page of solid, undifferentiated text, what do we do? We use a colored highlighter. In highlighting, we create visual landmarks. We mark key points that we want to remember and refer to, that help us mentally follow the structure of the information". In any reasonable communicative document, information comes in levels (Keyes 1993), the infographic only provides the highest levels in a comfortable form, and the interviewer as required then provides additional layers.

This section has presented the notion of the infographic as a means to elicit advanced dialogue from expert practitioners. The next section will describe the context of the research in which this method was deployed.

7. Research methodology

This research project has been carried out in a three stages, an initial investigation which included reviewing significant literature, and initiating two interviews to familiarise the researcher with the interview process and with the use of the infographics. The second phase tested the infographics as a data collection method over four interviews in the final data gathering phase a further nine interviews were undertaken.

In the first instance it was essential to devise a way by which experts could be identified. As previously stated in section 3, this research is based on an epistemic assumption that significant understanding and best practice is found in the knowledge and oral traditions of experienced and effective practitioners. A criteria for selection thus emerged, by which those with relevant experience and expertise might be identified as suitable subjects, a criteria that identified the 'expert'.

Hoffman et al. (2002) surveyed definitions of 'experts' proposing a return to craft guilds terminology. It is a significant observation that failing to find clear definitions of 'experts' in modern literature they opted to revive a taxonomy based in the Middle Ages. Accordingly, Hoffman et al. presented a taxonomy with seven respective categories: naivette; novice; initiate; apprentice; journeyman; expert; and master. At one end of this comprehensive spectrum is the naivette "who is totally ignorant of a domain" (p. 132) with masters being those who are *the* expert in a sub domain, "whose judgements set the regulations, standards or ideals" (p. 132). However, most relevant is their definition of an expert:

"The distinguished or brilliant journeyman, highly regarded by peers, whose judgements are uncommonly accurate and reliable, whose performance shows consummate skill and economy of effort, and who can deal effectively with rare or "tough" cases. Also expert is one who has special skills or knowledge derived from extensive experience with sub domains" (p, 132)

Avoiding an extended etymological debate, this definition provides a basis from which a selection criterion can be defined. In this research, the following attributes were used to define 'experts':

- Experts are highly regarded by their peer group and are referred to using distinguishing terminology such as 'leader', 'expert', 'best' or 'strongest';
- Their practitioner experience is in excess of ten years;
- They have played a lead role in the introduction and implementation of least three major systems and have participated in many more;

- Each has a proven track record of dealing affectively with 'tough' examples.

It should be noted that most subjects satisfied these minimum criteria several times over. Four candidates comfortably met the Hoffman et al. (2002) definition of a master and all but three candidates struggled even to estimate the number of implementations they had participated in.

A second criterion for selection related to the sector in which a subject's experience predominately lay. Eight of the candidates only had experience of a single sector; two more predominantly resided in a single sector with perhaps a single project excursion into other sectors. The rest had experience across three or more sectors. To prevent an unbalanced focus, no two subjects had gained the predominate part of their practitioner experience in the same organisation and no more than three candidates were selected from any single sector. Specifically, three candidates were selected from health and logistics; two interviewees represented financial services and one interviewee represented the other sectors.

Eliciting expert knowledge although difficult (Kidd, 1987), is a proven empirical technique exploited in a wide range of applications and disciplines (Hoffman et al. 2002). With respect to the role of attitude change in user acceptance however, this research represents the first study of its kind. With the criteria for selection defined, the next section discusses the number of candidates interviewed and the size of the transcription corpus created.

7.1 Number of interviews conducted

Estimating the correct number of purposively sampled subjects is known to be problematic (e.g. Guest et al 2006; Onwuegbuzie & Leech 2007), general guidance is that data gathering should continue until a point of saturation has been reached (Onwuegbuzie & Leech 2007). Guest et al. (2006) reviewed the use of the commonly used term "theoretical saturation" in literature, finding this routinely proposed as a milestone for selecting a sample size. However, Guest et al. also observed that the same literature "did a poor job of operationalizing the concept of saturation, providing no description of how saturation might be determined and no practical guidelines for estimating sample sizes for purposively sampled interviews" (p.60). They go on to review work where the 'number of interviews' is suggested exposing an erratic set of figures. Although it can be observed from Guest et al. that many papers suggest small numbers often to be adequate (perhaps only 5 or 6 participants), ultimately it has to be concluded that no one can say how many interviews are enough.

In this research, the interviews were relatively long (about 90 minutes) and being conducted 'expert to expert' they were intensive and productive. Accordingly it was predicted at the outset that saturation might be reached quickly. Although no figure was put on this, 19 potential subjects were originally identified, of which 15 were interviewed. On reflection, it is apparent that just the eight strongest interviews would have been sufficient, but it took all of the interviews to identify those eight. Strictly speaking, the final three also need not have taken place as no new major themes emerged, however they served as assurances that saturation had occurred and provided additional supporting examples. Accordingly at 15 interviews a decision was taken not to seek out any more candidates.

7.2 Conducting the interviews

Each interview began with a confidentiality statement, which explained that no information would be made public that might enable the subject, their affiliated organisations or other people involved to be identified, they might be quoted in journals and conference papers but not in an attributable manner. It was further expressed that no copies would be made of interview recordings or transcripts and that they would be made available to no one but the interviewer, and selected participating academics. Any deviation from this agreement would require the subject's express written permission.

Given the nature of the organisations involved this guarantee of confidentiality was necessary for a significant 'warts and all' corpus of information to be gathered. As most subjects were employed by large commercial organisations with 'public relations departments' accounts that were not guaranteed anonymous would be significantly sanitised and virtually impossible to attain.

The interviews were recorded for subsequent transcription with consent for the recording to take place being obtained. The interviewees were offered breaks during the process, as after the pilot interviews it was apparent that the process was tiring for both the interviewee and the interviewer. The location

for the interviews was decided upon at the interviewee's discretion to aid in creating conducive ambiance, a feeling of comfort, to reduce formality and with an eye to their convenience. For those interviewees who were in the workplace it was important that taking part in the interview was not intrusive and made a minimal impact on their working day. After the interview in some cases (where it was thought to be useful) permission was sought to re-approach the interviewee to take reflections on the findings of the research.

From the perspective of the interviewer awareness of good interview techniques such as; active listening, observation, appropriate language, awareness of the comfort of the interviewee were researched prior to entering the field.

7.3 Using the infographics

With a basic understanding established through discussing the theoretical lens to be applied aided by the infographics, subjects were then encouraged to reflect on their experiences of cognitive dissonance among users, its cause, affect, appropriate responses, management and so forth. The focus for the interviewee was on real experience and not imagined scenarios, as this is understood to produce more accurate and reliable information (e.g. Ericsson and Simon 1993; Cote et al. 2005). Questions were presented in a manner that built a beneficial peer relationship with the subject, respecting their knowledge and experience (e.g. Mishler 1986). As the infographic provided only an introductory understanding, an iterative process was required that revealed other aspects of theory through dialogue, relative to the subject's examples. This also served to avoid potentially distracting confusion about 'psychology'.

With a fundamental understanding of cognitive dissonance established in the first instance, more advanced theory was introduced focused on three themes, namely dissonance in a group context, its cause and the affect of current activity on the process. Once again, although such theory is complex, subjects only required an understanding adequate at a level to enable reflection; which was provided by additional infographics presented and explained in the same manner as before. These later infographics were particularly simplistic, effectively just text that incorporated illustrative typography. The same process was then undertaken for the second theoretical construct, which was the elaboration likelihood model, further discussion of this construct is outside the boundary of this paper.

All of the infographics used, were held in a laminated file and presented to the interviewees at the appropriate point in the interview. They were available to subjects throughout the interview to act as information reference points when required. The 'file' also kept things tidy and portable allowing interviews to occur at the time and place of the subjects choosing, which is significant given the importance of interviewee comfort discussed above (e.g. Hair et al. 2000; Babbie 1998).

8. Results

Results largely confirmed initial optimism to be founded. All subjects were practitioners with extensive experience of encouraging users to participate in I.T. Elements of this approach (a single infographic) were initially tested on two subjects, one with over 40 years experience and another with 20. Four complete interlocations were then performed as a pilot stage, three with women who each had 10 to 15 years of experience and a man, recently retired with over 40. In all 15 interviews were undertaken and the table below indicates the significance of the corpus of data gathered. The table, which is not in chronological order, describes the data in terms of the word count of transcribed data per interview and the time taken for the data to be gathered. The interviewees were asked how many organisations they had worked for, and their experience in the field of user acceptance. Interestingly the number of different largely blue-chip organisations that were referred to was over 100 with over 150 separate projects being subject to expert reflection by the interviewees.

The main objective of encouraging practitioners to reflect while learning was certainly achieved, subjects often paused, clarified and questioned the psychological theories, appeared deep in thought then recalled relevant scenarios. Covering seven infographics, the complete interlocations each lasted for an average of 90 minutes. In some cases, infographics elicited nothing, with subjects simply saying that they couldn't contribute, out of the four full pilot interlocations, only one subject provided discourse for all seven infographics, one was unable to do so for two infographics and the remaining two both failed to contribute for one infographic each. From the pilot, however, there was no single problematic infographic. Subjects failed to respond to different ones and, in all cases, subjects

understood the theory being explained but were just unable to recall a circumstance where they had seen it. Without prompting, three subjects made positive comments about the infographics themselves, all subjects focused on them, flicked between them and in one case, sat stroking them while deep in thought. The graphics also clearly assisted in keeping subjects 'on topic', which can sometimes be a problem (e.g. Oropeza-Escobar 2007). The knowledge elicited was also excellent. Two candidates, for example, described in detail scenarios where dissonance was so severe that it led to resignations, another subject revealed they had affectively made a career out of avoiding dissonance when introducing IT systems to northern unionised industry and described the best practice that underpinned their success. This pilot phase gave confidence that the infographics were useful and contributed to the interview process and the decision was made to continue with their use for the remaining interviews.

Table 1: Key aspects of the research data

Interview	words in transcription	Interview length (Minutes)	Organisations worked for (full time)	Years of user acceptance experience	Organisations involved	Projects or Systems Referenced
1	9091	102	1	10	2	6
2	12733	106	1	15	11	11
3	11933	101	6	34	11	16
4	6142	96	2	10	3	12
5	5157	78	2	18	8	9
6	8185	84	6	41	20	22
7	13832	94	1	33	5	8
8	11912	108	1	8	1	7
9	9042	85	8	15	8	14
10	6652	77	1	14	1	9
11	8170	70	6	14	8	7
12	7305	52	3	30	2	6
13	6526	87	18	26	14	14
14	8414	91	1	28	5	5
15	12401	109	4	14	12	14
	137495	1340	61	310	111	160

Although subjects claimed to have personally benefited from participating, the process was clearly tiring. The first full interlocution was stopped for a comfort break after 37 minutes (less than half way through), and despite an intention to continue it was decided that to maintain focus it should be postponed to another day. This had unexpected benefits, providing space to reflect on the topic between discussions. In later interlocutions where subjects chose not to break, they clearly started to 'slow down' towards the end.

Two older subjects, displayed personas that support our epistemic assumptions. One was passionate, almost angry that his experience was now going to waste and appeared frustrated by a culture that dismissed qualitative experience and was over focused on technical competence and dry technical manuals. Although off-topic, the following statement captures this persona:

“the only thing that really fucking matters, is deciding what the machine will do and what the people will do, and that determines the interaction. This determines what communication will take place and when, it all comes from that one thing”

The elder subject involved in the full interlocution was clearly moved by the experience; he had originally been unsure that he would have anything to contribute. While driving the interviewer home (from his very large house in his prestige car) he appeared deep in thought and expressed surprise at the level of contribution he had made, it made him realise how affective a practitioner he had been.

Another observation is that subjects didn't automatically differentiate between I.T. systems and other systems. One, for example, spoke about enforcing the use of cycle helmets on industrial plants. Although such tangents were discouraged, they support the proposition that this method could be re-applied to the acceptance of other environments, such as health and safety systems. Although such tangents are not explored here, it would be interesting to see how results between such potential future investigations compared.

As an inter-disciplinary investigation, the subject of contrasting paradigms couldn't be avoided. Three subjects without prompting said they had never encountered this type of research, one of whom (a certified engineer and PhD chemist) openly questioned its validity, although she also admitted prejudice towards *all* qualitative research. The same three subjects however, with alacrity agreed this research would be beneficial with significant real world application, they simply found it 'alien'. Perhaps such responses are a burden that inductive, interpretive, inter-disciplinary researchers will simply have to live with.

The initial data analysis was conducted employing a thematically driven approach, which in these early stages are already producing interesting results. The knowledge gained will be used to suggest improved implementation strategies alongside understanding more fully the manner in which experts may more readily share what they know.

9. Conclusion

This paper has presented an approach to augmenting the efficacy of interviewing as a technique for data collection. Asking experts to reflect on their considerable experience aided by a 'new to them' theoretical perspective has yielded interesting and substantive results. Whilst this particular research project focused on knowledge elicitation from the world of information systems implementation the intention is to assess its applicability to other complex domains such as logistics, health and safety, and health. When dealing with experts the embedded and tacit nature of the processes by which they arrive at answers and make decisions is often difficult to understand, with this research accessing this rich source of knowledge becomes a possibility.

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