ETHICS IN CONSTRUCTION HEALTH AND SAFETY RESEARCH: REFLECTIONS FROM A PHD PROJECT

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Construction health and safety researchers need to be aware of the various aspects associated with the ethical conduct of research. Most journals now require researchers to make some reference to some aspects of informed consent and confidentiality of informants as a way of addressing ethical conduct of research. Universities and research institutions also expect all researchers to follow established rules and guidelines as prescribed by institutional ethics research boards and/or committees, through an approval process prior to the conduct of research. However, ethical issues permeate the entire research process, yet there is little in terms of published literature that discusses how this important issue is actually addressed by the researchers during the actual conduct of research. This is a significant gap which this paper seeks to redress by reflecting on how and what ethical issues were addressed during planning, purpose and research questions, data collection, analysis and interpretation stages of the authors PhD project.

Keywords: empirical health and safety research, institutional human research ethics committee, informed consent, reflexivity.

INTRODUCTION

Research, by its very nature, involves collecting, analysing and writing about information and data on a range of issues. When the issue is as important as health and safety, this inevitably means sourcing, gaining access to and speaking with people. Hence the ethical conduct of health and safety research becomes very important. Researchers not only need to protect their research participants but also develop a trust with them, ensure integrity of their research, and cope with any new, challenging problems (Israel & Hay, 2006). It does not whether the research method involves qualitative or quantitative studies, since ethical issues are present in any kind of research (Orb, Eisenhauer, & Wynaden, 2000; Panter & Sterba, 2011), although the issues may be different. Ethical issues are therefore becoming an increasing focus for research, with a number of academic journals specifically devoted to this. Most research, however, has been published from domains such as medicine, nursing or social work; with very limited from industries such as construction, or from health and safety research. Moreover, there is very little published on the actual practice of ethics in research (Gillam, Guillemin, Bolitho, & Rosenthal, 2009), including the experiences of researchers during the conduct of research. This creates a false impression that following the guidelines and rules lay down by the institutional research ethics committees and 'approved' at the project proposal stages by itself is sufficient to warrant the ethical conduct of research! This raises the question of whether ethical challenges are understood and addressed appropriately in construction health and safety projects, since ethical issues permeate the entire research process. This is an important question to consider not only for maintaining the integrity of research, but also to ensure researchers (novice, as well as those experienced in one methodology seeking to employ different methods compared to what they may have been used to in the past) are adequately prepared for dealing with new and emerging ethical

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Return to TOC
challenges that arise during the research process. The aim of this paper is to start the conversation on this important topic, by reflecting on how the issues of ethics were addressed as part of the researcher's PhD journey. It is limited to those issues addressed during planning, purpose, research questions, data collection, analysis and interpretation stages of a construction health and safety research project.

RESEARCH APPROACH

Any piece of academic research involves connecting the layers of basic assumptions from the ontological, epistemological and theoretical positions to inform the research methods and techniques used in the research process. This research is based on an interpretive ontology and epistemology of constructionism, both of which sees knowledge being constructed instead of being discovered (Crotty, 1998). The theoretical perspective involves symbolic interactionism (SI), which surmises that people act towards things on the basis of meanings for them, with the meaning derived and modified through social interactions (Charon, 2010). The knowledge involves the ethical conduct of research, and for maintaining the integrity of the research process. The research method is based on reflective practice, more specifically 'reflection-on-action' which involves reviewing, describing, and evaluating past practice with the aim of improving it in future (Schön, 1994). Reflexivity and reflections are integral for maintaining the quality of any qualitative research (Malterud, 2001). The data for the paper is based on the author's collection of papers on the topic of research ethics before and after the research process, and a research journal maintained during the four-year period of the PhD project. Maintaining such a journal is an integral part of doing qualitative research and maintaining rigour (Creswell, 2009; Tracy, 2010).

LITERATURE REVIEW

Ethics and ethical standards

Ethics, in its broadest sense, is about examining and understanding morals (Israel & Hay, 2006), rule-driven principles, obligations, imperatives, rights and duties, as applied in a social context to Castaneda (2006). It can be traced to the Nuremberg Code, first developed in 1947, by American judges presiding over the cases of Nazi doctors accused of conducting lethal and torturous human experiments in concentration camps (Shuster, 1997). Since then, most professional associations, educational and research institutes have developed standards or guides to prevent similar forms of experimentations, with many making these freely available on their websites. Examples of these include:


Australian Code for the Responsible Conduct of Research (available at https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/r39_australian_code_responsible_conduct_research_150107.pdf); and

The Royal Academy of Engineering Statement of Ethical Principles (available at www.raeng.org.uk/publications/reports/statement-of-ethical-principles); and


Previous research on ethics in research

Ethics has been the subject of ongoing research for over a decade. In 2001 the National Bioethics Advisory Commission commissioned a research project on ethical and policy issues involving humans in research. This research investigated research ethics in a number of countries, problems of status of the National Institute of Health as an independent authority, privacy and confidentiality,
Proceedings of CIB W099
Benefitting Workers and Society through Inherently Safe(r) Construction
Belfast, Northern Ireland, 10-11 September 2015

unifying and expanding federal oversight of human subject research, institutional review boards and ethics research committees at local and national levels, vulnerability of research subjects, protection of human subjects, survey of policies and procedures for protecting humans, role of the state in overseeing human research, privacy and confidentiality, and beneficence of human research (National Bioethics Advisory Commission (NBAC), 2001). Since then, a number of reviews covering different aspects of research ethics in a number of fields have been published.

Singer and Vinson (2002) reviewed ethics in software engineering studies and identified informed consent, scientific value; beneficence and confidentiality were deemed most important. Shaw (2003) identified informed consent, confidentiality, privacy, and social justice was important at the design stage; power differentials, reciprocity and contextual relevance during fieldwork; and narration, outcomes, justice and the utilization during analysis and dissemination. Grant and Sugarman (2004) found out that incentives caused problems when the subjects were in a dependent relationship with researchers, when risks were particularly high, the research was degrading or when the incentives were relatively large. Dubois, Volpe, and Rangel (2008) identified informed consent, respect for subjects, value, scientific validity, fair selection of subjects, favourable risk-benefit ratios being the most important aspects published in non-ethical related health journals. Suri (2008) identified that multiple layers of interpretation influenced the selection and representation of ‘voice’ in research publications at the synthesis stage. White and Drew (2011) revealed authenticity of data, integrity of the analysis process and representations of voice were important at data collection and analysis. A special issue published in 2013 examined ethics of longitudinal research, theories and moral questioning, online research, visual materials and techniques (Wiles & Boddy, 2013). Redman (2014) reviewed instruments for measuring ethics in biomedical sciences; while Saunders, Kitzinger, and Kitzenger (2014) examined the challenges of maintaining anonymity of interview data. And more recent reviews have examined deception (Liong, 2015); voluntary participation and informed consent (Mamotte & Wassenaar, 2015); and the communication of findings (MacKenzie, Christensen, & Turner, 2015). While these reviews continue to add to the body of work on different aspects of ethical conduct of research, none of these focussed on (i) building or construction settings, (ii) health and safety research, or (iii) the actual experiences of researchers. This is a significant gap in the literature, and the aim of this paper is start a conversation towards addressing this important gap.

The following sections reflect on ethical issues in conducting health and safety research in construction. While most of the issues identified here will be relevant for both quantitative and qualitative researchers, this paper draws on a qualitative case study the author completed as part of his PhD research.

PROJECT

This research draws on a project which explored the application of a set of rules, safe work method statements, in the construction industry, using the framework of resilience engineering (herein called the ‘SWIMS’ project). This involved a multi-level analysis (Rasmussen, 1997) of the residential construction sector using a case study methodology (Stake, 1995), with data collected through interviews, documents and field observations. Ethical approval was sought and received from the IHREC before the data collection, based on a process which met the ethical standards established jointly by the National Health and Medical Research Council / Australian Research Council / Universities Australia (2007). The key instruments used included a plain language information statement (PLIS), consent forms, and protocols for semi-structured interviews and field observations.

ETHICAL ISSUES

Ethical issues is research can arise at any, or all, stages of a research process, including planning, data collection, data analysis and interpretation, and writing and dissemination (Creswell, 2009).
Ethics in Planning

The considerations surrounding ethics start during the planning stages (Sieber, 2000), not only during data collection. Some of the things that need to be considered here include the need and the benefits of the proposed research. In seeking to justify the need for research, it is important to identify a significant issue, concern or problem; one that benefits and is meaningful to others, not only the researcher (Creswell, 2009).

In as far as the benefits are concerned, factors such as the market share of the construction industry, its contribution in terms of Gross Domestic Product (GDP) or value-add (VA), and employment numbers are generally used to make the case for research in any industry; while statistics associated with number and/or costs of injuries and are used to strengthen the case for health and safety research. In this project the value-add of construction, estimated at that time to be around $US3 trillion, employing over 180 million workers; against 100 000 deaths and a fatality rate being five times greater than the average workforce was used to justify the need for research. Upon reflection, however, the researcher faced a moral dilemma of whether presenting an argument based on statistics alone pointed towards quantitative research! This ethical conundrum is one of conflicting rationalities (Watson, 2003), in other words is it ethical to (predominantly) rely on quantitative data to justify the need for research that has been planned to be done qualitatively? Or should this argument be dealt with in at some other part of the research process? There were no guidelines or rules to follow at this stage, but quoting and citing these types of statistics made sense, it also meant something to others other than the researchers (Creswell, 2009). More importantly, nearly all articles and publications scrutinised seemed to use it, so the overriding criteria used by the researcher was one of consistency i.e. if other researchers used it, then it was okay to use.

Ethics in Purpose and Research Questions

The purpose (or intent statement), goals and questions for research needs to be made clear to the participants involved in research, and (any) sponsors need to be identified (Creswell, 2009). A number of ethical questions arose here. For example, what, if any, 'goals' was this research trying to achieve? A common problem with most research involves 'hyperclaiming', or telling prospective participants the research is likely to achieve goals which are likely to benefit them in some way (Rosenthall, 1994). Strictly speaking, the SWIMS project did not do this entirely, for it was an attempt at seeking to understand the meaning ascribed to SWIMS. The strategy the researcher relied on here was to remain silent over this issue. Upon reflection, it can be questioned whether this represented some level of deception in the manner suggested by Liong (2015).

A related ethical question that arose at this stage was how should the purpose of research and the research questions be presented in simple, 'layman terms' so that the different players in the construction industry heard the same message? In this project the purpose statement submitted for approval by the IHREC was phrased 'to develop an understanding of whether safe work method statements (SWMS) enhance or impede resilience engineering (RE) as a health and safety management strategy in construction organisations.' It seemed to make sense, at least academically; but how would one with no (or limited) understanding of RE, or those who had not worked with SWIMS, interpret this? In hindsight, most of this information can be deemed redundant, if not confusing (Walkup & Bock, 2009). This became evident when, during one of the first of five pilot interviews, an informant asked the question "are you checking out whether I follow SWIMS or not?" Since this was not the intention, the purpose statement written in the PLIS was simplified to 'we are researching how safe work method statements (SWIMS) are interpreted and applied to control health and safety risks in the Australian construction industry!' This still sounded a bit academic, but the researchers felt this could be better explained to the participants than the earlier version.

Ethics in Data Collection

A number of ethical issues need to be considered during data collection; the three most important ones being (i) protection of informants, (ii) informed consent, and (iii) confidentiality (Creswell, 2009).
The confrontational nature of the construction industry can also pose additional ethical challenges (Loosemore, 1998), as can issues of low English-language literacy (Trajkovski & Loosemore, 2006).

**Protecting participants from harm**

Irrespective of the methods used for collecting data, qualitative research inevitably involves probing into the lived experiences of participants and placing these in the public arena (Mauthner, Birch, Jessop, & Miller, 2002), and this interaction affect informants because of the power differentials that exist between researchers and informants (Karnielli-Miller, Stryer, & Pessach, 2009). Ways of managing this needs to be considered alongside any other physical, psychological, social, financial or legal risks (Israel & Hay, 2006). Participants can feel vulnerable, experience additional anxiety and/or distress if they are questioned, and their anxiety levels can rise if they have issues with literacy (Labott, Johnson, Fendrich, & Feeney, 2013; Roth, 2005). Some may even feel exploited, especially if the study entails methods such as ethnography or insider research. In addition to the participants, researchers also need to ensure any work areas used as research sites are not disturbed or impacted negatively in any way (Creswell, 2009).

In this project a deliberate choice was taken to ensure only those who were (i) educated to at least year 9, and (ii) predominantly born or migrated to Australia were included as key informants. This purposeful sampling strategy (Coyne, 1997) was one way of ensuring informants had a minimum language capabilities in English. In addition, as part of the data collection strategy the researcher spent a period of time getting familiar with the sites and the specific range of occupational cultures involved, completing an industry-based induction training course, becoming a member of the local union, and spending over a month at each of the research sites and the different projects (over six months in all). Some of these strategies are consistent with ethnography (Creswell, 2009), although the study design itself involved case studies. As part of data - collection, the researcher became a quasi- assistant to a range of construction crews. This, together with getting membership to the local union, was key to developing and maintaining the necessarily level of trust to be developed between the informants and the researcher. These steps were adopted from Gherardi and Nicolini (2002). The voluntary nature of participation was emphasized as part of the recruitment process, and a point of referral to the national helpline was provided to allay the concerns and fears of any potential participants. Aspects of some of these practices are what authors such as Buchanan and Bryman (2007) refer to as 'contextualization of choice in methods.' Authors such as McDonald et al (2008), however, suggest that, from the perspective of human subjects, trust is a more dynamic concept characterised by reciprocity and negotiation. Upon reflection, however, the issue of reciprocity did not play much of a role in this stage of the project.

**Informed consent**

Informed consent concerns the respect and right of participants to be involved in the research process, access to their data, and the ability to withdraw from the research (Miller & Boulton, 2007). A written consent form is the most commonly used instrument for gaining such consent, with textbook guidance suggesting the need to include information on things such as (i) researcher(s) and sponsor(s), (ii) purpose and scope of research, (iii) an indication of how the participants were selected, (iv) benefits of participating, (v) level and type of participant involvement, (vi) risks to participants, (vii) types of questions which will be asked, (viii) the use to which the results will be put to, (ix) how confidentiality and anonymity will be maintained, (x) right of participants to withdraw at any time, and (xi) contact details for persons (other than the researcher(s)) for any questions, clarifications or issues (Creswell, 2009). Providing the information is only half of the process; the other half is about getting the consent itself. Getting construction workers to sign something can be problematic as they generally have lower levels of literacy compared to other trades such as mechanics or fitters (Bates & Holton III, 2004; Trajkovski & Loosemore, 2006), so informed consent becomes a process of negotiating and re-negotiating, not the mere act of getting informants to sign forms.

In this project both verbal and written forms of consent were obtained from the participants. This involved giving each participant a plain language information statement (PLIS) which covered the
points above, going over these at the beginning of any interviews and at the end, and giving them the right to withdraw. However, as the research progressed two issues became apparent.

The first was that a number of informants were more than happy to withdraw given that particular choice. The ethical problem however, was that if this was allowed to continue uncontrolled, it could impact on the final outcome in terms of number of informants and seeking new informants to make up. The second was that most of the workers were contractors, and they were taking out valuable time to speak with the researcher and show him how things were actually done. While all did this in good faith, the ethical issue that arose here was whether these participants should have received some form of monetary compensation? If so, how were these likely to impact on the results? These questions have also concerned authors such as Grant and Sugarman (2004) and Ripley (2006). To account for people's time's chocolates were provided as a compromise, in line with the suggestion by Grant and Sugarman (2004) that this should neither act an incentive nor as a disincentive for participating. Due to long delays in getting access to research sites and key informants, the researcher discouraged the withdrawal of informants by maintaining a level of silence around it i.e. including this information in the consent form but not explaining it in any detail during, before and after the interviews. Whether this was ethical practice or not remains questionable.

Confidentiality

Qualitative research invariable involves collecting some level of personal information regarding the informants. While many try to conceal as much of these, such sources of contextual data are useful for analysis. Commonly used strategies for maintaining confidentiality include pseudonyms, initials or some accepted form of coding (Creswell, 2009). However, it is possible that some participants may not want to remain anonymous; and permitting this means he/she holds ownership of voice and exerts their independence in decisions, in such instances the risks of non-confidentiality need to be made clear (Creswell, 2009). Moreover, the confidentiality can be breached on legal grounds, in spite of the best assurances provided (Lowman & Palys, 2014).

In this research pseudonyms to replace any personal identifiers from protocols of interviews and observations were used for maintaining confidentiality during data collection. Most of the informants did not wish to be identified, while a few suggesting they were not overly concerned whether they were identified or not. A statement in the PLIS provided generic advice that all data collected would remain anonymous and confidential, unless required otherwise by law. Prior to the interviews this was explained to the informants, with the understanding that no such cases involving health and safety research had been the subject of such court action in Australia at the time the time research was conducted.

Ethics in Data Analysis and Interpretation

Ethical issues can also arise during analysis and interpretation. Common examples include maintaining the anonymity and confidentiality of participants, safe storage of data, using the data beyond the project for which it was collected for, and the ownership of data collected (Creswell, 2009). Dissociating names from responses during coding and recording, and using aliases and pseudonyms to protect the identity of individuals and organisations are some of the most common practices in this regard. Data collected can be stored in locked folders or through password protection for between 5-10 years, and personal agreements can be negotiated for maintenance and access to the data collected. At the interpretation stage, it is important to provide an accurate account of the information; and this may require briefing and debriefing between the researcher and the participants (Creswell, 2009). At the data transcription stage standardised responses can become the norm and lead to some level of fabrication and/or falsification (Tilley, 2003).

In this project, research sites were given aliases as orgs A, B, C, D and E. The participants were simply coded as numbers and linked with organisations. All data collected was stored electronically, and the consent form included a statement informing the participants that the data collected would be maintained for a period beyond 5 years and used in other publications. The PLIS also stipulated that
some of expressions used by the participants could be cited and used in the thesis and publications, and these would be linked with a code such as A1 or A2 to protect the identity of the informants. The transcription of most of the interviews was outsourced to an external agency. Two attempts at de-briefing were made by contacting the respective informants by telephone. However, the workers and some groups of supervisors, who were employed as sub-contractors, had moved on to other sites, so this process could not be completed in its entirety. A sample of the transcripts was discussed with the supervisory panel once they were coded and themed. This was one way of maintaining reflexivity in the process.

CONCLUDING REMARKS

As this reflection has revealed, there are a number of issues that are involved in the ethical conduct of research in construction health and safety, only a few of which have been included in this article. For example, issues of ‘voice’, ‘representation’ at the data writing and dissemination stage, plus the quality of the research process are also important considerations. While these, and other related issues will be the subject of future articles, it is hoped this paper acts as an incentive to other researchers to share their experience and wisdom in enhancing the ethical conduct of health and safety research in construction settings.

Acknowledgments

The author is grateful to the editors and the two anonymous referees for their insight and critical comments on earlier versions of this paper.

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