

# Towards a Digital Methodology for Qualitative Research

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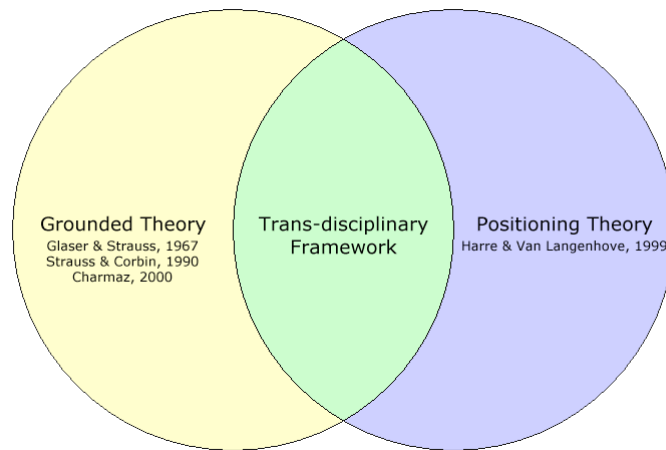
*As digital natives, enter the arena of qualitative research, there is a need for a methodology that allows researchers to analyse qualitative data in a manner similar to quantitative data. To date there has been little work done on the development of a qualitative methodology capable of operating in real-time. An aim of this paper is to demonstrate how a digital methodology could produce real-time, qualitative analysis of participants engaged in structured or semi structured in-depth interviews.*

## **Introduction**

This paper stems from PhD research titled, ‘A Trans-disciplinary Conceptualisation of Chinese International Student Perspectives of Academic Integrity’. This paper elaborates on the trans-disciplinary component of this research, describing the framework developed to analyse data derived from two rounds of semi structured in-depth interviews with eight undergraduate students of business and a single round of semi structured in-depth interviews with six lecturers of undergraduate students of business. The aim of this paper is to demonstrate how the trans-disciplinary framework developed for this research might form the basis of a digital methodology that accepts a variety of inputs, is auditable, is automated, has clearly defined methods, creates a rudimentary qualitative analysis, operates in real-time, is replicable and useful to an emerging generation of qualitative researchers. The digital methodology proposed in this paper stems from an amalgamation of Glaser and Strauss (1967) Grounded Theory with Harre and Van Langenhove’s (1999) Positioning Theory. The amalgamation of grounded and positioning theories provides a methodology used to analyse qualitative data through the division, categorisation and frequency analysis of components of data. An algorithm would process these components to depict actors engaged in episodes of discourse and negotiations of moral order. The intention of this methodology is to produce a basic qualitative analysis for expansion by the researcher, this paper does not focus on the technology required by such a methodology, rather it focuses on concepts underlying the development of a qualitative methodology for use by digital natives.

### *Trans-disciplinary Framework*

This section highlights the need for a framework to analyse and conceptualise qualitative data. To analyse and conceptualise qualitative data a conceptual framework was developed representing a union of two distinct methodological tools, including an adaptation of grounded theory from the field of nursing research (Birks & Mills, 2011) with an interpretation of positioning theory from sociology (Baert, 2012). Grounded theory developed by Glaser and Strauss (1967) and formalised by Strauss and Corbin (1990) forms the basis for Auditable Systematised Qualitative Analysis (ASQA), an adaptation of grounded theory that relies on the constructivist views of Charmaz (2000) in which a reality emerges during the interview process. The ASQA adaptation of grounded theory presented in this study is ideal for the provision of auditable, replicable and unbiased frequency data to the interpretation of positioning theory also developed for this research to conceptualise qualitative data.



*Figure 1: Trans-disciplinary Framework*

Singularly the ASQA adaptation of grounded theory enables analysis but lacks the ability to derive meaning or to conceptualise participant data. However, a resolution to this limitation of the adaptation of grounded theory to derive meaning lies in the union of two existing theories from two distinct disciplines to form a trans-disciplinary framework for analysis and conceptualisation.

### *Grounded Theory*

This section introduces grounded theory and posits the use of a modified version of grounded theory to analyse data. Grounded theory, at least a modified version of the Glaser and Strauss (1967) or Strauss and Corbin (1990) concept forms the basis for the ASQA interpretation developed for this research, which is a significant component of the trans-disciplinary framework used to conceptualise qualitative data. This research adapts grounded theory by combining Strauss and Corbin's (1990) structured relativist approach (Mills et al., 2006) with Charmaz (2000) constructivist approach to reduce ambiguity and produce replicable unbiased data. As Charmaz (2000) constructivist approach advocates creation of a reality during the interaction of researcher with participant this study assumes reality is physically contained in the

transcribed interview data of participants. Furthermore, as reality exists in a physical form it can be analysed using a constructivist version of grounded theory called ASQA to produce data for conceptualisation via positioning theory to discover what and why participants think.

#### *Auditable Systematised Qualitative Analysis (ASQA)*

This section introduces a variation on grounded theory conceived by the researcher and used to analyse qualitative data. The ASQA process detailed in this section is adapted from existing grounded theory methodologies. The purpose of ASQA is to overcome ambiguity in relation to open coding, axial code selection and obtaining a core category, while ASQA must be replicable by other researchers or an automated process in the future. The following steps are grounded in traditional Glaser and Strauss (1967), Strauss and Corbin (1990) and Charmaz (2000) approaches to grounded theory. As participant data or created reality (Charmaz, 2000) is examined, open codes are derived from the sentences and paragraphs contained in the data. Open codes identify what is happening in the data with each new code appended to an axial code derived from the specific research questions. Axial codes act as containers for the storage of open codes, as open codes are identified they are appended to the appropriate axial code and a memo explaining why the open code was assigned to that axial code is generated. In traditional grounded theory, memoing occurs during participant interviews to capture the idiosyncrasies and nuances of participants (Lancy, 1993; Gall, Borg & Gall, 1996). However, post interview memoing during the assignment of open codes to axial codes makes the open coding process auditable and replicable to other researchers.

The next step in the ASQA process is to ascertain the number of open codes assigned to axial codes for each participant. This step attempts to overcome criticisms of vagueness in the creation of axial codes and the assignment of open codes to axial codes in traditional grounded theory (Calman, 2006). Using frequency analysis on the number of open codes assigned to axial codes for each participant derives a core category or central phenomenon for each participant, rather than the cohort as is the case with traditional grounded theory (Strauss & Corbin, 1990; Glaser 2002). The final adaptation of the ASQA process is to derive a core category for the research when the number of participants is large enough to warrant deriving a central phenomenon. In this instance, ASQA takes the core category for each participant derived by conducting a frequency analysis on the open codes in the axial codes and placing this core category for each participant into another store. A frequency analysis on this store determines the most frequently reoccurring axial code across all participants, which becomes the central phenomenon for the research. This process is auditable, replicable by other researches and optional for constructivist grounded theorists that adhere to Charmaz (2000) view that a core category is unnecessary. Determining a core category or central phenomenon for the research is likely to be effective in samples containing greater than twenty participants where replication of issues across a cohort is likely to occur.

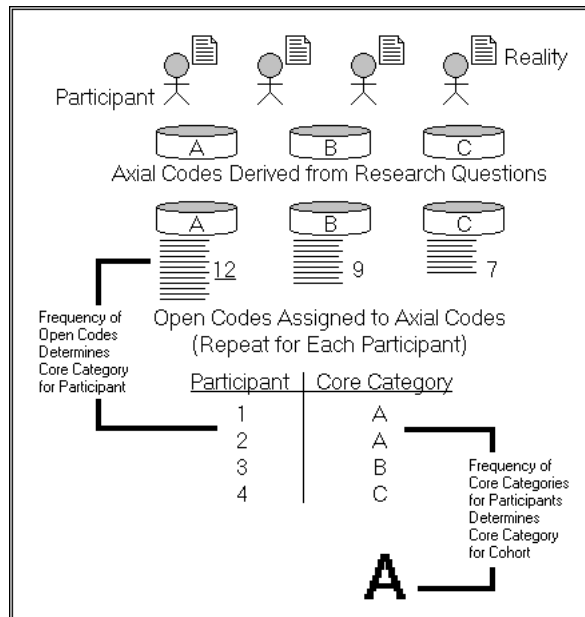


Figure 2: Auditable Systematised Qualitative Analysis (ASQA)

Figure 2 demonstrates how ASQA derives auditable, unbiased data that illuminates what participants think regarding a phenomenon under investigation, it does not conceptualise data to determine why participants think what they do. By predefining, the steps involved in the ASQA process, including deriving axial codes based on specific research questions open coding, memoing and determining core categories based on frequency you can avoid the ambiguities identified by other researchers.

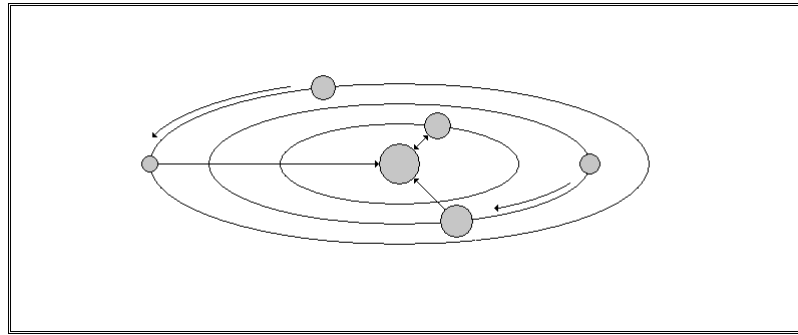
### Positioning Theory

This section uses an interpretation of positioning theory to conceptualise participant data and draw conclusions about research participants. Positioning theory underpins and provides the direction for this research. The interpretation of positioning theory developed for this research identifies actors that influence participants during episodes of discourse, including an actor’s location in a participant’s reality. Positioning theory enables the modelling of qualitative data, which helps the researcher ascertain that rarely do individual actors present at single ontological divisions in a participants reality influence perspectives on their own. Using positioning theory, this study demonstrates how multiple dependent actors present at various ontological divisions in a participant’s reality coalesce to affect the perspectives of the participant. For example, this research has shown how it is unlikely for Confucian principles such as collectivism alone to influence perspectives of academic integrity, including collusion amongst peers.

### Basic Positioning

The interpretation of positioning theory used here expands on the work of Harre and Van Langenhove (1999) particularly their illusion to the ontological divisions of society into compartments or levels surrounding those positioned. Harre and Van Langenhove (1999) name these ontological divisions as interpersonal, institutional

and cultural and suggest actors locate at each ontological division, including business, government, people, schools and technologies and all play a role in changing or enforcing the view of those positioned through discourse. In this scenario, participants' position in response to the flow of discourse and changes in local moral order from actors located at the ontological divisions. A basic representation of positioning theory might see an individual surrounded by three ellipses representing the rings of ontology on which actors sit and position others through discourse. The diagram below depicts this concept in its simplest form.



*Figure 3: Basic Positioning*

The interpretation of positioning theory developed for this research conceptualises data collected from academic and student participants. While the interpretation itself is similar in concept to Newton's gravitational forces on the planets. Rearranging the traditional concepts of positioning theory to use elliptical rings of ontology to surround the positioned conveys more information, including the influence an actor has on the participant based on physical location and the state of their interpersonal relationships.

In developing an interpretation of positioning theory, I acknowledge that Harre and Van Langenhove considered it unlikely that society divides into interpersonal, institutional and cultural levels. Harre and Van Langenhove (1999) said, '... we do not think that society can be split up into three ontologically distinct levels' (p.10). However, the division of interaction into levels is useful in isolating where actors interacting with the positioned reside in terms of hierarchy of consequence and importance. Therefore, I conclude that the levels of interaction depicted by the rings of ontology actually form part of an individual's reality and not society as people position based on the strength of an actor and their success in negotiations of local moral order with that actor. Negotiations depend on status and the level of influence or respect the positioned allows an actor to have on them or the physical location of the actor itself. The scenarios discussed below vary for each participant as some individuals have more interactions and a greater number of actors on their ontological rings. While others engage in limited discourse with a limited number of actors and consequently have fewer actors on their rings.

#### *Dependent Hierarchical Positioning*

The trans-disciplinary framework developed for this research demonstrates how multiple dependent actors combine hierarchically across the ontological divisions in a participant's reality to influence their perspectives. In this scenario, which relates to

my PhD research the trans-disciplinary framework demonstrates that for Chinese International Students (CIS) to be willing to help Confucian Heritage Culture (CHC) peers a number of actors must be present concurrently in the reality of the participant, including that CHC principles be known to participants and indoctrinated by parents. The CHC peer must have poor English proficiency and both actor and participant must reside together in an environment with diminished pressure such as studying in the West, where the participant does not feel disadvantaged if they assist peers, unlike in their home country where demand for university places is significant (Davey, Lian & Higgins, 2007; Li & Bray, 2007).

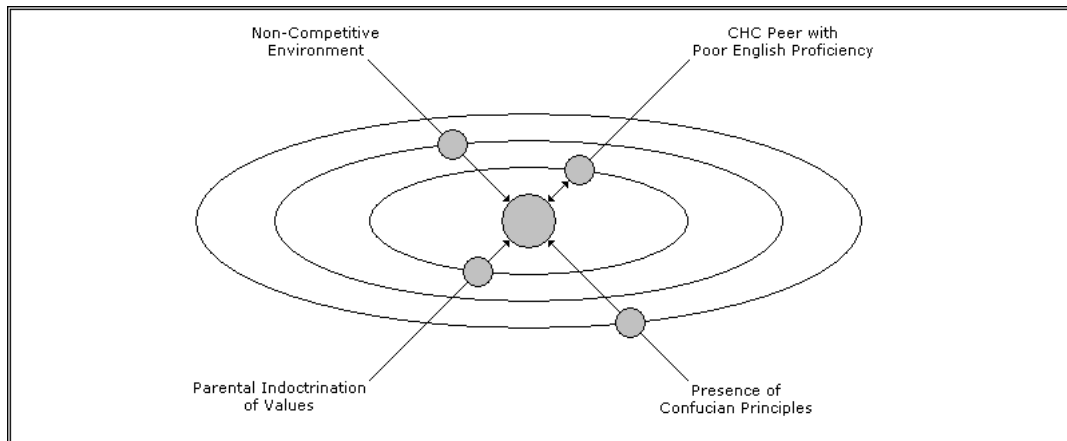


Figure 4: Dependent Hierarchical Positioning

Figure 4 demonstrates the scenario described above, including that multiple actors at various ontological divisions must be present in a participant's reality before CIS will assist CHC peers with poor English proficiency.

### Conclusion

I trust further development of the trans-disciplinary framework will lead to the creation of a digital methodology for qualitative analysis useful to an emerging generation of 'digitally native' researchers. In response to criticisms of existing grounded theory particularly that it is not auditable or replicable (Chiovitti & Piran, 2003) and is poorly defined in its methods (Eaves, 2001) the ASQA competent of the trans-disciplinary framework intends to counter such criticisms by transparently deriving axial codes to contain open codes identified in the data from the specific research questions. Initially an electronic version of the trans-disciplinary framework should be created using software to provide automated analysis and conceptualisation of uploaded interview transcripts, while in time interview data might be collected via voice recognition and enable the creation of a rudimentary, real-time qualitative analysis via mobile devices.

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