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**The development of an instrument to measure
individual dispositions towards rules and principles;
with implications for financial regulation**

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*Thesis Submitted in Fulfilment of the Requirements for the Degree of
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Abstract

The main focus of this PhD project is the development and validation of a psychometric instrument for the measurement of individual dispositions towards rules and principles.

Literature review and focus groups were used to generate insights into the reasons why individuals prefer rules and principles. On the basis of that review, an initial item pool was created covering the conceptual space of dispositions towards rules and principles.

The final instrument consists of 10 items, 5 items each for the rules and principles subscales. The psychometric analysis suggested that it is valid and reliable.

The instrument has sound predictive power and was able to significantly predict individuals' behavioral intentions in relation to rules and principles across contexts. I found there were gender and ethnic differences in the relationship between dispositions towards rules and principles scores and behavioural intentions.

This PhD is relevant to an emerging literature in behavioural accounting research that examines how practitioners' personal characteristics and styles affect financial reporting practice.

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Author's Declaration

Declaration of Originality

I declare that no portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

I declare that the thesis embodies the results of my own work. Following normal academic conventions, I have made due acknowledgements of the work of others.

Copyright Statement

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Signature: _____

Printed Name: Ying Feng

Abbreviations

The Global Financial Crisis (GFC)

Dispositions towards rules and principles (DRP instrument)

Principles-based regulation (PBR)

Financial Accounting Standards Board (FASB)

Securities and Exchange Commission (SEC)

Institute of Chartered Accountants of Scotland (ICAS)

International Accounting Standards Board (IASB)

Principal components analysis (PCA)

Exploratory Factor analysis (EFA)

Special purpose entity (SPE)

Behavioural intention (BI)

Dialectical Self scale (DSS)

Regulatory Focus Questionnaire (RFQ)

California Personality inventory (CPI)

FSA (Financial Service Authority)

IFRS (International Financial Reporting Standards)

SAV (Scenarios Average Score)

TST (Twenty Statements Test)

Field Dependence/Field Independence (FD/FI)

Behavioural Accounting Research (BAR)

Judgement and Decision-Making (JDM)

Chapter 1: Introduction to the PhD

1.1 Introduction

This chapter provides an overview of the entire PhD project and reflects on the research journey taken by the researcher. In the process, it will make clear both the need and rationale for the study, and introduce the research design the researcher intends to follow. This chapter is introductory and designed to give some overview of issues.

1.1.1 The objective of the present PhD

The main focus of this PhD project is the development and validation of a psychometric instrument for the measurement of individual dispositions towards rules and principles. The grounding of the instrument development is inter-disciplinary, and draws on debates concerning rules and principles in law, accounting and business, social-psychology, and philosophy.

1.1.1.1 My prior research journey

The decision to develop such an instrument had two main inspirations. Firstly, in my MRes research work I tried to use individuals' 'regulatory focus' scores (see Higgins, 1997) to predict their behavioural responses to rules and principles-based scenarios. I had expected that individuals' regulatory focus orientations, as measured by Higgins' regulatory focus questionnaire, would be a good proxy for the dispositions towards rules and principles and capture a good deal of the variation in individuals' responses to rules and principles. My MRes results did not confirm the initial expectations. In reflecting on MRes findings, I realised that various factors might plausibly be expected to bear on individuals' dispositions to rules and principles, and that whilst there are various psychometric instruments that might reasonably be thought to be relevant to the issue; there was no instrument tailor-made for the purpose of measuring individual dispositions towards rules and principles.

Secondly, prior studies suggested that individual dispositions, in addition to directly affecting behaviour, have an impact on, for example, preferred learning styles and the types of learning experiences under which particular individuals perform best, and an effect on judgment and decision-making (Ge, Matsumoto, & Zhang, 2010; Booth & Winzar, 1993; Ramsay, Hanlon, & Smith, 2000; Fuller & Kaplan, 2004; Ho & Rodgers, 1993). According to Ge, et al (2010, p.7), it is important to recognise the extent of individual-specific factors, e.g., dispositions and biases, affect decision-making (see also Hambrick, 2007). I concluded that in order to facilitate convincing work addressing the prediction of individuals' responses to rule- and principle-based situations, the most useful contribution I might make, in the first instance, would be to develop, an instrument specifically designed to reliably and validly measure dispositions towards rules and principles.

The decision to develop a general psychological instrument in contrast to developing a situation-specific test is based upon my conviction that basic underlying psychological dimensions provide a sufficient basis for measuring dispositions to rules and principles.

1.2 The organisation of the chapter

This chapter offers a brief introduction to this thesis. The remainder of this chapter is structured as follows. Section 1.3 introduces the research context of this project. Section 1.4 explains, in a little more detail, the important motivations driving this research. 1.5 outlines the research questions and their theoretical justifications. Section 1.6 introduces the chosen methodological approach and briefly explains why it is appropriate. Section 1.7 provides some introductory discussion and explanation of the meaning / definitions of the concepts of rules and principles as used in the thesis. Section 1.8 outlines the chapter contents of the whole thesis. Section 1.9 identifies the main contributions of the research. Finally, section 1.10 provides a brief conclusion to this chapter.

1.3 Rules vs. principles after the Global Financial Crisis

The Global Financial Crisis (GFC) that began around middle of 2007 and continued, in its most intense phase, until the end of 2008 resulted in the collapse of some major retail and investment banks, and required governments to provide massive financial support to a banking system on the verge of total collapse¹ (Barth & Landsman, 2010). The state of regulation was certainly not solely responsible for the financial crisis, but it is commonly recognised as having been one of the factors that in combination with others made it possible, and the crisis has thus given rise to calls for significant reassessment of systems of financial regulation (Black, 2010, p. 2).

The recent shift to a more rules-based regulation can be seen as a reflexive response to the loss of trust associated with the credit crisis (Ford 2010; Black 2008; Guiso, 2010). However, Ford (2010, p.22) argues that the principles-based regulation (PBR), as such, did not fail in the face of the GFC. She suggests that the lesson we should take from the GFC is that regulators failed to effectively implement PBR, failed to participate actively and sceptically in the interpreting and monitoring process necessary to the effective implementation of the PBR, and failed to sustain good ‘regulatory conversations’ with the regulated parties (Black, 2008). She notes that the financial markets are too fast moving and complex to be regulated in a ‘command-and control’ manner, and that we should not risk another Enron type of scandal associated with gaming rules (Ford, 2010). Moreover, a straight-jacketed rules-based regulation would be more likely to create a suspicious and low-trust environment since it reinforces the perception that “if increased regulation is justified then the people being regulated must be suspect; guilty before proven innocent” (Swinson, 2004, cited by Arjoon, 2006, p.68).

¹ For a timeline of the crisis, New York Times, “A Year of Financial Turmoil,” (11 September 2009) online: NYT (11 September 2009; accessed Nov 2010) online: NYT http://www.nytimes.com/interactive/2009/09/11/business/economy/20090911_FINANCIALCRISIS_TIMELINE.html?ref=businessspecial4 accessed on the December 2012.

In the face of the recent credit crisis, the FSA's PBR approach does not appear to have changed or to have been considered as one of the areas where the FSA needed to improve in light of the crisis (Turner Report, 2009²). The review, though recognising the challenges that the crisis has posed for PBR in 'a difficult year', provides that the UK's regulatory difficulties and the crisis have not in any way undermined FSA's general approach to regulation (Turner Review, 2009). Furthermore, the US seems to be inching ever closer towards a final commitment to the adoption of International Financial Reporting Standards, and from a relatively rules-based US GAAP to a more principles-based IFRS system (Cohen et al., 2011). Countries such as Korea, China, and India are already in the process of transforming to the adoption of IFRS (data from IFRS website, 2012): Suffice to say, the rules and principles debate is still meaningful and relevant.

1.3.1 Research Background

The recent corporate scandals of Enron, World.com and Royal Ahold (Beest, 2009) prompted an effort to identify characteristics of accounting regulation that might have contributed to the scandals (Madsen & Williams, 2012; Leigh, 2003). Rules-based standards have been seen as, and especially criticised for, having fostered "a check-the-box mentality to financial reporting that eliminates judgments from the application of the reporting" (Herdman, 2002): The Enron debacle is often taken as a prime illustration of this problem: Whilst the reports were in compliance with the letter of the rules (at least in many respects), they were in breach of the spirit of the law (Sama & Shoaf, 2005). According to Bhimani (2008), if the accountants had exercised the 'substance over form' principles in their report, Enron's SPEs (special purpose entity) would have been included in consolidated financial statements as Enron had economic control over the partnerships.

² Hector Sants, former chief executive of the FSA, speaking at the 2008 Securities and Investments Institute annual conference asserted that "the recent events have demonstrated both the value of a more principles-based approach to supervision and the risks of deviating from it." He argued that those firms that had taken an outcomes focussed PBR approach were doing better during those difficult times than firms that had not.

Whilst also suffering some scandalous corporate failures, including, for example, Polly Peck, Maxwell, and BCCI, the UK experience of accounting scandal was somewhat less traumatic than that of the US. It was seen by many as having been to some degree protected by its more principles-based approach to standards (Kershaw, 2005). The apparent problems of a rules-based approach and UK's 'success' with principles-based regulation prompted SEC's push for the enactment of provisions within the Sarbanes-Oxley Act, (SOA) 2002, designed to move the previously very much rules-based US's accounting standards towards a more principles-based standard. Since 2002 there has been a worldwide tendency, not yet complete, towards convergence in accounting standards (Beest, 2011).

The IFRS is a principles-based regulatory approach which primarily focuses on providing a conceptual framework for accounting practitioners to follow (Wustemann & Wustemann, 2010; Alali & Cao, 2010). Accounting practitioners are therefore, expected to exercise their judgment in applying IFRS to access the 'substance' of a transaction (Alali & Cao, 2010; Carpenter, Backof, & Bamber, 2011). This movement prompts a question of whether the accountants and auditors familiar with operating in a rules-based accounting system will be comfortable, confident and capable when confronted and required to work with a more principles-based system (or vice versa). This raises the issue of what Jamal and Tan (2008) called a 'fit effect' between the nature of the accounting regulation and the mentality of the accounting practitioners required to use it, which they argue demands fuller and closer examination.

1.3.2 Research Gap

Cohen et al. (2011) argue that there is a need for more substantial research designed to develop our understanding of how a shift in the nature of regulation affects accounting practitioners' behaviour. Despite the fact that there is some evidence showing an increase in empirical studies in exploring the nature of financial regulation (rules vs. principles) in relation to practitioners' behavioural change in the context of earning management and aggressive reporting (Mergenthaler et al., 2012), the results are somewhat mixed and inconclusive. Furthermore, the discussion on the advantages and disadvantages of rules- and principles-based regulation systems are

mostly argued from a conceptual perspective, and with arguments tending to lack clear empirical support.

Jamal and Tan's (2008) research was among the first important empirical work done on examining the 'fit effect'. In that study, they examined the effects alternative types of generally accepted accounting principles (GAAP), that is, of principles- versus rules-based accounting standards, on the judgments of chief financial officers (CFOs), and how those effects were moderated by the characteristic of the audit partner overseeing the audit. They classified auditors into three categories: rules-, principles-, and client-oriented. Rules-oriented auditors are those "with a relatively greater proclivity towards going by well-specified rules rather than employing judgment to capture the underlying substance of the transaction" (p.4). The focus of this type of auditor on compliance can tend to become excessive (Essaides, 2006 and Scott, 2006 cited by Jamal & Tan, 2008). Principles-oriented auditors, on the other hand, are more concerned with the substance of transactions than with just compliance with the letter of rules. The so called client-oriented auditors, the last category, are mostly concerned with pleasing clients (Moore, Tetlock, Tanlu, & Bazerman, 2006). Jamal and Tan's (2008) results showed that when the CFO expects to be working with a client-oriented auditor, there is no effect of GAAP type on the CFO's tendency to carry the debt off balance-sheet. With a principles-oriented auditor, the CFO's tendency to take the debt off balance-sheet is lower when GAAP is also principles-based rather than rules-based. With a rules-oriented auditor, the CFO's tendency to take the debt off balance-sheet is lower when GAAP is rules-based rather than principles-based.

The empirical evidence from Jamal and Tan, 2008, and Herron and Gibertson, 2004³, suggests that there may be "fit" and/or "misfit" effects between types of standards and

³ Herron and Gilbertson (2004) found a match and mismatch effect between the judgment and the type of professional conduct code in application; rule or principles-based. In particular, when there was a match between the form of the professional conduct code (rules-based or principles-based) and the moral development stage of the participants were "more likely to reject a questionable audit engagement" (p. 499); however, when there was a mismatch between the form of the code and the moral reasoning stage of the participants, the professional conduct code had no behavioural impact.

users' preferences regarding using rules- or principles-based standards. Further empirical studies have been carried out in order to explore the 'fit effect'. Jamal and Tan (2010) considered how the type of auditors (principles- vs. rules-based) affects financial managers' reporting decision under rules- and principles-based standards. They found that the auditor-type had no effect on reporting decisions under a rules-based standard. However, under a principles-based regulation, financial managers are less likely to report aggressively when the auditors are also relatively more principles-based. They concluded that improved financial reporting will happen only if a move toward more principles-based standards is accompanied by a shift in auditors' attitudes toward being more principles-based. The research by Jamal & Tan (2008; 2010) is significant but also suffers a few limitations: 1) their attempt to categorise rules-oriented; principles-oriented and finally client-oriented auditors is half-hearted; they lack reliable and valid means to categorise auditors empirically and convincingly; 2) the different mental orientation (rules vs. principles vs. clients) as they set it out may be just a state of mind, in other words some momentary states (like mood), therefore lack stability. Jamal and Tan have not shown that such mentality could be related to stable individual characteristics such as personality and cognition, which would suggest some stability across contexts and timelines.

Despite the notable 'fit' and 'misfit' effects between the practitioners' rules and principles preferences and the type of regulations (rules versus principles) detected by Jamal and Tan (2008; 2010), there is no reliable measurement instrument available that can readily categorise individuals as either rules-oriented or principles-oriented. In summary, it is concluded that there is a gap in the knowledge related to our understanding of dispositions to rules and principles, which gives rise to the research questions forming the basis of this research study.

1.4 Research Motivation

Based on the arguments presented by Jamal and Tan (2008), I believe that in some circumstances there may be considerable value in making a "fit" between personal dispositions and the types of regulations, and in particular the balance of rules and principles, with which the individual is required to work. The instrument I have

developed in this PhD project is designed, amongst other things, to help facilitate the creation of such fit. The study of the measurement of the individual attitudes / dispositions towards rules and principles is supported by the increasing numbers of recent empirical behavioural studies in accounting, of variation in practitioners' behaviour in response to the rules and principles-based regulation (Cohen et al., 2011; Peecher et al., 2010; Cohen et al., 2011; Jamal & Tan, 2008; 2010; Pasros & Trotman, 2004; Nelson, 2002 & 2003).

The current research takes inspiration from Higgins' concept of 'regulatory fit': In my view, fit effects such as that reported by Jamal and Tan are analogous to the 'regulatory fit' effects reported by Higgins and his colleagues (2003, 2004) in the motivational psychology literature. People experience a regulatory fit when they use either vigilant or eager goal pursuit means that fit respectively with their prevention or promotion regulatory orientation. Such regulatory fit can affect individuals' evaluation of alternatives (Camacho et al., 2003, p. 499). Further, a feeling of 'fit' can spill over into a feeling of 'rightness', and even a 'moral rightness' (See Higgins et al., 2003; Camacho et al., 2003). Higgins and his colleagues found that regulatory fit produces an experience that what is being done is correct or proper (this adds an element to the experience that is more than just a positive feeling). In other words, "regulatory fit affects what feels right or wrong, and this transfers to what people experience as being right or wrong (fit violation produces an experience that what is being done is wrong or improper)" (Camacho et al., 2003; Cesario, Grant, & Higgins, 2004; Higgins, Idson, & Forster 1998; Freitas, Liberman, & Higgins, 2002; Freitas, Spiegel, & Molden, 2003; Idson, Liberman, & Higgins 2004). Where there is regulatory fit the value that a person will derive from a choice, holding the outcome of the choice constant, will be greater, simply by virtue of the fact that the choice is made in a manner that is in alignment with the person's regulatory orientation.

Camacho et al. (2003, p.498) argue that "individuals can pursue the same goal activity with a different regulatory orientation and in a different manner". In relation to the current project, both rules- and principles-based regulation in accounting can be seen as aiming at the same goal of a 'true and fair' reporting of the economic reality of the business entity (Financial reporting Council, 2011). Similarly, two auditors might

have the same objective of testing the truth and fairness of a set of accounts, but have different preferences for rules- or a principles-based approach towards the identical objective. An auditor with a positive personal disposition towards principle-based approaches, might derive or feel a sense of ‘rightness’ when adopting a more principle-based approach (regulatory fit) in the formation of professional judgment (Bratton, 2004, p.32). The same auditor may experience a sense of discomfort or tension when she has to work with voluminous concrete rules. Such tension or discomfort may transfer to a feeling of ‘wrongness’; a lack of ‘rightness’ that may spill over into her substantial audit judgments concerning truth and fairness. Conversely, a rules-oriented auditor may experience a sense of fit, and ‘rightness’, using a rules-based approach that may spill over into her substantive audit judgments. A misfit, non-fit, may occur when such an individual has to work with abstract and broad-brush principles. The misfit may transfer to a feeling of wrongness, and ultimately, in this case, into a less positive evaluation of the audit evidence.

Higgins’ focus was on individuals’ regulatory focus, dispositions towards a promotion or towards a prevention orientation. He developed an instrument to allow the measurement of an individual’s promotions and prevention orientation - their regulatory focus (see appendix seven). His work does demonstrate the value of having a reliable measure of individual dispositions, and has inspired me to attempt to develop a reliable measure of individual dispositions towards rules and principles. I see this as a potentially valuable, and necessary, resource for researchers, who like me, are interested in exploring the rule and principle ‘fit’ effect. Such an instrument will also enable more empirical work to be conducted on this topical issue.

1.5 Research Questions

Most of the debate on rules versus principles has been conducted in narrative or conceptual terms. It is slowly being recognised that there are opportunities for more empirical testing with respect to this debate. Thus, the central research goal and task of this PhD project is the development and validation of a reliable instrument for measuring individual dispositions to rules and principles. There are various research questions associated with this primary goal:

Underlying my efforts to develop an instrument to measure individuals' dispositions towards rules and principles (DRP), and any value such an instrument might have, is the presumption that such dispositions exist (of necessity with some stability). Because dealing with rules and principles is an essential part of daily life, of external discipline and self-regulation (Bandura, 1991; Twining & Miers, 1999). I begin by assuming that such dispositions exist and, of their nature, persist over time and situations with some consistency, individuals also exhibit an intention to demonstrate that they do. I define dispositions⁴, in a preliminary way at this stage, as an individual's inherent preference for, and comfortableness with, rules and principles, and that individuals will carry their dispositions into different, rule and principle related, situations with real effect on how they respond to situations. My later empirical work will in effect test this underlying assumption.

RQ 1: Do individuals have (stable) dispositions towards Rules and Principles?

The concepts of rules and principles are rather complicated and often contested among scholars (Raz, 1975; Dworkin, 1967; Hart, 1977). One line of research argues that rules and principles are two extremes, polar points even, but essentially residing on a continuum (Korobkin, 2000, p.30; Sunstein, 1995, p.961). For instance: Verheij et al (1998) argue that the differences between rules and principles are “merely a matter of degree” (p.3). Scholars (see Burgemeestre et al., 2009, p.1; Cunningham, 2007; Kaplow, 2000) who hold this view, generally take the position that whilst rules and principles have different behavioural effects when applied in practice, they have essentially identical logical structures.

Another line of research and reasoning, taken for example by Dworkin (1967, 1979) and his supporters such as Braithwaite (2002a, 2004) and Alexy (2000), is to argue that principles and rules are distinctive from each other. They provide an orthogonal view on rules and principles. On this view rules and principles are different in kind - not just degree. They do not lie on a simple continuum and it would be logically possible for an individual to be positively, or negatively, disposed towards both rules

⁴ The psychological concept of disposition will be discussed in more detail in chapter 5.

and principles. The discussion by Dworkin and his supporters helps me to identify a number of important conceptual dimensions that affect individual attitudes to rules and principles. His conceptions of rules and principles have deeply influenced my own view.

RQ2: Are individuals' dispositions towards rules and principles independent and distinctive? In other words, does the relationship between individuals' dispositions towards rules and principles tend to be orthogonal?

An instrument measuring such dispositions is liable to be more useful and reliable if it captures, or reflects, the important dimensions underlying the dispositions (Cunningham, 2007). I proceed with an 'open mind' concerning the nature of individual dispositions towards rules and principles and the dimensions of such dispositions. I recognise that such dispositions may have unconscious or intuitive dimensions; however it seems likely that they also have rational aspects. It seems that individuals have, at least to some extent, reasons for their dispositions towards rules and principles and that those reasons are liable to be reflected in debate (Cunningham, 2007; Black, 2001).

As discussed previously, I am interested in the interaction between decision-makers' psychological characteristics and characteristics of the decisional situations. Literature has indicated that rules- and principles-based regulation tend to have distinctive characteristics, as reflected, for example, in perceptions and discussions of the relative strengths and weakness of each approach (Cunningham, 2007). The emphasis on fairness and morality of a principles-based approach has been recognised by many scholars (Cunningham, 2007; Black et al, 2007; Dworkin, 1967; Ford, 2010). One might also note, and credit, the benefits of the comparability and predictability often seen to be associated with a rules-based regulation (ICAS, 2006b; Cunningham, 2007). Some individuals may value rules highly because they tend to associate them with efficiency; others may value principles highly because they associate them with creativity and feeling of empowerment. I will review this literature in some detail in later chapters (chapter seven for in-depth review).

My initial considerations of the literature suggests that whilst the dimensions may have conceptual independence, it may be that certain dimensions are systematically related one to another, and may be grouped as factors underlying dispositions to rules and principles. Different dimension, and perhaps factors, may have more or less significance in the make-up of an individual's dispositions to rules and principles.

RQ3: What are the conceptual structure generally underlying individuals' dispositions to rules and principles (DRP)?

If we were able to establish that the individuals' dispositions towards rules and principles do not change dramatically over time, in other words, they are a relatively stable aspect of their make-up as individuals, then we would hypothesise that such an individual disposition would have meaningful and significant effect on individuals' behaviour in relation to rules- and principles-based decision-making.

My exploration of the predictive power of the DRP instrument will for the purposes of this PhD project be limited, for the most part, to that necessary to convince one of the 'predictive validity' of the instrument. In other words it will be conceived as a test of the instrument. The main development of the use and application of the instrument I conceive as being reserved for work subsequent to this PhD project.

RQ4: Are dispositions towards rules and principles predictive of individual's actual behaviour in response to rules- or principles-based social cognitive tasks / situations?

Individuals' dispositions towards rules and principles (DRP) can come under the research umbrella of cognition and personality in psychology. The psychological root of such disposition will be explored and explained in detail in chapter five. Accordingly, I am interested in examining the relationships between one's dispositions to rules and principles (DRP) and other cognitive styles and personality traits. There is sufficient evidence from prior studies which directly or indirectly suggest a relationship between one's DRP and, for instance, thinking style as measured by Sternberg's thinking inventory, need for closure cognition, dialectical

thinking style, Higgins regulatory focus orientations as well as the Big5 personality traits such as openness and conscientiousness (an overview on the proposed linkages between DRP and individual proposed psychological construct see chapter five).

The focus here, which is to examine the relationships between DRP scores and same individual's scores on certain other psychological measurements, will essentially be confined to that considered necessary to establishing the convergent and divergent validity of the DRP instrument. That is, to confirm that the DRP correlates positively with measures that logic suggests it ought to correlate positively with and vice versa, and that it does not correlate with measures that logic suggests it should be unrelated to. In this work I expect to find predicted correlations, but not such high correlations as would suggest that the DRP is simply re-measuring constructs already specified by existing instruments.

The following six psychological constructs were chosen based on the speculated linkages between them and people's rules and principles dispositions as implied by prior literature (more detailed discussions see chapter five). In order to support the evidence that DRP is not just a replicate of measuring people's attitudes toward social approval, I will also test for the relation between DRP and social desirability in chapter nine part two.

RQ5: Whether the DRP will show a meaningful relation with one's other psychological characteristics and relevant measurements, such as one's thinking style and personality trait?

1. What is the relationship between DRP and Higgins' regulatory focus orientations?
2. What is the relationship between DRP and need for closure cognition?
3. What are the relationships between DRP and Big5 personality traits?
4. What are the relationships between DRP and Sternberg's thinking styles?
5. What is the relationship between DRP and dialectical thinking style?
6. What is the relationship between DRP and socially desirability test?

Research in various areas of academia has found that there are both personality and cognitive differences between the genders (Chung & Monroe, 1998; Gilligan, 1982). Within the personality research arena, research has found that women score higher on the Big5 personality trait model of Neuroticism and Agreeableness (Costa, Terracciano, & McCrae, 2001). The former suggests that women tend to be more sensitive to a variety of negative effects and their emotions and feelings are therefore reflect the contextual cues more acutely than men. The latter reflects amicability, altruism, peace-making, and women's interest in maintaining the harmony of the environment by compliance (Chapman et al., 2007; Huang, 2002). Further, it has been found that women are more affected by the environment as they look for more contextual cues, and dedicate more time to consider different factors when reaching a decision, whereas men are more dominant, assertive, objective, and realistic (Lizárraga, Baquedano, & Cardelle-Elawar, 2007).

Asian countries such China and India are in the process of adopting the IFRS⁵. Ethnic background may also be an aspect that affects one's dispositions to rules and principles and requiring further empirical examination. Sama and Shoaf (2005) observed that rules-based approaches are more commonly found in societies (or organisations) favouring bureaucracies, while principles-based approaches are more commonly found in societies characterised by strong and operative social controls. In addition, recent cross-cultural research has suggested that there are systematic cultural differences in the habitual ways of people reasoning in relation to context: North Americans and Europeans are more analytical, thus the attention is focused on objectives and features of the contexts (such as precedents and rules), and their reasoning is decontextualised. In contrast, East Asians tend to be more holistic in their reasoning, that is attention is dispersed to the field and reasoning is contextualised (Buchtel & Norenzayan, 2008, p.264).

⁵ In an article for the Risk & Regulation, London School of Economics, Summer, 2009, p.4-5. <http://issuu.com/carr/docs/riskregulationsummer2009?mode=embed&layout=http%3A%2F%2Fskin.issuu.com%2Fv%2Fflight%2Flayout.xml&showFlipBtn=true>

My exploration of gender and cultural differences will be directed towards the development of an understanding of the properties of the DRP instrument.

RQ6: Are there any gender and cultural differences in terms of individuals' dispositions to rules and principles?

1.6 Research design and methods

This project is designed from an inter-disciplinary perspective in the sense that I attempt to capture the underlying elements which could affect people's dispositions to rules and principles from various theoretical sources and not limited to consideration of the accounting literature. Because of the rules versus principles issue and debate have significance for many spheres. I intend to develop a general instrument to help answer these research questions. The instrument will not require training in any particular field, such as accounting, to allow its completion, and it will have the general form typical of an attitude or personality-type measurement instrument. I will therefore rely on and follow the guidance in the attitude questionnaire literature for the process of creating the initial draft questionnaire as well as the process of developing and validating the instrument.

Many of the empirical studies on rules versus principles in the existing accounting research literature have employed experimental vignettes involving hypothetical accounting problems or situations needing professional judgments and solutions. Such vignettes are useful in dealing with specific accounting issues such as earnings management or aggressive reporting (Mergenthaler, 2010; Psaros, 2007; Beest, 2009; Cohen et al., 2011; Segovia, Arnold, & Sutton 2009). Nonetheless, due to the highly technical nature of such scenarios, the results obtained from them tend to suffer from relatively low external validity and limited generality (Tan, 2001).

I have also dismissed the option of adopting a scenario analysis based approach, such as Kohlberg's moral reasoning scale (1975) as well as the alternative, Rest's Defining Issues Test (DIT) (Rest, 1986b). Although both have been used heavily in the accounting / ethics research (Sweeney & Roberts, 1997; Ponemon & Gabhart, 1990; McKernan, Dunn, & O'Donnell, 2003), they both suffer from low predictive validity

and are limited in scope (Rest, Narvaez, Bebeau, & Thoma, 1999a). In addition, because their focus is primarily on moral reasoning ability, they are therefore too narrow for the purpose of this current project. I propose that there are other conceptual dimensions which could lead one to prefer one approach over another beyond the moral consideration which has not been tested empirically in the accounting ethics literature (see chapter seven for an overview). I will subsequently utilise suitable research methods that enable the possibility of factor grouping and test the significance of such dimensions empirically (see chapter two for an overview).

I am aware of the philosophical and psychological debate concerning the role of intuition and reason in moral judgment (Haidt, 2001). I am prepared to acknowledge that intuition may have a large role in moral decision-making, and that it may even have priority in that region. I am however interested in a wider range of settings, including areas like practical decision-making / problem-solving, where intuition clearly holds less sway. Nevertheless, I recognise that intuition may be seen as an alternative to both rules and principles. And I expect that some individuals may have low or negative dispositions towards both rules and principles, because in fact they prefer to be guided by intuition.

1.7 Definitions of rules and principles as based on legal regulatory discussions

Legal scholars have long been interested in the optimal choice of legal forms: in terms of relative effectiveness of a rules-based versus principles-based regulation (Korobkin, 2000; Cunningham, 2007). Such legal and regulatory scholarship and theory can shed light on the understanding of rules and principles in the accounting debate. The on-going discussion on rules and principles in the domain of accounting, discussed in chapter three, can be seen as an extension of this legal debate.

Rules and principles in the accounting context are inherent in some of the characteristics of the rules and principles being defined in Law. According to a number of prominent legal scholars leading with Dworkin (also see, Sunstein, 1995; Cunningham, 2007; Braithwaite, 2002a & 2004), rules are considered as concrete and detailed prescriptions. Rules are associated with exceptions and “bright lines” and

they are “applicable in all-or-nothing fashion”, i.e. “if the facts a stipulated rule are given, then either the rule is valid, in which case the answer it supplies must be accepted, or it is not, in which case it contributes nothing to the decision” (Dworkin, 1967, p.25).

Principles, on the other hand, have weight and reflect a wide spectrum of factors to be taken into consideration by the decision-makers (Wustemann & Kierzek, 2007, p.20; Dworkin, 1997 & 1967). This characteristic of principles reflects the fact that they are composed in order to encourage the use of judgment (Dworkin, 1967). Thus, principles are more abstract and general (Black et al., 2007).

1.8 Chronology of the thesis

The remainder of the thesis is organised into nine chapters. I explain the methodological basis on which I have developed a research instrument for measuring dispositions towards rules and principles in Chapter two. Part of that methodology was to explore various research literatures, including psychology, law, philosophy, and accounting, with the object of developing an understanding of rules and principles and an analysis of the strengths and weaknesses, advantages and disadvantages, articulated in debate and otherwise claimed for each. I report on this analysis of literatures and debate, in chapters three, four, five, and seven. Each of these chapters deals with a different literature stream and has a different emphasis. The empirical core of the thesis reported on in chapters six, eight and nine. Concluding remarks will be made in chapter ten.

Chapter two explains the methodology followed in this project. In particular, it outlines the steps which this project follows to develop and test the instrument. A survey method is identified as best suited to the research objectives. The common problems with survey research are explained and some solutions to the problems are also provided.

Chapter three focuses on the rules-based versus principles-based debate in the context of accounting regulation. It serves to contextualise the thesis. The aim of this chapter is to provide a synthesis of the important arguments for and against rules and

principles in recent years in accounting. An important observation is that the majority of the work done in relation to the rules and principles debate in accounting is conceptual.

Chapter four identifies and justifies the particular conceptualisation of rules and principles underlying the development of the instrument. Legal and regulatory theory, in particular the ideas advanced by Dworkin (1967, 1997) provide the main conceptual foundation on which the understanding of rules and principles, and the distinctions between them, reflected in the instrument development, is based.

Chapter five explores the psychological roots of individuals' dispositions to rules and principles. I identify various personality traits, cognition, attitude and values/cultural differences which have impact on individuals' dispositions towards rules and principles. This chapter also serves an important need for the later empirical work: identifying relevant psychological constructs which are used to help establish the divergent and convergent validity of the instrument (DRP).

Chapter six discusses the use of focus groups in testing and expanding on my understanding of what are seen to be the reasons underlying preferences for rules and principles. It explains the rationales and steps in using focus groups to filter the theoretical elements or dimensions which are derived from chapter three and also to check: 1) whether the literature review has covered the concepts under study, and that there is no immediate and obvious missing elements; 2) whether the conceptual dimensions correspond to the way people perceive rules and principles in real life.

Chapter seven synthesises the elements espoused in the academic literature and the focus groups. In particular, in this chapter, I provide an extensive discussion on the dimensions which are introduced in chapter three, four, five and six. Therefore, chapter seven is the framework, foundation and literature source for the subsequent empirical work; this includes the theoretical source for item generation for the development of the DRP instrument. Empirical research at later stages is used to confirm or reject these conceptual dimensions.

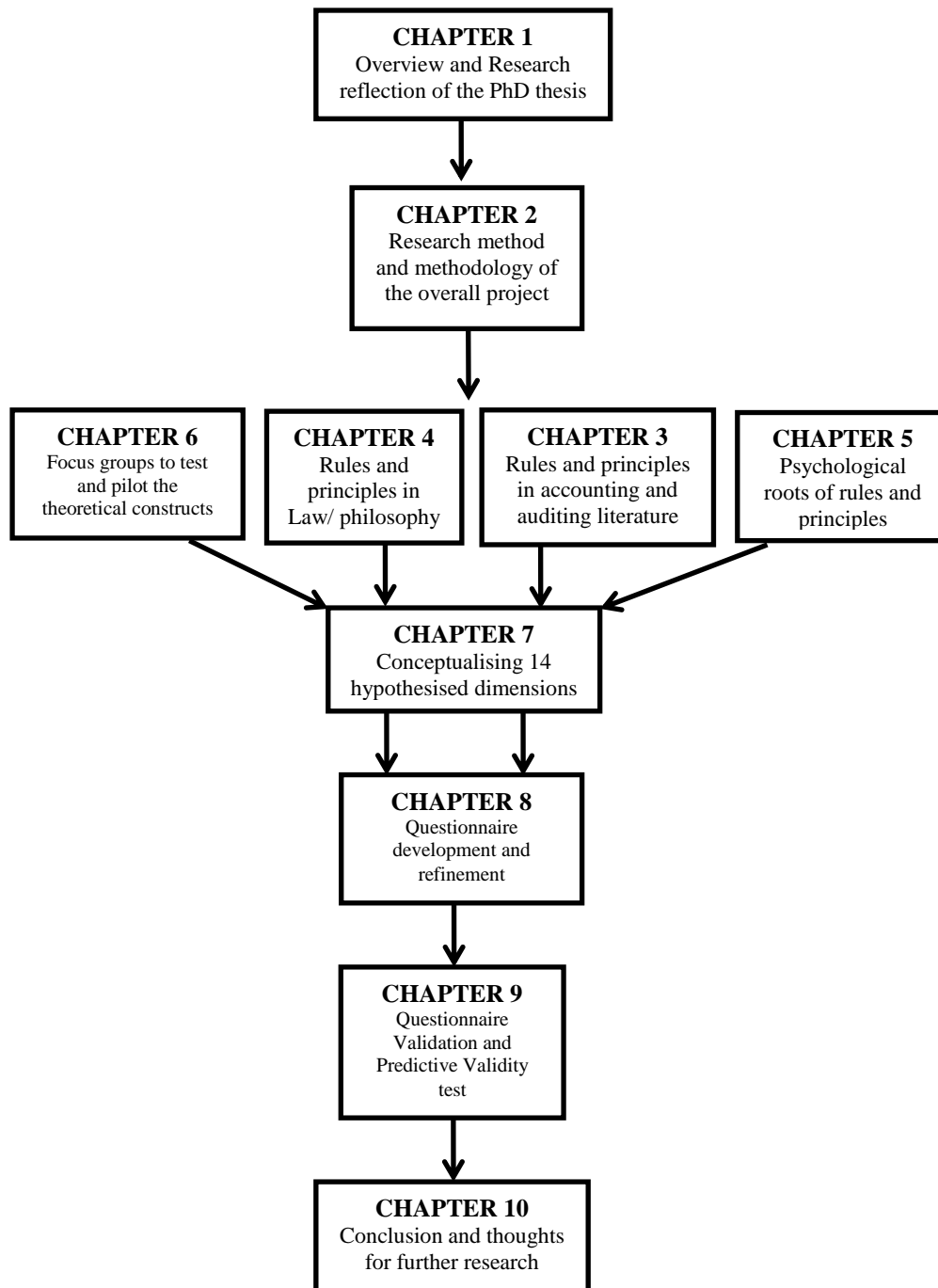
Chapter eight creates an initial item pool based on the identified 14 dimensions from the previous chapters. In this chapter, I describe the research methods and steps are

adopted to test the face and content validity of the items. Subsequently, at the quantitative phase of the study, a series of statistical procedures were carried out for further item reduction and establish the reliability of the DRP.

Chapter nine reports the main empirical findings of this PhD: A factor analysis conducted on an independent sample with the objective to check whether an identical factor structure emerges; test for divergent and convergent validity of the refined instrument; internal consistency reliability and test-retest procedures. The predictive validity of the instrument was established via experiments using cognitive task based scenarios. A demographic variables analysis focused on - gender and ethnicity differences in relation to rules and principles-based approaches.

Chapter 10 summarises the main findings and contributions of this PhD. Some speculations on the potential implications of the DRP are offered. In addition, it proposes some further research ideas and points out the limitations of the current research.

Figure 1 Overview structure of the thesis



1.9 The intended contributions of this research

This PhD project is designed to make a contribution to the rules versus principles debate which in various manifestations has been an important and unresolved concern in the domains of accounting and law for many years. In particular, in chapter seven, the synthesis and elaboration of 14 conceptual dimensions underpinning individual

dispositions towards rules and principles makes a valuable contribution, in its own right, to the research in regulatory theory. Furthermore, within the domain of social psychology, rules and principles are often implied to being linked to stable personal characteristics (need for closure, some dimensions of the thinking styles as well as some of the traits from the Big5 personality trait model). However the presumptions lack clear empirical evidence. This PhD unprecedentedly attempted to explore these psychological linkages and provided empirical responses to these presumptions.

Rather than simply focusing on the phenomenon of which kind of regulation is 'better' and 'fairer', one needs greater understanding of the compatibility and 'fit' between different types of regulations and individuals' dispositions to rules and principles. This remains an important research issue for empirical studies examining the effectiveness of rules versus principles-based regulation. For example, research is needed on how individuals' dispositions to rules and principles affect their investment and reporting decisions. If we were able first of all, to prove and establish empirically that individuals exhibit a relatively stable disposition towards rules and principles, then subsequently we would be able to classify regulation users as either rules-oriented or principles-oriented. Therefore we would then be able to study more systematically the relationship between the individuals, in particular their rules/principles preferences or dispositions, and their behaviour. Such knowledge could have significant implications for the design of appropriate, and 'fitting' regulatory systems. To achieve its full potential a psychometric instrument such as that which I aim to develop needs to be general enough to be widely applicable and not narrowly domain specific. The main task is to develop the instrument; later researchers can apply it in accounting, auditing and other fields where the problem of rules and principles has significance.

Further this research will deepen and widen our understanding of factors that affect individuals' attitudes towards rules and principles in a more general sense. The extant studies have solely focused on the 'moral reasoning abilities' aspect of ethical decision-making in the context of rules versus principles (Herron & Gilbertson, 2004). They dismissed the possibilities of a range of other factors which may influence such dispositions. One of the contributions of this PhD project will be to

explain and predict that some individuals may be attracted to certain factors, reflecting features of rules and principles, while others may be repelled by them. Such information should be of interest to accounting firms and regulatory bodies who may need to take consideration of such individual variation in the situations of recruitment and regulatory training.

I intend to develop an instrument able to produce scores of satisfactory measurement qualities. In the context of this research, accounting regulators, recruiters as well as accounting educators will be able to use this instrument to predict with some certainty how individuals are actually likely to behave in specific situations in relation to rules and principles. For instance, my instrument can be used to understand how accounting practitioners' dispositions to rules and principles might affect their competence and the person-job match (the degree to which an individual's dispositions to rules and principles can be reconciled to the behavioural demands of their job without stress creation). In addition, the empirical findings regarding the ethnicity and gender differences of individuals' dispositions towards rules and principles will contribute to one relatively new stream of behavioural accounting research which focuses on examining gender and ethnicity differences in terms of decision-making related to accounting and or auditing issues (Francis, Hasan, Park, & Wu, 2013).

1.10 Conclusion

This introductory chapter has sought to provide a description and brief explanation of the substance of the present PhD project. It has conveyed the initial six research questions which serve the central objective of designing and validating a psychometric instrument, measuring individual dispositions towards rules and principles. I explained that there is a research gap, as recognised by the Jamal and Tan's (2008&2010) experimental studies, which examined and established that there is a 'fit effect' between the mentalities of practitioners and the types of the accounting regulations. Undoubtedly their study is significant, yet suffers major weakness as they lacked valid means to categorise auditors empirically and convincingly. Thus, Higgins' regulatory focus theory, and in particular the concept of regulatory fit, inspired the researcher to develop an instrument to fill that gap. The rest of the chapter

proceeded by justifying the use of survey design as the main method for this project, introducing Dworkin's position on rules and principles which forms the conceptual basis of this project, outlining the main content of the remaining nine chapters, and proposing the potential contributions that this project would make.

Chapter 2: Methodology and Methods

2.1 Objective for chapter and overview of content

In this chapter I will explain and discuss, in broad terms, the methodology and practical methods employed to address the research questions set out in chapter one. I will also, in this chapter, attempt to uncover and briefly explain the methodological stance adopted. It is not the intention to ‘justify’ my own position here, but merely to bring its features into the open.⁶

Fuller explanation of each method employed can be found in individual chapters dealing with specific project phases: chapter six - focus groups; chapter eight - creating and testing the initial items pool; chapter nine - further refining and confirming the instrument factor structure and other validity related tests/ results.

This chapter is organised as follows: Section 2.2 to section 2.5 outlines a range of issues related to the development and validation of an instrument, such as the methodological assumption underpinning this project; providing a critical evaluation on the mixed research methods adopted here and a brief explanation of the way they complement each other; research design as well as validation issues. In addition, I point out the strengths and weakness of survey and offer some remedies could potentially alleviate the limitations. Section 2.6 concludes the chapter.

2.2 Overall steps taken in this project

The instrument development and refinement process follows, in broad terms, the classic paradigm for developing and validating measurement of constructs, as set out

⁶ I recognise that there seems to be unending debate within accounting research regarding the nature of the reality that accountants deal with and the best way of exploring and knowing it. Differences in this debate are often exacerbated by researchers’ failure to clearly state their ontological, epistemological and methodological assumptions (Bisman, 2010, p.5). I have no plan to contribute to this debate as such, but will endeavour to make the assumptions guiding my own research clear.

for example by Churchill (1979), and elaborated in subsequent research dealing with attitudinal scaling (see for example DeVellis, 1991; Netemeyer, et al., 2003). This process comprises three main stages:

1. The development, through an analysis and or examination of prior research and literature, of a preliminary view of the structure and dimensions of dispositions towards rules and principles (DRP). Detail of this work can be found in chapters three, four, five and seven.
2. The development of a preliminary research instrument and initial work to reduce the size of the item pool. This stage involves the following steps: The generation of a large pool of survey or questionnaire 'items' based on the analysis of prior literature (referred to above) and focus group discussions. The submission of the initial item pool to expert review and peer review sessions is to "weed out" weak and unclear items and reduce number of the items to a more manageable level. The collection of a large sample of responses to the preliminary questionnaire, is based on the refined but still large item pool, using online survey. The performance of statistical procedures including the calculation of Cronbach's alphas and an EFA, all facilitating the elimination of redundant items and the production of a first draft of the DRP instrument. Further the initial empirical testing of the hypothesised structure underpinning the dispositions to rules and principles is presented (chapter eight).
3. The confirmation and validation of the reduced sized questionnaire, involving: another factor analysis based on a new sample to confirm the structure that emerged from the first preliminary factor analysis; predictive tests, and test-retest, and tests of convergent and divergent validity based on a large sample analysis of the correlation of the DRP instrument, and a battery of carefully selected research instruments (chapter nine).

Note: the process of attitude questionnaire design is a continuous and iterative process (see Churchill, 1979).

2.2.1 Conducting literature review for the generation of initial item pool

To derive the conceptual dimensions underlying individual's dispositions to rules and principles, a systematic literature review is conducted.

In order to generate items for each dimension, I have adopted an approach which basically taking inspirations from prior research. To ensure the conceptual space would be adequately covered, I consulted the following sources: 1) a search of rules and principles debate in accounting & law using Google scholar; 2) identifying recent papers which have referenced the key publications on rules and principles debate in the domain of accounting and legal philosophy; 3) searching rules and principles as key words within one of the biggest and most authoritative psychometric database: PsycTESTS⁷, by the American Psychological Association; 4) Furthermore, some items were created based on the participants' experiences with rules and principles as discussed in the focus groups (chapter six). A full list of items, and their sources can be found in appendix one.

2.2.2 Steps adopted in this project

There is an agreement amongst researchers on procedures for developing a good scale which is valid and reliable (Churchill, 1979).⁸ There are seven major steps in the design and development of the current instrument (see figure 2):

⁷ <http://www.apa.org/science/programs/testing/find-tests.aspx>

⁸ A common approach to the development of a scale is to modify an existing scale, by for example or introducing a new set of items to the scale, to fit a specific purpose, context, or conceptual perspective. This approach is not appropriate in this case because, as previously explained, our review of the previous research and literature shows that there is no existing scale / instrument designed specifically for measuring individuals' dispositions to rules and principles.

Figure 2 A flow chart depicting the DRP development processes

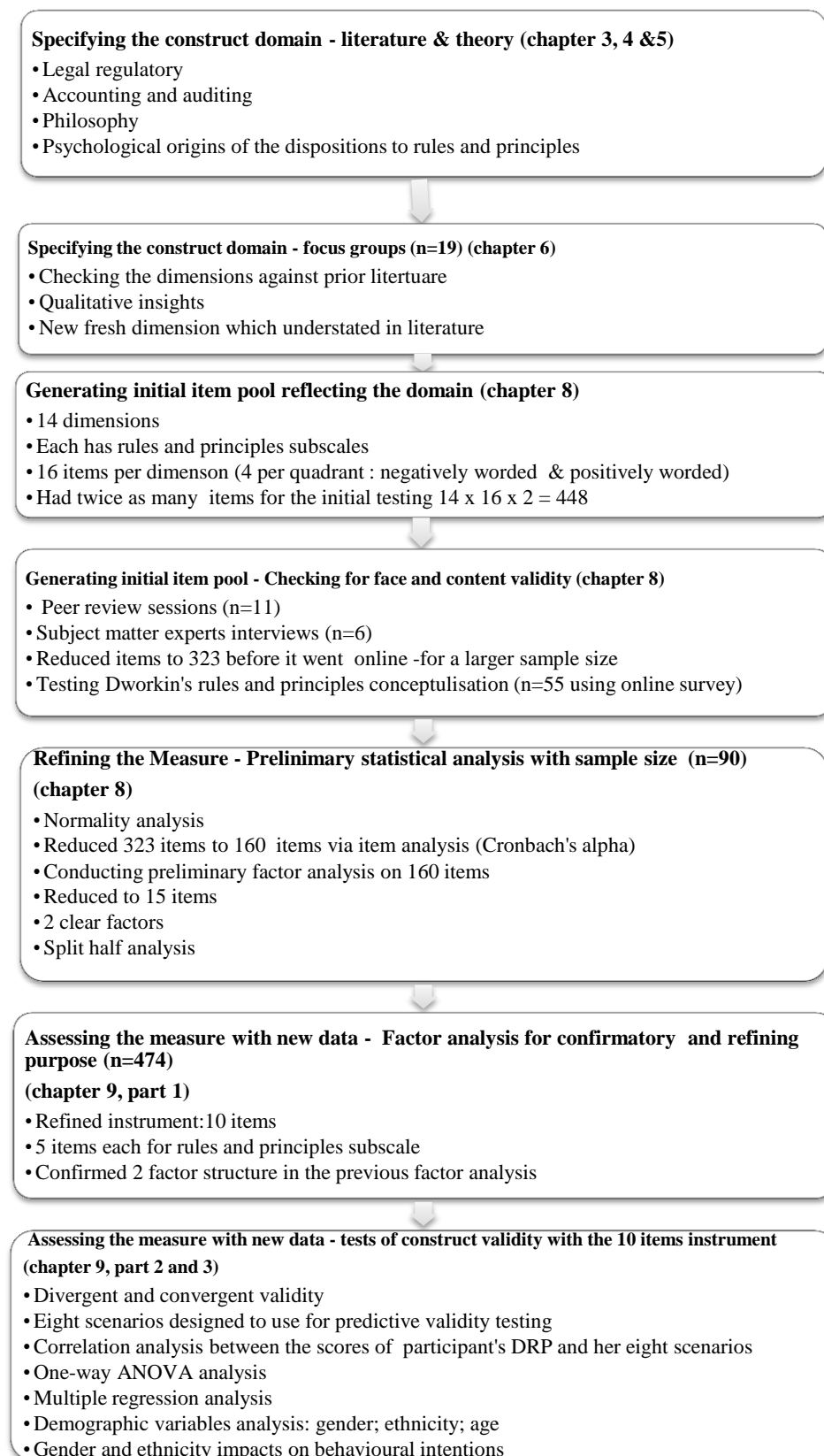


Table 1 A summary of the sample size for each step of empirical work

Empirical step	Sample size	Reference
Focus groups	N=19	Chap 6, p.123
Peer review sessions & Experts reviews	N= 17	Chap 8, p.162 & p.165
Testing Dworkin's rules and principles distinctions	N=55 (subsample of the 90 sample)	Chap 8, p.169
Online survey (preliminary item pool) for item reduction purpose	N=90	Chap 8, p.168
Shortened instrument for confirmatory and validating purpose	N=474 (new sample)	Chap 9, part 2, p.197
Predictive validity tests with eight scenarios	N=89 (subsample of the bigger 474 sample)	Chap 9, part 3, p.225
Test –re test of the instrument	N=30 (subsample of the 89 sample)	Chap 9, part 1, p.202

2.3 Basic methodological assumptions underlying the research

Positivistic research refers to a research that is “scientific, structured, has a prior theoretical base, seeks to establish the nature of relationships and causes and effects, and employs empirical validation and statistical analyses to test and confirm theories” (Bisman, 2010, p.5). Positivist research generally aims at generalisability and at the deduction of universal principles. The theories derived in this manner consequently are judged by their capacity to explain and or predict phenomena.

Positivistic research views “‘reality’ as a concrete structure and ‘people’ as adapters, responders, and information processors to achieve efficiency and the goal of an organization” (Morgan & Smircich, 1980, cited by Hoque, 2006, p.1). Accounting research from such perspective, views accounting control systems such as budgeting

as a means to achieving low cost, efficient operations. Research of this school of thought normally apply an arms-length research method, statistically categorises key variables and then attempts to retrieve meaning by *ex post facto* interpretations of tests of significance (Tomkins & Groves, 1983, p. 362 cited by Hoque, 2006, p.1).

Interpretivist approaches to research, on the other hand, typically “assume that people create and associate their own subjective and intersubjective meanings as they interact with the world around them”. Interpretive researchers thus attempt to understand “phenomena through accessing the meanings participants assign to them” (Orlikowski & Baroudi, 1991, p5). Interpretivist research seeks interpretations, and finely contextualised explanations and rich understanding of actions and events that do not fit into the existing theories or models (Bisman, 2010, p.7). Because interpretivist analyses are finely contextualised, they are typically not designed to offer findings that can be generalized in a very direct way. Nevertheless, this research has the capacity to provide powerful insight and lessons of general value. From a methodological perspective, interpretivist work requires in-depth study of a specific meaningful context. Symbolic interactionism, grounded theory and ethnomethodological approaches are the examples of such school of thought (Laughlin, 1995).

The current project is dominantly positivism in nature but is complemented with some of the interpretivist approaches in the forms of focus groups and subject matter expert’s interviews. I acknowledge the existence and interaction between the social and psychological worlds and the outside physical world. On the other hand, I believe that the role of human actors play in the material world (Morgan & Smircich, 1980). I believe that human beings have the ability to utilise languages, labels, and other means of culturally specific actions to interpret, modify their environment, in turn contributing to the enactment of a reality (Morgan & Smircich, 1980). With regard to the current research phenomenon, namely individuals’ dispositions to rules and principles, I focus primarily on the degree to which individuals relate to rules and principles differently and what are the dimensions or elements underpinning those individual differences. More importantly, I hope to develop a reliable instrument which is able to capture and measure such individual differences.

In summary, the majority of the empirical work in this PhD will be survey research taking a predominantly- positivist epistemological stance. It is quantitative, and data-driven, it utilises statistical analysis, and aims to draw patterns from large data samples (Bryman, 2004; Bisman, 2010). On the other hand, qualitative and inductive methods such as experts and peer review sessions and focus groups are used to derive a conceptual framework as a basis for item generation and for the survey design.

2.4 Methodology: Mixed method

This project applies both qualitative and quantitative methods at various stages of the research. Mixed method means working with different types of data. In essence, triangulation of different methods is mainly used for enhancing construct validity, or the extent to which theoretical concepts and their operational definitions adequately capture underlying properties of the research phenomena (Jick, 1979).

The qualitative research method (focus groups discussion) are conducted as the supplementary method to the survey, more specifically they are used in order to filter through the theoretical assumptions and claims made in rules and principles debate, primarily drawn from the legal regulation, moral philosophy, and accounting and auditing literatures, and checking whether there are any themes that were not being explicitly identified or discussed in the prior literature. Expert review sessions are adopted to establish the face and content validity of the items in the initial pool. The qualitative steps have facilitated a more accurate instrument calibration for this project. The administration of the survey and subsequent analysis was essentially quantitative as are most of the final stages of the process of deriving the DRP instrument, exploring its psychometric properties, and testing its reliability and validity, using a series of statistical techniques such as factor analysis, the analysis of Cronbach's alpha, correlation analysis as well as regression models.

2.5 Main research method: survey

The choice of the design reflects the research interests and objectives pursued. The goal here is to develop and validate a generic instrument that will have reasonable predictive power, can be used to predict individuals' behaviour in relation to real-life

tasks. I aim for a simplified factor structure that could explain reasonable variance/portion of the individuals' dispositions to rules and principles.

2.5.1 Demonstrating the validity and reliability of the instrument

Concern for the representativeness, or generalizability, of research, for its reliability, or consistency and replicability of measurement, and for its validity is typical of positivist approaches⁹ however as I have noted that, this study is not entirely positivist as it also applies qualitative methods such as focus groups and the experts review sessions. Validity refers to whether a questionnaire is measuring what it purports to (Bryman & Cramer 1997). While this can be difficult to establish, demonstrating the validity of a developing measure is essential. There are several different types of validity (Bowling, 1997; Bryman & Cramer, 1997). Face validity: whether the item appears to be about what you want to assess. Face validity is essentially a matter of appearances and whether an instrument 'seems' valid (Loewenthal, 1996). Content validity, on the other hand is a matter of real substance, it concerns the extent to which the elements of the assessment instrument are relevant to and representative of the target construct. In this study some assurance concerning content validity is given by subject expert review of the item pool; which itself was drawn from a careful analysis of relevant debates.

Face and content validity are the initial steps in establishing validity, but they alone are not sufficient. Convergent and discriminant validity must also be demonstrated by correlating the measure with related and/or dissimilar measures (Bowling, 1997). Convergent validity¹⁰ refers to the degree to which measures of constructs that in theory ought to be related are in fact correlated (Pedhazur & Schmelkin, 1991).

⁹ Such concerns are typical of any social research that aspires to be at all like the hard sciences; whether or not strictly speaking positivist.

¹⁰ If the DRP were to have convergent validity, thus the scores on DRP are expected to correlate highly in the predicted direction with older, well-established test measures designed to measure theoretically related concepts such as need for closure measure; Big5 personality traits such as openness and conscientiousness; Sternberg's thinking style, etc.,.

Discriminant validity¹¹, on the other hand, refers to tests of the degree to which constructs that theoretically ought not to be related are in fact un-related, or uncorrelated (Pedhazur & Schmelkin, 1991). These tests help to show that the construct I attempt to develop and measure is unique enough and not a mere duplication of another existing construct. Construct validity relates to how well the items in the questionnaire represent the underlying conceptual structure (Rattray & Jones, 2007). In other words, it focuses on how well the items created by the researcher to represent “a hypothetical construct really capture the essence of that hypothetical construct” (Proios, 2010, p.197). Factor analysis is one statistical technique that can be used to determine the factor structures for the construct.

Tests of the predictive validity of the instrument included analysis of the correlations of subjects’ the DRP instrument scores with their responses to eight scenarios (see appendix six) designed to measure their behavioural intention in relation to real-life situations involving rules and principles.

Instrument reliability is concerned with consistency, including replicability, of measurement. The internal consistency reliability reflects the degree to which each item is intercorrelated with the other items in the pool designed to measure the same construct facet (Bryman & Cramer 1999). Internal consistency reliability is assessed here by calculating Cronbach’s alpha coefficients and examining or comparing the factor structures using a split-half technique. External reliability concerns the degree of consistency of a measurement over time. It refers to the degree to which a research instrument is able to produce reliable and consistent results if repeated applications are made (William et al., 1989). Test-retest was carried out to establish the reliability of the instrument.

¹¹ If the DRP were to have divergent validity, thus DRP scores are expected show marginal correlations with scores on tests that are designed to measure concepts that are unrelated theoretically such as social desirability test; Higgins’ regulatory focus questionnaire and the emotional stability trait of the Big5 personality model.

2.5.2 The main research method: Survey

2.5.2.1 The strengths of survey

The choice of the design reflects the research interests and study objectives pursued. In particular, the main research objectives of this study are to develop a valid and reliable way of measuring individuals' dispositions towards rules and principles and then to explore underlying structures of these dispositions, and their relationship to rule and principle related behaviour. The aim is to generate an instrument that can be used with some justified confidence, to measure dispositions to rules and principles and to predict actual rule and principle related behaviour: that is, how individuals are likely to respond to, or handle, rules and principles. Hence, ultimately, a quantitative approach based on statistical theory is more suitable to achieve the objectives of the study.

There are other associated benefits of using survey as method of data collection are they usually relatively quick to complete, are relatively economical and are usually easy to analyse (Bowling, 1997). Nelson (2002) argues that good surveys elicit detailed information from large populations. Thus, it is an approach that provides rich insights into the practical setting with high generalisability.

The main ethical considerations of using a self-administered survey include the data privacy and the anonymity of the participants (a detailed discussion on this see chapter eight, section 8.4.1).

2.5.2.2 The weakness of survey and potential remedies

A common criticism of survey-based research is that it sometimes lacks contextual and historical depth in its approach to the phenomenon of interest. The qualitative dimension of this study may remedy this potential limitation by providing richer insights (Yin, 2003). The focus groups, for example, provided comparatively rich qualitative insights in relation to the construction of our understanding of the dimensions underlying dispositions towards rules and principles.

Another main criticism associated with questionnaire research is that “it assumes that the researcher and respondents share underlying assumptions about language and interpret statement wording in a similar manner” (Rattray & Jones, 2007, p.235). This shortcoming will be remedied by the use of peer review and subject matter expert sessions (chapter eight), in which, amongst other things, readability and familiarity with the language used in pool items were specifically considered. Furthermore, I have tested across different groups in terms of age, gender and ethnicity for equivalence. The results showed that the instrument does not discriminate people from different demographic groups.

2.6 Conclusion

In this chapter explanations and justifications have been given of the basic methodological paradigm adopted in this project: The method used and described being essentially positivist with some use of qualitative methods where appropriate in some phases of the work. This was followed by the introduction to the main research steps employed by the project, and an introductory discussion of the means by which validity and reliability will be pursued, and of certain disadvantages associated with the survey method and how they will be addressed.

Chapter 3: Rules vs. Principles in Accounting

3.1 Introduction

This chapter provides a critical discussion of the on-going rules versus principles debate in the context of accounting and auditing literature. The debate over the pros and cons of the principles versus rules-based accounting and auditing regulation has drawn considerable attention from regulators, academics and the accounting profession (DiPiazza et al., 2008). However, little attention has been paid to the roles, capacities and inclinations of the practitioners required to implement and work with the regulations and standards in question (Jamal & Tan 2008; 2010). As discussed in chapter one, it is not simply a matter of which kind of regulation or standard (rule-based or principle-based) is better or more effective. Rather, the likely interaction (fit or misfit) between the kind of standard and the individual dispositions towards rules and principles needs to be considered (Jamal & Tan 2008; 2010). It becomes potentially important for matters such as the pursuit of accounting and audit quality, that we have means of assessing and understanding the dispositions of individuals' towards rules and principles, and that this is taken into account at the general level by standard setters and at the more local level by managers and or HR allocating tasks.

In this chapter, in to order to establish the context for this project, I will describe an array of reasons emerging from the research, theoretical and experimental, for and against rules and principles. Thus, I am not attempting to draw conclusions as to which arguments are 'best' in any objective sense. I acknowledge that the reasons presented here are not exhaustive. Nonetheless, an extended and systematic literature review shows that these are the reasons most commonly cited in the debate. Later on, in chapter six, I will empirically test these conceptual dimensions against individuals' practical experiences dealing with rules and principles (chapter six: using focus groups to double check the dimensions and elicit new insights). Finally, the analysis developed will provide one source for generating individual "items" to be used in the development of the DRP instrument.

3.1.1 The organisation of the chapter

The structure of this chapter is as follows: Section 3.2 gives an overview of the importance of the “rules versus principles” debate in the context of financial regulation and emphasises the significance of the debate for the maintenance of the all-important commodity of trust in financial contexts. Section 3.3 delineates and elaborates the definitions and characteristics of a rules- and a principles-based regulation in the sphere of accounting and auditing. Here I also discuss the cultural and legal contexts of the two approaches. Section 3.4 (3.4.1-3.4.13) proceeds to describe the theoretical dimensions underpinning the preferences towards a rules- and principles-based approach, as emerging in debate in the accounting and auditing context. Section 3.5 concludes the chapter.

3.2 Trust and the debate

The prior research has implied that the regulatory choice between rules- and principles-based regulations reflects the level of trust or faith the regulatory agencies and stakeholders involved put in the regulated firms (Black, 2008; Sama & Shoaf, 2005; Roth et al., 2011). The recent regression to a rules-based regulation reflects a deteriorating level of trust or “collapse of confidence” (Hutter & Dodd, 2008, p.4). The risk with rules is that this approach is considered to foster a culture of “opportunistic behaviour and serious frauds” (Guiso, 2010, p.1). Therefore, the challenge remains as to how the regulators “restore corporate integrity and market confidence without overacting and stifling the dynamism that underlies a strong economy” (Coglianese, Healey, Keating & Michael, 2004, p.2).

The regulators face a choice between rules and principles to restore the ‘trust’ (Black, 2008). A rules-based approach reflects a more distant and less trusting regulatory relationship between the regulators and the regulated (Black, 2008; Guiso, 2010). In contrast, it has been argued that a principles-based approach would be more beneficial for enhancing the trust between the regulators and the regulated players because it is designed to prompt re-framing of the regulatory relation from ‘controlling’ to ‘mutual trust’, and the regulated would adopt a self-reflective approach in their own business

practices to meet the regulatory goals. Consequently, both regulators and the regulated players would “trust each other to fulfil their side of this new regulatory bargain” (Black, 2008, p.8). Meanwhile, a ‘mutuality’ of the perspectives of the regulators and the regulated players will be emphasised, on shared interpretations regarding the meaning of principles with respect to the appropriate behaviour (Coglianese et al., 2004).

3.3 Definitions of rules- and principles-based regulation

Despite the long-standing prominent debate regarding the effectiveness of rules-based and principles-based accounting standards, “the exact meaning of their distinctions is still not clear and settled” (Hail et al., 2010, p.376). In addition, there has been considerable variation in terminology, used to express substantially similar ideas: Principles-based regulation (PBR) has been called a ‘substance-over-form’¹², approach (Psaros & Trotman, 2004); an ‘objective-based approach’ (Benston, Bromwich, & Wagenhofer, 2006; FASB, 2004); a ‘less precise and general standard-approach’ (Nelson, 2003); and a ‘risk-based’/an ‘outcome-based’ approach (Wallison, 2007). While, a variety of definitions of the term principles-based approach have been suggested¹³, this PhD project takes the view of ICAS which sees an accounting principle as “a general statement, with widespread support, which is intended to support truth and fairness and acts as a guide to action; and contains no “bright-line” or anti-abused provisions” (2006, p.1-2). With this view, principles announce “broad-brush” directives. The implicit expectation is that they will be appropriately

¹² The IASB has used the term “substance over form” to describe the importance of exercising professional judgment in accounting (IASB, 2009). “Substance over form” refers to business transactions that are accounted for and presented in accordance with their substance and economic reality and not merely their legal form (IASB, 2010, Framework, para. 35). For instance, International Accounting Standards (IAS) 17 states that “whether a lease is a finance lease or an operating lease depends on the substance of the transaction rather than the form of the contract” (para. 10).

¹³ I believe that all above mentioned approaches share the common underlying characteristics that constitute a principles-based approach. It is the one characterised by, for example, an orientation to outcomes and regulators’ acceptance of the fact that there is more than one way to achieve a regulatory goal.

interpreted and applied in various circumstances through the use of professional judgment and expertise developed through professional practice and dialogue (Ford, 2010) and, over time, will take account of other pertinent regulation and law (Jackson, 2004). In this way, regulators can maintain focus on the high-level regulatory objectives whilst allowing for 1) variations in the application to each individual case to take proper account of circumstances (Bratton, 2003, p. 1037); and 2) deviation from the accounting standard when required in order to achieve ‘true and fair’ reporting (IASB, 1989, p.46¹⁴; Beest, 2009). Fundamental to principles-based regulation is the “development of a functional and effective ‘interpretative community’ that includes industry participants, regulators and other stakeholders in on-going communication around the content of the regulatory principles” (Ford, 2010, p.4).

In contrast, a rules-based regulation tends toward formalism, with the content of the rules dictating both the regulatory objectives and the particulars of the given context (Bratton, 2003). It is defined as “a means of establishing an unambiguous decision-making method. There can be no doubt about when and how it is to be applied” (ICAS, 2006, p.4). In other words, the rules-based approach can be characterised as tending to favour ‘form over substance’. In this approach, not the economic substance but literally and mechanically following the letters of the rules determines how to recognise accounting events. Moreover, a rules-based approach has been referred to as ‘a cookbook’ (Alexander & Jermakowicz, 2006), in which all the right answers are prescribed in a lot of detailed and interpretive implementation guidance. This guidance is often necessary because it describes the application of the exceptions. A further aim is to eliminate ambiguities by giving clear instruction of how and when the rules should be applied. Thus, a rules-based approach has been criticised for offering minimal opportunity for the application of professional judgment (Duchac, 2004 cited by Bhimani, 2008, p.447; ICAS, 2006a & 2006b).

¹⁴ “Financial statements are frequently described as showing a true and fair view of, or as presenting fairly, the financial position, performance and changes in financial position of an entity” (IASB, 1989, p.46).

I acknowledge the fact that no workable system consists entirely of rules or of principles, but different systems can be comparatively more rules-based or more principles-based (Ford, 2010, p.7): The regulatory approach of the UK Financial Services Authority (FSA) and the accounting standards developed by the International Accounting Standards Board (IASB) can be broadly classified as being principles-based (Leone, 2007; Sawers, 2008), whereas standards created by the US Financial Accounting Standards Board (FASB) can be classified as being predominantly rules-based (Schipper, 2003; Leone, 2007). Hence, auditors using US like GAAP or IASB-like GAAP regimes are exposed to standards that vary in terms of being principles-based or rules-based.

3.3.1 The characteristics of a rules-based and a principles-based standard

Table 2 The characteristics of rules- and principles-based standards

Rules-based standard	Principles-based standard
Bright-line threshold: numeric threshold, usually presented as 1) criteria, 2) condition, 3) provision, 4) requirement, 5) percentage	Qualitative as opposed to “bright line” rules: evaluative terms such as fairness, reasonable, with care, professional judgment.
Scope and legacy exceptions: numerical thresholds, exceptions, exemptions.	They have broad application to a diverse range of circumstances; no exceptions or exemptions.
Large volumes: prescription and instruction with regard to how rules should be implemented and operationalised.	Expressing the reason behind the rules, application involves higher involvement and investment of judgment.
Concrete and detailed expression.	High level of generality and abstractness.
Top-down, prescriptive and ‘box-ticking’ regulatory style.	Embedded in and derived from a community that shares the interpretations of the principles.

Based on Mergenthaler (2009), Black, et al (2007; 2008), Ford (2010) and Tweedie (2007).

3.3.1.1 Principles increase judgment and accountability

Research on the motivational and cognitive effects of process accountability suggests that since the application of a principles-based standard requires higher levels of judgment, it concurrently increases the sense of accountability of those involved.

Accountability can have a “positive effect on decision performance as it overcomes biases and increases attention and effort duration” (Wynder, Baxter, & Laing, 2012, p.3). Moreover, a principles-based standard increases auditors’ epistemic motivation in comparison with a rules-based standard (Cohen et al., 2011). This is an important finding since epistemic motivation is linked directly to the “desire to obtain a thorough and accurate understanding of the task at hand” (De Dreu, Beersma, Stroebe, & Euwema, 2006, p.928). A high level of epistemic motivation has been found to “stimulate decision-makers to search for ‘the truth’ because of concerns about possible invalidity of their judgment” (Cohen 2011, p.7).

Chapman et al. (2009, p.296) reviewed a number of behavioural studies on earning management and accounting choices and suggest that a more principles-based rather than a rules-based regulation “will be likely to mitigate earning management behaviour” (p. 296; see also Peecher et al., 2010; Cohen et al., 2011). This is because the former will require more informed and transparent disclosure on how the judgment has been used in arriving at the accounting decision. This conclusion was further testified in Carpenter et al (2011), who found that auditors using a more principles-based approach are less likely to consent to a client’s aggressive reporting preference. This is because a principles-based approach encourages counterfactual reasoning which requires practitioners to explicitly consider the argument against the client-preferred method of accounting treatment.

3.3.2 Institutional and political contexts of the rules vs. principles debate

Because an accounting system is a complementary component of the country’s overall institutional system (Ball, 2001), accounting issues such as rules versus principles are clearly affected by country-specific factors such as complex cultural, institutional and legal structural differences between countries (for example, between the United Kingdom and United States) (Jamal & Tan, 2008, p.5). The task of examining and comparing two jurisdictions is obviously beyond the scope of this PhD project. However, it is necessary for me to point out certain significant differences between these two regulatory systems without going into a great deal of depth.

It is widely accepted that the nature of the legal system in a country influences its accounting practices (e.g. Salter & Niswander, 1995; Donelson, McInnis, & Mergenthaler, 2012). A rules-based preference in accounting decision-making is closely related to the litigious environment in the US, since accounting practitioners might be reluctant to increase the level of professional judgment applied for fear of subsequent lawsuits. This is supported by a recent empirical study by Donelson et al (2012), whose work confirmed that rules-based standards are associated with a lower threat of litigation. In addition, America also has the highest numbers of multinational companies which have subsidiaries around the world (Donelson et al., 2012), which leads to a greater desire for rules for the purpose of comparability. In contrast, the European legal environment is different as in “lacking class actions, contingent fees, or the ‘American rule’ that generally precludes fee-shifting against the plaintiff” (Coffee, 2004a, p.61). Thus, Europe “experiences little securities litigation and hence can tolerate abstract generality in the formulation of its accounting rules” (Coffee, 2004a, p.61).

3.4 Overview of the dimensions

The literature makes it clear that there are various reasons underlying preferences for one approach over another. In the following sections, I present an array of underlying reasons for causing one to prefer one approach over another.

3.4.1 Need for security

Prior literature involving accountants’ behaviour has shown that auditors seek protection through ‘rule following’ behaviours (Houghton & Hronsky, 2001; Öhman et al., 2006). This type of auditor belongs to the camp which favours structured quantitative algorithms over auditor judgment (Sullivan, 1984 cited by Smith, Fiedler, Brown & Kestel, 2001, p.40). To these auditors, a rules-based approach creates a buffer against litigation risk and potential accusations, as auditors are able to match their standard of care to specific guidelines (Schipper, 2003; Taub, 2005; Pentland, 1993). In this way, auditors feel the shift in accountability reduces their anxiety about being held liable for any potential loss or wrong doings (Mergenthaler et al., 2012);

rules-based regulation, therefore, is seen as a ‘safe harbour’ against the risk of litigation and criticism (Houghton & Hronsky, 2001; Schipper, 2003; Mergenthaler, 2010; Mergenthaler et al., 2012; Bratton, 2004). It has been noticed that if auditors claim that they have followed the rules, the chances of being sued are diminished (Shortridge & Myring, 2004; Mergenthaler et al., 2012). However, the opposing argument is that rules sometimes result in a ‘gotcha’ enforcement mentality (Dickey & Scanlon, 2006, p.15¹⁵). That is, any accidental rule-breaking can be more likely to be viewed as intentional and will consequently be punished more severely. Therefore, despite the fact that rules protect individuals from potential backlash, they also provide a ‘roadmap’ for lawyers/regulators to better detect any errors or mistakes one would accidentally commit (see Mergenthaler et al., 2012 for an in-depth analysis).

Some scholars believe that a principles-based approach better protects practitioners because in the principles-based standards, objectives are clearly outlined, “thus, the range of responses in which professional judgment can fall is tightly bounded, thus significantly mitigating this [litigation] risk” (SEC study 2003, cited by Dickey & Scanlon, 2006, p.14). Furthermore, a principles-based approach allows users to justify their decisions/rationales under challenge, thus, it is less likely to result in restatements (Bogoslaw, 2008; Mergenthaler et al., 2012; ICAS, 2006; Maines et al., 2003; Ng, 2004; Arjoon, 2006). The bottom line with operationalising with a principles-based approach is that the ground for litigation should not be held on the basis of compliance, but rather it should be based on whether practitioners exercise their professional judgment correctly or not (Hall & Renner, 1991, p.63).

Principles-based approaches can cause a feeling of insecurity for practitioners because of their inherent ‘exposure risks’ (Dickey & Scanlon, 2006, p.16). In other words, people fear that the ex-post nature of the principles-based standard will “open them up to more litigations as they depend on their own judgment rather than a set of strict rules” (Somerville, 2003, online press¹⁶; Mergenthaler et al., 2012, p.35). It is a

¹⁵ Remarks of Linda Thomsen, Sec Director of Enforcement, at 2006 Securities Regulation Institute, January, 2006.

¹⁶ <http://www.bizjournals.com/triad/stories/2003/03/03/focus2.html?page=all>

challenge since auditors and accountants “may be less able to predict how regulators or courts will apply these principles in particular contexts” (Coglianese, 2004, p.15). This is also referred to as ‘interpretative risk’ by Black (2008). The vagueness and context-sensitive principles could lead to multiple interpretations of one particular situation (Black, 2008) and since the principles “are open to interpretation, it will also be more challenging to identify when a principle has been breached” (Barrass, 2007 cited by Carter & Marchant, 2011, p.162).

3.4.2 Need to ensure uniformity vs. flexibility

The preference for rules could also be viewed as reflecting a collective accounting professionals’ value system which emphasised uniformity (Gray, 1988). Gray suggests that accountants’ preference is for uniformity, which is referred to as “a preference for the enforcement of uniform accounting practice between companies and for the consistent use of such practice over time, as opposed to flexibility, in accordance with the perceived circumstances of individual companies” (Gray, 1988, p.8).

Ball (2005) sees two problems, however, with this ‘one size fits all’ approach. For a start, it ignores the fact that firms differ on a myriad of dimensions such as strategy, investment policy, financing policy, technology, size etc. Further, standardised rules-based regulation overlooks some of the country-specific factors such as the political/legal and cultural/social differences. For these reasons, he concludes that “It has never been convincingly demonstrated that there exists a unique optimum set of rules for all” (p. 8). Moreover, a rules-based accounting approach could lead to “illusory comparability” (SEC, 2003; FASB, 2004) or practitioners to assume that ‘comparability in appearance’ is equivalent to ‘comparability in substance’¹⁷ (Sawabe, 2005, p.180). In this way, “rules often do not only fail to provide the most relevant information about the economic substance of transactions and events, but

¹⁷ Sawabe (2005) suggests two reasons for that: 1) use of complex financial engineering to circumvent the rules may reduce the comparability of underlying economic substance; 2), if two arrangements are fundamentally the same but one meets the bright-line tests while the other does not, they may still be accounted for differently.

they may also require economically different issues to be accounted for identically and thereby create a pseudo-comparability” (Wustemann & Kierzek, 2007, p.24; Benston et al., 2006, p.169-170; Nobes, 2005, p.10).

Principles-based regulation has been praised for its ability to be adaptable and dynamic gap-filling (Carter & Marchant, 2011, p.165). A principles-based approach provides firms with more options and freedoms for conducting business and achieving both their own and regulatory goals (Black, 2008; Carter & Marchant, 2011). Each firm, therefore, has the flexibility to determine how each principle applies to their products, practices and business (Kershaw, 2005; Carter & Marchant, 2011). The additional freedom which comes with using the principles-based approach will lead to more co-operation and willingness to comply with the regulatory goals (Ford, 2008; Black, 2008).

There are some concerns with the flexibility aspect of a principles-based approach; one is that it does not guarantee the comparability of the financial information being reported (Aliali & Cao, 2010). Indeed, some people argue that the flexibility of the principles causes diversities in reporting quality which leads to inconsistencies between companies and different timelines (Gordon & Gallery, 2008).

3.4.3 Need for predictability and certainty

Auditors may have a higher tendency to avoid uncertainty and, as a result, come to rely on rules to deliver more certainty and predictability (Hofstede, 2001, p.145). However, rules are liable to fail in situations which are not known or anticipated by the rules in advance (Black, 2001; Ford, 2010). Moreover, rules-based approaches tend to “drive uncertainty ‘underground’ and make problem-solving less explicit” (Ford, 2010, p.49).

Ford (2010) argues that in a complex, real life situation where the market is fast changing, the principles-based approach is a more promising long-term solution to alleviate the associated uncertainties. It is able to deliver more certainty for the individual player for the reason that it facilitates and bridges an on-going dialogue

among stakeholders within the community, in the sense that each player could participate in the negotiation process and have a clearer view on whether the outcomes emerging would take note of their needs and interests (Ford, 2010; Black, 2008; Okamoto, 2011; Cunningham, 2007).

One aspect of principles-based regulation causing unpredictability is the concern for backlash because of the high level of uncertainty associated with what is expected by applying the principles across a wide range of different situations (FSA, 2007; Black, 2008; Cunningham, 2007). In particular, an individual company faces uncertainty regarding the degree to which its conduct is in compliance with the regulator's interpretation of the principles (Black, 2008; Schawarcz, 2008; Coglianese et al., 2004). Furthermore, there is also the uncertain question of how tolerant regulators will be of a company's divergent interpretation (Carter & Marchant, 2011, p.162). Consequently, "one fear is that companies will be blamed in hindsight for actions that may have seemed like reasonable and good-faith interpretation of the principles at the time the decision was made" (Gray, 2009; Cunningham, 2007 cited by Carter & Marchant, 2011, p.162). This fear is closely linked to the need for security when applying principles as discussed in section 2.5.1.

3.4.4 Need for innovation

One of the common arguments in favour of principles-based regulation is that it supports innovation (Ford 2010, p.37). Black argues that PBR provides a flexible regulatory regime which can facilitate innovations for both firms and regulators (Black, 2008). In her view, for firms, PBR can facilitate innovations and enhance competitiveness. For regulators, the innovation can be seen as a new way of supervision, which enables the responsiveness and the durability of the regulatory methods in a rapid changing market place, and enhances its own competitiveness (Ford, 2010, p.22).

The FSA (2007) rejected, or at least downplayed, the role of prescriptive rules. The FSA held the view that prescriptive rules were unable to keep up with the constantly changing pace of the market and practices and could eventually, in some cases, hinder

market innovation. In summary, a rules-based regulation is “hard pressed to respond to a rapidly changing and diverse market place” (Carter & Marchant, 2011, p.164).

There is, however, question over the claim that a principles-based approach is beneficial for innovation (Carter & Marchant, 2011). It is the question of whether a principles-based approach may sometimes lead to a more conservative approach; in other words, when people are dealing with a vague standard (principles-liked feature) they tend to become more cautious (Shavell, 1987). As a result, this overly cautious mentality may potentially “hamper innovation and stifle competition if the companies are unwilling to take risks or are unwilling to do the research that will make their experiments and proposed products comply with the principles” (Schwarcz, 2008 cited by Carter & Marchant, 2011, p.164).

3.4.5 Concern for complexity

Tweedie (2007) criticises that the existing accounting standards are unnecessarily complex for users¹⁸. In an empirical study, Mergenthaler et al (2010) support the complexity view and argue that a rules-based system is too complex and difficult to implement because of its inherent linguistic characteristics (see section 2.4 and 2.4.1 for in-depth description on the characteristics of a rule). A rules-based system continues to proliferate in order to cover new conceivable situations¹⁹ (Sawabe, 2005, p.179-180; Bagshaw, 2006). Subsequently, rules-based financial reporting has become exceedingly complex in terms of scope, exceptions and alternative treatments, in

¹⁸ This point is illustrated by a real life example given by Douglas Flint (2007), in the Principles into Practice ICAS 2007, New York conference, who is Group Finance Director, HSBC Holdings Plc. He provided, as an example, the annual accounts at HSBC which have now exceeded 400 pages as a result of following the introduction of IFRS in 2004, and it is too heavy to deliver by conventional post.

¹⁹ Furthermore, the dynamic interactions among rules cause further complication: in the context of financial reporting standards, Nelson (2003, based on Wood, 1986) summarises that the increase in the number of rules and the number of 'exceptions to the rules' affect “component complexity,” “coordinative complexity,” and “dynamic complexity”. Component complexity increases with more rules; coordinative complexity increases when a new rule must be considered in light of existing rules; however, dynamic complexity increases by changing the pattern of rules over time.

order to keep up with the growing complexities of operations of companies and the economic conditions (Bhimani, 2008, p.447; Sawabe, 2005, p.180).

Nelson, Elliott, & Tarpley (2002) conducted a combination of survey and experimental research and investigated the effects of detailed rules upon the relationship between managers and auditors. Their finding is that “as rules become more detailed, the precision of rules improves while complexity also increases²⁰” (cited by Sawabe, 2005, p.182). The increases in the volume and complexities of the accounting rules cause what Black (2001, p.28) refers to as ‘rules overload’ for the practitioners. Mental burden resulting from 'rules overload' could cause deterioration in judgmental accuracy and consistency (Black, 2001) leading to coping strategies that reduce mental processing (Nelson, 2002), weakening the interactions between users and standard setters (Shaw, 1995; Beresford, 1999; Sawabe, 2005), reducing users’ ability to limit aggressive reporting (Hammersley et al., 2010) and to communicate the financial information accurately (Sawabe, 2005). In addition to all these negativities of ‘rules overload’, the complex rules reduce the comprehensibility and relevance of financial information (Madsen & Williams, 2012). Complexity resulting from a rules-based regulation is further criticised for leading to higher compliance cost (Simpson, Meeks, Klumpes, & Andrews, 2000; ICAS, 2010).

Principles-based regulation, on the other hand, is proposed with the aim of simplifying the current financial system (Ford, 2010; Dickey & Scanlon, 2006). When there are conflicts, the abstract principles can be used to mediate multiple conflicts of interest in many areas by objectifying a goal so that the decision-makers/different

²⁰ Rule precision and complexity affect two functions of financial accounting standards: communication and constraint (Sawabe, 2005, p.182). According to Nelson (2003, p.92) communication refers to “the role of standards to provide a ‘shared understanding’ of the meaning of financial reporting”, while constraint refers to “the role of standards to discourage biased communication by serving as the benchmark”. Consequently, as time passes, more rules, exceptions to rules and/or guidance will be added to the existing rules, thereby creating communication problems that offset the communication benefits provided by increased precision (Nelson, 2003, p.6).

parties can choose their own actions to achieve that goal while balancing other parties' interests. There is a competing view, however, that principles themselves, due to the difficulties of professional interpretations they allow, can potentially generate their own problems and could potentially cause complexity and become more difficult and costly to enforce (Herz, 2003). In addition, there are opposing views from the audit firms complaining that with a principles-based regulation, they will have to make complex arrangements to accommodate compliance (Freshfields Bruckhaus Deringer report, 2007 cited by Carter & Marchant, 2011) including hiring expensive specialists with expertise in complex transactions, putting together a monitoring audit committee and arranging vigilant enforcement agents (Bratton, 2004, p.35; Ford, 2010).

3.4.6 Concern for manipulation

Rules reduce discretion on the individual decision-makers, making it less likely that their judgment will be incentivised by their own personal desires and gains (Coglianese, et al., 2004, p.12). However, the danger is that the formalistic rules-based approach encourages a perception, in some quarters, of accounting regulations as mere technicalities; to be 'avoided' whenever necessary (Dunn et al., 2003). This is referred to as 'creative compliance' or 'creative accounting' (Jameson, 1988; Balaciu, Bogdan, & Vladu, 2009; Shah, 1996). Some commentators find rules are more vulnerable to manipulation because of their 'open texture'²¹ characteristics (Bhimani, 2008, p.447; ICAS, 2006a & 2006b; Schauer, 1991; Kershaw, 2005). This characteristic of rules in effect causes people to find loopholes and ways to "evade narrow and specific rules" (Coffee, 2004a, p.61; Macnamara & Banff, 2004; Okamoto, 2011). Besides, "even if newer and tighter rules were drafted, practitioners would predictably stay one step ahead of regulators by finding new ways to play the game and evade narrow and specific rules" (Coffee, 2004a, p.61). In addition, a rules-based approach focuses on compliance by a 'check-list' approach, which undermines auditors' ability to assess fraud risk (Pincus, Bernardi, & Ludwig, 1999). Therefore, a

²¹ Rules do not anticipate and dictate solutions for all the possible circumstances (Hart, 1961, *The Concept of Law*).

rules-based approach has been criticised as the root reason for companies to invent and commit more technically advanced schemes and manipulation, which are often hard to detect (Okamoto, 2011; Dickey & Scanlon, 2006).

Shifting to a principles-based system is seen as a conscious strategy to counter creative accounting (Somerville, 2003; McBarnet & Whelan, 1999, p.1). Principles-based accounting was perceived to give the most “authentic presentation” of financial information and represent economic reality (ICAS, 2010, p.8). That is because by using a principles-based approach, auditors will have to explain and disclose the rationales behind their decisions (Benston et al., p.167; ICAS, 2006; Maines et al., 2003). In this way, this process would entail a “critical and reasoned evaluation made in good faith”, including the consideration of the substance of the economic transaction and the pros and cons of different accounting treatments (CIFiR, 2008²², p94-95 cited by Carpenter et al., 2011). Accounting behavioural researchers have used experiments and surveys to examine the behavioural effects of rules- and principles-based regulations on practitioners’ responses to aggressive earning management. For example, Agoglia et al. (2010) conclude that financial statement preparers are more likely to report aggressively under rules-based than under principles-based standards. Mergenthaler (2009) finds that the magnitude of earnings management is greater in rules-based standards than under principles-based standards. Jamal and Tan (2010) show that preparers report less aggressively under principles-based standards, but only if the auditor is principles-oriented, as opposed to client-oriented or rules-oriented. Finally, Segovia et al., (2009) find that auditors are more willing to allow clients to manage earnings under a more rules-based standard (SFAS 121) than under a more principles-based standard (ARB 43).

²² There is a concern to the degree, the courts and investors will trust auditors’ judgments when they are not supported by precise rules (PCAOB, 2008 cited by Carpenter, et al., 2011). In response to these concerns, the Advisory Committee on Improvements to Financial Reporting (CIFiR, 2008 cited by Carpenter et al., 2011) provides guidance on the elements of a well-formed professional judgment to be used to support and evaluate auditors’ judgments. The goal of the proposed guidance is to encourage auditors to form a disciplined process in making judgments.

Nevertheless, it has been pointed out that the imprecise nature of principles could be a ‘double-edged sword’ (Carpenter et al., 2011) in that the “latitude allows managers to choose accounting methods that reflect their informed understanding of the underlying economics of the transitions, but it also permits managers to opportunistically advocate reporting methods that do not necessarily capture the economics of the transactions” (Maines et al., 2003 cited by Carpenter et al., 2011 p.9).

3.4.7 Legitimacy issue²³

Because principles-based regulation is relatively young compared with an established rules-based regulation, the issue of legitimacy is a major concern. For a principles-based regulation to be perceived as legitimate by the regulated and participants who are subject to it, it has to be democratic in the way it is enacted and implemented. A principles-based regulation emphasises the need to widen and strengthen shareholders’ participation (Hill, 2007; Black, 2008; Ford, 2010). The democratic nature of principles is reflected in the way it invites dialogues and inputs from industry players and experts (Ford, 2010, p.20). For instance, in the sphere of corporate governance, Hill (2007) argues that a principles-based approach increases the obligations of the accounting profession to the stakeholders, since it provides stakeholders with “greater consultation and information flow” (p.10).

3.4.8 Concern for Ethics

Lampe and Finn (1992), and Eynon, Hill, & Stevens (1997) provide evidence showing that accountants were more oriented towards maintaining rules and norms in making moral judgment than to engage in principled moral reasoning. The rules-based regulation has been criticised as contributing to a string of auditing failures in America (SEC, 2003; Benston, 2003). Satava et al (2006) argue that “recent high profile events indicate that the accountants and auditors involved have followed rule-

²³ A more elaborate discussion on what I mean by legitimacy in the context of this research see chapter five, subsection 5.4.2.

based ethical perspectives and have failed to protect investors and stakeholders – resulting in a wave of scandals and charges of unethical conducts” (p. 271).

A principles-based approach is considered more effective in promoting more ethical decision-making and behaviour (ICAS, 2006). Rasmussen and Windsor (2003) show that auditors with higher moral reasoning ability have the disposition to act fairly on principles when subject to moral dilemmas. According to Sweeney and Roberts (1997), auditors who think at a higher moral level think in a way that resembles principles-based thinking, in that they are more prone to draw contextual factors into their decision-making, while technical rules are not able to cover all realistic situations. These auditors had to form their decision independently from rules and they were less anxious about the penalties associated with noncompliance. Nonetheless, findings by Dunn et al (2003, p.37) show the profession’s lack of reasoning capacity in a move towards a more principles-based reasoning. It concludes that simply changing the form of accounting regulation to a more principles-oriented one will not be effective in triggering higher levels of ethical behaviour (Herron & Gilbertson, 2004). Thus, “a principles- based approach will only work if those charged with its implementation have the necessary outlook and aptitude to operate in that way”(Dunn et al., 2003, p.5).

3.4.9 Effectiveness

The effectiveness dimension is focused on addressing the quality of the specific task being performed (Salterio, 1994, p.521). In particular, there is an increasingly urgent emphasis on improving auditors’ ability to detect fraud (SAS No. 53, 1988; SAS No. 82, 1997; Pincus, 1999, p.123). Rules are effective in the sense of eliminating and minimising individual users’ mistakes and errors, as well as helping to verify the financial statements effectively (Coffee, 2004a). However, this approach has been criticised as being suboptimal (Pincus, 2000). Rules have the tendency to be ineffective when the users become rule-bound, leaving no space for discretion and freedom (Pincus, 2000, p.247; Mergenthaler et al., 2012).

A principles-based approach, on the other hand, is particularly effective in detecting and deterring “loophole behaviour and checklist style approaches” (Carter &

Marchant, 2011, p.160). However, the drawback of principles is that because of their vague and ambiguous nature, they may be not so effective in decision-making or problem solving (MacNeil, 2010; Gray, 2009).

3.4.10 Efficiency

Rules are efficient in helping decision-making and problem solving because they are simpler and easier to follow than principles. They “demarcate a clear line between acceptable and unacceptable behaviour” (Coglianese et al., 2004, p.11). They also spare users the debate issues of value and fact every time someone does something which has social consequences. By following rules one could eliminate the necessity for making extra investigations and calculations. For instance, a highly structured audit programme (detailed and concrete audit procedures and step by step instructions) is being associated with increased efficiency (Pincus et al., 1999). However, rules could also cause inefficiency due to their ex-ante nature, which attempt to specify outcomes before particular cases arise; such characteristics lead to the consequences of producing both injustice and inefficiency (ICAS, 2006).

A flexible principles-based approach could be efficient because it is addressed more proactively and with feedback from the regulator (Kovacevich, Dimon, James, & Renyi, 2008), eradicating duplications and contradictory rules. It is also efficient because it can be integrated into the regulated players’ own systems (Carter & Marchant, 2011, p.161). However, a principles-based approach could potentially lead to a delay in reaching closures in terms of decision-making. An application of principles will have to take consideration of the uniqueness of each individual context and weigh the pros and cons of each alternative treatment (Carpenter et al., 2011). Furthermore, modifying the approach to suit each individual context is more of a costly deliberation process and if any relevant new information later on emerges or any errors have been detected, decision makers have to go back and revise their original decision-making in an ex-post manner (Cunningham, 2007). Thus, the time and other resources devoted to such deliberation may cause an inefficiency problem.

3.4.11 Need to reach closure

This is a dimension concerned with the rules' and principles' respective ability in reaching a closure in the context of decision-making and problem solving. The expanded focus for more cues to support their justification is referred to as an individual difference in psychology, namely, 'need for closure' (NFC; more details please see chapter 5, section, 5.5.3.1). This concept has been well researched in psychology but has not yet been widely studied in the accounting or business literature (Bailey et al., 2007).

A study by Bailey et al. (2007) on NFC in auditing sheds some light in helping to understand how NFC relates to dispositions to rules and principles. It has been argued that when facing uncertainty, auditors are likely to follow precedents, even at the risk of misreporting in favour of their clients (Mayhew et al., 2000). Rules are believed to release users from the burden of making judgment under uncertainty (Bratton, 2004). Therefore, when there is a pressure of audit fee/deadline, auditors would prefer to apply straightforward rules to close the case (Bratton, 2004; Bennett, Bradbury, & Prangnell, 2006).

In contrast, a principles-based approach represents a more elaborate and thorough decision-making process (Cohen et al., 2011, p.28). The users of principles will be more likely to resort to their professional judgment and experiences rather than simply follow explicit rules. These people tend to have lower NFC.

3.4.12 Abstractness vs. concreteness

A typical rule is expected to include "specific criteria, 'bright-line' tests, numerical thresholds, examples, scope restrictions, exceptions, subsequent precedents, implementation guidance, etc.," (Nelson, 2003; Mergenthaler, 2009 & 2010; Schipper, 2003; SEC, 2003; FASB, 2002). Rules tend to be concrete and prescriptive.

On the other hand, principles are abstract and broad in nature (Cunningham, 2007). They are behavioural statements and often stated in qualitative terms (Black et al.,

2007). They provide decision makers “with a common foundation and basic reasoning on which to consider the merits of alternatives” (Preface to ‘Statements of Financial Accounting Concepts’ cited by Wustemann & Kierzek, 2007, p.7). They do not prescribe detailed action plans to the users in the way rules do.

3.4.13 Need for procedural fairness

Procedural fairness is concerned with the fairness of decision-making procedures. It deals with the perceived fairness of procedures or processes applied to achieve the desired outcomes (Folger & Konovsky, 1989; Wentzel, 2002 both cited by Zainuddin & Isa, 2011, p.642). The individuals’ dispositions towards rules- and principles-based approaches affect their perceptions of the fairness of the organisational procedures. The principles-based approach rejects the presumption of a ‘one size fits all’ approach for a given transaction (Dickey & Scanlon, 2006, p.17). Instead, it is more sensitive to the particular context, allowing for individual differences in terms of varying value and ways of doing things, permitting a more flexible and attuned practice (Bratton, 2003; Wustemann & Kierzek, 2007; Levitt et al., 2005).

It is, therefore, considered as a fairer approach because it is an approach which ensures each event is treated idiosyncratically. Thus, the use of a principles-based approach may be associated with increased procedure fairness (Ford, 2010, p.9).

To the degree to which one is complying with rules, one can create the perception of procedural fairness (Proios, 2010). The criticism for such an approach is that it may fail to take account of the particularities or substance of the individual transaction (Bratton, 2003, p.1037); by treating all cases using an identical method, it may create unfairness.

3.5 Conclusion

In this chapter, I have discussed in broad features the rules versus principles debate, particularly as it has emerged in relation to accounting regulation. And I have identified many of the arguments used for and against both rules-based and principles-

based regulation. Consistent with Dworkin's distinctions between rules and principles in legal regulation, the definitions and distinctions of a rules- and a principles-based accounting regulation are based on the position held by ICAS (2006).

This chapter is closed by reiterating that it has not been my objective to come to any conclusion in respect of this debate or to take up any position of my own, except to say that I agree with the view put forward by ICAS (2006) that: "it is possible to conclude that neither approach is fundamentally superior to the other, but each has its strengths in application and enforcement" (p.49). There is a huge demand from the accounting profession for detailed rules-based guidance. Many practitioners believe rules protect them from litigation and increase the value of accounts by promoting comparability and compliance. However, ICAS (2006a&b) argues that rules do not help accountants to stand up to pressure in conflict situations and a mechanical rule-following ethic will ultimately damage the profession. Meanwhile, I have also explored the weaknesses associated with the rules-based approach such as its tendency to lead to complexity, and a proliferation of ever more rules, sub-rules and exceptions, and to its facilitation of 'creative compliance'.

In contrast, a principles-based approach, in the view of many, seems in theory to have the potential and characteristics necessary to enable higher quality financial reporting and audit, and particularly so when applied properly in good faith. The findings from recent behavioural accounting (section 2.4.1.1) has shown that principles-based standards may be associated with high auditor epistemic motivation and accountability, and may thereby contribute to a better professional judgment and will result in better reporting quality. Nevertheless, there is also evidence of practitioners' lack of competence and confidence in working with principles. Other benefits associated with a principles-based approach are inherent flexibility and space for creativity. Therefore, such an approach provides more feeling of empowerment for the practitioners. Again, the downside of this is that it may increase the interpretative and exposure risks because of its imprecise nature.

Chapter 4: Rules and Principles in Law

4.1 Introduction

This chapter draws on the analysis of literature in legal philosophy in order to develop and deepen the clarification of the logical distinctions between rules and principles. The regulatory literature on rules and principles is truly vast and it would be impossible to address it within the scope of this chapter in anything approaching a “comprehensive” way. Therefore, I primarily focus on Dworkin’s view on rules and principles, using his position to clarify and solidify the conceptual distinctions between rules and principles.

The focus of this PhD is on rules and principles as prescription, as distinct from description (Schauer, 1991a²⁴), and more specifically as they are normative and regulative. My focus, then, is on the aspect, or kind, of rules and principles which moral, political, and legal thinkers have been most concerned with. I am primarily interested in the regulative, as distinct from any constitutive role, of rules and principles. I recognise that rules and principles often play a constitutive role; the rules of chess are instrumental in constituting the social reality of the game. Once the game is in place, of course, the constitutive aspect of the rules is not something the players attend to; they do need to make their moves in accordance with the regulatory rules of the game, otherwise they cannot be playing chess. It is this regulative aspect of rules and principles that this PhD focuses upon. The regulative rules and principles that I am interested in are also distinct from what Raz (1975) called the permissive and power conferring rules (such as the rules granting parliament power to legislate, or common people power to make wills). I am also not concerned with specific technical or descriptive rules or protocol such as instructions for how to bake a cake or operate a computer.

²⁴ Schauer, *Playing by the Rules*, p.17-18 (1991) (discussing the distinction between prescriptive and descriptive rules).

4.1.1 Overview of the chapter

The organisation of the chapter is as follows: Section 4.2 examines the jurisprudential debate between formalism and anti-formalism, which helps to locate the theoretical discussion of the comparison of rules and principles. Section 4.3 primarily focuses on outlining Dworkin's position. In doing so, I identify an important point of divergence between Hart's positivism and Dworkin's Naturalism, this helps to understand the origin of the orthogonal view on the distinction between rules and principles as postulated by Dworkin, in contrast to the opposing view that rules and principles are dichotomous. Section 4.4 introduces the distinctions and definitions of rules and principles as proposed by Dworkin, and critically examines the interplay between them. Section 4.5 provides some criticism of Dworkin's view of rules and principles. Section 4.6 outlines distinctions between rules and principles and the other commonly entangled concepts such as analogy, heuristic and policy/rights. Section 4.7 concludes and summarises the chapter.

4.2 Formalism vs. Anti-Formalism

According to McBarnet and Whelan (1991), the debate over rules and principles in law reflects two competing stances on the nature of law, and how legal control should be operated: formalism and anti-formalism. Legal formalism is a way of viewing legal philosophy and jurisprudence from the perspective of legal positivism. I have taken the definition of the formalism defined by Alexander. He says that “by formalism I mean adherence to a norm’s prescription without regard to the background reasons the norm is meant to serve (even when the norm’s prescription fails to serve those background reasons in a particular case).” He continues that “a formalist looks to the form of a prescription-that it is contained in an authoritative rule-rather than to the substantive end or ends that it was meant to achieve. A norm is formalistic when it is opaque in the sense that we act on it without reference to the substantive goals that underlie it” (Alexander, 1999, p.531). In view of this definition, in this PhD, a formalist view is that the rules would be applied literally without the need to go beyond them in search of other grounds for interpretation of the rules. It is an approach that emphasizes much on “uniformity, consistency and predictability, on the

legal form of transactions and relationships and on literal interpretation” (McBarnet & Whelan, 1991, p.848).

The core of a formalist approach lies in a rules-based decision-making (Schauer, 1988, p. 509-510), where the rules involved are typically codified with specific linguistic formation: If X then Y (see Twining & Miers, 1999). In formalism, the “literal” meaning of a rule is followed, even though it does not serve the underlying spirit of the law / regulation. In other words, “to be formalistic ... is to be governed by the rigidity of a rule’s formulation” (Schauer, 1988, p.535). Formalists argued that rules should be “read literally, that the appliers and interpreters of rules should not be empowered to modify the rules at the point of application” (Cunningham, 2007, p. 14-15). Thus, rules-based systems fall easily into formalism, even when they include overarching principles, because “the exhaustively articulated rules that treat, categorise and distinguish complex transactions invite mechanical application” (Bratton, 2004, p.12). Mechanical application holds a certain promise of fairness, understood in terms of treating like things alike, uniformly. The need for efficiency and certainty in the legal decision-making draws many to a preference for, legalism, rules-based approaches. However, many have argued that principles handle better in complex situations where the virtues of fairness²⁵ and flexibility outweigh the need to uniform decision-makings (Diver, 1983; Ford, 2010; Cunningham, 2007).

Formalism also assumes that law is an intelligently coherent system in a sense that it is capable of operating in a closed fashion, which isolates it from other ethical and social-political factors (McBarnet & Whelan, 1991). The ‘legalism’ of many lawyers contributes to the isolation of the operation of a rules-based legal system. The concept of legalism refers to the legal profession’s outlook and attitude towards morality: “moral conduct is a matter of rule following, and moral relationships consist of duties and rights determined by rules” (McBarnet & Whelan, 1991, p.849). Consequently, Shklar (1964) as cited by McBarnet and Whelan (1991) describes the mentality of formalism as causing lawyers to be ‘rule-preferrers’ and ‘rule-followers’ (p.848).

²⁵ Different perceptions of fairness dependent on following through a rules- or a principles-based approach can be found in chap 7, section 7.2.3.

4.2.1 The problems with the formalism

The two notable problems with the rules-based formalism are:

- Formalism dealing with uncertainty

Several legal commentators have pointed out; one of the notable problems associated with adopting a formalist approach is the complexity issue resulting from the limited ability of rules to handle uncertainty (Weisbach, 1999; Braithwaite, 2004; Braithwaite, 2004 & 2002a), especially its results from cat-and-mouse game-playing, which generates contrived complexity (Braithwaite, 2004).

Braithwaite argues that “when the type of action to be regulated is complex, changing, and involves large economic interests, principles tend to regulate with greater certainty than rules (2004, p.2). In contrast, he believes that when the type of action to be regulated is “simple, stable and does not involve large economic interests, rules tend to regulate with greater certainty than principle” (p.2). In addition, another view expressed regarding rules causing uncertainty is that in the event of loopholes or new situations, there are not any existing rules. In such cases the reliance on rules only create more uncertainties and unpredictable exercise of discretions (Braithwaite, 2004, p.11-13).

- Formalism leads to creative compliance

It is to avoid the uncertainty created by broad principles that regulators seek precision in detailed rules. However, the formalist approach does not prevent avoidance, but shifts it to a new level, involving game-playing and ‘creative compliance’ (McBarnet & Whelan, 1991; McBarnet, 2004). The problem of creative compliance thrives on both a narrow legalistic approach to rules and legal control and a formalistic conception of law (McBarnet & Whelan, 1991, p. 848). In other words, the formalist approach creates a favourable climate for creative compliance, that is, the artificial combination of specific rules and an emphasis on legal form and literalism, designed in a manipulative way to circumvent or undermine the spirit of the regulation (McBarnet & Whelan, 1991, p. 849). Creative compliance highlights the weakness of

formalism as a legal control strategy: “A formalistic approach, which relies upon a ‘cookbook’ or code of specific and rigid rules and emphasises the legal form of transactions, can ‘fail’ to control for a variety of reasons” (McBarnet & Whelan, 1991, p. 850). In particular, they (1991, p.850) proposed six reasons why formalism could fail: 1) complying with rules according to their literal interpretation may not help to achieve the overall purpose of the law; 2) the letter of the rules may not serve the spirit of the law; 3) a literal application of the rules may not lead to a desirable outcome and instead be counter-productive; 4) rules may not be effective because they have gaps, omissions or loopholes; 5) rules may be out of date or no longer relevant to the changing dynamic reality; 6) the last but not least is that the form of a transaction or a relationship can misrepresent its underlying economic substance.

4.2.2 Anti-Formalism

Anti-formalism has been adopted as an alternative approach to respond to the trend of creative compliance and problems associated with formalism. It is “more flexible, open-ended and policy-oriented” (Johnston, 1991, p. 342) .And it puts “emphasis on the substance of transactions and relationships, on the purposes and 'spirit' of regulation and on the need for dynamic responses” (McBarnet & Whelan 1991, p.851). Further, the formalism versus anti-formalism debate reflects some of the differences existing in different legal cultures (Cunningham, 2007, p.14-15). In his opinion, in a legal culture where benefits of specificity and predictability outweigh the values of flexibility and adopting in fast changing environment, a formalism approach is preferred. Anti-formalism prevails in cultures where reaching the fairness of each individual case is more important than the uniformity brought by complying with detailed rules (Cunningham, 2007, p.15).

4.3 Justification of choosing Dworkin’s positions

My own intuition and experience of the phenomena, as well as insights from focus group discussions (chapter six), suggest that there are important differences between rules and principles. I am therefore drawn to analyses that cast the difference in strong

terms, as positive difference in kind, and in particular I use analysis of the differences between rules and principles presented by Richard Dworkin as a conceptual anchor for the development of my own views. Dworkin's view of rules and principles has been subject to a good deal of debate and competing interpretations. Nevertheless, I agree with Tolonen that Dworkin's ideas, whilst perhaps initially apparently ambiguous, on reflection "appear to form a consistent and clear entity" (Tolonen, 1991, p.290).

This project is premised on the notions of rules and principles that were proposed by Dworkin (1967). For him, rules and principles are different in kind, not merely degree, and his theoretical position on the distinctions between them enables me to propose that conceptually, individuals are liable to possess distinct / separate dispositions towards rules and principles. In other words I can propose dispositions towards rules and principles as orthogonal, statistically distinct, possibly even independent, factors. I find Dworkin's view of the rule versus principle distinction, and in particular the feature noted above, persuasive, and I have made use of it in this project to help clarify the rule and principle distinction and to help guide item generation for the instrument development.

4.3.1 Dworkin: A Philosophical Basis

Dworkin is one of the most important contemporary legal philosophers and probably his most significant contribution is his attempt to explain how judicial reasoning works in jurisprudence. Dworkin's perhaps most influential work, *Law's Empire* (1986), offers an uplifting image of law as ultimately grounded in the best moral interpretation of existing social practices. Dworkin's work has consistently been concerned with judicial interpretation of law and the role of judges. Dworkin is clear as to the political values he is committed to. His philosophy stresses a 'rights' approach over utilitarian calculations. His theory of justice is that all political judgments ought to rest ultimately upon the injunction that, people are equal as human beings, irrespective of the circumstances. For this reason, Dworkin has been considered as a liberal political theorist, he believes that: "the rights of an individual

receive absolute priority over “collective” social goal/ policy” (Tolonen, 1991, p. 283). In other words, Dworkin believes that “the central focus of the judiciary is and should be the individual” (Baker, 1980, p.841).

In challenging the legal positivist view of law as rules, Dworkin develops the concept of principles as part of law, and he argues that a legal system has the moral aim of securing rights and ensuring justice and not just “maintenance of behaviour that is specified by rules” (Turiel, 1983, p.77). Dworkin uses two famous cases to illustrate that principles that inform rules within the legal system: *Riggs v. Palmer* (1889)²⁶ and *Henningsen v. Bloomfield Motors* (1960)²⁷.

4.3.2 Legal Positivism on rules

There are two competing legal philosophical positions on the role of rules and principles in the judicial reasoning. The legal positivism camp includes Austin (1983 / 1954), Hart (1961), Raz (1975), and they make a strict separation between the rules of legal systems and moral rules and principles (Alexy, 2000). Legal positivism is a “collection of theories that law consists of a set of rules produced by the sovereign, rather than from some higher place” (Hovenkamp, 1990, p.818)²⁸. The basic premise of legal positivism is that law can and needs to be separated from morality and other

²⁶ In *Riggs v. Palmer* (1889), a New York court decided a case in which a grandson who murdered his grandfather and according to the rules apparently stood to inherit. The court found that he could not inherit, even though there were no written statutes to support the decision. Instead, the court appealed to moral reasoning, citing the principle that no one should be permitted to profit from his own wrongdoing. This decision was to become a landmark for many other cases (Dworkin, 1977, p. 75).

²⁷ In *Henningsen v. Bloomfield Motors, Inc.* (1960) case, a New Jersey court, finding no applicable rules, decided that automobile manufacturers could not limit their liability for defective parts and the damages caused by them. The court based its decision on the principle that automobile manufacturers have a special obligation because, among other reasons, cars are so essential (Dworkin, 1977, p. 75-76).

²⁸ More details read: Hart, *The Concept of Law* (1961); Raz, *The Concept of a Legal System* (1970); Shuman, *Legal Positivism: Its Scope and Limitations* (1963).

social aspects such as economics and politics (Hovenkamp, 1990, p.818). Alexander and Katz for instance, believe that formalism, in essence, refuses to look beyond the letter of the law to its spirit or purpose, which will inevitably come with high moral cost (Farber, 1999, p.598). In other words: “Positivist maintains that law is distinguishable from other social standards, including etiquette and conventional morality” (Lyons, 1977, p.417).

The criticism has been made that “legal positivist studies a society’s law without attempting to determine the truth or falsity of the moral propositions upon which that law is based” (Hovenkamp, 1990, p. 818). For Schauer (1991, cited by Farber, 1999, p.598), the key to formalism is “a determination to ignore the inevitable misfit between a rule and its background justifications”. Schauer’s version of formalism therefore suggests that decision-makers’ moral dilemmas will be resolved by prescribing rules (1991), and positivists will only accept the judicial decision as “legitimate only to the extent that they strictly follow the rules laid down” (Farber, 1999, p. 598). Thus, for strict positivists, “the rule of law is, essentially, the law of rules” (Easterbrook, 1998 cited by Farber, 1999, p.599).

4.3.3 Dworkin’s attacks on Positivism

Dworkin’s theory of rules and principles was developed as a response to a positivist view of judicial discretion. In legal positivism, the rule of recognition, which was developed by Hart, serves as the formal criterion. Dworkin’s central attack on this was “rules are recognised (as being valid) on the basis of formal criteria” (Tolonen, 1991, p.275; Shapiro, 2007). He disagrees with Hart’s doctrine that law essentially consists of ‘rules’; that legal rules are identified via a ‘rule of recognition’²⁹; that where a rule does not determine a case judges have discretion, and no party has legal

²⁹ The “rule of recognition” is a secondary rule used to identify primary rules of obligation (Hart, 1961, p. 94ff). Shapiro (2009, p.4): Hart claims that in every legal system, there is one rule that acts as the test of validity of that system. Further, “any norm that bears one of the marks of authority set out in the rule of recognition is a law of that system and officials are required to recognise it when carrying out their official duties.”

right to prevail. “When Dworkin sets out to understand and depict the nature of adjudication in (some) advanced common law systems, his focus was on the rule of recognition, or what he called the ‘pedigree’ of a legal rule” (Schauer, 2006, p.872; Baker, 1980, p.849). His critique reflects his views on the nature of rules and principles and on the basis on which they can claim legitimacy.

The full scope of the arguments between positivism and Dworkin’s naturalism is not necessary for this project. I only need to present the aspects of arguments that relevant to the purpose which to use Dworkin’s view as a framework to distinguish between rules and principles.

4.4 Dworkin’s position on rules and principles

Dworkin’s 1967 article “Two models of Rules” is often regarded as a starting point for the discussion on rules and principles (Tolonen, 1991, p.271). His main purpose is to distinguish principles in the generic sense from rules. Alexy supports Dworkin’s emphasis on principles by arguing that the difference between rules and principles is one of quality and not only one of degree (Alexy, 1996, p.77). Further, they differ in the character of the direction they give (Dworkin, 1967, p.22).

Rules, in Dworkin’s view “are applicable in an all-or-nothing fashion. If the facts a rule stipulates are given, then either the rule is valid, in which case the answer it supplies must be accepted, or it is not, in which case it contributes nothing to the decision” (1977, p.24). An example of a typical rule, Dworkin argues, is “a will is invalid unless signed by three witnesses”.

Principles, on the contrary, “do not conclusively dispose of cases to which they apply” (Lyons, 1977, p.418). Principles “have weights, they function as reasons for deciding cases” (p.418). They can be overridden without losing their validity. Principles can be in conflict with each other and they contribute to a case by their different relevance or weights (Lyons, 1977). There may be counter instances to a principle, and there are in this case, but we don’t try to capture all the counter-instances to a principle by extending its statement, and if we did try to do so it would

not “make for a more accurate or complete statement of the principle” (Lyons, 1977, p.418). A principle like “no man may profit from his own wrong-doing” does not purposely set out a condition that makes its application explicitly necessary, in if x then y style, instead it's a “justification for doing certain things; a reason for action among other reasons” (Dworkin, 1967, p.26). Principles are “to be observed, not because it will advance or secure an economic, political, or social situation deemed desirable, but because it is a requirement of justice or fairness or some other dimension of morality” (Dworkin, 1967, p.22).

4.4.1 Two distinctions between a rule and a principle

Table 3 Two distinctions between rules and principles as identified by Dworkin

Distinctions	Rules	Principles
Recognition Conditions: Validity	Formal recognition by institutional procedures; Encourage minimum ethical compliance / developed when old rules become obsolete or novel situation requires new rules.	Related and consistent with social culture and value/ institutional support and moral consideration.
Application Conditions: Relevance	All or nothing, un-ambiguous, definitive; analyse issues as ‘black and white’; operating in hierarchic manner.	Can be in conflict with another principle; decision is made by relevance “dimension of weight (strength)” and “value” appropriate to the circumstances in (actual) situation/ analyse ‘grey’ issues.

Based on Tolonen (1991, p.276), Alexy (2000), Dworkin (1967).

4.4.1.1 Recognition conditions: validity

A rule derives its validity, partly from the group’s acceptance of the legitimacy of the rules and the associated sanctions; partly from the perceived fairness of procedures for the stipulation of rules (Hart cited by Turiel, 1983, p.76). Hart believes that the validity of law, as rules, is entirely dependent on the way they are enacted and perceived by the group. For this reason, Hart argues that rules of a legal system are separated from moral rules and principles. In other words, positivism is “a system of

law is based on acceptance of the authority of existing procedures for adopting and enforcing them and not on anything else” (Turiel, 1983, p.76). According to Coleman, Raz basically argued that “if the rule of recognition identifies law according to its content as opposed to its pedigree, then it will fail in its identifying function”, because “a content-based rule of recognition will fail adequately to provide the information ordinary citizens need” (Coleman, RSF, p.720 cited by Sebok, 1998, p.288). The reason is, Raz considers that “the adoption of a contentful standard into the rule of recognition could not guarantee that it could be used by an ordinary citizen to determine his or her legal duties” (Sebok, 1998, p.288). In summary, positivism posits law consists only of ‘rules’ and judges have no discretion but to follow legal rules (Shapiro, 2007, p.8).

Lyons (1977, p.418) provides a succinct summary of the main points of the validity of the rules from the perspective of positivism: First, new rules are identified and developed by their ‘pedigree’ or the manner in which they were adopted or developed. Secondly, legal standards are considered and implemented as rules. Thirdly, because of the ambiguities and vagueness in the loopholes and gaps inherited by a rules-based system, in some cases rules are indeterminate (Picciotto, 2007). Therefore, judges have to make new rules by exercising ‘judicial discretion’. Fourthly, because the rights and duties are determined by rules, when there are indeterminate rules, there will be no “pre-existing rights or duties to be enforced”.

The validity of principles is related to and consistent with social culture and value/institutional support and moral consideration (Dworkin, 1977a, p.40 and p.64-68). For Dworkin, principles emphasize considerations of fairness, rights, and contextual sensitivity, and promote individual rights among regulated actors (Cunningham, 2007, p.10). Individual principles are typically embedded within broader sets of principles, with more or less social coherence, from which they might be derived. The broader principles of social organisation, sustaining and guiding the interpretation of the principle that ‘No man may profit from his own wrong-doing’, might include principles of liberty and justice, that frame moral life (Sockett, 2006, p.15). In Dworkin’s view, the validity of rules should not only be dependent on whether the rules themselves have a certain legitimacy by virtue of the means of their creation, a

rule of recognition, or consensus of usage, but also depends on their relation to underlying principles and to the coherence of their interpretation in context of those underlying principles. In addition, it's worth noting a distinction between moral and legal principles. The idea of moral and legal principles is somehow entangled in Dworkin's conceptualization. Tolonen in particular points out that the "legal principles are not identical with moral principles" since the kinds of legal principles we are concerned with here are embedded and guided by "institutional conditions" (1991, p.276³⁰). In other words, the substantive and evaluation criterion that is typical of the reorganisation of a principle cannot be merely the subjective opinion of an individual: "the criterion must be more or less institutionalised" (Tolonen, 1991, p.276).

4.4.1.2 Application Conditions: relevance

Alexy (2000) argues that the difference between rules and principles emerges most clearly when one turns to collisions of principles and conflicts of rules. They differ most fundamentally in their respective solutions to the conflict.

According to Alexy (2000), the conflict between two rules can only be solved by either introducing an exception clause into one of the two rules or declaring at least one of them invalid. Hence, a rule which operates in 'all or nothing' manner, it either dictates a specific behaviour or outcome or it contributes nothing to the decision-making (Dworkin, 1967). In this way, rules "establish legal boundaries based on the presence or absence of well-specified triggering facts". Consequently, decision-making with rules will deliver more "certainty ex ante" (Korobkin, 2000, p.25).

In contrast, a collision of principles is solved in an altogether different way. To solve the conflict between principles, we need to consider the "dimension of weight". "...in terms of their significance and value that they are assigned in respect of one another when applied in practice" (Tolonen, 1991, p, 276). An emphasis on freedom, for example, often comes at the expense of equality and social justice (Sockett, 2006,

³⁰ Dworkin, 1977a, p.40 and p.64-68.

p.15). Therefore, “a case of conflicting principles is resolved on the basis of both substantive and evaluative criteria” (Tolonen, 1991, p.278). In other words, principles are relevant to the decision-making, dependent on the weight/value that is deemed appropriate to apply in the given circumstances - in both the general and contextual sense (Tolonen, 1991, p.276). Consequently, “the court solves the problem by determining a conditional priority of one of the colliding principles over the other with respect to the circumstances of the case” (Alexy, 2000, p. 296). However, as a result, decision-makers of principles cannot know with “certainty ex ante where a legal boundary would be drawn in the event a set of specified facts come to pass” (Korobkin, 2000, p.26).

Ford (2010, p.6-7) explained this difference between a rule and a principles using a well-known example involving driving speed limits. A rule-based approach regarding speed limits will be like ‘no faster than 90 km/h’. A principles-based approach will be more like “drive reasonably and prudently in all the circumstance”. In this way, a rule attempts to command, in advance and with precision, what conduct is allowed or required. The user of the rule (in this case, perhaps a police officer) will only need to check one fact: was this driver exceeding the 90 km/hr limit or not at the time of being caught out. On the other hand, the user of principles (in this case the principle of reasonableness) needs to determine whether a driving offence has occurred taking account of an array of factors such as the road conditions, time of day, traffic, weather, conditions of the car, driver experience, etc. There is a weighing process involved in the use of principles, involving the user balancing all the important factors and then making a decision that is fair to the driver.

4.4.2 Rules and Principles interplay

There is some temptation to see principles as optional, as rules of thumb designed to aid the decision-maker. We might be tempted “to treat principles as summaries of what most judges "make it a principle" to do when forced to go beyond the standards that bind them’ (Dworkin, 1967, p. 30). This is not Dworkin’s view. As we have stressed above he sees principles as a real part of law and as binding, he insists that

their application, where appropriate, is obligatory, and that there can be “right answers” (see Dworkin, 1977b).

Dworkin points out that the confusion on the form of a rule and a principle should not cancel the difference between them. Dworkin (1967) argues that “Sometimes a rule can appear to look like a principle by having words such as ‘reasonable’, ‘negligent’, ‘just’ and ‘significant’. These words function in a way to ensure the applications of the rule base on its underlying principles. But they do not turn a rule into a principle” (p.28-29). As such although these “‘multiple-factor balancing tests’ are less pure and more rule-like because they specify *ex ante* (to a greater or lesser degree of specificity) what facts are relevant to the legal determination”. They still fall within the category of principles, because “they do not specify how adjudicators should weight the relevant factors” (Korobkin, 2000, p.28).

4.5 Criticisms of Dworkin’s rules vs. principles

The main criticisms against Dworkin and his camp have been focused on: 1) the empirical accuracy of Dworkin’s depiction of judicial reasoning; 2) the notion of a principle.

The first attack is focused on the difficulty inherent in empirically testing Dworkin’s distinctions between rules and principles. In relation to this issue, Smollett (2002, online essay³¹, p.5) is sceptical about Dworkin’s assumption that judges are obligated to consider principles when making judicial decisions, and she claims that the task of empirically examining the question is fraught with difficulty. Smollett questions the empirical accuracy of Dworkin’s depiction of judicial reasoning, suggesting that Dworkin offers one picture of the ideal judge and that his theory is a series of normative claims about how he thinks judges should act.

³¹ <http://www.yellowpigs.net/philosophy/dworkin> (accessed on the June 2009). Accessed on the July of 2010.

Another significant criticism of Dworkin's theory, for Tebbit (2005, p.60) is that he has never been able to clarify his notion of a principle satisfactorily. Therefore, there are a few questions left to be asked regarding his rules and principles distinction. Sunstein argues that the legal status of principles is "obscure" (1995, p. 966), and that there is more than one kind of principle involved in law. On the one hand, principles give justification, usually moral or political, to rules which can assist us in the interpretation of the rule. Such principles in a sense "lie behind" rules and as such are not directly applied to cases. On the other hand, there are explicitly formulated principles, of the "No man may profit from his own wrong-doing" sort, that can be directly applied to cases. He accepts that generally such principles may be more flexible than rules and that they "tend to bear on cases without disposing of them" (p. 966). He warns us not to overestimate the significance of this distinction, noting that rules themselves do not always unequivocally dispose of cases, and that principles can be vital to the determination of cases.

4.6 Distinguishing principles and rules from other concepts

The concepts of rules and principles are sometimes confused with related concepts such as: analogies, heuristics, rights and policies. Therefore, it is necessary to have some discussion on the distinctions between rules and principles and those above mentioned concepts.

4.6.1 Analogies vs. rules and principles

Reasoning by analogy is perhaps "the most familiar form of legal reasoning" (Sunstein, 1996, p. 741), although like rules- and principles- based reasoning it arises in other contexts. Reasoning by analogy is typically used where there are some common characteristics in the facts of the present and previous cases which are considered relevant to decision-making in the present case³². Sunstein (1995, p. 967-

³² <http://plato.stanford.edu/entries/legal-reas-prec/#Pri> (accessed on the November, 2010). Accessed on the July 2012.

968) provides an explanation of the nature of analogy and how it differs from rules; analogy is an important tool that helps provide a clue to how law often operates. Legal reasoning by analogy typically occurs where shared characteristics and context allow the reasoning that settled the prior case to be extended to the present case in a process in which the decision makers evaluate both the similarities and differences between the cases. The analogical process may itself yield a rule that can be applied to future cases. In the analogical process of comparing cases, rules, standards and principles will be considered, but when reasoning analogically one cannot be bound by a rule specified in advance of the process of analogical thinking. Sunstein (1995) argues, however, that it is unusual, for analogical thinking to yield rules.

Rules and analogies also differ in the fact that rules typically either do or do not apply to a case in a categorical fashion; analogies in contrast vary in strength. Analogies vary in strength from very close analogy (in which strong resemblance in cases supports the grounds for a similar conclusion in both cases) to more remote analogy (in which there are only remotely resembling features from which relatively weak connections can be drawn). Analogical arguments further differ from rules and principles as they are not binding. They must be considered along with rules and principles. The use of analogy is largely dependent upon the relevant rules and principles leaving interpretive space for the operation of analogical reasoning. Such room is obviously available if the case falls beyond the existing rules, and where the justification for the earlier decision, whilst having relevance to the case does not apply as a mechanical rule-like precedent, in such cases opportunity for the application of analogical reasoning emerges.

One influential view on analogy is that it is grounded in the principles that underlie the existing cases (Sunstein, 1996). A body of cases can be considered to determine which principle (or a body of comprehensive principles) explains and justifies those decisions. The difference between analogies and principles is that principles may apply with equal force to two separate cases which do not share much common features, but analogies on the other hand, can only be used when there are some common features in both cases.

4.6.2 Heuristics vs. rules

Amir and Ariely (2003, p.2) argue that the mechanism of rules has some resemblance to the use of heuristics, but also some important differences. Frederick (2002) contends that heuristics are general procedures used by decision-makers to simplify decisions (to limit the amount of information processed or to reduce the complexity of the ways in which it is combined). In this vein, Amir and Ariely (2003, p.24) note that “heuristics are useful for simplifying computations under uncertainty, when cognitive resources are scarce, or when full computation is infeasible.” In comparison, rules provide prescriptive ‘do and do not do’ action plans in a specific situation, the primary objectives are enforcement and compliance rather than serving to simplify the decision-making process³³.

The second main difference is related to preferences. Heuristics are supposed to balance competing preferences. With the aim, in particular, of maximising the preferences under multiple constraints such as: time, cost of thinking and input of efforts. A typical heuristic-based decision model is a trade-off between accuracy and effort (Payne, Bettman & Johnson, 1993). In contrast, rules are used to guide decision-making regardless of the complexities of a particular context or the cost-benefit tradeoffs for different individuals.

4.6.3 Rights, policies vs. rules and principles

A policy in his view is a standard setting out a goal to be achieved, usually for the economic, social or political well-being of the community. A principle, on the other hand, sets individual rights above collective well-being and imposes a standard of justice or fairness or some other moral dimension³⁴. In essence, for Dworkin, “principles lay down rights directly; policies do not. Policies do not entail any rights”

³³ On this view, objective that might appear with rules of conserve decision-making resources would appear as secondary.

³⁴ Whilst Dworkin draws a distinction between principles and policies, he notes that (1977) majority of principles could be framed as policies and most policies can be written as principles.

(Lyons, 1977, p.431), and, individual rights weight more than utilitarian goals, the exception is where in the cases of major emergencies where goals will be given priority over rights in order to restore the state of peace. In general, Dworkin suggests that judges should reserve the right to use principles and rights, and leave the matter of making policy and goals to the elected legislatures.

Dworkin (1977) distinguishes right from rules. Rights are more fundamental than rules in a legal system. Rules express rights but the rights exist before their expression in the form of rules. This is opposed to Hart's view where rights develop from legal rules. The reason why Dworkin considers rights are more important is because rights develop in the legal system through the working out of the political morality.

Dworkin conceptualises principles as protecting individual rights against potential state interferences - even interference for the general good or in the pursuit of policy. We then have a basis of two different forms of justifications - arguments of principles and arguments of policy: "Arguments of principle are arguments intended to establish an individual right; arguments of policy are arguments intended to establish a collective goal" (Dworkin 1977a, p.90).

4.7 Conclusion

Legal scholars continually struggle with the rules and principles debate and assessment of their relative merits (Cunningham, 2007, p.7), and have done so for decades. In this chapter, I have undertaken a focused review giving consideration to some key points of the debate and to its root in two opposing approaches to how legal control operates: formalism vs. anti-formalism. At the heart of this chapter is an outline and examination of Dworkin's positions on rules and principles. The basic premise of this PhD project is that rules and principles are different concepts and they are independent of each other, instead of the view that rules and principles vary only in terms of degree. I justified this position by explaining Dworkin's views on the distinctions between a rule and a principle. I recognise the issue of the interplay between rules and principles, and I also acknowledge the imperfections of, and some of the criticisms of, Dworkin's views. However, as delineated in the above chapter, I

believe Dworkin's conception to be best suited to the purpose of the PhD project. In this way, I have identified the conceptual distinctions between a rule and a principle. Finally, I have also clarified some confusion between rules and principles and other similar concepts such as analogies, heuristics, policies and rights.

Chapter 5: Psychological roots of rules and principles

5.1 Introduction

A literature review of the psychological roots of dispositions to rules and principles is necessary for the project as a whole for the following three reasons: 1) A search on the biggest psychometric instruments database - PsycTESTS Database³⁵, by the American Psychological Association, and literature on rules and principles, revealed that there were no instruments specifically designed to measure dispositions towards rules and principles. There were instruments which have some items relating to rules and principles (e.g. Need for closure scale, Sternberg's thinking style scale, etc.³⁶), but they do not tap into the exact dimensions underpinning dispositions towards rules and principles; 2) This stream of literature is one of the multiple streams of literature which inspires the generation of items for the initial item pool (see chapter seven for 14 dimensions, and appendix one for initial items pool); 3) Later empirical work in chapter nine will examine the statistical linkages between dispositions to rules and principles, and the other relevant instruments, to establish empirically that the instrument is not just replicating an existing instrument.

Despite intense scholarly interest and recent financial regulatory reform, few attempts have been made to examine the rules versus principles debate from a social-psychology perspective. Bonner (1999) reminds us that "it is the valuation of individual auditor's or audit firms' performance that matters to judgement and decision-making related outcomes such as compensation and legal fines." Thus, "it is important to continue the relatively recent work on the evaluation of auditors' decision-making" (p.395).

My premise in this project is that, dispositions to rules and principles would be relatively stable, and associated with stable individual characteristics. Thus, I start

³⁵ <http://www.apa.org/science/programs/testing/find-tests.aspx>

³⁶ They have items touch on rules and principles but the intention of these scales are not devised for measuring dispositions to rules and principles constructs.

with the expectations that individuals can be validly characterised in terms of their preferences to rules and principles, that those preferences will have significant stability across decision types and contexts, and that they will be linked to, and shaped by, individual characteristics that are trans-situational and consistent across time, such as some of the prominent personality traits and cognitive styles. A primary aim of this chapter, accordingly, is to review the linkages that the literature suggests, that a number of well-established psychological constructs have with dispositions towards rules and principles. The second aim of this chapter is to provide some specific propositions regarding the relationships between the DRP and these constructs. Certain psychological constructs will subsequently be selected and used to help establish the convergent and divergent validity of the instrument (DRP) in chapter nine. By exploring the psychological linkages between DRP and other well-established psychological constructs, some of the groundwork is laid for justification and validation of the DRP as a psychological instrument.

Although my review draws out linkages between dispositions to rules and principles and other psychological constructs in ways that I believe are novel, it follows a large literature on related topics. Whilst suggestive of links, the extant studies in this literature cannot not give empirical evidence of a kind that would have statistical significance, on the connections between dispositions towards rules and principles and individuals' characteristics. I aim to be able to give such evidence by virtue of the DRP measure. Further, the review of these studies revealed that there is no synthesis of the psychological constructs related to dispositions towards rules and principles, and I attempt to make some contribution towards filling that gap.

5.1.1 Organisation of the chapter

The chapter is organised as follows: section 5.2 elaborates on the nature of dispositions. Section 5.3 explores how different parental styles may affect and shape one's dispositions towards rules and principles. Section 5.4 distinguishes between the concepts of values, traits and cognitive styles. In this section I will also briefly discuss how differences in the values reflected in and prioritised by different cultures may tend to lead to different dispositions towards rules and principles. I will define the concept of legitimacy. Subsection 5.5 elaborates an array of personality traits

including the five main traits as described in the five factor model. Section 5.6 discusses psychological constructs such as empowerment and locus of control. Section 5.7 focuses on exploring a range of cognitive styles and demonstrates their linkages to dispositions towards rules and principles. Section 5.8 concludes the chapter.

5.2 The nature of dispositions

In this study, disposition³⁷ refers to the tendency to behave and think in a particular categorisable pattern³⁸; all else being equal, individuals are predisposed towards choosing certain approaches (rules vs. principles) in decision-making and problem-solving situations. According to Katz (1993), a disposition is “a tendency to exhibit frequently, consciously, and voluntarily a pattern of behaviour that is directed to a broad goal” (Katz, 1993, p. 2). Haynes et al (2008, p. 86) further contend that “individuals are - or can be - consciously aware of their preferences and have a measure of control over their behavioural manifestations”. The individual’s relatively

³⁷ Although I have used attitudes and dispositions interchangeably throughout the thesis, there are a few noted differences between these two concepts: 1) Attitudes are more temporary in nature than disposition and personality trait. 2) Attitudes carry a “point of view”, meaning that they tend to assign an evaluation to either a specific or abstract entity such as attitudes towards sex before marriage, attitudes towards gender equality, etc., (Oppenheim, 1992). 3) Attitudes are generally positive or negative, express favour or disfavour, (Oppenheim, 1992); dispositions on the other hand are generally relatively neutral. The idea of attitudes is important because as one will see in chapter 8, the attitude questionnaire development literature provides us with structures in terms of the steps and statistical procedures I will carry out in the process of developing and validating my psychometric instrument (DRP).

According to Kim & Hunter, 1993, note 1. p.357: Contemporary researchers tend to agree that the characteristics attribute of attitude is both dispositional and evaluative in nature. Ajzen (1988) defines an attitude “as a disposition to respond favourably or unfavourably to an object, person, institution, or event”; Rokeach (1968) defines an attitude as “a set of interrelated predispositions to action organised around an object or situation”.

³⁸ I use the term “preferences”, perhaps a little loosely, throughout this thesis to refer to disposition. The notion of a “disposition” carries a sense of relative stability. The term “preferences” invokes relatively less stability: our preferences may reasonably be quite variable.

stable complex of dispositions will tend to affect their behaviour in characteristic ways in almost all common situations (Haynes et al., 2008, p.86).

Individuals naturally display and employ their preferred mental functions and dispositions, yet they are also able to take consideration of the requirements of the context or tasks for which their primary preferences may or may not be well suited or fitting (Stetson, 2007; Haynes, et al., 2008). In addition, dispositions can be strengthened or weakened by the reinforcement of training or environment (Katz, 1993). In other words, there is a dynamic interaction between individual differences and contextual cues, and situations can activate certain specific behaviours (Haynes et al., 2008, p.88). For instance, a principles-based accountant may readily and competently use rules in the context of book-keeping (strong context: the job requires one to follow clear cut rules with little discretion), despite her dominant natural preference for using principles (Stetson, 2007).

5.3 Literature review on parenting style

Supporting the earlier research, Haynes et al (2008), argue that the development of relatively stable preferences and dispositions begins to take shape in the very early years of an individual's life. Parents exert important influences on, for example, children's early development of self-regulatory competence. Different parenting styles are likely to encourage children to develop differing self-regulatory behaviours. The definition of parenting style is consistent with early research on socialisation (Gleitman et al., 2007). It assumes that the way parents relate to the children affects the development of their individual differences (Steinberg & Darling, 1993). Although there is no specific theoretical framework explicitly linking parental styles and individuals' dispositions towards rules and principles, we can tentatively identify some relations between aspects of rules or principles preferences and parenting styles:

Figure 5.1: Parental styles (cited from Gleitman, Reisberg, & Gross 2007, p. 411)

<p>Authoritative</p> <p>Reasonable demands, consistently enforced with sensitivity and attentiveness to attend to the children's needs.</p>	<p>Authoritarian</p> <p>Many rules and demands, few explanations and little sensitivity to the children's perspective.</p>
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Permissive	Uninvolved
Little structure in regulating children's life, children are allowed much freedom by indulgent parents.	Few rules or principles, parents are uninvolved and insensitive to the children's needs.

An authoritative style refers to having reasonable demands on children, and consistently enforcing them with sensitivity and attentiveness to the children's needs (Baumrind, 1966; 1967; Lewis, 1981). Grolnick and Ryan (1989) citing Baumrind (1967, 1971) argue that the children who were brought up by the authoritative parents were found to be more self-reliant and independent. The authoritative style is echoed in what Baldwin (1949) called democratic style: it implies an active approach in which the child's views are taken into account and information is provided to facilitate choice toward appropriate behaviour.

The authoritarian parenting style, on the other hand, is described as prescribing many rules and demands, yet providing very few explanations and having little sensitivity to the child's perspective (Gleitman, et al., 2007). For Maccoby and Martin (1983), rearing styles have two control dimensions: 1) gaining compliance; 2) consequently, providing timely feedback on the degree of obedience. According to this idea, authoritative parents are high in both demandingness and responsiveness. Authoritarian parents are high in demandingness but low in responsiveness. Practical examples include some parents explaining their instructions ("go to bed, so you have energy for school tomorrow"), some parents asserting their authority ("go to bed, NOW, because I told you so").

Maccoby and Martin (1983) have also empirically found the 'permissive style' which is high in responsiveness but low in demandingness. Becker (1964) identified a permissive style as the other end of the restrictive dimension, described as a lack of control and a passive approach to child. The fourth type of parenting style has been identified by Gleitman, et al (2007) based on the work by Baumrind (1967) and Maccoby and Martin (1983), as uninvolved. In this style, very few rules or principles are given to the children and parents are uninvolved and insensitive to their needs.

In conclusion, I have discussed the existing theorising dimensions in parental styles, from Baumrind's authoritative-authoritarian - permissive typology, to Maccoby's and Martin's (1983) demandingness and responsiveness. All four styles include the use of rules and principles but they differ in the frequencies and intensities of usage during the parent and child interactions. The participants of our focus groups recognised that their own experiences with, and orientations to, rules and principles have a relationship with the parental styles they have been brought up with (see chapter six).

A rules-oriented approach in child rearing implies high 'control', 'structure', and 'demandingness', while too extreme a rules-governed rearing may lead to low responsiveness to children's needs; rules refers to parental authority, hierarchy, rigidity and absolute obedience (Baldwin, 1990; Cunningham, 2007). In such instances, rules are assigned to children in a top down way and reinforce the family structure by emphasising the "might makes right" mentality - "because I said so", "I am the parent, so you have to listen". Rules are externally enforced on the children and, usually, once the rules are set, they prohibit the possibility of question, adaptation or exception.

In contrast, a principles-oriented rearing approach may reflect 'autonomy' and 'democracy' and be both high in the demands it makes of children and in responsiveness to their needs. Further, a principles-oriented rearing would give some emphasis to autonomous judgment and adaptability to circumstance that take the child beyond the clear lines of rules. Principles, as I have cast the idea in this thesis (see Dworkin, 1979; Rawls, 1971; see chapter 4), can be seen as representing a synthesis of individual rights, fairness and morality that once agreed upon, provides an internal governance of conduct. Principles need to be internalised and understood in order to apply consistently across different circumstances in one's life (Turiel, 1983).

I take the view that different parenting styles systematically affect dispositions towards rules and principles. I see the origins of dispositions to rules and principles as significantly lying in parenting styles. I have not included parental style as a separate individual dimension for the instrument development because I recognise parental style as having a wide ranging influence on individuals' psychological characteristics and behaviour in many areas of life (social and professional). Hence, its effects are

manifested or reflected indirectly in the psychological constructs I will proceed to discuss and draw directly into the development of the instrument.

5.4 Traits vs. Values vs. Cognitive styles

Focused on moral reasoning, Turiel suggested that individuals' dispositions to rules and principles are partially rooted from one's early childhood rearing experiences and shaped by one's personality traits and cognitive style (1983). The divergence in the preference of rules and principles represents an individual difference. Another way to put this is that individuals relate to rules and principles differently based on their unique personal characteristics such as traits, values/cultural background, as well as cognitive styles.

Personality traits, values and cognitive styles are closely linked, yet different, concepts. Below, I attempt to give some explanation of each of these concepts with a view to clarifying how dispositions towards rules and principles are potentially related to these psychological constructs.

Personality traits have been argued to be a key player in determining an individual's capabilities, in the sense that a person's personality traits are likely to predispose them to certain competencies (Wheeler, 2001; Wheeler et al., 2004a cited by Andon, Chong, & Roebuck 2011, p.254). Recent research indicates that personality traits are "endogenous basic tendencies tied to the underlying bio-physiological response system" (Olver & Mooradian, 2003, p.110; also see Zuckerman, 1998, for a recent thorough review of bio-physiological theories and research). Olver and Mooradian (2003) reviewed a number of studies on traits and concluded that traits are evolutionary survival strategies, therefore, they are heritable, persistent in the face of social pressure and generally stable throughout one's lifetime. This definition reveals that traits are innate and can be inherited genetically.

Values are learned through socialisation and viewed as ideal or self-regulatory standards that are used to judge the actual behaviour displayed by individuals (Rokeach, 1973; Carver & Scheier, 1981; Kluger & DeNisi, 1996). When "all else is equal", people strive to behave according to their values (Rokeach, 1973; Schwartz, 1994). Individuals use values when they wish to justify choices or actions as

legitimate or worthy; in other words, values provide people with enduring motives for behaving in certain ways (Knafo et al., 2002; Rokeach, 1973; Schwartz, 1992). Further, value is directly linked to culture, and cultural differences, as reflected in values, can directly affect one's dispositions (Christie et al., 2003). For instance, a person raised in a particular culture may acquire and cultivate certain predispositions without questioning their validity (Christie et al., 2003, p.265).

Cognitive style is defined as “an enduring characteristic way of thinking, which can serve an explanatory role in accounting for the observed regularities and consistencies in solving cognitive problems” (Fjell & Walhovd, 2004, p. 293). In other words, cognitive style is a way of perceiving, thinking, problem solving and decision-making (O'Brien, 1994). It is not an ability, but rather a preferred way of using the abilities one has (Sternberg, 1997, p.8). Such preferences are also indications of the type of environment in which one feels most comfortable and works best (Barkhi, 2002, p.678). Cognitive style has been studied predominantly in the field of decision-making science which examines “the way in which an individual perceives and comprehends stimuli and how she chooses to respond” (Ahangar, 2010, p.956).

Another question I am trying to address here is to understand at which level dispositions towards rules and principles should be placed, in comparison with cognitive styles and personality traits. Fjell and Walhovd (2004) suggest that the difference between personality traits and thinking styles is a matter of scope. If so, they argue that “while the personality traits influence our everyday actions, the influence of thinking styles will be limited to the situations where we have to approach and solve cognitive or intellectual problems” (p.293). The use of rules and principles, I believe, is primarily concerned with decision-making and problem solving, which are essentially cognitive processes driven by one's cognitive preferences, shaped perhaps by personality traits, values and cultural background. From this position, the DRP instrument should be considered as an instrument for measuring an aspect of preferred thinking style, or cognition, rather than a measure of traits or values. In the later chapter (chapter nine), I will empirically assess whether the correlations between the DRP and cognitive constructs are of larger magnitude than the correlations between the DRP and personality traits constructs.

5.4.1 Values and cultural difference - DRP

Prior cultural studies have shown that individuals from specific cultural groups have a tendency to think and act in specific ways that differ systematically from members of other cultural groups (Gray, 1988; Hofstede, 1980; Douppnik & Riccio, 2006). A culture affects the way that its members think, feel and act and it thus has the potential to greatly influence the success and applicability of the chosen financial reporting framework (Hofstede, 1980).

One theoretical perspective to examine the cultural differences is dialectically oriented versus analytical thinking. Recent empirical studies seem to suggest that East Asians tend to be more holistic thinking and Westerners tend towards analytical thinking (Nisbett, Peng, Choi, & Norenzayan, 2001). Analytical and holistic thinking patterns correspond to dual-process accounts of cognitive reasoning strategies, namely “rules-based” versus “associative thinking” (Sloman, 1996, cited by Buchtel & Norenzayan, 2008). According to Nisbett et al (2001), East Asians have a greater tendency to rely on context to make decisions, while, given the identical task, Westerners tended to de-contextualise, using feature-based and rule-based strategies (Nisbett et al., 2001). The reasons, as suggested by Spencer-Rodgers, Wang, & Hou (2004, p.1417) are that East Asians more readily tolerate psychological contradictions and express greater ambivalence. Such cultures are referred to as dialectically oriented cultures; they accept and recognise the “duality in all things (yin/yang)”. This is based on three fundamental pillars: “the principle of contradiction (two opposing propositions may both be true), the principles of change (the universe is in flux and is constantly changing), and the principle of holism (all things in the universe are interrelated)” (p.1417); in contrast, Western cultures “tend to be more linear or synthetic in their cognitive orientation: they consider both sides of an opposing argument and then they search for synthesis and the resolution of incongruity” (Peng & Nisbett, 1999 cited by Spencer-Rodgers, et al., 2004, p.1417). As result of such beliefs, Westerners are generally “less comfortable with contradiction and attitudinal ambivalence is associated with psychic tension and conflict” (Spencer-Rodgers, et al., 2004, p.1417).

The significant implication of naive dialecticism is that Westerners seek to “reconcile inconsistencies”, in that they aim to eliminate inconsistencies in their cognitions and

behaviours, which manifests itself as a ‘need for consonance’ (Spencer-Rodgers et al., 2009), p.30). In contrast, East Asians³⁹ tend to be more comfortable with a higher level of internal inconsistency in their judgment and thinking. Spencer-Rodgers et al (2009, p.30) summarised a number of prior studies on cross-situational consistency of the self-concept, and they found that East Asians “use more situational modifiers when characterising the self, viewing themselves differently on the Twenty Statement Test (TST) depending on the context”. In other words, East Asians hold more ‘context-specific’ self-beliefs (p.30).

In chapter nine, section 9.19.4, I will examine whether there will be differences in terms of variations in the DRP scores between different ethnical groups in relation to context: the Western group versus the Asian group.

5.4.2 Legitimacy of rules and principles being studied in this project

I am interested in individual differences regarding dispositions to rules and principles in ordinary times and situations in which, broadly speaking, their use has certain social “legitimacy”. The questionnaire does not seek to investigate our relationships with rules and principles in extreme situations of gross unfairness, oppression and exploitation. Legitimacy is, therefore, a fundamental embedding psychological property for the kind of the rules and principles being studied here. Tyler (2006, p.377) defines legitimacy as “a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions”. In other words, it is the “acquired belief that authorities, institutions, and social arrangements are appropriate, proper and just” (Tyler, 2006, p. 376). It is a property that can be possessed, and which will be internalised within an individual to have an effect on her cognitive behaviour. In addition, legitimacy has also been studied as a cognitive need by French and Raven (1959), who found that the activation of legitimacy is induced by feelings of ‘should,’ ‘ought to,’ or ‘has a right to,’ i.e. by appeals to an “internalised norm or value” (p.264).

³⁹ Countries include China, Japan and Korea. Major religions include Buddhism and Confucianism.

The idea of legitimacy is essential in understanding voluntary compliance. Tyler considers it as “the primary alternative to power as a source of compliance necessary for the functioning of an institution” (Hamm, Pytlik-Zillig, Tomkins, Herian, Bornstein, & Neeley, 2011, p.98). Further, “in the absence of citizen’s trust in policy-making institutions the legitimacy of those institutions is endangered and the probability that citizens commence to undermine the authority of those institutions become more likely” (Kaltenthaler et al., 2010, p.1261 cited by Roth, et al., 2011, p.2). Tyler’s (1997) model proposes that legitimacy is connected with voluntary compliance and a sense of obligation to comply. Recent studies suggest that having legitimacy facilitates the ability to gain decision acceptance and to promote rule following (Tyler, 1997, p.338). One risk of internalised literal obedience to prescribed rules from official or institutional sources, however, is that individuals may replace their own sense of morality and judgment with authoritative demands from institutions or organisations without critically questioning the ‘rightness’ or the rationale behind that demand (Kohlberg, 1975). This may lead to destructive consequences. This point is exemplified by the famous Milgram’s experiments, that people often obey authorities even when they personally dislike or are aversive towards the tasks (Milgram, 1965).

5.5 Personality Factors

The current dominant model in personality research is the five factor model (FFM) (Knafo, et al., 2002; McAdams, 1992). Taggar and Parkinson (2007) recommend that more studies in accounting should be done using the FFM model for analytical and predictive research. The model is made up of five stable structures in the personality of most people, which permeate all areas of behaviour including work behaviour (Levy, et al., 2011). Based on the personality framework posited by McCrae and Costa (1990) and Goldberg (1992), there are five stable, orthogonal dimensions underlying individual personality differences (Premuzic, Furnham, & Lewis, 2007, p.242). See table 4 for an overview of the five traits. The Big Five structure has provided researchers with a reliable psychometric instrument to assess the predictive validity of personality traits in many settings, including companies and universities.

In addition, many prior researches in accounting have used MBTI⁴⁰ (Bealing, Baker, & Russo, 2006) which is similar in many ways to the Big5 model except it divides people into four categories instead of five.

Wheeler et al (2004a) have argued that MBTI is well suited for research exploring relation between cognition of information processing and personality. Some influential work testing the effect of accountants' cognitive styles on their judgement using MBTI see Cheng et al., 2003; Fuller & Kaplan 2004. Similarly to individuals' rules and principles preferences: The MBTI is not necessarily an indication of individuals' capabilities to utilize either their most or least preferred personality functions, but rather is only an indicator of preference (Kovar et al. 2003).

Evidence from studies using MBTI measuring the personality type of the accounting practitioners seem to correspond to a such perception, as the most common type is the 'STJ (sensing, thinking and judging)' (Wolk and Nikolai, 1997; Bealing, Baker and Russo 2006; Landry, Rogers and Harrell 1996; Stetson, 2007). Kovar et al., (2003) elaborates that "accountant's primary strength... remains collecting actual information from the events in a business (an inherently sensing function), creating logical categorizations and aggregations (an inherently thinking function), and finding ways to communicate it in an organized fashion and to use it to facilitate effective decisions (a function requiring an individual focused on Judging)" (p. 92).

Table 4 The Big5 personality traits

Traits	Descriptions
Openness	Curious, original, intellectual, creative, and open to new ideas
Conscientiousness	Organised, inclination to adhere to company norms, rules, and values, achievement oriented, sense of doing the 'right' thing, being moral
Extraversion	Outgoing, engaging, sociable, and tendency to be sociable
Agreeableness	Affable, tolerant, sensitive, trusting, cooperative and participative in a group

⁴⁰ MBTI (Myers-Briggs Type Indicator): a survey instrument consisting of over 120 questions designed to access an individual's perceive information and make decisions in four primary ways: introvert/extrovert, sensing/intuitive, thinking/feeling, and judging/perceiving. The theory is that each individual has a predisposed preference to one of each of the above pairs. Thus, each individual can be put into one of the 16 categories (Bealing, Baker, & Russo, 2006).

	situation, propensity to work as a team
Neuroticism/emotional stability	Anxious, irritable, temperamental, and moody, reflects overall level of adjustment, ability to function effectively under conditions or job pressures and stress

Based on Levy et al (2011, p.240).

Certain traits of the five factor model seem most likely to be related to individuals' dispositions towards rules and principles. Prior theory and research suggest that openness to experience and conscientiousness are the traits that may be most relevant for self-regulation and conformity to cope with situations (Costa & McCrae, 1992; Feist, 1998; McCrae, 1987; McCrae & Costa, 1997; Roccas et al., 2002). Conscientiousness is the trait that has the strongest and most consistent relationship with job performance (Barrick & Mount, 1991; Hogan & Ones, 1997). Further, openness and extraversion have an impact on the performances of accounting professionals (Levy et al., 2011). The other two traits are not considered to have a direct impact on individuals' dispositions towards rules and principles behaviour for the following reason. Neuroticism is one's tendency to experience negative emotions such as anger, anxiety and depression. Highly emotional/ neurotic individuals may be more prone to stress and suffering (Lev et al., 2011). Such an individual tends to be more volatile emotionally (Levy et al., 2011). Agreeableness is concerned with the willingness to cooperate with others in a team rather than a preference for an independent, solitary work style (Levy et al., 2011).

5.5.1 Conscientiousness

Conscientiousness is a global term consisting of multiple facets: dependability, will to achieve, self-control, prudence, constraint, reliability, self-control, industriousness and trustworthiness (Costa & McCrae, 1998; Levy et al., 2011; Moon, 2001; see MacCann, Duckworth, & Roberts, 2009 for a review of these facets). This trait influences the way in which we control, regulate and direct impulses (Olver & Mooradian, 2003). The concept of conscientiousness can also be viewed as comprising both a sense of morality and responsibility (Norman, 1963).

Within the context of accounting, conscientiousness has been argued to exert an impact on the ethical decision-making process of accountants positively (Sennetti et al., 2007). In particular, the empirical findings of Levy et al (2011) confirmed

previous research on conscientiousness and performance in accounting and they concluded that: 1) individuals with higher levels of conscientiousness tend to “respect and adhere to idealistic ethical standards in the workplace and are less likely to circumvent established norms for personal gain” (p.244); 2) accountants higher in conscientiousness would be “more sensitive to perceived unfairness and inconsistencies, since they tend to value trustworthiness and consistency” (p.244).

Conscientiousness is a complex, multiple-faceted construct, I therefore expect that the facets displaying an orientation for rules and compliance will correlate positively with preference for rules; however, the facets of conscientiousness associated with morality and striving to do the right thing will correlate positively with principles.

5.5.2 Extraversion

The American Institute of Certified Public Accountants (AICPA) recommended a top five “core competencies” accounting professionals will need to possess in order to be successful in the current economic climate. Among them were: communication and leadership skills, being responsive to dynamic changes in client and market needs, and ability to interpret the broader context of financial and non-financial information (summarised by Levy et al., 2011, p, 239). An empirical study by Wheeler (2001) found that the personalities of accountants tended to be generally introverted, logical, structured and detailed rules-driven; Brown (2006) arrived at a similar result and, further, he found accounting students prefer things to stay the same and have clear cut answers: they are less flexible compared with students in other disciplines. Based on the above reasoning, I propose that:

- 1) Extraversion will correlate positively with preference for principle.
- 2) Extraversion will correlate negatively with preference for rules.

5.5.3 Openness to experience

Considering multiple perspectives and working with openness to different viewpoints will fit well, it seems to me, with the psychological profile of an individual who is predominantly principles-oriented. Such an individual would be expected to be more receptive to new information and open to unfamiliar situations characteristics with a high degree of novelty (Baer & Oldham, 2006). As a result, their rules-following

behaviour will be minimal in that they tend to think ‘outside of the box’ to get access to a variety of experiences and perspectives and would respond with elevated creativity to time pressure (McCrae & Costa, 1997). In contrast, individuals with low openness might be intimidated by the uncertainties or flexibilities when being exposed to a new experience and circumstances. This is to say that in such situations the sense of security and familiarity of individuals with low openness suffers, and she may become increasingly anxious as a result of lacking precise coping strategies (McClelland, 1967). These individuals tend to find more comfort in the status quo and in following rules that reduce uncertainty (George & Zhou, 2001).

Based on the above theoretical reasoning, I therefore expect the following:

- 1) Openness will be positively related to preference for principles.
- 2) Openness will be negatively related to preference for rules.

5.6 Overview of constructs positively related to principles-orientation

In this section, psychological literature on locus of control, self-efficacy and empowerment is used to shed some light on the psychological perspective of preferring a principles-based approach. The discussions on these psychological constructs strike some commonalities with Dworkin’s conceptualisation of principles (see chapter four). Furthermore, the themes that emerged from the focus groups (see chapter six) also confirmed the association between the use of principles and the psychological constructs focusing on one’s intrinsic motivation and feeling of competency.

5.6.1 Locus of control

Locus of control represents an individual’s perception of whether she has the ability to bring about change through her own efforts or abilities (Rotter, 1966). People with a strong internal locus of control may take more responsibility for their actions and depend more on their own value structure, skills and abilities. They believe that their actions can bring about change (Beu, Buckley, & Harvey, 2003, p.93; Hodgkinson, 1992, p.311). People with an external locus of control, on the other hand, feel that their actions are insignificant, and feel that change is largely governed by external

forces such as luck, fate or other people's actions (Rotter, 1966). Such people are much less likely to act organically, since they believe that it is meaningless and insignificant.

The internal locus of control theoretically implies the use of a principles-based approach, which is viewed as fostering more ethical professional conducts (Trevino & Youngblood, 1990). The external locus of control may be related to reliance on using rules to help decision-making or error avoidance. In particular, there is some evidence which shows that people who have an internal locus of control tend to behave more ethically than those with an external locus of control (Hegarty & Sims, 1979; Trevino, 1986).

5.6.2 Empowerment and self-efficacy

The extent to which individuals feel comfortable or competent about themselves in relation to rules and principles can differ. Perceived self-efficacy refers to one's perception of the degree of difficulty for someone to act in a certain way, and how much confidence she has in her ability to perform that task (Bandura, 1991; Bandura, 1998, p.624). Empowerment assesses an individual's sense of meaning, competence, choice and impact (Yukl & Becker, 2006). Empowerment involves "relaxed (or broad) controls and an emphasis or internalised commitment to the task itself" (Thomas & Velthouse, 1990, p.667). The broader definition of empowerment also includes self-efficacy as one factor in producing this intrinsic motivation (Thomas & Velthouse, 1990, p.668). The person derives a sense of motivation and satisfaction from assessing the task itself, rather than from the context of the task or from the rewards or penalty mechanisms. Based on the conceptual connection as discussed, I believe that the use of principles signals a higher level of empowerment, because it tends to increase the individuals' involvement and investment of judgment and interpretation (Cohen et al., 2011; Black, 2001).

5.7 Overview of cognitive styles

Recently there has been increasing interest in investigating individual cognitive styles in relation to accounting performance and decision-making. Such a stream of literature provides us with a general context with which to understand DRP and its associated cognitive constructs in the domain of accountancy (Hartmann, 2005).

There are many different types of cognitive styles that could be conceptually relevant to the DRP. Rules and principles are mostly means to achieve goals such as reaching a closure in decision-making and providing guidance in drawing boundaries regarding factors to be considered for decision-making. The dispositions towards rules and principles are therefore more likely to be related to cognitions such as need for closure and tolerance for ambiguity. The preferences towards rules and principles are usually reflected in one's thinking styles in particular: One's tendency to process with abstract vs. more prescriptive information; global vs. local level information; being more creative in seeking new solutions vs. taking orders and following the status quo. On this basis, I would expect DRP to be related to one's thinking styles as being measured by Sternberg's thinking style. Furthermore, rules and principles are distinctive means for achieving strategies, for different people a rules-based approach may ensure 'correct rejections' and ensuring against errors of commission or 'false alarms' whereas, a principles-based approach involves ensuring maximising 'hits' and ensuring against errors of omission or 'misses'. This characteristic is expected to be related to individual's regulatory focus orientations.

5.7.1 Cognitive style - Need for Closure

The need for closure reflects an essential reason for the desire for rules: to avoid ambiguity and have clear-cut answers/solutions to decision-making or problem solving. According to Kruglanski, 'need for closure' (NFC) is defined as "a subject's desire for a firm answer to a question; a firm answer, in contrast to a confused 'and or' ambiguous one" (Kruglanski et al., 2007, p.188). Depending upon their psychological state, subjects differ in their 'degree of tolerance' for lack of closure. The need for closure plays a motivating role in people's tendency to avoid researching alternatives, and to reach a conclusion without consulting new emerging evidence in decision-making tasks (Kruglanski et al., 2007, p.188). Webster and Kruglanski

(1994) adduce a five factor structure which underlies the construct of NFC, they are: preference for order and structure; affective discomfort caused by ambiguity; decisiveness of judgments and choices; desire for predictability; and closed-mindedness.

Individuals with high NFC tend to acquire information rapidly, iterating through mental images in order to reach a definite conclusion. According to Mannetti, Pierro, & Kruglanski (2007, p.188), individuals with a strong need for closure tend to commit to their views 'permanently'; to 'seize' upon limited information, as the basis for making judgments. In other words, as information is always limited, the subject's perception becomes biased by the acquired information; attention becomes 'frozen' upon such judgment (Van Hiel & Roets, 2007, p.267). As a result, an individual will be less likely to be open-minded and less likely to seek new information (Kruglanski & Webster, 1996). Such subjects have shown strong 'judgmental commitments' and a high level of confidence in their judgments (Bailey, Daily, & Phillips, Jr., 2007). In contrast, subjects with a strong need to avoid closure will always be aware of the emergence of new information, thus, they feel more comfortable keeping their options open. Such subjects display a relatively high tolerance in accepting the agony of indefinite views (conclusions) (Van Hiel & Roets, 2007).

Based on the theoretical arguments of the NFC, our theoretical expectation of its relationship with DRP will be that people who are predominantly rules-oriented would correlate positively with high need for closure, order and associated factors, such as: need for structure; affective discomfort caused by ambiguity; desire for predictability; and closed-mindedness. Further, the relationship between disposition towards rules and decisiveness is expected to be negative, as the more indecisive one is the more likely to need to rely on rules to provide clear cut answers in decision-making. In contrast, people who are predominantly principles-oriented would correlate negatively with need for closure and its four factors (need for predictability; order; avoid ambiguity as well as close-mindedness). The exception is that disposition to principles will correlate positively with decisiveness.

5.7.2 Cognitive Thinking style

The way individuals relate to rules and principles also reflects an individual difference in thinking style, as individuals have different preferences in relation to information processing and decision-making. Thinking styles refer to a person's preferred way of thinking and using abilities (Sternberg, 1997). Thinking styles are encompassed by intellectual styles which also embrace cognitive styles, learning styles and problem-solving styles (Zhang & Sternberg, 2006). Individuals differ in the strength of their preferences (Sternberg, 1999).

The most authoritative study on thinking style is the one by Sternberg and his colleagues, which addressed a comprehensive range of dimensions on cognitive style and self-governance (Zhang, 2000, p.273). Sternberg (1999, p.139) argues that the mental idea of self-governance (MSG) can serve as a bridge between intelligence and personality. Intellectual functioning could be viewed as mental self-government. MSG is based on a metaphor between the way that individuals organise their thinking and the way that society is governed (Sternberg, 1999). A brief description of each of the thirteen thinking styles are identified and organised in five dimensions: function, forms, levels, leanings and scope of mental self-government (see Table 5 overview of thinking styles based on Sternberg (1999)).

Table 5 Dimensions of the thinking style

Dimensions	Thinking styles (Description); for more details see (Sternberg, 1999)
Functions	<p>Legislative (prefer problems that are not pre-structured for them, rather they can use their judgment and creativity).</p> <p>Executive (prefer to be giving guidance as to what to do or how to do what needs to be done; like to enforce rules and laws).</p> <p>Judicial (prefer to evaluate rules and procedures and to judge things both on structure and content).</p>
Forms	<p>Monarchic (tend to be single-minded and driven by whatever they are single-minded about).</p> <p>Hierarchical (tend to be motivated by a hierarchy of goals, and prioritising goals by attentions and resources).</p> <p>Oligarchic (tend to be motivated by several, often competing goals, while have trouble deciding how to prioritising these goals).</p> <p>Anarchic (tend to be motivated by a wide range of needs and goals that are often hard for others and themselves to sort out; they tend to be anti-systematic).</p>
Levels	<p>Global (tend to focus on the bigger picture and abstract information).</p> <p>Local (tend to deal with details and concrete issues, sometimes at the price of missing the</p>

	bigger picture).
Learning	Liberal (prefer to go beyond existing rules and procedures and seek to maximise change; being comfortable with ambiguous situation and unfamiliarity). Conservative (like to adhere to existing rules and procedures, minimise change, avoid ambiguous situations where possible, and prefer familiarity).
Scope	Internal (focus on tasks rather than others around them, and socially less sensitive than other people). External (prefer team work and more extroverted and people-oriented).

Sternberg (1999, p.19) argues that we do not have a style; instead we have a profile of styles. People may function at similar levels of abilities yet have very different styles. When an individual's style matches the requirement of a particular context, he or she may be more comfortable and be perceived to have better abilities when, in fact, what is being recognised is not ability but the fit or misfit between the individual's style and the task they are confronting. The studies on thinking style help us to understand why certain people are a better fit for certain activities or jobs and others are not (Sternberg, 1999, p.19). Sternberg's thinking styles inventory has been used primarily in the field of education in particular, in examining the students' learning styles and how their thinking styles related to their personality types (Zhang, 2000; Zhang & Sternberg, 2000). The subjects for the inventory are often university students (Zhang & Sternberg, 2000).

More specifically, the following hypotheses are advanced in the present study, with a brief rationale provided for each proposition.

In terms of functions:

The individual with rules-orientation will tend to have an executive style, which is characterised by more concern for the proper implementation of tasks within a set of guidelines, i.e. need for clear guidelines and being organised (Sternberg, 2009). A rules-preference could also be correlated positively with judicial style, which is shown as having a preference to evaluate rules and procedures and to judge things (Sternberg, 1999).

The individual with a principles-orientation will tend to have a legislative style, which is characterised by preferring tasks that require creative strategies and generating new approaches and new alternative solutions to traditional ones (Sternberg, 2009).

In terms of levels:

A rules-based approach will fit more to the description of a local thinking style, which is characterised with enjoying concrete problems and a requirement to deal with details, avoiding conceptual abstract analysis and experiencing difficulty in prioritising tasks by importance (Sternberg, 2009).

A principles-based approach will be more connected to a global thinking style, which is characterised by the preference to deal with relatively abstract and broad issues, and ignoring details (Sternberg, 2009; Zhang & Sternberg, 2001).

In terms of learning styles:

Individuals with a high principles-orientation will tend to have a liberal thinking style, which is characterised by going beyond existing rules and structures. Liberal thinkers tend to be attracted to carrying out tasks that require breaking with the status quo.

Rules-oriented individuals will tend to have a conservative thinking style, which is reflected in preferring familiar tasks that require the application of and adherence to existing rules and structures, to avoid ambiguities and show a relatively higher level of resistance to novelty (Zhang & Sternberg, 2000).

In term of forms:

According to Sternberg (1997), individuals with a monarchic style prefer engaging in activities that require focus on one thing at a time. Those with a hierarchic style prefer distributing their attentions and energies towards several tasks that are prioritised; individuals with an anarchic style prefer focusing on the segments or fragments of parts of a bigger task, without any systematic approach. One consequence of that focus is that sometimes they fail to see how the task at hand contributes to the whole objective. Finally, those with an oligarchic style tend to have difficulty in prioritising and in allocating resources. They especially need extra guidance or assistance to provide them with some structures or procedures on time management because they have a tendency to pay attention to several non-prioritised tasks at the same time (Sternberg, 2009). In a way, an oligarchic style rests in between a monarchic style and a hierarchic style.

In terms of scope:

A high rules-orientation individual will tend to display an internal style, which is characterised by preferring tasks that require working independently of other people. Previous research has shown that accountants are not as comfortable in team-based tasks (Brown, 2006). On the other hand, a high principles-orientation will tend to display an external style, as people with an external style will tend to prefer activities that allow for interaction with others (Sternberg, 2009; Zhang & Sternberg, 2001). One of the key skills for successful application of principles is to be able to express and communicate with others and with clients (Levy et al., 2011).

5.7.3 Higgins regulatory focus and the DRP

Regulatory Focus theory holds that self-regulation operates differently when serving fundamentally different needs, such as the distinct survival needs of nurturance (e.g., ‘nourishment’) and security (e.g., ‘protection’). Differences in socialisation can produce chronic individual differences in regulatory focus (see Higgins & Silberman, 1998). Nurturing parenting engenders a promotion focus in which self-regulation is concerned with accomplishments, hopes and aspirations (i.e., ‘ideals’). It involves concern for the presence of positive outcomes (e.g., ‘bolstering’) and the absence of positive outcomes (e.g., ‘love withdrawal’). Secure parenting engenders a prevention focus in which self-regulation is concerned with safety, duties and obligations (‘oughts’). It involves concern for the absence of negative outcomes (e.g., ‘safeguarding’) and the presence of negative outcomes (e.g., ‘criticism’).

Regulatory focus theory also distinguishes between different strategic means of goal attainment. It distinguishes between an eager strategy and a vigilant strategy (see Crowe & Higgins, 1997; Higgins, 1997; 1998). In signal detection terms (see also Trope & Liberman, 1996), an eager strategy involves ensuring ‘hits’ and ensuring against errors of omission or ‘misses’, and a vigilant strategy involves ensuring ‘correct rejections’ and ensuring against errors of commission or ‘false alarms’. Because an eager strategy ensures the presence of positive outcomes (ensure hits; look for means of advancement) and ensures against the absence of positive outcomes (ensure against errors of omission; do not close off possibilities), it fits promotion focus concerns with the presence and absence of positive outcomes (Liang et al.,

2007; Halamish et al., 2008; Higgins & Siberman, 1998). Similarly, because a vigilant strategy ensures the absence of negative outcomes (ensure correct rejections; be careful) and ensures against the presence of negative outcomes (ensure against errors of commission; avoid mistakes), it fits prevention focus concerns (Liang et al., 2007; Halamish et al., 2008; Higgins & Siberman, 1998).

Regulatory focus questionnaire (RFQ) is designed to measure individuals' strategic orientation in attaining their goals (prevention focus orientation vs. promotion focused orientation) (Higgins et al., 2001). The majority of the subjects for the studies involving the use of RFQ have been university students. Nonetheless, because the generic nature of the instrument, it can be used on general populations (Love, Staton, Chapman & Okada, 2010). The actual instrument has been used in areas such as decision-making and risk-taking in the domain of marketing and brand management (Love et al., 2010).

Relating regulatory focus theory to DRP, I expect that individuals who are predominantly rules-based will prefer a 'vigilance' approach which is characterised as thinking in terms of all-or-nothing (loss vs. non-loss contingencies). Therefore, they are more sensitive to the absence and presence of negative outcomes. Prevention oriented individuals are likely to be drawn to the security provided by the clear lines of concrete rules which can afford the individual assurance that she has done her duty and avoided the negative outcome. For example, responsibilities within a prevention focus are usually described in a rather concrete fashion, so that one knows what should be avoided in order to attain security or fulfil duty (Förster & Higgins, 2005, p. 632). Therefore, prevention oriented people will be drawn to prefer a rules-based approach to many situations. The prior literature was not clear in determining the relationship between promotion orientation and principles orientation, thus, the question will be addressed empirically in chapter nine, part three.

5.8 Conclusion

A systematic search shows that there were no instruments designed specifically for measuring the dispositions towards rules and principles, therefore, my efforts to develop such a psychometric instrument is innovative. A review of prior research on

psychological constructs, which seem to me to bear logical relationships with dispositions towards rules and principles, provides some insight into the nature and psychological origins of individual disposition to rules and principles and gives support for my contention that the DRP can pick out a significant concept that deserves investigation. As shown in the subsections on each individual psychological construct, I have explained and proposed the conceptual linkages between the DRP and some of the constructs. Those specific constructs were chosen because of their logical or prima facie relevance for rule and principle dispositions.

Chapter 6: Focus groups

6.1 Introduction

This chapter primarily explains and discusses the use of focus groups in the process of developing our research instrument (DRP). In addition to the eclectic literature review across three disciplines (accounting, legal and psychology), I feel by conducting a qualitative method such as focus groups, I will be able to examine whether people in real life could resonate or make sense of the conceptual dimensions as elaborated in chapter two and four; furthermore whether some ‘fresh’ dimension(s) that is (are) not studied in prior literature would be unveiled. Thus, the focus groups play a complementary role and serve as a supplementary source of items. Moreover, the use of focus group at an early stage of study will help to improve the phrasing of item stems and reduce measurement errors (Ping, 2004). All in all, the uses of focus groups will facilitate a more accurate instrument calibration for this project

I found, through content analysis, that the discussions that took place in the focus groups were broadly in agreement with the theoretical views about rules and principles emerged from the prior literature (chapter two). Nonetheless, I discovered a new interesting dimension primarily concerned with individuals’ motivation and feeling of empowerment, emerged more vividly from the focus group discussion rather than from prior theoretical debates.

6.1.1 Overview

The chapter is organised as follows: sections 6.2 to 6.4 deal with issues concerning the rationales and practicalities associated with carrying out the focus groups; section 6.5 describes data transcription and data analysis; section 6.6 presents the focus groups discussions; Section 6.7 concludes the chapter.

6.2 The focus groups

6.2.1 The nature and aims of focus groups

The research methodology literature, related to instrument development suggests that, focus groups can be used as a secondary and supplementary source for generating and sounding out items for the questionnaire (Morgan, 1988). It is recognised that the observation of interactions between participants in a focus group can provide much richer information comparing with the outcome of a one-to-one face interview (Bloor et al., 2001). Thus, the literature suggests that the use of focus groups in the preliminary stages of this research will help to achieve some of the stated research objectives, and in particular will help in:

- obtaining general qualitative insights into the characteristics of individuals preferences for rules and principles,
- discovering and exploring extra dimensions that have not been covered / discussed by prior literature,
- identifying the phrases and words used by participants to describe their attitudes towards rules and principles
- confirming or verifying the dimensions that have been derived from prior theories

6.2.2 The abstract questions probing approach in focus groups

General context specific scenarios have been used to probe and ‘lure’ participants to discuss their experiences and operationlization with rules and principles. Participants will answer a series of very general open-ended questions about processes and individual experiences associated with using rules and principles. The discussion offered by participants will then be verified against a list of main conceptual themes I have already derived from prior literature (see chapter two).

Note: the discussions on the use of rules and principles start off from participants’ professional life, but I do not intend to limit the discussions in that domain only.

6.3 The practicalities of conducting focus groups

This section explains the practical issues related to the use of focus groups. It starts with the preparations before carrying out focus groups and follows with the actual operations of the focus groups and finishes with analysis of the focus groups discussions.

6.3.1 Recruiting participants and organising each focus group

Participants were approached in the public lecture and theatres as well as the University library, University of Glasgow, Scotland, subsequently contacted by email. This recruiting strategy offered two main advantages: 1) it saves labour input and time compared with more extensive recruiting techniques, and 2) it is economic. It should be noted however that, with this approach, the selection of participants was not random.

Specifically, participants of the focus groups were full-time students from the University of Glasgow; therefore they are likely to share similar university experiences. The only requirement is that they have a good level in spoken English adequate for higher study at the University of Glasgow.

Given the objectives of the study a student sample is deemed to be appropriate / adequate (more info on the use of student sample can be found in chapter eight section 8.5.2).

6.3.2 Managing attendance

In order to ensure a good attendance rate, an introductory message was handed to potential participants. The message included a brief background of the study and researcher's contact details. This enabled the researcher to make contact with the participants to deal with specific queries and for assuring participation.

6.3.3 The size and number of the groups

Examination of the literature (Morgan, 1988) reveals that it is generally agreed that four participants per focus group is the minimum size for a group. The number of focus groups to be undertaken is determined by practical issues such as how easily participants can attend each meeting. At the same time it depends on the array of research themes that need to be covered using focus groups (Krueger, 1994). Based on these considerations, I decided to conduct four focus groups with a minimum of four people for each group. Each session lasted between 45 and 60 min (Bloor et al., 2001).

6.3.4 Data privacy and anonymity

All data obtained were treated on an anonymised basis. The recordings of the focus groups were accessed by the primary researcher only. The recordings were transcribed and analysed, and only the anonymised transcription / analysis will be included in any research reports. At no stage will the recordings be broadcasted to a wider audience (beyond the researcher). Participants were informed of the voluntary nature of their participations as well as of the confidentiality of the information or pictures gathered.

6.3.5 The role of Moderator and observer

According to Krueger (1994), I needed a moderator to create a climate where participants are willing to share their feelings and experiences. The moderator must also ensure that all topics are covered (Krueger, 1994). The PhD supervisors of this PhD project acted as the moderators of the focus groups and they present the focus group participants with a series of questions.

The research student acted the role of observer which is to observe the dynamics of the group discussions; make extra comments on some specific points to ensure clarifications; assist the moderators whenever backup question or illustrative examples might be called for or be helpful in explaining or clarifying things for participants.

6.4 The actual operationalisation of the focus groups

At the beginning of each focus group, participants were shown and asked to sign the standard departmental ethical consent form, if they were to agree with the form. I also explained to the participants that the session would be recorded both by a voice recorder as well as a video-recorder (to ensure the qualities of both voice and picture)⁴¹. All four sessions were carried out in the secondary PhD supervisor's office in the Psychology department, university of Glasgow.

When the session started, the moderator first introduced himself as the PhD supervisor of the researcher. He then gave a brief introduction of the current research topic, including the background and implications of this PhD research. He used some accounting example to illustrate the conceptualizations of rules and principles that are adopted by the current research.

Participants sat around a round table, forming a circle in order to ensure everyone would have a roughly equal chance of speaking. The researcher provided beverages, snacks and fruits throughout the focus group sessions. This has also helped to promote a relaxed and friendly environment for people to open up and be more willing to talk. These were vital factors for the success of the focus groups.

6.4.1 The descriptive summary of the participants for 4 focus groups

Including the pilot focus groups, I have organised four focus groups, 19 students have attended the focus groups in total. The following table summarizes the basic

⁴¹ The transcripts and videos were used as supporting documents in assisting me to gain a better understanding of the focus groups discussions. Thus they were coded based on a coding structure I have derived from prior literature. Nonetheless, the primary purpose of conducting focus groups at this stage of the PhD is to 'double check' the themes which have been discussed explicitly in the prior literature; while attempting to elicit some new insights if there were any. I do not intend to treat them as a primary source for the item generation. The records are safely stored and kept in the research student's office. They can be accessed and cross-examined upon request.

demographic characteristics of the participants. The sizes of each focus groups are: 5,5,5 and 4. For the last session, two participants had cancelled the attendance at the last minute. The average time for each session was 45minutes.

Table 6 The overview of the demographic data of the sample for focus groups

Sample size	19
Average age	27
Average educational level	17 years formal education
Male vs. female	11 vs. 8
Asian	5
White	14

6.4.2 The general questions which have been covered by the focus groups:

The moderator did not necessarily follow a structured question-answer approach. Therefore, the observer (the research student) made special notes about the discussions which appear to be confirming or adding new insights to prior literature. The following list of questions was merely a rough guide to help the discussions flow more freely.

Questions guidance:

- 1) What does a rule-oriented approach mean to you?
- 2) What does a principles-oriented approach mean to you?
- 3) Can you briefly explain to me in your own words, the main distinctions between a rule and a principle?
- 4) Which one do you prefer to apply in general in your life?
- 5) Can you give me some of your experiences where you specifically preferred to be dealt by rules/ or principles?
- 6) Can you give me some of your experiences where you specifically prefer to apply rules/ or principles to deal with/ or resolve the problem at hand?
- 7) Which approach gives you more satisfaction, and what is the reason(s) for that?
- 8) Do you have anything extra to say about rules and principles?

This is when I expect some new dimension being raised by participants that could have not been covered by the literature review.

6.5 Transcribing Focus Group data

Broadly speaking, there are divided views as to how to go about transcribing qualitative data. One view is that it's not always necessary to transcribe the whole focus group word for word; the researcher just needs to take some notes while listening to the tapes in conjunction with the notes taken at the time of the focus group and memories of the facilitator (Krueger, 1994). An alternative view is that the researcher should carry out the full detailed transcription without losing the richness of the data otherwise one could run the risk of being subjective or superficial in the analysis (Hammersley & Atkinson, 2004). In this research, I have adopted the former approach, where the research student focused on making notes on significantly relevant details of the discussions instead of transcribing data word for word.

6.5.1 Data Analysis

Because the focus groups were carried out after an extended and systematic literature review on the dimensions underlying rules and principles (see chapter three) had been undertaken, my understanding of rules and principles thus has been significantly shaped by the prior literature. I have become somehow alert to the key words and themes that were covered in the literature review. Therefore, for the current project, I used the rules versus principles debate literature surveyed in chapter three, four and five as a general analysis guide. The pre-conceived dimensions underpinning rules and principles may run the risk of limiting the scope of the research. Nonetheless, the primary purpose of conducting focus groups at this stage of the PhD is to 'double check' the themes which have been discussed explicitly in the prior literature; while attempting to elicit some new insights if there were any. I do not intend to treat them as a primary source for the item generation.

There are a range of techniques for analysing data (see Onwuegbuzie, Dickinson, Leech, & Zoran, 2009 for an overview): classical content analysis, key-words-in-

context, discourse analysis as well as constant comparison analysis. Since I examine the data against some general theoretical themes, keywords-in-context is the method I have applied to the data analysis. There are two stages in the analysis;1) generation of key words, phrases, and quotes that fit in or support the conceptual descriptions of each theoretical dimension (flexibility, ethics, certainty, security, judgment, abstract, creativity, fairness; see chapter three for an overview);2) Identification of additional, new themes relevant to people's preferences for rules and principles that have not been spelled out explicitly by prior research (accounting literature in particular), e.g. feeling of empowerment, parental influence, experiences / maturity, cultural differences.

6.6 Discussions: results of the preliminary study

The theoretical discussion on rules and principles as previously presented is important here because the researcher has referred to it in the process of analysing data. The emerging categories for the content analysis are discussed in the following sections.

Theme 1: Distinctions between rules and principles confirming our view (chapter four for an overview)

Participants recognised and agreed with our position on the distinctions between rules and principles (see chapter two and four). Some participants expressed the perception of seeing principles-based approach as an approach which allowing space for personal judgment and freedom, whereas rules might constrain judgment.

“A principles-based approach tends to just encourage everyone to be a bit more expressive, that way we got lots of freedom to explore what we want to do in the department and every one really enjoys it.” (Participant D in group 2).

“So I guess you should like (to arrange for) all employees in the company to have some sort of educations nowadays, to take principles into account and use more of their judgment rather than (mechanically) sticking to rules.” (Participant E in group 2).

“... (my part-time job) *was very strictly controlled by rules...we had to start off by saying a particular piece of script and I mean it's a bit like be on an answer machine, you did not have any choice, what you are saying just responding to other customers have said.*” (Participant M from group 2).

“... *principles are more for on-going context dependent situation, where I have to exercise my own judgment on (determining) whether something is wrong or right or what should I do.*” (Participant S from group 4).

“...*a principles-based approach, they kind of give police officers more responsibilities to use their judgments to say, ok this is a minor offence, we are not going to spend hours on it; but (we need to) focus on more serious crimes.*” (Participant A from group 3).

These views expressed by participants regarding their perceptions of principles are in line with the nature of principles as conceptualised in this project. If one takes on Dworkin's (1979) view, then applying principles implies to be able to take account of a spectrum of multiple or even conflicting factors all of which could have 'weights' contributing to the final decision-making to some extent. Moreover, the use of principles tends to be context-specific and gives rise to the use of judgment, which in turn increases one's sense of accountability / responsibility (more details see chapter three & four).

Theme 2: Need for Certainty

Some people perceive that rules provide them with a sense of certainty and predictability. For these people, clear-cut rules help them with understanding what is expected from them, and the procedures, steps they therefore can take to tackle problems. Some participants echoed a sentiment in which the presence of rules increases their level of feeling of certainty.

“This is the rule and the principle behind this rule, so it's a useful guide, especially early on when you cannot quite grasp principles maybe at much depth that might be

help, it's useful to have the points (rules) to tell you if in doubt, what you should do." (Participant H from group 2).

"I wonder especially not many people feeling like they probably have too much good control of it, so that's the thing when I need rules to rely on, (because of rules) I can predict how well I am going to do." (Participant M from group 2).

"While I guess if you were in a position to give rules to others under you, you need to be more sure that they going to do what you ask them to do. So you kind of say (prescribe) more detailing, more detail, and say exactly what you want them to do, so that for your to enhance your certainty." (Participant F from group 3).

However to others, a different sentiment was raised as to rules' ability to deliver certainty. They argued that rules are not capable of delivering certainty because of the complexities inherent in the current ever changing world and unpredictable nature of human behaviour.

"The problem has always been that human behaviours are too complex to be reduced to certain sets of rules." (Participant S from group 4)

"What I'd say is (that) a vague principle of instead of detailed rules, answer that everybody knows what they are doing and should do in the future." (Participant M from group 2).

Theme 3: Manipulation problem

Some participants recognise that in some cases, rules are not applied to serve the underlying principles. In these situations, rules are being complied in the form of 'creative compliance' but the spirit of principles is breached.

"I think sometimes the rules do not serve the principles... So if the principle is to serve the customer, how do you serve the customer? If only what you do is what the rule says, there are certain situations where you have to understand, you can make it

looks like you comply with the rules, but the customer is still not happy, it's because you did not achieve the principles." (Participant E from group 2).

<p>Theme 4: Rules are concrete and prescriptive Versus Principles are general and broad</p>

Some participants put forward that rules were associated with concretion and are often applied in a prescriptive manner. These people also identify principles as being general and broad.

That was all scripted, it was not like you have to adapt to anything, you just follow the rules exactly." (Participant M from group 2).

"in practice, a rule is may be more important than a principle, because sometimes when you doing something, rules are very clear for the employees to follow and, organise things, but principles are something, for my experiences, principles are too broad and not have some clear directions for people, and that's my experience." (Participant A from group 1).

<p>Theme 5: Cultural aspect</p>

There seems to be a divergence in the preferences to rules and principles between participants from Asian and European cultures. Consistent with prior research, generally speaking, Asian participants tend to have higher preferences towards rules; whereas, European participants seemed to prefer principles to rules.

"I mean in China, when I was a child, the teachers gave me more rules than principles, they always ask you to do something or not to do something, because they think children do not have the enough ability to understand principles and know how to do something, so they need to be given some rules to make sure they do not make too much mistakes in their life and in education, I mean in eastern country, children are more likely to be given more rules than principles, this is also dependent on the

background, it's different, maybe it's different with western countries.” (Participant CL from group 1).

“Coming from a Mediterranean country⁴², where principles are important but not rules.” (Participant E from group 2).

<p>Theme 6: Feeling empowered by principles Versus Feeling disempowered by rules</p>
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Evidence from the discussions of the focus groups has showed that rules sometimes disempower people: for instance, some participants did not feel they could have any individual input or autonomy with the decision-makings. For that reason, they feel disconnected from the more meaningful underlying purposes of the task; as a result they did not attach much commitment or energy to rules-based tasks. One participant suggested that when people are not involved in the decision-making, they tend to feel less responsible and accountable for the success of the task, and this could result in less desirable outcomes for the organisation.

“In cases of applying rules, I have no feeling; just have to be done, because they are rules.” (Participant M from group 1).

“It's also gave a relief to the employee that in a way that this is what I should do, I should just do this, following the rules, I will not get more involved, so in that way, if you don't get more involved, it's highly unlikely you increase your degree of success you going to bring to the company.” (Participant E from group 2).

“Normally I just like you, obey the rule, I don't feel empowered to break or challenge the rule, even I don't agree with it.” (Participant V from group 4).

⁴² This participant is from Greece.

In addition, participants recognised that, compared with rules, principles are more empowering because they foster a feeling of community and shared experience for all involved parties.

“... and (principles-based approach) would have been able to may be even more helpful or to do our job better, we would have been allowed more freedom and to do the best we can.” (Participant M from group 3).

“...principle promote more engagement and responsibilities among employees.” (Participant E from group 2).

“Even by just saying principle, I think it allows the individual to interpret how they want and I think it’s what this generation desires, in support of freedom: I want to do what I want to do, you know, so if I just had this guideline, I can push it, push it, push it. Whereas rules are just like yes or no, it’s like I cannot do it.” (Participant C from group 1).

Theme 7: Legitimacy

It has been argued that rules do not derive their legitimacy from a democratic approach, as opposed to principles. Rules are perceived to embody more legitimacy because they are prescribed by officers from authoritative positions and their pedigree. People who are more sceptical towards the legitimation of rules often feel powerless in that they feel that they have no impact on the way rules are being applied to them.

“It is not something I have any impact / choice, this is the rule you have to do, if you want to use the service or whatever.” (Participant M from group 4).

“...You probably (will have to be) higher up to have more decision-making power, then you can look at the principle behind this to change the rule or modify them.” (Participant CL from group 1).

“Then it comes to the level of power, when we standing at this kind of premise... normally goes like top guys leading and applying rules, and poor guys at the bottom doing the hard work” (Participant M from group 2).

Theme 8: feeling of security associated with using rules:

People commented that by following rules, they feel a sense of security, because if they do something wrong, they can shift the blame to the rule. Rules also protect them from backlash.

“The only satisfaction I have got was knowing I was safe from any backlash or anything could be going wrong that I would walk to anyone in charge and say, these are the rules I have been given, I have to do it this way, maybe I could have done it differently but I really did not have any choice.” (Participant M from group 2)

Theme 9: Fairness associated with using rules

Rules were being recognised as capable of providing a sense of fairness to people. It is perceived as a fair approach because everyone who is subjected to a certain rule undergoes the same treatment. Rules are also designed to standardise actions and ensure everyone is on the same page about how to go about doing things.

“I think when you get a rule that has to be true to everyone, like it does not work if you have a rule and someone obeys it and someone does not, it is not fair.” (Participant M from group 4).

“Rules are very helpful, because without it, everyone will not produce work the same standard.”(Participant L from group 3).

Theme 10: Creativity associated with principles

Participants perceive principles, rather than rules, tend to encourage their creative thinking.

“I think principle rather than rule tends to promote new ideas, creative thinking. I think I’d rather allow someone to do it than limit them with certain set of rules.”
(Participant S from group 3).

6.6.1 Key words

The analysis of the qualitative data also revealed that there are frequent, consistent, specific patterns in terms of the words used by participants to describe their experience with rules and principles (see table 7 for an overview). This evidence shows some agreement between the prior theoretical themes and the practical experiences with rules and principles reported by participants. Such patterns are also, broadly speaking in line with the conceptual arguments that I have presented and synthesised in chapter two, four and five.

Table 7 presents the key words pattern as identified via key words searches in the notes the research student has taken for the four focus groups. Since I have become accustomed to the key words, which repeatedly showed up in the rules and principles debate, I made a note on the keys distinctive words, used by individuals when describing their experiences with rules and principles. I have also counted the frequencies of these single based on her notes. A cut off count three (same key words appear more than three times in the notes) was chosen. Key word search function of the Microsoft word was performed on the notes to count for the occurrences of the theme words.

Table 7 Key words patterns associated with expressions of rules and principles respectively

Patterns associated with rules and principles	Rules: these words are identified as associated with rules	Principles: these words are identified as associated with principles
Key words	Rigid, strict, control, predict, scripted, higher up, power, backlash, fair, complex, detail, certainty.	Freedom, judgment, vague, broad principles, more involved, increased responsibility, empowered, creativity, individual, interpretation.

6.6.2 Summary of the analysis of the focus groups

Other dimensions emerged from the discussion are effectiveness, efficiency, need for closure and complexity issues associated with rules and principles. In general, the participants' observations and experiences are in agreement with the theoretical arguments. For instance, rules are perceived as more effective than principles, because using principles requires weighing and contemplating an array of relevant factors, which may delay the decision-making process. Nonetheless, participants argued that individuals sometimes do not understand the reasons behind the rules, they misapply rules and this could lead to ineffectiveness. The efficiency dimension also emerged during the discussion of rules sometimes they make life easier by telling someone what to do; whereas principles take more learning and time, hence may hinder the decision-making process. The complexity dimension was illustrated during the discussion on rules lead to bureaucratic issues, which complicate the decision-making process.

I appreciate that for some people the dimensions may mainly operate at the sub-conscious level. I found that quite commonly participants would agree with the theoretical dimension when it was drawn out and articulated in discussion yet say that they rarely think of things this way themselves although the dimensions made sense to them. For instance, the need for closure, where some people agonize over rule-less situations under the pressure to close a decision; in contrast, some people have a higher tolerance for using a principles-based approach to close a decision-making, yet individuals disposed either way will not always diagnose the situation in an explicit way.

Note not all 13 dimensions were explicitly covered in the discussion; for instance the ethical dimension was not discussed explicitly in the focus groups. But I feel there is sufficient evidence from prior research, both conceptual and empirical, to show support for the linkage between rules and principles and ethics.

6.7 Conclusion

In this chapter, I have explained the rationale and practicalities of using focus groups for the purpose of filtering through the identified theoretical dimensions as described in previous chapters (chapter three, four and five). I also gathered a sense that individuals seem to have some stable preferences towards rules and principles across different contexts.

Through the focus groups, I were able to ‘empirically’ test, in a qualitative way, the conceptual themes which were derived from the prior literature, and to gain better understanding of how they feature in the dispositions to rules and principles of the focus group participants. Further, I learned that there are some elements not being discussed explicitly in the literature but which do seem to have weights in the real life of participants’ and have effects on their preferences such as feeling of empowerment in relation to rules and principles. Together with the 13 conceptual dimensions as discussed explicitly in chapter two, I now have 14 dimensions in total. Chapter seven will tie and synthesise all the 14 dimensions together to form the conceptual framework that can be used for the generation of items for the preliminary item pool.

Chapter 7: Framework of the dimensions underpinning disposition towards rules and principles

7.1 Introduction

The objective of this chapter is to layout the working framework of the dimensions underpinning individuals' dispositions towards rules and principles, used in the development of a measure of those dispositions. This identification of the conceptual dimensions was theory driven, with some supplementary confirmations and insights drawn from the focus groups. As a result, in this chapter, I integrate here all the dimensions of preference and aversion towards rules and principles which have been previously discussed in chapters three, four, five and six. These dimensions reflect the reasons and motives that the literature suggests are likely to underlie preference and choice regarding rules- or principles-based approaches to decision-making or problem solving.

If the disposition towards rules and principles instrument (DRP) is to persuasively pick out and measure preference for rules and principles as a construct, it is important that the questions built into the instrument should systematically cover the various 'dimensions' of individuals' preferences for rules and principles. Essentially, this chapter provides a conceptual apparatus that guides the overall research effort in pursuit of answering the research questions (see chapter one), and developing the main source for the subsequent empirical work; particularly including the guidance of item generation for the development of an instrument for the measurement of the individuals' dispositions towards rules and principles. Empirical research at a later stage (chapters eight and nine) is used to confirm and refine these conceptual dimensions.

The outcomes of the analysis of the focus groups discussions of individuals' preferences towards rules and principles generally confirmed and corroborated the findings drawn from the literature review and existing theory. Thus, my observation was that the themes/dimensions that emerged from individual participants'

experiences, and views they expressed in the focus group meetings, by and large agreed with the literature. Consequently, the majority of the dimensions emerging from these two sources are, broadly speaking, overlapping. I did find, however, that the dimension of empowerment in particular emerged more vividly from the focus group analysis than from the literature, and especially the accounting and legal literature.

In addition to their role in the DRP instrument development, I hope that the identification and articulation of these conceptual dimensions makes a valuable contribution, in their own right, to the research in regulatory theory.

7.1.1 Overview

The structure of this chapter is as follows: Section 7.2.1 - Section 7.2.14 proceeds to discuss each dimension. Section 7.3 briefly proposes the possible inter-relationships between the dimensions. Section 7.4 offers concluding remarks on the chapter.

7.2 Overview of the 14 dimensions

This section focuses on delineating the 14 dimensions as identified and emerging from prior literature and the discussions of the focus groups. I acknowledge that there are probably more than the 14 dimensions being presented here, underpinning individuals' preferences towards rules and principles. Nonetheless, according to my extended investigation, these are the ones that appeared most frequently and have the most potency in the rules and principles debate cross disciplines.

7.2.1 The ethical dimension

My view of ethics is broadly speaking conceptualised within the realm of professional dilemmas, individual-decision-making models, and professional codes. The literature suggests that there is likely to be variation in individuals' propensity to favour rules and principles decision-making styles in view of perceived differences in the ethical considerations. Thus, the behavioural norms that are matched with the ethical framework of the intended population would improve decision-making and

performance (Ponemon & Gabhart, in the book edited by Rest & Narvaez, 2009, p.107).

Some people seem to believe that rules' following is necessary and even sufficient to ensure ethical decision-making and behaviour. This type of person might, for example, embrace a formalist philosophical doctrine (McBarnet & Whelan, 1991; see chapter 4, section 4.2). Under such doctrine, "individuals subscribe to a set of rules for guiding behaviour" (Schmicke et al., 1997, p.1193). As such, this type of person may be inclined to apply rules "without regard to questions of background morality" (Alexander, 1999, p.544). Their mental position assumes that rules themselves would be enough to settle the moral dilemmas that fall within its scope (Alexander, 1999, p.544). In accounting, this formalistic approach is reflected in accountants' attitudes to accounting manipulation (Fischer & Rosenzweig, 1995 cited by Amat et al., 1999), as they perceive 'doing things the right way' as more important than 'doing the right thing' (Ohman et al., 2006). The formalist approach may appeal because it seems to offer a certain clarity about what is the right thing to do in the form of rules which, "as long as they are complied with, one is morally 'safe', even if one knows that compliance will bring about results that morally speaking are suboptimal and undesirable" (Alexander, 1999, p.556; Beu et al., 2003; Ohman et al., 2006). Moreover, auditors with this type of mentality would tend to "follow the rules to defend themselves against allegations of wrongdoing or audit failure" (Ponemon & Gabhart, in the book edited by Rest & Narvaez, 2009, p.107).

The literature suggests that some other people may be inclined to see a mentality of rule compliance as morally dubious and associated with insulation from, or even disregard for, the consequences of action, and an inappropriate limitation of responsibility (Cunningham, 2007; Black, 2001; Essaiades, 2006; Scott, 2006 cited by Jamal & Tan, 2008). The application of rules is recognised, and objected to, by some as not requiring moral reflection or much contemplation at all: "the knowledge of the rule itself and the instantiation of the concepts involved suffice" (Burgemeestre et al., 2009, p.3). The application of rules may, in fact, produce a suboptimal result in moral, or other, terms. Compliance with rules sometimes comes at the price that the rule may be applied in some situations where it does not ideally, or at all, serve the underlying

purpose (ICAS, 2006): a price some may be less willing to pay than others. Herron and Gilbertson (2004, p.505), for instance, point out that “CPAs tend to follow a rule-based approach even when it was not the course of action they considered to be morally right”. Furthermore, there is a danger that the focus on the detail and complexities of rule application and compliance is liable, in some situations, to distract attention from, and even cause us to lose sight of, the original ethical intention behind the rule (Barnett & Vaicys, 2000), and, again, this is a danger that some may be more sensitive to than others.

Some people may believe an ethical decision can only be achieved by an approach that allows space for exercising their individual discretion and judgment (see chapter three, section, 3.3.1.1; Arjoon, 2006; Paine, 1994). Kohlberg’s moral reasoning model can also be used to explain this type of person and her preference for using principles to achieve ethical decision-making. According to the model, this type of person would tend to be one who thinks at the autonomous level (Kohlberg, 1975). In other words, this is the type of individual who “knows the rules, understand the underlying principles, and makes a decision that is guided by the principles rather than by the rules” (Ponemon & Gabhart, in the book edited by Rest & Narvaez, 2009, p.106). Sweeney and Roberts (1997, p.339) attested that auditors exhibiting a greater tendency towards principled moral reasoning would also be more likely to behave ethically. Furthermore, people who reason with principles are more prepared to alter and depart from rules if the decision can be justified on universal and moral grounds (Schatzberg et al., 2005, p.243; Gaa, 1992, p.35). This conclusion is consistent with the proposition the researcher made in chapter five (psychology), where she discussed the psychological construct of locus of control (section 5.5.2.1). The psychological studies imply that a person who is high in internal locus of control and sense of autonomy may be attracted more to a principles-based approach.

7.2.2 The legitimacy dimension

The legitimacy dimension is concerned with how individuals perceive the relative ‘rightness’ to actions/ decision-makings associated with rules and principles-based

approach. The psychological construct of legitimacy has been discussed in chapter five, section 5.4.2.

The literature suggests that some people may prefer rules because they see legitimacy and legitimate power in them that can secure some order and respect for authority without requiring them to be personally involved with those who are being subjected to the rules (Black, 2001). This type of individual believes that the prescriptive formal structure in itself provides adequate legitimacy to the rules they apply (Power, 2003). The pressure from some quarters for the use of rules can be understood in terms of the legitimacy that their application can confer on decision-making, and the fact that a clear structure affords those at the centre of complex organisations some measure of control, at a distance, and with the capacity to predict accurately, the behaviour of other members of the organisation (Power, 2003). Individuals with authoritarian personalities, understood as “favourable to the authority as opposed to that of individual freedom” (p. 96, Ray, 1972 cited by Rigby, 1982, p.195), are liable to exhibit such preference. It has been argued that people with authoritarian personalities are more likely than others to adhere to the traditional social conventions and exhibit a need for unequivocal rules (Rubinstein, 2003). In chapter five (section 5.3), I have touched on how an authoritarian parental style could potentially cause one’s preference and need for rules.

Individuals who prefer principles may tend to be lower in authoritarian personality, as the application of principles requires a certain level of introspection and acceptance of personal responsibility for judgment, whereas one of the characteristics of the authoritarian personality is anti-introspection (Rubinstein, 2003, p.698). Further, as conceived by Dworkin (chapter four, section 4.4), people who value and find legitimacy in the application of principles are also likely to value ‘individual rights’ and ‘democracy’ highly. The application of principles has the attraction for being compatible with democracy as well as allowing space for judgment, deliberation and debate (Ford, 2010). Principles therefore, are appealing to many because they have the potential to tap into the power and legitimacy of democracy in situations where their operation is a “collaborative, dialogic experience” (Ford, 2010, p.47). The use of

principles could further be seen as a platform to provide more voicing opportunities for minority groups (Ford, 2010).

Some people, however, would question the legitimacy of principles. For example, people who are low in propensity to trust (propensity to trust is a dispositional willingness to rely on others. Individuals differ in their propensity to trust: Mayer et al., 1995) may have a harder time to agree with and trust in the legitimacy of interpretations of the principles and the meanings given to them. In situations where the presence of mutual trust is lacking, such an individual would be highly likely to question the degree to which a principles-based approach could truly represent minority group interests. After all, the legitimacy of the principles and their active interpretation, insofar as it is drawn on the power of democracy, is dependent on engaging a diverse and inclusive interpretive community which has a certain degree of mutual trust (Ford, 2010).

7.2.3 Procedural Fairness⁴³

Some people are likely to prefer rules because they see them as “fair”. Fairness for such people is likely to be judged in terms of the degree to which the decision made follows from the rules, and specifically a strict, even legalistic, application of rules (Proios, 2010). These people will tend to believe that as long as rules have been complied with strictly and rigorously, unfair treatment will be eliminated: that is, they tend to favour a ruled-based procedural view of fairness. Others may have been struck by the fact that applying homogeneous rules to idiosyncratic cases, sometimes leads to the effect of failing to capture the particularities of the individual case. Subsequently, they are likely to result in substantive unfairness. The reasoning for that is highlighted by Bratton (2003, p.1037): “a procedurally correct result not reflecting the underlying substance of the situation and the applicable principles”. This type of

⁴³ I focus on the procedural fairness instead of outcome fairness, rules and principles are essentially applied as part of the procedures; further, people rarely have the information regarding the outcomes of others, in which situation, they rely on the evaluation of the fairness of the procedures to indirectly assess the fairness of outcomes (Van Den Bos, Lind, & Wilke, 1997)

person will tend to have reservations and be concerned by the substantive unfairness that can occur if rules-based approaches are to be implemented.

Some people will prefer principles-based approaches because they value the sense of individualised justice that can derive from particularistic reasoned decision-making (Schauer, 1991a). It is an approach that pays greater sensitivity to the particular context, allowing for individual differences in terms of varying values and ways of doing things. It focuses more on what is constitutionally and democratically agreed upon and how well their individuals 'rights' and 'values' have been addressed in the procedure (Bratton, 2003; Wustemann & Kierzek, 2007; Levitt et al., 2005). Furthermore, the use of a principles-based approach may entail more engagement and give room and opportunity for people affected to express their views, hence, contributing to the increased overall perception of procedural fairness, and perhaps increased substantive fairness (Zainuddin & Isa, 2011, p.642).

On the other hand, there are reasons why we might distrust the propensity of principles-based approaches to deliver fairness: and these may be the aspects of a principles-based approach emphasised by some, particularly those individuals with a low propensity to trust. These people may see the principles-based decision-making process as inevitably value laden and associated with individual biases and interests (Ford, 2010; Carter & Marchant, 2011). Ultimately, for them, the use of a principles-based approach would create an uneven ground for competition between ordinary users and more powerful elites who are good at justifying themselves (Carter & Marchant, 2011).

7.2.4 Concreteness vs. abstractness

This dimension is concerned with an individual's propensity to process information and decision-making, using either concrete rules-based approaches or more abstract principles-based approaches. A rules-based approach often presents information in concrete and detailed form. This method of acquiring, assimilating and analysing data may appeal to a certain type of person whilst for others; a broad and abstract principles-based approach is more attractive.

Construal level theory developed in psychology has been used to shed some light on how auditors make decisions under either rules-based or principles-based approaches (Liberman & Trope, 1998 & 2003). The theory posits that the same event or object can be approached and represented at two levels of construal: a concrete, low level vs. abstract, high level construal of events (Liberman & Trope, 2003; Trope et al., 2007 cited by Carpenter et al., 2011). Based on the construal level theory, some people may be drawn to rules because they prefer information represented in a low construal which focuses on prescribed details of the accounting transaction.

On the other hand, the type of person who prefers principles would be more likely to be comfortable working with high-level construal, which is to understand and represent the essence of the event in more abstract terms. The rationality is that principles do not prescribe solutions to a particular person at a particular time in a particular context (Alexander, 1999). Instead, principles are high-level construals and “apply to a broad array of examples and selectively include relevant and exclude irrelevant features of those objects and events... therefore capture the superordinate, central features of an object, and abstracting these high level, immutable features conveys the general meaning of the event” (Trope & Liberman, 2003, p.352). In this way, people who prefer working with the high construal would primarily be focused on considering ‘why’ a transaction should be accounted for in a certain form (Carpenter et al., 2011, p.14).

7.2.5 Uniformity versus Flexibility

Some people may hold the view that uniformity is desirable, hence, rules are essential for that purpose (Bhimani, 2008, p.451). This preference is consistent with a preference for strong uncertainty avoidance, leading to a need for concrete rules and rigid codes of behaviour (Gray et al., 2006, p.47).

Some people may see the limitations of a rules-based ‘one size fits all’ approach (Ball, 2005). Rules are non-reflective in nature, which means that people do not really need to take heed of whether the application of certain rules is really appropriate for

the contexts. The consequence of adopting that mentality is that applying rules would result in a ‘pseudo-uniformity’; ‘pseudo-comparability’ (Amir & Ariely, 2007, p.143).

Some people may prefer a principles-based approach for the reason that it is an approach that supports flexibility. It enables people to engage their own discretion to determine how best to achieve goals in each individual setting (Black, 2008; Ford, 2008; cited by Carter & Marchant, 2011, p.160). This reflects my expectations regarding the linkages between preference for principles and personality traits such as openness and extroversion (chapter five, section 5.5.2 & 5.5.3). My proposition is that because of the flexibility associated with a principles-based approach, individuals who are predominately principles-oriented would also tend to be more open and extravert. Hence, people with principles orientation would have greater agility in adapting to new situations (Better Regulation Task Force 2003 cited by Carter & Marchant, 2011, p.161); The flexibility of principles also enables individuals to focus on the desirable ‘outcomes’ and ‘objectives’ they are endeavouring to achieve, “without being overburdened by attempts to stay in compliance with an inflexible rules-based system” (Ford 2008; Hopper & Stainsby, 2006 cited by Carter & Marchant, 2011, p.161).

7.2.6 Need for certainty and predictability

Different people are likely to be attracted to rules and principles differently because of their varying abilities in delivering certainty and predictability.

Within the legal arena, certainty and predictability imply that “laws and, in particular, adjudication must be predictable: laws must satisfy requirements of clarity, stability, and intelligibility so that those concerned can with relative accuracy calculate the legal consequences of their actions as well as the outcome of legal proceedings” (Paunio, 2009, p.1469). Based on this line of reasoning, people who have a higher tendency to eschew uncertainty and structure are liable to be attracted to rules, and more prepared to rely on them, in the expectation that they will deliver more certainty and predictability (Hofstede, 2001, p.145). A structured approach in auditing is characterised by “a prescribed, logical, sequence of procedures, decisions and

documentation steps” (Cushing & Loebbecke, 1986 cited by Smith et al., 2001, p.40). In addition, individuals with a lower tolerance of ambiguity will be less likely to break with rules even when doing so would serve the underlying spirit of the rules themselves - if not their ‘letters’; on the other hand, individuals with a higher tolerance of ambiguity are more likely to tolerate, and even relish, the ambiguity of the outcomes, in the absence of clear rules (Cohen et al., 1993).

I expect that individuals with a higher tolerance of ambiguity and lower need for closure are likely to be more positively disposed towards principles. This unstructured approach is associated with use of more judgment by the practitioners (Smith et al., 2001). These people appreciate and may prefer the fact that principles could afford flexibility in response to complex and chaotic real-life situations with low predictability where all sorts of uncertain and unanticipated factors may arise in fast changing environments. Such people may feel or find that by using a principles-based approach, they are better able to cope with any unpredictability and chaos that arises.

Some people are more likely to be concerned with the relatively high level of imprecision sometimes associated with principles; they may, for example, feel principles give them insufficient guidance, leaving them exposed and, for example, having to speculate on how their superiors would expect a particular principle to be interpreted and applied in a particular case. In these situations, the degree of tolerance of the superiors towards an individual’s interpretation and judgment is uncertain. Consequently, they would fear the backlash they may face as a result of applying their judgment. This point was reinforced by the experiences shared by the participants in the focus group who pointed out the sense of uncertainty associated with using principles when making decisions.

7.2.7 Complexity

Response to complexity is one dimension underpinning individuals’ difference in preferences towards rules and principles.

Some people find themselves reluctant to work with rules for the reason that they view rules-based systems as burdening and unnecessarily complex. This phenomena is sometimes referred to, in accounting and elsewhere, as 'rules overload' Black (2001, p.28). The mental burden resulting from 'rules overload' would have undesirable implications. Examples of some of the undesirable implications are: deteriorating judgmental accuracy and consistency; coping strategies which reduce mental processing; weakening the interactions between users and regulators; reducing users' ability to constrain aggressive reporting and to communicate the financial information accurately (Nelson, 2002; Sawabe, 2005). Others, however, may find rules are extremely helpful in complex situations by providing them with clear structures and instructions to follow. This type of person may show a higher need for structure and concrete information. They tend to process information in a linear and hierarchical manner, rather than taking a network of information with competing importance (Hartmann, 2005; Sternberg, 1999).

Abstraction and simplicity are associated and sometimes conflated. Some people prefer to work with principles because they are drawn to what they take to be their simplicity (Ford, 2010; Dickey & Scanlon, 2006). Consistent with the construal level theory (section 7.2.4), this type of person is likely to be more comfortable with information presented at a high construal level, and with principles, which are typically written in simple and straightforward language that avoids the complications associated with exceptions, and sub-rules, encountered heavily in a rules-based approach (Tweedie, 2007; Ford, 2010, p.14). Nevertheless, there are people with the view that principles themselves, due to the difficulties of professional interpretations they allow, can potentially generate their own problems and complexities (Herz, 2003). Consequently, this kind of person may resist as too difficult and complex, the weighing and balancing, without precise clear-cut guidance, required by the application of principles (Carter & Marchant, 2011).

7.2.8 Need for security

Need for security involves the concerns that some individuals will have regarding whether rules or principles will protect them from potential criticism or litigation.

Some people will tend to prefer rules because they value or need, and feel protected by, the structure and clear guidance that rules can provide. In particular, a preference towards formal structure can also be related to individuals' search for certain protection against any potential accusations (Pentland, 1993), expressing an attitude of 'it's not my judgment; it's the rules that tell us this is wrong'. These are the individuals who welcome the avoidance of responsibility for decisions that can be associated with a heavy reliance on rules, rather than principles, and an effective abdication of judgment (Ohman et al., 2006, p.105). This type of individual will also tend to be low in openness and flexibility. They would be uncomfortable with the uncertainty or ambiguity that can be associated with new or changing tasks/environments because in such situations there is usually a lack of clear structured rules to supply the feeling of security.

People who are more comfortable with the uncertainty and ambiguities may prefer to rely on a principles-based approach to protect them from litigation or attacks or other challenges to their judgment. These individuals are likely to be comfortable in justifying the rationales behind their decisions rather than just seeking protection in complying with regulation and the status quo. Principles allow some autonomy within a framework, and this type of person will welcome that freedom which in itself gives decisions some protection from criticism. This is shown in the recent argument put forward by a number of prominent scholars, "principled professional judgments made in good faith on the basis of the professionals interpretation of the facts and the application of principles can be especially difficult to challenge as it will often be impossible to identify any specific point in which in any sense they are 'wrong'" (Hall & Renner, 1991, p.63, see also Black et al., 2007; Jackson, 2004; ICAS, 2006; Dworkin, 1979; Carpenter et al., 2011).

Sennetti and his colleagues proposed that when auditors are required to work under principles-based regulation, the principles attribute puts more internal responsibilities onto the auditors (Sennetti et al., 2007). "They have more latitude in the application of principles and may be held more personally accountable for the results" (p.4). For that reason, some people may feel more vulnerable when applying principles with the potential threats such as backlash or criticism. Their own personal judgment is at

stake rather than an impersonal rule - in which their “self” is not at stake. The imprecise nature of principles would “open people up to more threats as they depend on their own judgment rather than a set of strict rules” (Somerville, 2003, online press⁴⁴). As a result, Schipper and Sennetti note that a principles-based regulation is likely to increase liability-risk concerns, (Schipper 2003; Sennetti et al., 2011, P 168⁴⁵).

7.2.9 Need for closure

NFC (need for closure) is referred to as “a subject’s desire for a firm answer to a question; a firm answer, in contrast to a confused ‘and or’ ambiguous one” (Kruglanski et al., 2004, p.6; more details please see chapter 5, section, 5.7.1). Rules may be attractive to some individuals because of their desire or need for closure of problems; avoiding ambiguity and having clear-cut answers/solutions to decision-making or problem solving (Kruglanski et al., 2004, p.6). The need for closure as a psychological construct can be measured by an instrument called the ‘need for closure scale’ (NFCS) developed by Kruglanski, Webster, & Klem in 1993, (for more detail on the instrument please see chapter nine, section 9.11.2.2).

Applying the NFCS instrument in studying the behaviour of auditors, Bailey and his colleagues observed that auditors who score lower in NFC spend relatively more time on the deliberative, judgmental tasks such as hypothesis generation. Further, together with the findings from a later study, they found that subjects higher in the NFC instrument generate fewer and lower quality hypotheses yet demonstrate a higher level of confidence in the decision subsequently reached based on those hypotheses (Bailey et al., 2007; Bailey et al., 2011). This further supports the notion that people who are lower in NFC tend to be more comfortable with ambiguities and unstructured tasks: we would expect such individuals to be comfortable with and to prefer the relatively unstructured nature of principles-based approaches. Furthermore, Frenkel-

⁴⁴ <http://www.bizjournals.com/triad/stories/2003/03/03/focus2.html?page=all> (Mar 3, 2003, 12:00am EST)

⁴⁵ http://books.google.co.uk/books?id=BexOcYmZFwC&printsec=frontcover&source=gbs_ge_summa ry_r&cad=0#v=onepage&q&f=false

Brunswick (1949 cited by Leone, Wallace, & Modglin, 1999, p.555) posited a type of characteristic of persons “who are intolerant of ambiguity as tending toward premature closure and toward remaining closed-minded thereafter”.

Based on the empirical findings of Bailey et al. (2007), I therefore expect that people who exhibit a higher need for closure would tend to prefer concrete and clear cut rules. This type of person may also prefer to work with more precise and structured information such as in the form of concrete rules, implying a relatively low tolerance of ambiguity (by Hartmann, 2005). Whilst for others, who have a lower need for closure, my expectation of them would be to have more tolerance with respect to taking a relatively longer time to collect evidence and weigh and balance different factors required by principles-based approaches (Cohen et al., 2011, p.28; Dworkin, 1977).

7.2.10 Efficiency

Some people prefer rules because they believe rules can help them to reach decisions and solve problems in an efficient manner. Rules are viewed as efficient because: 1) they are clear cut and operate in an ‘all or nothing’ fashion (Dworkin, 1979, see chapter four, section. 4.4, for more details); 2) they are considered as “a summary of past good decisions”. Therefore, by using rules, “people could save time because they would not need to start afresh and debate issues of value and fact every time some new factor arises” (Sunstein, 1995, p.1022). In addition, rules prescribe the problem and the information/data required for its resolution and can afford certain efficiency by eliminating the necessity for making extra investigations and calculations (Braithwaite, 2004). Furthermore, rules provide instructions for prescribing actions one should take in unfamiliar or novel situations (Alexander, 1999, p.543). Nonetheless, a potential problem that may arise from this way of rationalisation is that as users no longer require to “consult the reasons behind the settlement in determining how to act, they are also required not to heed those reasons, even if they may disagree with the rules” (Alexander, 1999, p. 533). In effect there is a potential trade-off between efficiency and the optimality of decision-making. For this reason, people

may find that rules oversimplify decision-making and inevitably fall short in one way or another (Farber, 1999, p.601).

Some people may find, and react against, a certain inefficiency in the ex-ante nature of rules (Braithwaite, 2002a; Kaplow, 2000), which attempts to reasonably comprehensively specify outcomes before particular cases arise (Sunstein, 1995, p.961). Some people will be struck by the inefficiency of the pre-packaged rules-based solution approach and by the requirement it imposes on the people who are subject to them. Thus, procedurally cumbersome rules undermine the individual's ability to quickly and astutely assess the context, perhaps on the basis of principles, which is important in the particular situation, and respond ecologically in terms of gathering the 'important' information (Sunstein, 1996, p.62).

Some people will be predisposed to feel that the principles-based approach helps to make decision-making processes more efficient. They may, for example, feel that once principles have been internalised they can be easily and quickly integrated into their habitual decision-making process with less bureaucratic formality and inefficient constraint (Korobkin, 2000, p.33). However, using principles means one needs to be prepared to modify one's approach to suit each individual context/problem, and gather and weigh the necessary context specific information (Alexander, 1999, p.544), inefficiently 'reinventing the wheel every time' (Korobkin, 2000, p.33). Thus, the time and other resources devoted to such deliberation may cause inefficiency problem (Alexander, 1999, p. 536).

Principles tend to be more efficient when there is 'heterogeneity' across decision-making; they will also be more efficient where constant changes happen over time, a situation referred to as 'chronological heterogeneity' by Korobkin (2000, p.34). For different types of people, relying on rules may be appropriate for decision-making under one fixed and familiar condition; whereas for others, thinking with principles is a more efficient way to cross conditions and temporal differences.

7.2.11 Creativity

Creativity is likely to be another factor driving people's preferences in respect of a rules-based or a principles-based approach. Creativity requires one to be open-minded, non-conventional, and prepared to exercise one's initiative: all the characteristics that are the opposite of a pre-packaged, rules-based approach. A pre-prescribed package tends to motivate individuals to 'fix' their attentions on complying with rules or avoiding breaking rules and, hence, hinders their ability to think in a novel and adaptive way (Carter & Marchant, 2011). A person who opts for a rules-based approach might tend to be high in close-mindedness, adherence to conventions and conservatism, characterising the authoritarian personality (Rigby, 1982).

The space allowed by principles for creativity and innovation might be the one important factor that attracts some individuals to a principles-based approach (Ford, 2010, p.37). A principles-based approach enables users to adapt to the rapidly changing market place and continue to develop better financial products (ICAS, 2006). Since the use of principles requires a certain level of flexibility and creativity in individuals' thinking, I would expect that people who are high in creativity would be more able to cope with the demands, for creativity, of a principles-based approach and for this reason, be more likely to prefer principles (Ford, 2010). On the contrary, other individuals may express concerns over their ability to make effective use of principles as they may be not as comfortable or competent in dealing with less precise/abstract information and the demands that interpretative creativity principles can place on users (Carter & Marchant, 2011).

7.2.12 Empowerment

The feeling of empowerment could be another reason drawing individuals towards one approach rather than another. The psychological construct of empowerment has been explored in detail in chapter five, subsection 5.6.2.

Some people will be drawn to rules because they feel rules empower them, especially the type who is high in authoritarian personality. Such people may tend to see rules as

providing them with institutional approval and power in situations such as negotiation or when confronted with demands or views which challenge their own.

On the other hand, some people will feel disempowered by rules because they feel their input has no impact in the way tasks are approached when using prescribed rules (Yukl & Becker, 2006, p.213 and focus groups, chapter six). The type of person who might find rules constraining and disempowering would be someone who dislikes working with routines and overly specialised tasks (Yukl & Becker, 2006, p.212). They may also have a difficult time in assessing how their individual work could be contributing to the overall company objective (Ohman et al., 2006). This may result in an undesirable situation where individuals would develop a sense of personal detachment from tasks that are handed down from their superiors.

Principles have appeal for some people because they see them as empowering them in decision-making or problem solving. I expect this type of person would be high in internal locus of control as well as capable of reasoning autonomously. Consistent with my observations, Kohlberg (1975, p.670) argues that a principles-based approach promotes a sense of autonomy, which refers to an increased sense of self-determination or the freedom of practitioners to choose their own direction. And the reason for that is because it is an approach which allows and encourages their personal 'touch'/'perspective' on the task.

Conversely, people who feel powerless when using principles are more likely to be the type of people who have an external locus of control, who believe external, uncontrollable factors such as luck, nature and authority govern and determine and give meaning and significance to their behaviour (Rotter, 1966). Such people are likely to feel the application of principles as unpredictable, outside their control and perhaps in the hands of external forces, or that their own use of principles is liable to be subject to unpredictable external criticism. Consistent with prior study, participants in the focus group expressed the view that, when subject to principles, they tended to feel powerless because of lack of a trusting working environment and supporting supervisors. In particular, some participants remarked that to be able to use principles in decision-making, one really has to have the support of a good manager.

7.2.13 Effectiveness

Arguably, the type of people most likely to find rules “effective” are those who are most rule-bound, rather than rule-guided (Pincus, 2000, p.247). However, for other people, a rules-based system is inherently suboptimal - less than ideally effective (Pincus, 2000). Such people will tend to see rules as a compromise made to fit the generality and, therefore, always liable to be less than just quite right for the particular case being considered. Such people will see principles as more capable of being tailored closely to the particular case and more capable of delivering the “right” solution. People drawn to principles for this kind of reason are likely to see the inherent problem of rule generality, only compounded when rules are applied without any effort being made to understand the rationale behind them i.e. compounded in situations where the interpretation and application of rules is not informed by a proper regard to their underlying objectives and rationales (Alexander, 1999).

Effectiveness may be a reason for some people to prefer principles, in particular in the field of auditing fraud detection (MacNeil, 2010; Gray, 2009). Some people may have the attitude that “I think principles are more effective than rules, simply because it’s easier to get around a rule than get around a principle”. This is because these people believe that principles predispose people using them to “obtain a thorough and accurate understanding” of the task at hand (De Dreu, Beersma, Stroebe, & Euwema, 2006; Kruglanski, 1989), which is an approach focused more on substance rather than form (Backof, Bamber, & Carpenter 2010; Cohen et al., 2011; ICAS, 2010). On the other hand, there are people who dislike the vague and ambiguous nature of principles, as they reckon principles do not provide a structured approach in which to be effective in helping decision-making.

7.2.14 Manipulation

This dimension is concerned with the forms of approach which would encourage or discourage users from taking advantage of a specific approach which consequently has good or bad social ramifications.

Some people like rules as they believe rules are able to deter manipulation. Detailed and prescribed rules enhance transparency in the decision-making process (Bratton, 2004, p.30), which is perceived to reduce, or in some cases eliminate, opportunistic malpractices (Jackson, 2004). Some people find rules are easy to manipulate and compliance with rules fosters a “check-list” mentality which undermines these people’s ability to detect manipulation. For instance, in the case of auditing fraud detection, auditors trained and reinforced to audit a fixed set of financial statement items, transactions, or internal control processes, by using a limited number of procedures may not be able to recognise alternative audit procedures even when they are ostensive. Users of these rules-based procedures may feel frustrated, as the manipulative aspects of using rules tend to undermine their ability in detecting potential frauds.

Some people prefer principles for their ability to combat manipulation. Whilst there will always be some room for debate about how a rule should be applied, rules tend to put an end to conversation and debate with, for example, the blunt fact/statement that “that’s the rule”. Principles-based approaches are intrinsically open. One has to justify and makes an effort to disclose the decision/rationales behind his or her judgment, it leaves minimal opportunity for manipulation and malpractice (Benston et al., 2006, p.167; ICAS, 2006; Maines et al., 2003).

‘Self-serving bias’ is less problematic in a rules-based decision-making model, as there are clearly specified legal boundaries. In contrast, in a principles-based decision-making model, such bias means that the users of principles are perceived to be more likely to interpret ambiguous information in ways that benefit themselves (Korobkin, 2000, p.46). As a result, people who are sensitive to such biases would tend to perceive a principles-based approach as associated with manipulation. Their reasoning will be, nonetheless, distinctive from the reason why they would think rules are manipulative (Wustemann & Kierzek, 2007, p.7; Sawabe, 2005). I would expect this type of person to be someone who is low in trust propensity and high in need for more complete/precise information in order to reduce the uncertainty associated with the interpretative risk of using principles.

7.3 The possible inter-relationships

Through my work with focus groups and review of the literature, I have identified 14 dimensions underlying dispositions towards rules and principles. Whilst these dimensions are, I believe, conceptually quite distinct, the focus groups and my review of the literature clearly suggest that they will inter-correlate in various ways. I see many connections and potential relationships between these dimensions, some of which I will discuss below and, on the basis of my reading, will very loosely group the dimensions in terms of four proposed, or hypothesised, factors. Because of the complexity and multiplicity of the conceptual overlapping and the intricacies of the inter-relationship of the dimensions, it seems to me that interactions among these dimensions cannot be sensibly conceived of as operating in a hierarchical fashion. The reality is, I expect from my preliminary work a rather complex network, or matrix, relation. In addition, I would expect that the active relation between the dimensions and the ‘weight’ they contribute in the shaping of preferences would conceivably vary depending on context. In other words, I acknowledge that context is liable to bring into focus certain dimensions and shapes and sharpen preferences.

Based on the conceptual linkages between these 14 dimensions, and the cogency of the arguments concerned as expressed in the literature and in focus group discussions, the following expectations are very tentatively proposed regarding the factor structure underlying dispositions towards rules and principles. The factor structure is finally an empirical question and it will be examined as such in chapters eight and nine. It is important at this stage, for sampling reasons, to have a working sense of the number of factors I expect might emerge.

The first factor I propose centres on preference for rules and draws together dimensions reflecting various characteristics and features of that preference: individuals who appreciate the concrete and specific nature of rules may feel they are better at providing them with more professional security (Ohman et al., 2006), fulfil their needs for closure (Bailey et al., 2007) and uniformity (Ball, 2005; Gray, 1988). Clear cut rules working in an ‘all or nothing’ manner also provide more certainty and make the decision-making process more efficient in terms saving time on

deliberations and investigations (Pincus et al., 1999). However, too many rules and the dynamics among rules themselves may cause complexity for decision makers (Nelson, 2003; Black, 2001). I expect that concerns will systematically cluster around these issues.

The second factor centres on preference for principles and draws together dimensions reflecting various dimensions of preference for principles. It is grounded in the prior literature and the observations of the focus groups. Principles-based approaches offer fewer and more abstract standards of conduct (Levitt et al., 2007, p.120). Such an approach allows for individual discretion and flexibility to tailor decision-making or problem solving according to the uniqueness of the context. The flexible nature of the principles supports creative thinking (Ford, 2010); users will feel a sense of increased commitment and accountability to the task (Black, 2008; Arjoon, 2006; Hill, 2007). The increased involvement and commitment, and the focus on substance rather than form, associated with principles can also be seen to lead to increased effectiveness and compliance (Yukl & Becker, 2006). The more involved an individual is in decision-making that is important to them, the greater is likely to be their sense of self-empowerment and investment in the decisions made.

The third factor I expect will cluster around concerns for fairness and legitimacy. Prior literature has indicated that ethics, legitimacy and procedural fairness tend to be related at least at a conceptual level. Such linkages are reflected, for instance, in the formalist vs. anti-formalist debate in the jurisprudence literature (see chapter four). These dimensions all seem to pick up on aspects of individuals' beliefs about the validity and 'rightness' of rules and principles-based approaches. The grounds of legitimacy and fairness tend to vary for rules- and principles-based approaches, and will hold differing appeal for different kinds of individuals. The belief in the legitimacy of a rules-based approach reflects a formalist mentality and a narrow reliance on officials and preceding rules (McBarnet & Whelan, 1991; Alexander, 1999). Based on the model proposed by Coglianese (2007), a rules-based preference may reflect a focus on procedural legitimacy. In contrast, a principles-based approach may emphasise the 'substance over form'. Principles, as studied in this project, seem to reflect a belief in individual rights and a consequentialist mentality; in particular,

the legitimacy of the principles, and their active interpretation, is dependent on engaging a diverse and inclusive interpretive community which has a certain degree of mutual trust (Dworkin, 1979; Alexander, 1999; Ford, 2010; Black, 2008).

Last but not the least, is a factor reflecting concerns about the potential for manipulation and fraud that might be opened up or facilitated by either rules- or principles-based approaches. This factor seems to be the driving force behind recent calls for regulatory reform in the finance sector, and the increasingly urgent appreciation of the need for a re-kindling of public trust in the accounting profession. The conceptual discussions within accounting and auditing, and the level of concern expressed, alerts us to the fact that this factor may weigh exceptionally heavily at this time and be a particularly significant determinant of individuals' preferences towards rules and principles. A rules-based mentality would be more likely to invite creative compliance that subverts quality of financial reporting as demonstrated in a wave of corporate scandals (Sawabe, 2005). The concern about manipulation associated with a principles-based approach is somewhat different; because principles-based regulation is "premised on the concepts of 'co-regulation' or 'enforced self-regulation'" (Ford, 2010, p.4) and the adaption of principles reflects "legislative faith in regulatory expertise, objectivity, fairness, and capacity" (Ford, 2010, p.11); some people are concerned that principles give too much leeway to the managers and decision makers generally; too much space for interpretation and the biased and self-serving exercise of discretion. Principles, by highlighting the responsibility of the individual decision maker and placing the emphasis on substance, give a certain encouragement to practitioners to act in 'good faith' in using them (Wustemann & Kierzek, 2007; Sawabe, 2005; Schipper, 2002 cited by Keim & Grant, 2003, p.404-405; Amat et al., 1999; Carter & Marchant, 2011; Black, 2001); they thus have a moral appeal to many commentators. On the other hand, they seem to many to open up a space for exploitation and, in particular, exploitation of the close relationship between the regulator and the regulated fostered by principles-based, and generally more interpretative, approaches (Carter & Marchant, 2011; Benston et al., 2006, p.171).

Table 7.1 shows my initial speculation on how these dimensions would be collapsed and grouped into four distinctive groups based on the connections among dimension

emerging from the theory and focus groups discussion. The empirical part of the work will further investigate the groupings statistically (see chapters eight and nine).

Grouping 1	Grouping 2	Grouping 3	Grouping 4
Concreteness Uniformity Certainty Complexity Need for closure Efficiency Need for Security	Vagueness Flexibility Effectiveness Creativity Empowerment	Ethics Legitimacy Fairness	Manipulation Gaming the rules Exploiting discretion associated with principles Interpretative bias and abuse

7.4 Conclusion

The task of this chapter has been to specify, explain and justify the various dimensions of preference I expect to underlie dispositions towards rules and principles. In achieving this task I drew on, and brought together, my analysis of various streams of literature dealing, often only implicitly, with preference for rules and principles, and my analysis of the focus group discussions which were designed to supplement and support my reading of the literature.

I provided in this chapter a preliminary conceptual framework of the dimensions underpinning dispositions towards rules and principles. On my analysis of the prior literature and the focus group meetings, 14 conceptually distinct dimensions emerged. Each dimension is discussed above. These dimensions were crucial in guiding my development of “items” for inclusion in the empirical work.

I appreciate that there is a great deal of conceptual overlap and interconnection among these 14 dimensions. Full exploration of the inter-relationships of these dimensions will be taken up in chapter nine as an empirical question. At this stage I tentatively propose that the 14 dimensions might very likely, I hope plausibly, be related in terms of four factors.

Chapter 8: Initial item pool testing and reduction

8.1 Introduction

In this chapter I focus on explaining and documenting the process of creating and testing the initial items pool. The process follows the conventional scaling and attitude questionnaire development literature (see chapter two for an overview). The objective is to produce a short instrument with adequate psychometric properties. Later on a distinct sample will be used to further test and validate the instrument (see chapter nine).

8.1.1 Overview

The chapter is organised as follows: Section 8.2 clarifies the basic elements in the design of an attitude questionnaire; section 8.3 focuses on explaining the rationales and results of the qualitative methods of the piloting work, including subject matter experts interview as well as peer review session; section 8.4 discusses the use of online survey for the current project; section 8.5 outlines the issues involved in conducting quantitative analysis on the preliminary item pool. The results of the reliability analysis of the 28 subscales are also reported; section 8.6 focuses on further item reduction by performing principle component analysis on the cleaned up items set. The analysis shows that there are two dominant factors underlying the dispositions towards rules and principles. In addition, although it's not the focus of this project, an ad hoc analysis carries out on the remaining items to further explore the effects of the minor factors which emerged in the process; section 8.7 concludes the chapter.

8.2 Preliminary item pool

The following sections discuss elements and considerations in the process of designing the preliminary item pool for this stage of work.

8.2.1 Generating a pool of preliminary items

With rules and principles defined (chapter four) and a prior dimensional structure postulated (chapter seven), it was necessary to generate a pool of items that measure each dimension. Within the scaling literature such dimensions are referred to as factors (DeVellis, 1991; Netemeyer et al., 2003) because they are elusive abstractions which cannot be observed or measured directly (DeVellis, 1991). In order to operationalise factors, items are required to ‘tap’ or ‘cover’ the domain of the construct (Netemeyer et al., 2003).

8.2.2 The scaling method: Likert scale

Likert scale is most appropriate for studies exploring attitude patterning (Oppenheim, 1992, p.189). It uses fixed choice response formats and measures the strength/intensity of attitude (Rattery & Jones, 2007, p.235). In this project, I asked subjects to give numerical indication on their degree of preference of the statement by selecting from 1-5. A score 5 equals to the most favourable attitude, and score 1 equals to the least favourable attitude. 3 is the middle point for undecided or a neutral opinion. The benefit of having a neutral point is that it allows respondents to be honest about their choice rather than being forced to choose either extreme (Cox, 1980).

8.2.3 Self checking criteria for item Generation

In the process of creating items for the initial items pool, the research student followed self-checking criteria (table 8) to evaluate the initial face and content validity of the items. In addition, a weekly meeting with the primary supervisor of this PhD project was also held for him to go through each individual item with the research student to ensure the items were conceptually relevant and could be understood clearly. Moreover, each item has a cited reference or a source to show where she has taken the inspiration from.

Table 8 Self-checking criteria for the initial preliminary item pool

Biased questions	Does this item seem likely to divide responses into extremes?
Leading/ loaded questions	Does this item seem likely to influence the proportion of respondents?
Vague or ambiguous	Is this item clearly written?
Social desirability of the item	Does this item trigger response reflecting the socially desirable views, rather than the individual's true view?
Irrelevant items	Is this item relevant to the concepts?
Solution: an excel sheet is created with the theoretical or empirical sources for the questionnaire item (see appendix one).	

Source: Nigel, 1973; Oppenheim, 1992; Rattray & Jones, 2007.

8.2.4 Rationale for the multiple-items approach

Another decision I had to make at this stage was to determine the number of the items to be generated for the preliminary item pool.

Because I am trying to measure a new multiple dimensional construct, at this stage, it is difficult to say which items will strike a chord with the participants. Hence, I opt to adopt a multiple items approach because multiple items give more consistent results, and also cancel out ambiguities as the underlying dimension will be shared by more than one item (Peter, 1979). Further by using multiple items, provided they all relate conceptually to the same dimension, we would reduce the instability due to particular wording, emphasis, mood changes and so on (Oppenheim, 1992, p.147). In addition, too few items may not produce a reliable measure. The reliability coefficient alpha tends to be too low to meet the acceptability criteria when there are few items on a scale (Loewenthal, 1996, p.22).

Loewenthal (1996) guidance was adopted to help determining the number of items needed for each dimension. According to her, 5-16 items should be enough for assessing a single 'factor'. To achieve this, one needs to start with 10-30 items per subscale in the preliminary item pool.

The decision to have negative questions (preferences) is theory-driven as there are arguments for and against each approach instead of merely one directional argument.

In addition, for the scale construction purpose, mixing negatively and positively worded items is also helpful in minimizing the ‘yes saying’ tendency of the respondents (Loewenthal, 1996, p.24; Churchill, 1979).

- A positively worded item is one where high scores indicate the more preferences towards the rules or principles;
- A negatively words item is one where high scores indicate the less preferences towards the rules or principles.

The initial item pool needs to compose twice as much - 32 items per dimension (8 per quadrant).

$4 \times 4 \times 14 \times 2 = 448$ items for the preliminary item pool

The decision to have 448 items for the initial item pool was intended to be over- but not under inclusive to ensure the construct had been adequately sampled (DeVellis, 1991). The justification for this approach was twofold. First, it is easier to remove than to add items at later stages (Clark & Watson, 1995). Secondly, adopting this approach increases the probability that all dimensions will be adequately covered and represented which enhances content validity (Netemeyer et al, 2003).

8.3 Piloting stage one:

Before recruiting a large sample and conducting any statistical testing on the questionnaire, qualitative methods such as subject experts’ interviews and peer review sessions were used to check the items to establish face and content validity.

8.3.1 Qualitative piloting: Peer review panels

The goals of the peer review panels were: 1) to screen out inappropriate items; 2) to check and establish face and content validity of the items.

8.3.1.1 Ethical approval

I obtained ethical approval for both carrying out the focus groups as well as the subject experts interviews from the Institutional Ethical Review Committee of the University of Glasgow.

8.3.1.2 Participants for the peer review sessions

Students were recruited via emails and 11 participants had agreed to take in part in the study. Two judging panels were organised with five and six participants in each session. It was a convenience sample because the researcher had asked her fellow PhD colleagues to help with the research, some others were involved too because they were friends or flatmates of these colleagues of hers. The actual operationalisation of these sessions was similar to those focus groups which have been carried out previously (chapter six, section 6.4), therefore I will not go into more details here.

8.3.1.3 The descriptive data of the sample

Table 9 Demographic data for the peer review participants

Descriptive data for the peer review panel	No.
Sample size	11
Average age	25
Average years in Education	17 years of formal education
Background	7 from social science, 4 from science
Asian	4
White	7
Female vs. Male	4 vs. 7

Due to the time limitation and the length of the instrument, it was not practical or efficient to ask every participant to evaluate the whole instrument at one session. By splitting the questionnaire into 3 or 4 equivalent sets (by dimensions), we made sure that each dimension and the items in that dimension would be reviewed at least twice by different participant (Oppenheim, 1992).

To assist the judging process, a specific list of criteria for judging items has also been provided to the participants (see 8.2).

List of things were being judged and discussed by the panel review sessions.

I focused on getting an overall feeling on respondents' views on

- 1) the clarity of the wording

- 2) the likelihood the target audience would be able to answer the questions
- 3) the layout and style of the online survey

In addition, I also asked them to comment on the following issues:

- 1) intro message of the questionnaire
- 2) ranking the 14 dimensions according to individual personal preferences
- 3) suitability of using students sample for this questionnaire

8.3.1.4 Analysing the feedback

In general, my analysis of the discussions of these two panels showed that participants were intuitively able to recognise and understand the items without much explanation. They also agreed that the items were written in a way which is consistent with their experiences with rules and principles.

- 1) The outline and style of the online survey:

Participants liked the layout of the online survey. The comment was that “it seems pleasant and easy to use”. Another important suggestion related to recruiting people for the online survey is: to give future participants monetary incentives to encourage them to fill in it online rather using methods such as a paper and pencil approach.

- 2) One of the suggestions that I have taken on board from the discussions of the individual judging panels is to randomise the orders of the questions and avoid presenting emotive or controversial items at the beginning of the online survey.

- 3) The main problem being raised is that the definitions of 'principles' may seem difficult to grasp for some of the participants, these people needed more explanation on the nature of the principles referred to in this questionnaire.

- 4) The task of ranking the significance of the 14 dimensions according to participant's own personal preference proved to be difficult. For the reason that each individual has different perception of the 14 dimensions as well as their associated contextual considerations. I did contemplate the option to include a brief explanation of all 14 dimensions, but that would make the already lengthy questionnaire to be even more cumbersome. In addition, it would have been a risky choice since it could have been leading for respondents. Hence, the test of ranking these 14 dimensional was dropped.

5) Participants felt that a student sample will be appropriate for this research as they would be familiar with using rules and principles as presented in the questionnaire.

8.3.1.4.1 Improvements made after the panel review sessions

Taking the feedbacks on board, subsequently I developed a brief introductory message for the online survey which including my definitions of the rules and principles, as well as some real-life examples that participants can relate themselves to (see appendix two). Such attempts did not mean to restrict or limit participants' valuations towards our questions, instead it was an attempt to be open and transparent in my underlying positions and I invited participants to share them with the research team, rather than just assume that we were in agreement with the underlying assumptions.

8.3.2 Qualitative piloting: the subject matter experts

In addition to the peer review panels, subject experts review sessions are used to

- 1) judge on whether the items may seem to be related to the dimensions of the issue as they would see it;
- 2) help us to identify some of the less relevant or effective items;
- 3) examine whether the current dimensions have covered the rules vs. principles preferences space/ any missing dimensions?

Because the experts have limited time they could spend on reviewing the questionnaire, the main objective is for them to examine whether the 14 conceptual dimensions sufficiently cover the constructs I am proposing here.

The selection of the experts is based on the following (Ramirez, 2002, p.2):

- 1) Practitioners who can comment on how meaningful or relevant the questionnaire item might be;
- 2) persons who have rich survey research experience.

Table 10 Demographic data of the experts

ID	Position	Working experience	Qualification	Profession
1	Faculty International officer	>10 year	PhD	Higher Education
2	Professor of financial regulation	>15 years	PhD	Professor
3	Professor of Jurisprudence	>15 years	PhD	Professor
4	Director, Trade Finance, Scotland & Ireland	>15 years	Professional qualification	Financial Services
5	Deputy Head of Investment Banking Division	>20 years	Professional qualification	Financial Services
6	MD of Private Banking	>20 years	Qualified lawyer	Financial Services

The procedure of carrying out these subject matter experts' meetings is similar to the face-face interviews. A voice recorder was used to record the meeting, with experts' permission for us to use the information. The experts were asked to read through all the items and delete the ones that in their opinion were not relevant to rules and principles. Meanwhile, they were asked to provide an alternative version of the deleted statement as they see fit.

8.3.2.1 Problems identified by the experts and subsequent steps taken

Experts have recognised that the length of the questionnaire may put some potential participants off but they thought that there were no substantial conceptual or practical dimensions missing from the current form. All of them agreed that the items tapped the domain of the construct, and items, on average resonated with their own experiences of dealing with rules and principles. Notwithstanding, they have suggested a few things that could be improved about the initial item pool:

1) Emotive or provocatively worded items:

Emotionally provocative items were suggested to be deleted by experts. One financial director thought the item of 'If one decides to go for a very much rule-based profession, then one does not need to be very creative at all.' was too strong and should be deleted. Another example is this "When being confronted with a Rule,

made by someone else, even if I don't totally agree with it, consciously I tend to just follow it.' Another example is this Q139: "Strict compliance with rules can seem impersonal and cold but that is actually a small price to pay for the fairness that strict rules deliver." All these items were subsequently removed at this stage.

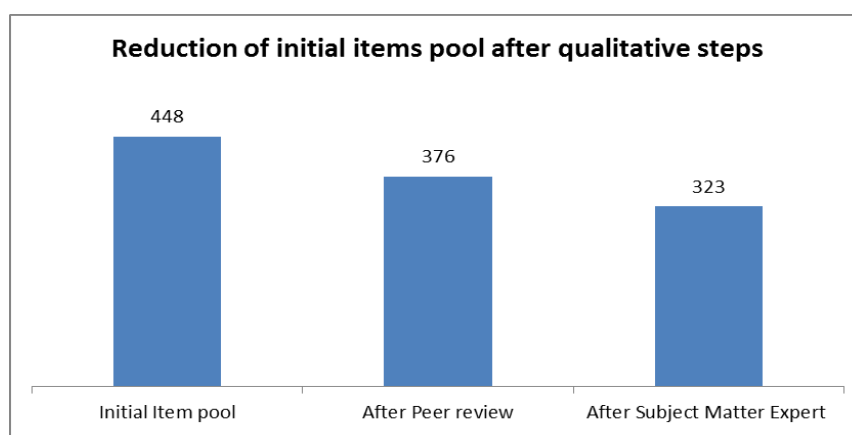
2) Theoretically wrongly located items / ambiguously worded items

Some items have been placed in the wrong theoretical dimensions. Because of the intricate inter-relationships among these theoretical dimensions, it is sometimes a rather difficult task to decide which dimension one item should be located in. For instance: 'people who need the security of rules never break new ground, and never achieve very much professionally'. After reading this statement, some experts thought it is about 'creativity': Different people are able to use / break rules in a creative way to advance their career. Whereas, it had been initially located in the dimension of 'need for security'. Experts suggested that such problematic items should either be deleted or be placed it into a more appropriate dimension instead. This item was dropped following the experts' advice.

Taking experts' suggestions on board, I subsequently relocated 10 items (3% of the total items in the initial pool) from the draft which was shown to the experts.

8.3.3. The outcome after qualitative review stage of piloting

Figure 3 Reduction of the initial items pool via qualitative steps



For the statistical reason articulated in Loewenthal (1996), I intentionally kept an equal number of items for each subscale: 6 per rule/ principles subscale for 14 dimensions: $6 \times 4 \times 14 = 336$, 13 items were further eliminated based on experts'

suggestions: such as items were ambiguous, irrelevant, or repetitive. After this procedure, 323 items were left in the preliminary items pool.

8.4 Online survey

As shown in diagram 8.2, after the pre-testing stage, I subsequently end up with 323 items in the initial pool (see appendix one). I advanced to the quantitative phase of work by adopting an internet-based online survey with user friendly features such as easy navigation, time alert and exit message, etc. The rationales for choosing an online survey were twofold: 1) the administration and the data entry of an online survey is the more efficient and requires the least amount of time compared with other forms of survey such as postal or paper and pencil. More importantly, compare with the pen and paper way of collecting survey data, the online data entry is instantaneous and highly accurate; 2) the secondary PhD supervisor, who is a professor in the psychology department, has conducted research using online surveys and he provided a free account for the research student to set up an online website using 'questionpro'⁴⁶ for this project.

8.4.1 Ethical Approval and Privacy Note

To achieve a larger sample size for the quantitative stage of piloting, I was required to apply for a separate ethical approval (in addition to that previously obtained for purpose of conducting focus groups) from the Research Ethics Committee of College of Social Sciences at the University of Glasgow.

A covering letter explaining the study together with researcher's contact method was issued to every participant at the beginning of the survey (see appendix four). Participants were asked to stop at any point of the online survey if they felt uncomfortable with the content. All responses were used anonymously: data will not be held associating responses to named participants.

⁴⁶ At the time, when the questionnaire firstly went online, the instrument was previously named as MPPR: measurement towards principles and rules. <http://attitudestorulesandprinciples.questionpro.com>

8.4.2 Sample recruitment for the online survey

A convenience sample was used by approaching students in the University of Glasgow's premises such as library, cafeteria and public lectures. Interested students were given a consent letter, and were asked to leave the research student their contact emails; shortly after they would receive an email from the researcher with the online link to the survey and also later on to arrange payment. The logo of The University Glasgow was also used in the online survey, to add authenticity to the survey.

Participants were sent an invitation email to the webpage of the online survey. In the email, I gave detailed and clear instruction on how to fill in the online form. The survey was self-administrated in the sense that participants were able to complete the survey at the comfort of their chosen locations and at their convenience. A submission date was indicated in order to improve completion rate and arrange for payment.

Comparing with the conventional pen and paper way of collecting survey data, the online data entry is instantaneous and more accurate. More importantly, the administration of pen and paper –based survey takes much longer and requires more organizations from both the researcher and participants: such as they have to all be in one location at once to enable the collection of the papers. The cost will likely to be high if a postal method were applied; there is also a question about the mails may arrive at different dates causing complexities in data entry.

The standard approach to monetary reward in experimental research in psychology is to pay £5 cash for each completed survey. Numerous meetings (locations were usually the university library and cafeteria for convenience and easy accessibility) have been arranged between the researcher and the participants for payment once the researcher has been notified by the completion of the online survey. Participants would have to sign a receipt/ consent form to give permission for this research to use their data.

8.4.3 Demographic data analysis of the preliminary item pool

The demographic variables of the participants who have filled in the 323 items of the online preliminary item pool are presented in table 8.4 below.

Table 11 Demographic statistics of respondents for the online preliminary item pool

Gender: Female: 43 (48%); Male: 47 (52%); total: 90
Ethnicity: Asia (including China): 30 (33%); Europe: 45 (50%); Others: 15 (17%); total: 90
Highest level of education attained: Some college: 19 (12%); Bachelors: 33 (37%); Masters /MBAs: 23 (26%); Ph.D:15 (17%); total: 90
Age: 18-21:5 (6%); 21-25: 41 (46%); 25-30: 24 (26%); over 30: 20 (22%); total: 90

8.4.4 Limitations of online survey and our remedy

It has been argued that, based on the large amount of information available online, it is hard to compete for the participants' attentions for them to dwell on the online survey long enough to complete the whole questionnaire (Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002). Thus, the way to compensate that was to use monetary incentives to encourage participants to improve the completion rate and accuracy of the data entry. Such an approach has also been approved by the previous participants in the peer review sessions (section 8.3.1.4).

Prior research shows that incentives help to reduce falsehoods, because the respondents may feel morally obligated to take more care in completing the survey (Burns & Bush, 2000). Further, studies have proven that incentives can improve data quality in terms of greater response completeness and greater accuracy, reduce item non-response rate and elicit more feedback (Willimack et al., 1995).

Following the standard practice in psychological experiments research, out of 90 participants, 70 of them have received £5 for completing the survey, which is 78% of total participants. The rest of the 20 were recruited through the research student's own social network, such as through friends or friends of friends, and these people did not require payments.

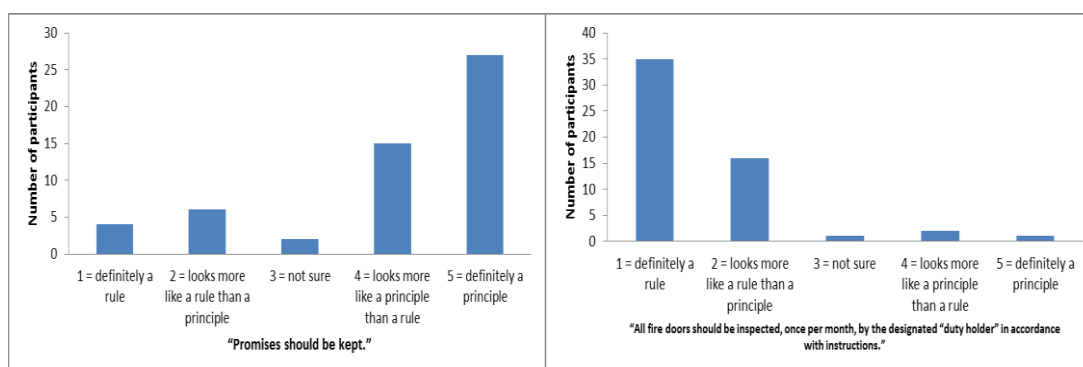
8.4.5 Testing people's ability in distinguishing between rules and principles

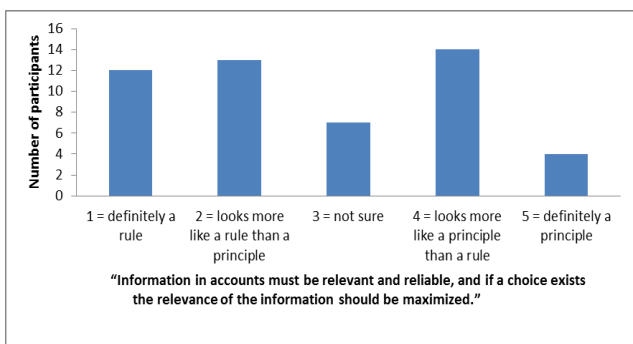
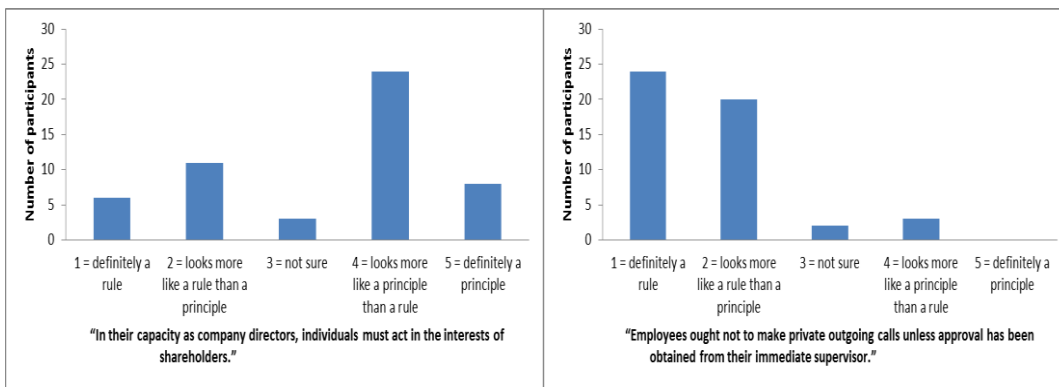
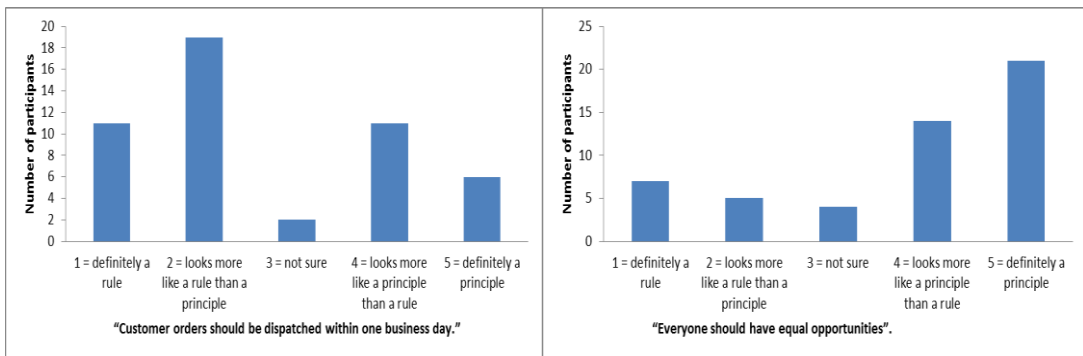
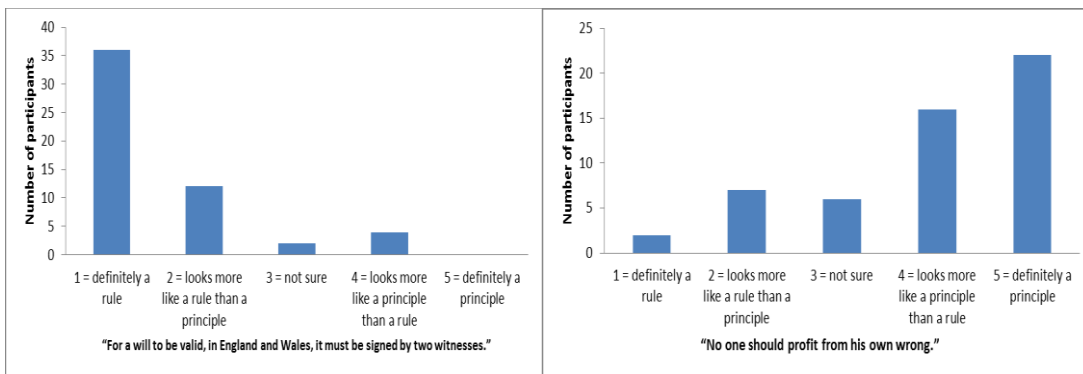
During the first four weeks of publishing the online preliminary item pool, I had an extra test, which was designed to examine individuals' ability to accurately locate the statement as either a rule or a principle. The statements were cited mostly from the

legal regulatory theory and they are classic examples of rules and principles as posited by Dworkin (see chapter four). People were asked to give ratings demonstrating their judgment of the degree, to which they agree the specific statement to be a rule or a principle (1 = definitely a rule; 2 = looks more like a rule than a principle; 3 = not sure; 4 = looks more like a principle than a rule; 5 = definitely a principle). Once I had gathered a sufficient sample size for it, n=55, the test was subsequently removed from the online survey package.

Table 12 A test on whether individuals can distinguish between rules and principles

Statement	Mean	SD	Total
1 "Promises should be kept."	4.02	1.3	N=54
2 "All fire doors should be inspected, once per month, by the designated "duty holder" in accordance with instructions."	1.5	0.86	N=55
3 "For a will to be valid, in England and Wales, it must be signed by two witnesses."	1.52	0.88	N=54
4 "No one should profit from his own wrong."	3.92	1.19	N= 53
5 "Customer orders should be dispatched within one business day."	2.63	1.38	N=49
6 "Everyone should have equal opportunities".	3.73	1.44	N=51
7 "In their capacity as company directors, individuals must act in the interests of shareholders."	3.33	1.29	N=52
8 "Employees ought not to make private outgoing calls unless approval has been obtained from their immediate supervisor."	1.67	0.83	N=49
9 "Information in accounts must be relevant and reliable, and if a choice exists the relevance of the information should be maximized."	2.7	1.33	N=50





Taking all nine histograms as a whole, there is a clear pattern demonstrating the individuals' ability to distinguish between rules and principles. Such empirical evidence shows some preliminary support for the distinctions between rules and

principles as postulated by Dworkin (1979). In other words, individuals are able to distinguish accurately between a rule and a principle and such distinction is in agreement with the conceptual model which was expounded in chapter four.

Statement 5 “Customer orders should be dispatched within one business day” and statement 9 “Information in accounts must be relevant and reliable, and if a choice exists the relevance of the information should be maximized” are particularly interesting and desire perhaps some more exploration. The histograms showed that in agreement with Dworkin (1967), there seem to be situations where people cannot tell rules from principle. That is because the individual judgment on the differences between rules and principles might not be exclusively absolute. It might also dependent on the individual’s appreciation/ analysis of the contexts. In contrast, for some statements such as “Promises should be kept”, an overwhelming consensus was reached on considering it as being a principle.

8.5 Piloting: quantitative analysis

At the quantitative stage of piloting, I had two objectives: 1) to remove problematic items and reduce the size of the initial item pool to a much shorter questionnaire which then could be used in conjunction with other psychological tests (see chapter nine, part two); 2) to explore the dimensionality of the dispositions to rules and principles.

8.5.1 Sample size

Kline (cited by Brace et al., 2006, p.310) argues for a 20:1 ratio, meaning that for each expected factor there should be 20 participants. In chapter seven, a four groups structure had been tentatively suggested, thus a sample size of $20 \times 4 = 80$ seems to be adequate for the purpose of this stage of the empirical work. I acknowledge that the sample size at this stage is not optimal; however I argue that the influence of sample size is reduced when the factor loading is higher (MacCallum, Widaman, Zhang & Hong, 1999, p.85). Recently Lei and Lomax (2005) suggest a sample size closes to 100 is adequate for estimating parameters accurately (p.1). For this stage of study, I decided to follow Steven’s (2002) Guideline of Statistical Significance for

Interpreting Factor Loadings. Steven's guidance is based on sample loadings and he recommends that statistically acceptable loading for 50 participants is 0.72, for 100 participants 0.50 and for 200-300 participants: 0.29-0.38. The sample size in this study is close to 100, thus a loading of 0.50 is adopted.

8.5.2 On using students as research subjects

While using student subjects might sometimes lead to limit external validity (Hughes & Gibson, 1991), the literature suggests that students are an appropriate surrogate for managers when the tasks being studied involve basic human information processing and decision-making tasks (Wynder, Baxter, & Laing, 2012, p.4). In a study designed to assess the suitability of using business students as surrogates for managers in decision-making situations, Remus (1986) found no significant differences between student and manager groups. Thus, the use of students as subjects in this study is justifiable on the grounds that I am studying basic aspects of human information processing and decision-making.

8.5.3 Normality distribution

The skewness and kurtosis (see appendix three) for the items from the preliminary pool were mostly ranged from -1 to +1, which are considered as 'excellent' for most psychometric purposes. Whilst, a few items had skewness and kurtosis between -2 and +2, which are considered as 'satisfactory' for research in the field of human attitudes and behaviour (George & Mallery, 2005, p.98-99). Furthermore, researchers (Cudeck, Barnes, Cote, & Malthouse, 2001; Nunnally, 1978) outline how it is unusual for Likert scales to follow a normal distribution. Scholars such as Bentler and Yuan (1999) note "real data sets in practice seldom follow normal distributions" (p.184) whilst Cudeck et al (2001) state "virtually no variable follows a normal distribution" (p.80).

Table 13 Extremely skewed items

Items with extremely skewed items	Skewness	Kurtosis
q19. One big problem with rules is that some people keep following them even when they are clearly morally dubious.	-1.96	5.64
q30. Principles tend to be a durable basis for problem solving in changing circumstances.	-1.47	2.00
q72. When Principles-based approaches to problems are working well, the outcomes generated will predictably, and with some certainty, reflect the values, culture, and interests of those affected.	-1.29	2.47
q130. Principles based approaches to problems provide a valuable space for debate in which good creative solutions can be developed.	-1.19	2.17

Only 4 out of 323 items (1%) did not achieve the normality criteria as discussed above and therefore have been taken out at this point (table 13 above)

8.5.4 Missing data

The survey approach usually suffers from the consequences of missing data when participants ignore certain questions (Bryman, 2004). SPSS has specific functions in analysing missing values of the dataset. See appendix three for missing data counts.

Missing responses were replaced with the mean of that item; item mean substitution provides an adequate representation of the original data for Likert type scales (Downey & King, 1998). I did not adopt the listwise method at this stage, as the sample size at 90 became perilously small for factor analysis.

8.5.5 Internal consistency reliability

A large portion of this section focuses on documenting and reporting on the internal consistency reliability of the individual scale item analysis. Internal consistency reliability reflects the degree to which each item is intercorrelated with other items in the pool, thus it indicates how well the items fit together conceptually (Parsian & Dunning, 2009).

The Cronbach's alpha is one of the most commonly used procedures for measuring internal consistency reliability (Bryman & Cramer, 1999; Aaker et al., 1997).

According to Gliem and Gliem (2003, p. 84) “Cronbach’s alpha is a reliability test technique that requires only a single test administration to provide a unique estimate of the reliability for a given test. Cronbach’s alpha is the average value of the reliability coefficients one would obtain for all possible combinations of items when split into two half-tests.” In this way, Cronbach’s alpha was intended to remove ‘garbage’ items which displayed low levels of internal consistency reliability (Churchill, 1979). In the study, 28⁴⁷ dimensional subscales was analysed and presented (table 16).

The objective of dropping certain items is to increase the overall Cronbach’s alpha of the subscale. There are four indicators were adopted in helping to determine whether to drop an item or not:

- 1) The **corrected item - total correlation** is used in a small sample size, which removes the score for the item from the total score for the dimension, prior to the correlation. Items with lower than 0.3 item-total correlation are deleted (Kline, 1993; Rattray & Jones, 2007, p.237). The reason I chose a lenient 0.3, rather than a higher threshold, is because it is preferable to retain items and remove them at subsequent stages if they consistently have an adverse effect on the scale’s psychometric properties (Rattray & Jones, 2007).
- 2) The **inter-item correlation**: keep the items which are within $0.3 < x < 0.8$ (Rattray & Jones, 2007).
- 3) **Alpha if item deleted**—this is probably the most important column in the SPSS outcomes. This represents the scale’s Cronbach’s alpha reliability coefficient for internal consistency if the individual item is removed from the scale. I want to drop the items where the alpha, if deleted, is higher than the overall alpha, which is the estimated value of alpha if the given item were removed from the model (Kaplan & Saccuzzo, 1997).

⁴⁷ Dimension 14 x 2 (rules and principles) = 28.

4) Besides discarding items according to these statistical indicators, items which are inconsistent with the remaining subsets should be eliminated (Rattrary et al., 2007⁴⁸). This would require subjective judgment, however the conceptual framework postulated in chapter seven provides some guidance in helping to determine whether different items tap into the same dimension.

8.5.5.1 Reversed items

Before performing the Cronbach's alpha's tests, all the negatively worded items have been reverse coded to ensure all items are commutated in the same direction.

8.5.5.2 Ways to improve the Cronbach's alpha

Effort has been made to increase the alpha, such as by relocating some items into the more conceptually appropriate dimensions to strengthen the grouping effect, rather than composing fresh new items from the scratch (Zander & Kogut, 1995, p.83). 11 items have been relocated into a different dimensional subscale.

8.5.6 Cronbach's alpha analysis for 28 subscales

Tables below show one example of the kind of results were obtained for need to reach closure dimension (full report see appendix five).

Table 14 Internal reliability of rules scales in the reaching closure dimension

Reaching closure_ Rules	n	mean	Variance	SD	No.of items	
Statistics for scale	85	16.1	17.9	4.2	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	2.68	2.29	3.07	.76	1.33	.08
Item Variances	1.24	.95	1.41	.42	1.44	.03
Inter-Item Correlations	.28	.04	.49	.45	11.95	.02
	Scale Mean if Item	Scale Variance if	Corrected Item-Total	Squared Multiple	Cronbach's Alpha if Item	

⁴⁸ They remind us that it is important to revise the questions and retain those ones that truly reflect/ are true representations of the theoretical dimensions, even if they have poor psychometric statistics.

	Deleted	Item Deleted	Correlation	Correlation	Deleted	
q199rev	13.48	13.02	.41	.26	.670	
q260rev	13.78	14.46	.33	.13	.692	
q219rev	13.56	13.44	.42	.30	.665	
q270	13.25	12.76	.51	.33	.637	
q59	13.28	12.09	.58	.40	.613	
q224	13.00	13.38	.36	.26	.685	
Cronbach's Alpha .70						

Table 15 Internal reliability of principles scales in the reaching closure dimension

Reaching closure_ Principles	n	mean	Variance	SD	No.of items	
Statistics for scale	83	19.2	16.8	4.1	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.19	2.61	3.75	1.14	1.44	.20
Item Variances	1.07	.73	1.43	.70	1.95	.05
Inter-Item Correlations	.33	.15	.61	.46	6.39	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q257rev	16.55	13.05	.36	.16	.72	
q88rev	16.44	12.20	.46	.30	.68	
q45rev	15.96	11.77	.53	.34	.68	
q124	15.70	12.84	.52	.40	.68	
q314	15.40	12.10	.54	.47	.66	
q307	15.71	11.51	.47	.30	.69	
Cronbach's Alpha .72						

Two out of 14 dimensional subscales, had maintained 4 items instead of 6. That was because extra two items were eliminated due to their low and negative inter-item correlations. This happened usually when 1) the question is too hard to understand so student had to guess; 2) item require 'technical' knowledge or skill that is different from the rest of the items (accounting knowledge for instance).

Table 16 items being omitted due to the negative inter-item correlations

Dimension	Items from principles-subscale	Items from rules-subscale
Ethics_ principles subscale: q285 correlated negatively with q228. The negative inter-item	q228. Principle-based approaches in business field will promote a more socially responsible decision-making.	q249. The more Rules we have, the more we have to rely on so-called experts and they are just not in a position to deal effectively with

correlations were found between q249 and q279 in the Ethics_rules subscale.	q285. People disagree so much about what Principles mean and imply that they can never serve as a sensible basis for ethical decision-making in the public and business spheres.	moral issues. q279. It is alright to put your own interests first so long as you do not actually violate any Rules.
For Efficiency_principles subscale; q150 correlated negatively with q261. To keep equal number of items, Efficiency_rules subscale also discarded the two items with the highest Cronbach's alpha if item-deleted: q243, q142.	q150. In my experience, Principles often operate like rules of thumb, cutting efficiently through to the crucial factors. q261. Principles based approaches to decision-making require deliberation in every case and that's a depressing inefficient way to go about things.	243. I find that consideration of the applicable Rules generally takes me quickly to the heart of a problem. 142. The problem with Rules is that they quickly multiply to the point where decision-making gets entirely bogged down in impenetrable webs of Rules and exceptions.

It is not appropriate to compare the alpha between two scales with unequal items, I therefore decided on equal items for each subscale. Finally, the remaining number of the cleaned up items: $12 \times 6 \times 2 + 2 \times 4 \times 2 = 160$ items⁴⁹.

Table 17 A summary of the Cronbach's alpha for all 14 dimensional subscales

Dimension	Cronbach's alpha		Dimension	Cronbach's alpha	
	Rules	Principles		Rules	Principles
Certainty	0.70	0.68	Efficiency	0.67	0.52
Complexity	0.72	0.74	Fairness	0.68	0.72
Abstractness vs. Concreteness	0.69	0.71	legitimacy	0.66	0.70
Creativity	0.72	0.77	Manipulation	0.76	0.66
Empowerment	0.73	0.73	Reaching Closure	0.70	0.72
Effectiveness	0.67	0.61	Need for security	0.75	0.63
Uniformity vs. flexibility	0.76	0.60	Ethics	0.63	0.65

⁴⁹ Six items (equal number of both positive / negative items for rules and principles) were kept for 12 out of 14 dimensional subscales; the ethics and efficiency dimension had 4 items for each subscale.

Alpha equals or greater than 0.50 is satisfactory for a new instrument (Pelzang, 2010). My results showed that all 14 dimensional scales had alphas over 0.60 (apart from the principles subscale for the dimensions of efficiency). In particular, the alpha coefficient varies between 0.52 and 0.77 for principles dimensional subscales and between 0.63 and 0.76 for the rules subscales. This shows the current version of the instrument has a satisfactory level of internal consistency. I have also obtained high variances for all 28 subscales: high variance means the instrument has a wide spread of scores, which suggests participants were easier to differentiate. Consistent with prior research, the results (appendix five) showed that reverse worded items consistently have a relatively lower Cronbach's alpha and item-total correlations compare to the positively worded items (Weijters et al., 2009, p.2).

Based on the satisfactory reliability of the current version of the instrument, I then proceeded to undertake factor analysis to explore the dimensionality of the structure of dispositions to rules and principles, as well as to further reduce the size of the DRP.

8.6 Exploratory Factor analysis (EFA)

EFA technique serves to further reduce the size of the instrument by grouping similar items together and reveal the construct dimensionality. It is important to note how reliability tests for all subscales were intentionally obtained prior to EFA. The logic being that conducting factor analysis on a pool of unreliable items results in a 'garbage-in-garbage-out' scenario and tends to result in conceptually irrelevant dimensions being identified (Churchill, 1979). Therefore, EFA is built on initial reliability analyses and helps 'pool' items into underlying factors.

EFA is a commonly used method in survey-based research. "It is a mathematical procedure which reduces a correlation matrix containing many variables into a much smaller number of factors or super-variables. Such super-variables cannot be measured directly and their nature have to be inferred from the relationships of the original items with the abstract super-variables" (Howitt & Cramer, 2008, p.330). It therefore could be carried out to help reduce the size of the questionnaire and also gives a clear overview of the underlying factors that are shared by multiple items. It is reasonable to use an EFA to generate a theory about the constructs underlying the

measures when the researchers do not have strong theory about the structures underlying the constructs (Bryman & Cramer, 1999).

Principal components analysis (PCA) is a type of extraction method of EFA and it explores the interrelationship of variables. It provides a basis for the removal of redundant or unnecessary items in a developing measurement (Rattray & Jones, 2007, p.239) and can identify the associated underlying concepts, domains or subscales of a questionnaire (Oppenheim, 1992; Ferguson & Cox, 1993). In PCA, all the variance of a variable (total variance) is analysed. Total variance consists of both specific and common variables. Common variance refers to the variance shared by the scores of subjects with the other variables, and specific variance describes the specific variation of a variable. Therefore, PCA is supposed to be highly reliably and without error (Bryman & Cramer, 2005).

Although there are differences between principles component analysis and factor analysis theoretically, practically, however, “the solutions generated from principles component analysis differ little from those derived from factor analysis techniques (Field, 2000, p.434). The terms of factor analysis and PCA are often used synonymously in this context. In practice, however, PCA is most commonly used.

A factor is a group of items which are collated together, and are usually conceptually related. Unrelated items, those that do not group together, do not define the construct and should be deleted (Parsian & Dunning, 2009). With PCA, the removal of redundant items within a developing measure occurs is an iterative process (Rattray & Jones, 2007). The main criticism of PCA however, is that the first two dominant factors account for the maximum of the variance explained; this will often lead to a situation where “most variables have high loadings loaded predominantly on the first factor, and small loadings on all other factors” (Field, 2000, p.438). This poses a challenge for the interpretation of the factors.

8.6.1 Factor loading and factor scores

Factor scores and factor loadings are separate concepts⁵⁰. Factor loading is the coefficient of correlation between the component (or factor) and the variables, and the larger the number, the more likely it is that the component underlies that variable (Brace et al., 2009, p.348). Factor scores are “the scores of a subject on a [...] factor” (Rietveld & Van Hout 1993, p.292). These two also have different usages. Factor loadings will be used to determine “substantive importance of a particular variable to a factor” (Field, 2000, p. 425), whereas factor scores will be mainly used in regression analysis.

8.6.1.1 The choice of rotation

According to Field (2005, p.3): Factor rotation can help to make the interpretation of the factors easier. Rotation “maximises the loading of each variable on one of the extracted factors whilst minimising the loading on other factors” (Ratray & Jones, 2007, p.239). Rotation works through the absolute values of the variables whilst keeping their differential values constant. Varimax, quartimax and equamax are orthogonal rotations whereas direct oblimin and promax are oblique rotations (Field, 2005). The choice of appropriate rotation should be based on whether there are some pre-assumed conceptual reasons on whether the factors should be conceptually related or not (Field, 2000, p.439). In addition, varimax rotation also produces an identity matrix between the variables so saved factor pattern matrix scores is not correlated.

In chapter four, I have proposed an orthogonal relationship between rules and principles, which distinguished on the basis of Dworkin. As a result, the choice of rotation for the EFA is varimax.

⁵⁰ Note that varimax (a rotation that creates orthogonal factors) gives only one rotated matrix of factor loadings, whereas promax (a rotation that creates non-orthogonal/oblique factors) generates two rotated matrices – a pattern matrix and a structure matrix. In other words, the distinction between pattern coefficients and structure coefficients is not relevant in varimax rotations.

8.6.1.2 Checking for multicollinearity

Multicollinearity refers to variables which are highly correlated with one another (Field, 2000). This causes difficulties in determining the unique contribution of the variable to a factor (Field, 2000, p.444). In the SPSS, the intercorrelation can be checked by using Bartlett's test of Sphericity, which "tests the null hypothesis that the original correlation matrix is an identity matrix" (Field 2000, p. 457). For factor analysis to work, the Bartlett's test of Sphericity needs to be statistically significant. In addition, the KMO produces the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test (Field, 2005, chapters 11 and 12). The KMO value should be greater than 0.5 if the sample is adequate for factor analysis purposes (George & Mallery, 2005).

8.6.1.3 Criteria for factor extraction and item removal

Following the well-established statistical procedure with regards to questionnaire development, four main criteria are used to determine how many factors should be retained:

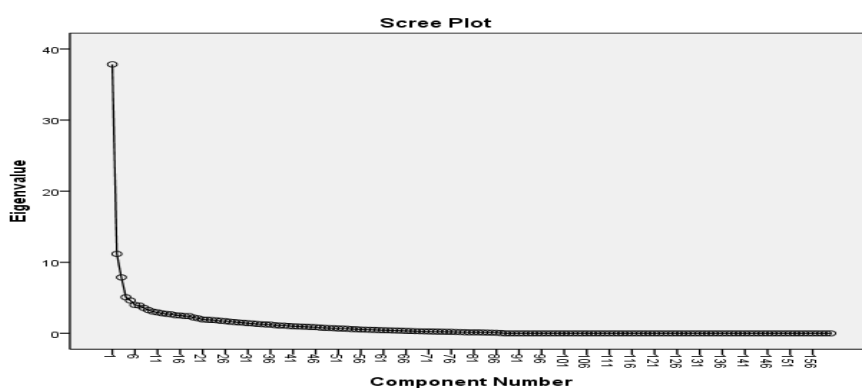
- 1) The eigenvalue >1 : however this criterion needs to be considered along with others because it tends to produce too many factors (Ratray & Jones, 2007).
- 2) A scree plot to illustrate the descending variances that account for the factors extracted in graph form. The factors that lie before the point at which eigenvalue begins to drop can be retained (Parsian & Dunning, 2009).
- 3) Single item factors will be eliminated, given the need to develop multi items measures. (Ratray & Jones, 2007)
- 4) Rule four is usually referred to as the psychological interpretability of the solution: the judgment of item elimination therefore is theory-driven.

8.6.2 Initial principles component analysis on the 160 items

This stage of PCA is still focused on data reduction, because 160 items are a lot of items to work with; the aim is to filter out more redundant items and trim down the size to a more manageable length.

The first un-rotated principle component analysis revealed 40 factor loadings with 87% variance explained. Because the scree plot produced too many factors, this made interpretation difficult (Netemeyer et al., 2003). More importantly, unsurprisingly almost all items loaded highly onto factor one. This solution was not useful for purpose of the current project. I then applied varimax rotation onto the dataset, this time it showed 27 factors whose eigenvalue greater than one whilst explained up to 77% of the total variance (see figure 4). Whilst after dropping redundant items, the remaining 69 out of the initial 160 items were able to explain equivalent amount of variance, suggesting a large degree of redundancy in the dataset.

Figure 4 Scree Plot for the initial 160 items



Performing a PCA on 69 items produced predominantly two factors (see figure 5), which were essentially 'preference for rules' and 'preferences for principles'. Among these 69 items, 22 items were loaded onto factors 1 and 2. The Scree Plot of the remaining 22 items revealed that there were dominantly two clear factors with eigenvalue greater than one (see figure 6 below). Further 7 items were eliminated at this stage because they had 1) less than 50% loadings on any factors; or 2) loaded significantly onto more than one factor at one time; or 3) they were single factor items. The remaining 15 items were loaded onto the 1st and 2nd factors out of the 22 items, whilst responsible for 50% of variance explained.

Figure 5 Scree Plot for the 69 items

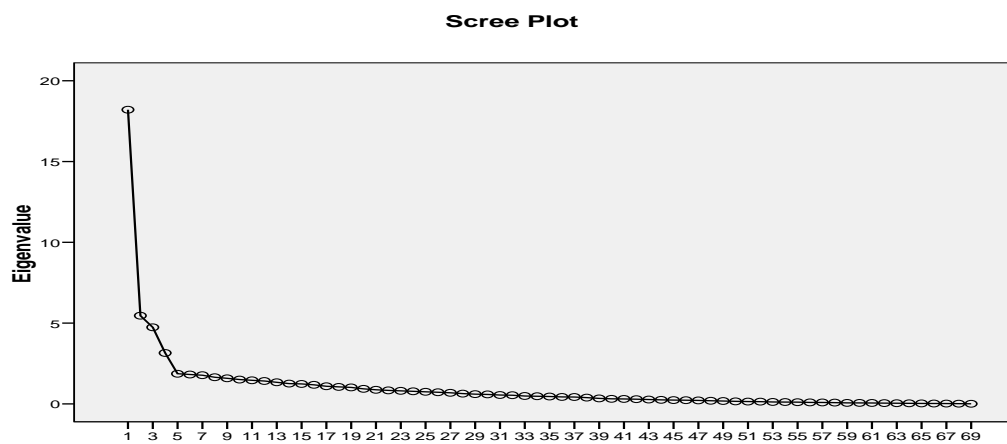
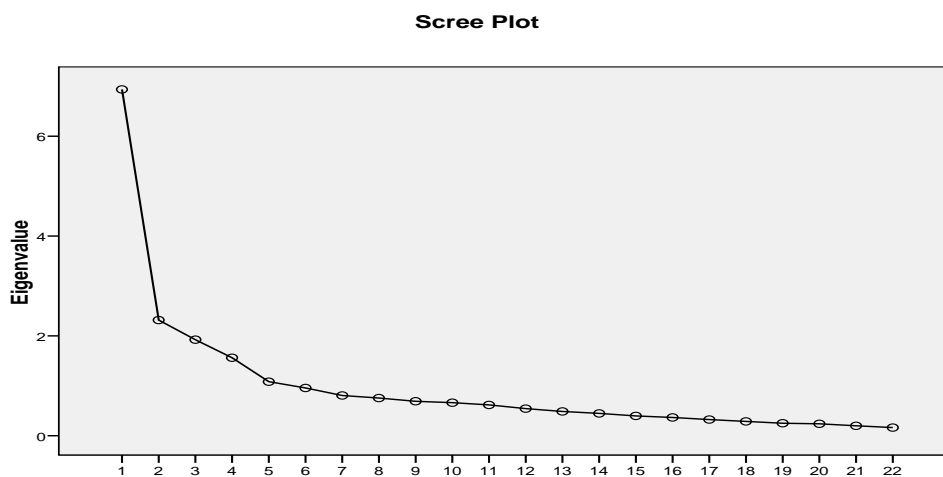
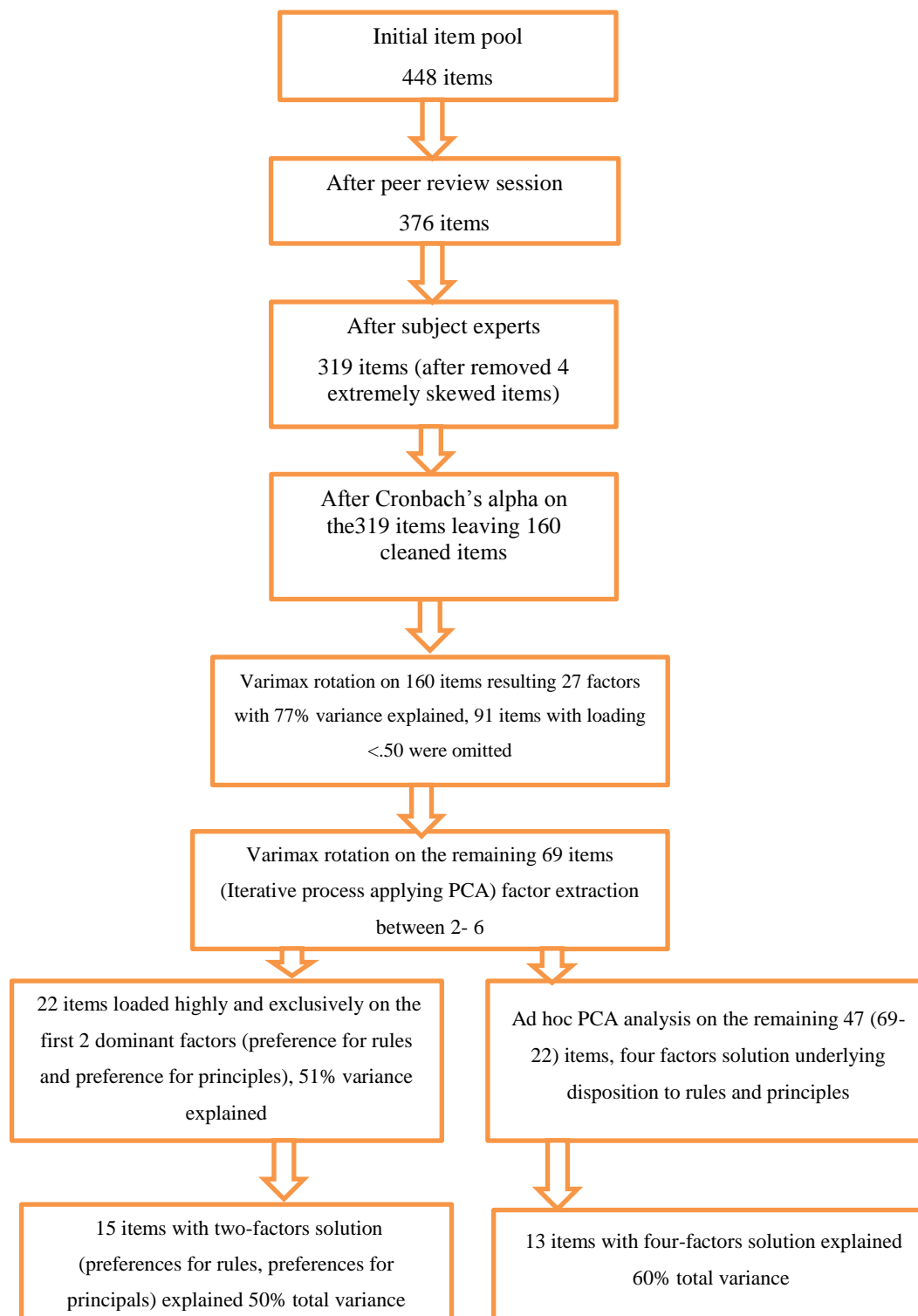


Figure 6 Scree Plot for the remaining 22 items



Lastly, an ad hoc analysis was conducted on the remaining items after removing the items which loaded exclusively and highly on factor 1 and 2. A varimax factor rotation showed 13 out of 47 items loaded strongly on four clear factors which explained up to 60% of total variance.

Figure 7 Flow chart depicts the process taken to achieve the final number of items in chapter eight



8.6.3 Rules and principles subscale (15 items)

After factor rotation, the factor analysis showed that there were primarily two dominant factors: which may be labelled as ‘preferences to rules’ and ‘preferences to principles’. These two dominant factors counted for over 50% of the variance explained from the data.

The KMO statistics is .84 which is excellent (Kaiser, 1974). For the current data, Bartlett’s test is highly significant ($p < 0.0001$), and I am able to proceed to rotated factor analysis. A measure of the multicollinearity is given by the determinant of the R Matrix, or correlation matrix, usually denoted as $|R|$, with values of $|R|$ greater than .00001 generally being regarded as acceptable for the purposes of factor analysis

Figure 8 Scree Plot of the 15 items DRP

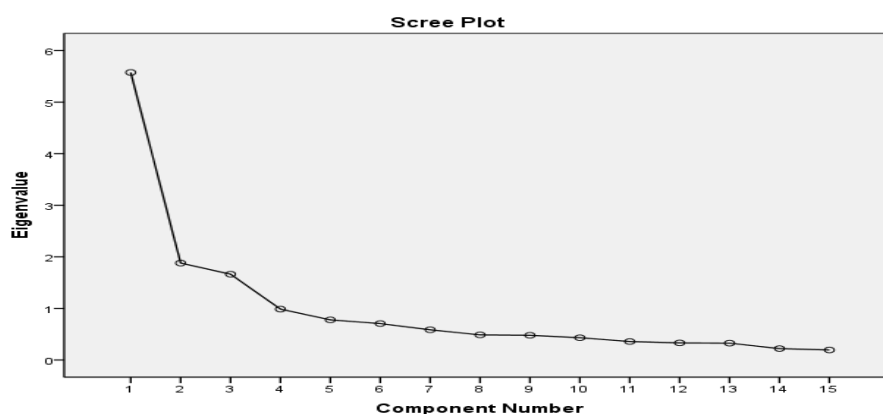


Table 18 The factor loading (Factor structure coefficients) of the DRP preliminary study

Items		Component	
		Principles	Rules
1	307. I tend to be comfortable with the ambiguities associated with Principle-based decision-making.	0.72	
2	311. Principles promote engagement and responsibility among employees thereby increasing their enthusiasm for the task.	0.7	
3	284. Action that is based on Principles has the strongest claim to legitimacy.	0.74	
4	280. Principles work well in situations where there are conflicting interests, because they make room for communication involving the affected parties that leads to more thorough and reliable analysis.	0.72	

5	132. I prefer Principles-based approaches because they engage people positively and openly in the decision-making process and thus reduce the likelihood of manipulation.	0.74	
6	63. Principles are too broad and vague to be any use in devising creative solutions.	0.62	
7	88. The problem with Principles is that they do NOT have the kind of structure that lets you be confident that you have really and finally got a firm answer.	0.53	
8	45. I don't like Principles-based approaches to decision-making since they never seem to give clear-cut solutions, and if you are unlucky, you have to go back and revise the decision.	0.56	
9	56. I prefer things to be set in the form of concrete Rules.		0.82
10	152. I like to work in settings where tasks and expectations are defined and standardised by clear Rules.		0.81
11	79. I often find myself wishing that there were more precise Rules to guide me through complex and unstructured situations.		0.74
12	167. I tend to judge the fairness of an outcome according to the degree of its compliance with Rules.		0.61
13	59. I rely on Rules to fulfil my desire for a firm answer.		0.68
14	223. Rule-based regulation is seldom very effective, because no matter how tightly it is designed it always leaves exploitable ambiguities and loopholes.		0.51
15	98. I sometimes feel as if I am living in a kindergarten since there are just too many detailed Rules forbidding me from doing things.		0.56

The above component matrix shows that the both rules and principles subscale contain positively and negatively worded items. Schouten et al (2010, p.8) argue that factor loading higher than 0.6 shows the adequacy of the sample size for the research. In this analysis, 6 out of 8 items (factor 1), 5 out of 7 items (factor 2) showed loadings > 0.60. Therefore, the sample size was adequate for this current stage of study.

Factor 1 seems to reflect putative benefits of a principles-based approach found in the accounting literature (Black, 2008 & 2001; Ford, 2010; Hill, 2007), in terms of increasing the use of judgment and felt of accountability (Ford, 2010, Black et al., 2007; Black, 2001; ICAS 2006 a&b). This is reflected for example in Q311 "Principles promote engagement and responsibility among employees thereby increasing their enthusiasm for the task". Further, the type of person who found

principles appealing might also appreciate the ‘weighing’ style of thinking associated with using principles; one may tend to feel comfortable with ambiguous information and feel a higher need to examine all relevant evidence in the light of principles, instead of reaching closure by using clear-cut rules. Because the legitimacy of principles is linked to a perceived democratic approach in the decision-making, it echoes Black (2001) and Ford (2010) refer to as the ‘interpretive community’. The pre-requisite for such a community is a ‘mutual trust’, which will in turn reduce the likelihood of manipulative behaviours. Three negatively worded items (Q63, Q88, Q45) were also loaded highly and positively onto factor 1. Collectively these three items suggest a contrasting preference towards the imprecise and unstructured approach entailed in using principles. Because the negatively worded items will be reverse scored, the lower of the scores expresses a higher tolerance of less clear cut answers; in contrast, the higher of the scores indicates a lower level of tolerance towards principles.

Factor 2 seems to express a positive appreciation for rules, in particular rules’ ability in providing clear-cut and structured approach to decision-making, thus fulfilling one’s desire to reach closure on matters. This is reflected for instance in Q59 “I rely on Rules to fulfil my desire for a firm answer”. Because of such a desire, this type of individual would be more likely to rely on rules to structure tasks, and in particular tend to judge the fairness of an outcome to the degree, that decision-making was in compliance with rules. Q223 and Q98 are negatively worded items. Thus, the higher the scores the lower preference expressed towards rules; the lower of the scores suggests a higher preference towards rules.

8.6.3.1 Reliability of the rules and principles subscale (15 items)

Table 19 Reliability of the principle subscale

Principles subscale	n	mean	Variance	SD	No. of items	
	84	26.3	35.5	5.9	8	
	Mean	Minimum	Maximum	Range	Maximum/Minimum	Variance
Item Means	3.29	2.72	3.66	.94	1.35	.07

Item Variances	1.17	.97	1.55	.58	1.59	.04
Inter-Item Correlations	.40	.18	.65	.47	3.69	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q132	22.90	27.72	.63	.43	.81	
q284	23.04	27.82	.58	.46	.82	
q280	22.93	28.50	.56	.41	.82	
q311	22.63	27.85	.62	.52	.82	
q63rev	22.98	26.60	.54	.49	.83	
q88rev	23.57	28.82	.47	.38	.83	
q45rev	23.10	28.087	.56	.44	.82	
q307	22.86	26.51	.62	.59	.81	
Cronbach's Alpha .84						

Table 20 Reliability of the rules subscale

Rules subscale	n	mean	Variance	SD	No. of items	
	86	19.48	35.17	5.93	7	
	Mean	Minimum	Maximum	Range	Maximum/Minimum	Variance
Item Means	2.78	2.56	3.05	.49	1.19	
Item Variances	1.42	1.1	1.63	.54	1.49	
Inter-Item Correlations	.42	.12	.71	.59	5.88	
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q59	16.69	26.59	.61	.43	.81	
q56	16.78	24.48	.79	.65	.78	
q152	16.43	24.86	.77	.60	.79	
q167	16.7	27.01	.50	.37	.83	
q79	16.65	25.6	.64	.48	.81	
q223rev	16.92	29.46	.41	.27	.84	
q98rev	16.7	27.81	.43	.29	.84	
Cronbach's Alpha .84						

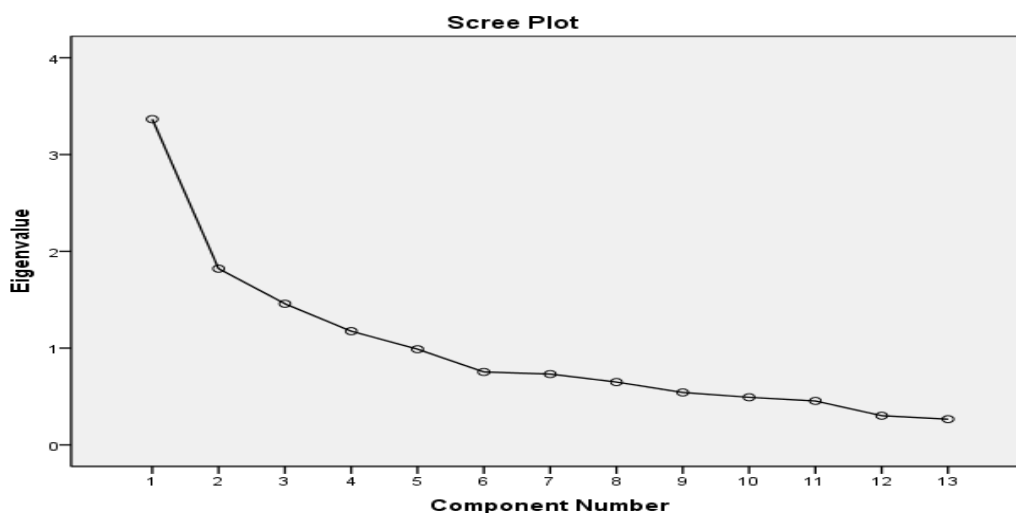
Cronbach's alpha for both rules subscale and principles subscale is 0.84. The corrected-item-to-total scale correlation of the items from the rules-scale, ranged from

0.43-0.77; items from the principles-subscales were ranged from 0.47-0.63. The internal consistency of rules and principles subscales is considered to be reliable.

8.6.4 An ad hoc analysis on the remaining items (resulting 13 items)

The KMO statistic is .66 which is mediocre (Brace et al., 2006). The determinant of correlation matrix of this data is .036 which is greater than the necessary value of .00001. Therefore, multicollinearity is not a problem for these data. The Bartlett's test of Sphericity is highly significant ($p < 0.0001$), and I am able to proceed to factor analysis.

Figure 9 Scree Plot of the 13 items an ad hoc analysis



component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% Of Variance	Cumulative %	Total	%Of Variance	Cumulative %
1	3.37	25.89	25.89	3.37	25.89	25.89	2.15	16.51	16.51
2	1.82	14.0	39.90	1.82	14.0	39.90	2.04	15.68	32.19
3	1.46	11.22	51.12	1.46	11.22	51.12	1.95	14.97	47.16
4	1.18	9.04	60.16	1.18	9.04	60.16	1.69	13.0	60.16

Extraction Method: Principle Component Analysis

Table 21 Factor loadings of the ad hoc analysis of the minor factors

	items	Factor 1	2	3	4
1	18. I feel comfortable with tasks that involve the interpretation and use of Principles.	.76			
2	64. The advantage of Principles-based approaches is that they facilitate communication about the issues and we can be quite sure that the outcomes emerging really take careful account of all the important factors.	.73			
3	66. Principles based approaches improve decision-making by enabling decision makers to approach problems from new perspectives.	.72			
4	109. The best decision-making emerges from the intelligent application of abstract Principles to concrete cases.	.50			
5	290. Rules fail as regulation because they play into the hands of the unscrupulous, those who are most willing to take conscious advantage of them.		.84		
6	301. Rules always seem to multiply and become ever more complicated so that eventually only a few specialists are able to understand and interpret them.		.74		
7	11. Rules block any further development of the children and novices.		.65		
8	201. Principles appeal to me as I like ideas that are expressed in abstract forms.		-.50		
9	99. Principles leave the people who have to use them wide open to harmful accusations of personal bias in their decision-making.			.81	
10	33. Principles are always wide open to manipulation because they require interpretation, which is often arbitrary.			.74	
11	217. Smart people can always twist Principles to suit their own point of view.			.64	
12	235. The beauty of Principles is that they can be creatively extended in their scope to help generate justifiable solutions to novel problems.				.85
13	175. Principles appeal to me because I find that their abstraction makes them easy to work with and adapt to particular cases.				.78

Some researchers argue that the absolute magnitude of factor loadings is the most important element in determining the reliability of a factor solution. Consistent with Schouten et al (2010, p.8), current result shows that: 3 out of 4 (factor 1), 3 out of 4 (factor 2), 3 out of 3 (factor 3), and both 2 items (factor 4) showed loadings > 0.60 . Thus, I can be confident that this factor structure is reliable. I did not look more into these items for this part of work is not the main focus, nonetheless, future work would be conducted on analysing these items and see whether they could be incorporated into the main DRP instrument.

8.7 Conclusion

In this chapter, I have reported on the process leading to the development of an initial 15 item instrument. I described the generation of the initial item pool, and the qualitative and quantitative stages of the piloting. The results of the initial item pool were tested in the pilot stage's field work, via both the peer group reviews and the subject experts review sessions. The summary of the feedback and suggestions of both qualitative studies have been presented and subsequent improvements have been made to the initial items pool. The direct result of such exploratory sessions was to enable us to obtain a shorter questionnaire with established face and content validity. After the qualitative piloting stages, a preliminary draft with 323 items was transferred to an online version in randomised order⁵¹ and this version was subsequently completed by 90 subjects. A series of statistical tests such item analysis (Cronbach's alpha and reliability test) were conducted on these items, and resulted in us being able to eliminate many weak items and get down to 160 items with sound reliability. More statistical procedures such as factor analysis were conducted in order to further reduce the size of the instrument and explore the dimensionality of the structure. At the end of this process there emerged a 15 item instrument, with two dominant factors, preference for rules and preference for principles, which explained 50% of total variance. Moreover, the 15 items displayed good reliability. In addition, led by curiosity, an ad hoc analysis was performed on the remaining items which were

⁵¹ It means that rules items and principles items as well as different dimensional items were separately and randomly arranged.

loaded largely on the minor factors after removing the influence of the items loaded exclusively on factors 1 and 2. This analysis resulted 13 items with a four-factor structure. Further confirmatory work will be conducted and reported in chapter nine on the 15 items.

Chapter 9 Part one: Further refinement of the instrument

9.1 Introduction

This chapter reports on the confirmatory and validating work carried out on the 15 items that resulted from the primary item pool (described in chapter eight). In the process, I also provide empirical responses to the six research questions which were proposed in chapter one, section 1.5.

9.1.1 The overview of the chapter

The organisation of the chapter is as follows: Section 9.2 describes the necessary considerations for the conduct of the empirical work. Section 9.3 explores and prepares the data for further analysis. Section 9.4 examines the rules and principles subscales using a large independent sample. I also explain the rationales for further item removal (see the preliminary factor analysis chapter 8, section 8.6.3 and 8.6.4). Section 9.5 shows evidence supporting the internal consistency reliability of the DRP. Section 9.6 examines the correlations between rules and principles subscales. Section 9.7 examines whether there are any gender, ethnicity and age differences in relation to dispositions towards rules and principles.

In part two of this chapter, I focus on reporting and presenting the results for testing and establishing the convergent and divergent validity of the DRP.

In part three of this chapter, I present the predictive validity test results of the DRP. In particular, the effect of the demographic variables on the interactions between individuals' DRP scores and their behavioural intention was also investigated.

9.2 Preparation for the empirical study: some preliminary considerations

9.2.1 Objective of the current EFA

In contrast to the previous EFA (chapter 8, section, 8.7), the aims of this current factor analysis were to examine: 1) whether the same items would group together and fall

onto the same factors; 2) whether the basic factor structure of the questionnaire remains stable on a new sample. In other words, this time I use the factor analysis to confirm the preliminary factor solution which was emerged on a relatively small sample size (n=90).

9.2.2 Sample size for factor analysis for confirmatory purpose

The confirmative factor analysis part of this research had a sample of up to 474, which was considered as excellent compared to the published research in the field of behaviour accounting, which often suffer from small sample size (Ball, 2008). The larger the sample size, the more powerful and robust the result will be statistically.

I was aware that it is not advisable to use the same respondents for both development and validation of an instrument. Thus in this project among the 474 respondents, only 34⁵² respondents had also previously filled in the preliminary online items pool. That was 7% of the total sample size, which is too small a group to have any adverse impact on the statistical outcomes.

9.2.3 Sample recruitment

The researcher primarily used two ways to achieve the sample: firstly I recruited students who were studying at the University of Glasgow. I have obtained permissions to access mass e-mails / class lists to contact a large number of students and get instant multiple replies. Campus recruitments were also employed, as students were randomly approached in the premise of University of Glasgow: library, public lecture theatres, and cafeteria. During the process, I have encountered some unexpected challenges. Because of the disruption of the snow season, many lectures were cancelled during the couple of weeks of running up to the Christmas holiday. Therefore, the researcher had to rely on her social contacts and connections to recruit additional subjects. Hence the second channel of recruiting was to utilise the

⁵² Technically speaking, the administration of these two versions of online survey was almost 2 years apart, the memory bias of these 34 participants might had would not be expected to pose a big threat to the accuracy of the data.

researcher's personal social contacts and connections to recruit non-student subjects (social networks such as the facebook and linkedin, her contact lists from personal emails). This approach was sensible because the questionnaire is generic in its content and presents no risk to anyone. Individuals from different professions (such as banking and IT) should also be able to relate to the content.

The participants were sent an email shortly after they expressed agreement to take part in the project. In the email, a link was provided to direct them to the online survey⁵³. They would also be informed on issues such as privacy and data anonymity (see chapter six, section 6.3.4 for more information).

The online survey consisted of a battery of scales, including DRP (15 items) and a range of scales that were relevant for the validation purpose: Higgins RFQ (11 items), Sternberg's thinking style scale (65 items), Need for closure scale (40 items), 10 Items Big5 personality traits scale, Social desirability scale (13 items), Dialectical self-scale (32 items). It takes on average 45minutes to complete.

This part of work was carried out using the same web survey. Thus, the ethical approval which I had previously applied for administering the preliminary item pool online was also applicable to this stage of study (chapter eight, section 8.4.1).

9.2.4 Monetary incentive and ICAS seed funding

This part of the research was partially sponsored by the ICAS (Institute of Chartered Accountants of Scotland) Seedcorn grant, £700. The rest of the funding was put up by the Secondary PhD supervisor, who provided £500 cash for paying the participants.

9.3 Exploring the data

I begin by looking at the descriptive statistics (mean, variance, kurtosis and skewness), of the sample. This step will help us to understand our data better. Table 22 shows that the all 15 items' distributions are within an acceptable range for the

⁵³ <http://attitudestorulesandprinciples.questionpro.com/>

purpose of our factor analysis. Both values of the kurtosis and skewness ranged between -1 and +1, which is considered as excellent for most psychometric purpose (George & Mallery, 2005, p.98-99).

Table 22 Descriptive statistics of the 15 items from previous factor solution (n=474)

	Code	Mean	SD	Skewness	Kurtosis
1	Q1	3.14	1.06	-.02	-1.22
2	Q3	3.21	1.15	-.26	-1.06
3	Q4	2.80	1.14	.25	-1.07
4	Q5	3.26	1.12	-.38	-.82
5	Q6	2.74	1.12	.39	-.82
6	Q7	3.16	1.11	-.32	-.96
7	Q8	3.72	.94	-.99	.81
8	Q9	2.28	.94	.99	.81
9	Q11	3.58	1.07	-.66	-.39
10	Q12	3.66	.90	-.77	.17
11	Q13	3.36	.98	-.49	-.55
12	Q14	3.70	.91	-.90	.66
13	Q15	2.30	.91	.90	.66
14	Q16	3.70	.91	-.90	.66
15	Q17	3.22	1.03	-.35	-.84

9.3.2 Respondents' profile

Table 23 Gender of the respondents

Male: 251	53%
Female: 180	38%
Missing data: 43	9%
Total: 474	100%

Table 24 Age range of the respondents

Age range	Size	Percentage
18-25	178	38%
26-35	156	33%
36-60	80	17%
Missing data	60	12%
Total	474	100%

Table 25 Ethnic backgrounds of the respondents

Nationality	Size	Percentage
White (including English, Scottish, Irish, other EU countries and United states)	122	26%
Black, or Black African (including other Black)	17	4%
East Asian (including Indian, Pakistani, Bangladeshi, other Asian)	242	51%
South Asian (including China, Japan and Korean)	66	14%
Others mixed backgrounds	25	5%
Missing data	2	0.4%
Total	474	100%

9.4 Confirmatory analysis of DRP scales

Based on the discarding criteria presented in chapter eight (section 8.6.1.3): items 4, 6, 1, 9, 15, were further removed. Four out these five items were negatively worded items. Consistent with prior research, negatively worded items tend to affect the factor structure adversely. The final 10 items are all positively worded and loaded strongly onto one factor at a time. Scree plots showed that there are clearly two dominant factors.

KMO statistic is 0.75 which is acceptable (Kaiser, 1974). Bartlett's test is highly significant, indicating that the sample is adequate for factor analysis. Determinant is .23 which is greater than .00001, suggesting that multicollinearity is not a problem for the current data. Two factors explain 47% of total variance, factor one is responsible for 25% and factor two is responsible for another 20% of variance.

Figure 10 Scree Plot for the final 10 items

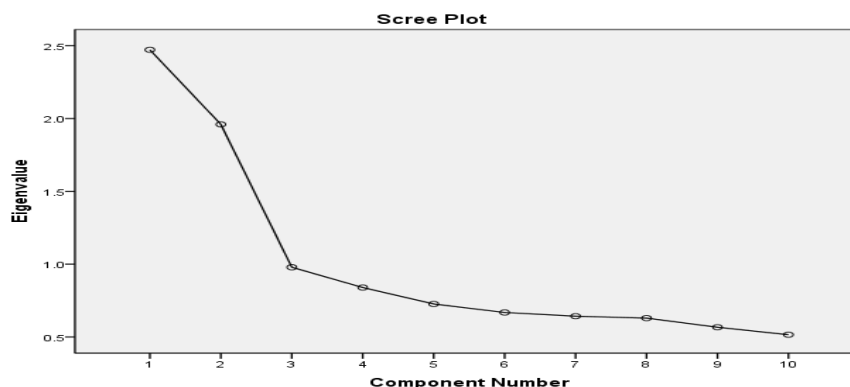


Table 26 Factor loading of the final 10 items in DRP

		Rotated Component Matrix	
		Rules	Principles
1	7. I prefer things to be set in the form of concrete Rules.	.74	
2	5. I rely on Rules to fulfil my desire for a firm answer.	.72	
3	11. I like to work in settings where tasks and expectations are defined and standardized by clear Rules.	.73	
4	17. I tend to judge the fairness of an outcome according to the degree of its compliance with Rules.	.68	
5	3. I often find myself wishing that there were more precise Rules to guide me through complex and unstructured situations.	.62	
6	12. I prefer Principles-based approaches because they engage people positively and openly in the decision-making process and thus reduce the likelihood of manipulation.		.69
7	8. Principles promote engagement and responsibility among employees thereby increasing their enthusiasm for the task.		.66
8	14. Principles work well in situations where there are conflicting interests, because they make room for communication involving the affected parties that leads to more thorough and reliable analysis.		.65
9	10. Action that is based on Principles has the strongest claim to legitimacy.		.58
10	13. I tend to be comfortable with the ambiguities associated with Principle-based decision-making.		.57

Based on collated item loadings of each factor, the scoring system for commuting rules and principles score is: Rules score = $(Q7+Q5+Q11+Q17+Q3)/5$; Principles score = $(Q14+Q12+Q13+Q8+Q10)/5$.

9.4.1 Interpretation of the factors

The two factors solution confirmed our previous conceptual proposition: The factors that affect preference for rules were different from those driving a preference for principles. According to Dworkin (1967, 1997), Black (2001; 2008), Ford (2010) and ICAS (2006 a&b) et al., principles tend to focus more attention on substance rather than form, thus users of principles would be expected to derive more feeling of empowerment and accountability towards the decision-makings; Whilst the predominant focus of a rules-based approach tends to be on form and compliance, thus users of rules tend to primarily focus on reaching closure by following clear-cut rules.

Factor one expresses a preference for rules. Five items grouped together suggest a preference for taking a rules-based approach in decision-making; for example, the preference for concreteness, neutrality, and fairness apparently provided by pre-defined rules. Such a preference for clear-cut answers to problems perhaps reflects an underlying anxiety about ambiguity and uncertainty, and discomfort in dealing with complex and unstructured tasks. Furthermore, some individuals prefer using rules because they seem to have the potential to help bring 'closure' on problems and situations, as reflected in Q3 (Bailey et al., 2007). It reflects the fact that this type of person is high in need for prescriptive answers to a question or structure, as opposed to tolerate to unstructured tasks or ambiguities (Webster & Kruglanski, 1994)⁵⁴.

Factor two expresses a preference for principles and draws together items reflecting various dimensions of that preference. The factor reflects, in for example Q14, positive appreciation of the idea that the application of principles requires 'weighing' of relevant considerations, including principles in a holistic fashion (Dworkin, 1979;

⁵⁴ An alternative perspective would emphasise weaknesses of rules in dealing with unstructured problems in ambiguous situations (Ohman, et al., 2006), particularly those that require innovative adoptions of rules, and applying them in new situation (Booth & Winzar, 1993).

Maines et al., 2003; Sullivan, 1992; Huhn, 2003; Korobkin, 2000). It shows positive appreciation for the abstract characteristic of the principles as they allow room for individual discretion and judgment (Black, 2001 & 2008; Ford, 2010). This in turn improve the feeling of empowerment and accountability (see chapter three, section 3.3.1.1), and as a result reduce the likelihood of manipulation (Ford, 2010). Finally, it expresses the notion that they allow more transparent dialogues among players in a shared ‘interpretive community’ (Ford, 2010). And because a ‘mutual trust’ is the pre-requisite for such a community, for some people principles have the strongest claim to legitimacy.

9.5 Evidence supporting the reliability of the DRP

9.5.1 Internal consistency reliability

I use Cronbach’s alpha coefficients to examine the internal consistency of the instrument. The concept of Cronbach’s alpha has been explained in detail in chapter eight, section 8.5.5. Bowling (1997) argues that an alpha >0.5 is an indication good internal consistency (also see, Pelzang, 2010), whereas an alpha of 0.7 or above is considered excellent by Howitt and Cramer (2008).

Table 27 Reliability of the rules subscale

Rules subscale	n	Mean	Variance	SD	No. of items	
	475	16.36	14.26	3.78	5	
	Mean	Minimum	Maximum	Range	Maximum/ Minimum	Variance
Item Means	3.27	3.16	3.57	.41	1.13	.03
Item Variances	1.19	1.06	1.29	.23	1.21	.01
Inter-Item Correlations	.35	.30	.44	.14	1.45	.002
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q5	13.12	9.61	.50	.25	.68	
q7	13.2	9.41	.53	.30	.67	
q11	12.79	9.70	.52	.29	.67	
q17	13.16	10.04	.48	.24	.69	
q3	13.15	9.95	.42	.18	.71	
Cronbach's Alpha .73						

Table 28 Reliability of the principles subscale

Principles subscale	n	Mean	Variance	SD	No. of items	
	469	18.04	8.37	2.89	5	
	Mean	Minimum	Maximum	Range	Maximum/ Minimum	Variance
Item Means	3.61	3.36	3.74	.38	1.11	.02
Item Variances	.86	.78	.96	.18	1.23	.004
Inter-Item Correlations	.24	.12	.34	.22	2.85	.004
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
Q8	14.31	5.8	.38	.14	.55	
Q10	14.48	6.06	.32	.14	.58	
q12	14.39	5.67	.44	.20	.52	
q13	14.68	5.88	.32	.12	.58	
Q14	14.32	5.98	.37	.15	.55	
Cronbach's Alpha .61						

Rules subscale yields an excellent 0.73 and principles subscale obtained a satisfactory 0.61. Within the field of psychometric testing, well-established instruments such as Need for Closure (NFC, 1994), which contains five subscales. The individual reliability alphas are: 0.62 for close-mindedness; 0.67 for discomfort with ambiguity; 0.7 for decisiveness, preference for order =0.67 and finally preference for predictability is 0.82. Therefore, the alphas of the DRP are believed to be competitive comparing with other commonly used psychometric instruments.

9.5.2 Test re-test Reliability

I examined the test-retest reliability of the DRP with a sample of 35 University students. The same students were sent a link asking them to complete the online survey again 12 weeks later; the purpose of this has been briefly mentioned as a reliability check. I obtained a usable sample of 30 responses. The test-retest correlation between these two rules scores = 0.78 ($p < 0.01$). For the principles subscale: the test-retest correlation between these two principles scores is 0.70 ($p < 0.01$). The general rule is that for academic research purpose, the correlation should be no less than 0.7 (Wuensch, 2006, p.4). This part of work provided an

empirical response to the RQ 1: the dispositions to rules and principles are stable over time.

9.6 Relationships between rules and principles subscale (response to RQ2)

Pearson correlation was conducted between the rules and principles scores for the 474 participants. Statistics show that, for rules score $M= 3.1$, $SD= .95$; while, for principles score, $M= 3.44$, $SD= .95$. A weak correlation (measure of an effect size) $r = .12$ between rules and principles scores was obtained. Due to the large sample size the significance level is not a good guide for estimating the magnitude of the correlation between rules and principles. According to Cohen (1977): $.1 =$ small, $.3=$ medium, and $.5=$ strong. The numbers are measures of an effect size. Despite being correlated significant at a 99% confidence level, rules and principles had only 12% of variance in common. Furthermore, because we deal with data measured on an ordinal scale, Spearman's Rho was also used to calculate the correlation between rules and principles. The result indicated an orthogonal relationship between rules and principles, ($r_s=0.07$, $p=0.13$, not significant, two tailed).

The low correlation found between factors one and two, lent empirical support for our conceptualisation of principles, based on Dworkin's view (1977), as orthogonal to rules, as distinct from competing views which see rules and principles as poles of a continuum (Cunningham, 2007). This part of work provided empirical response to RQ2.

9.7 Demographic variables analysis

This part of analysis is to examine the RQ 6: "Are there any gender and ethnic differences in terms of individuals' dispositions to rules and principles?" One of the long-standing topics in psychometric assessment is the relationship between group and individual differences, and many studies in the field have dedicated to investigate the degree to which various demographically defined groups vary on individual characteristics. With this in mind, it is potentially valuable to gain scientific knowledge in how various demographic groups differ in their dispositions to rules and principles.

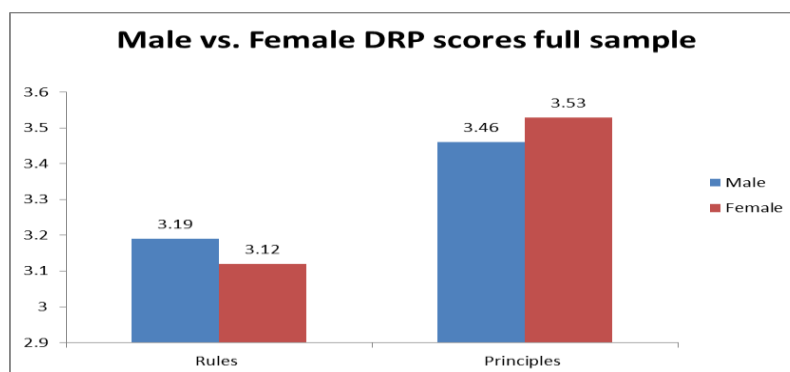
9.7.1 Gender factor scores analysis

The DRP instrument itself was found to be gender neutral. T-test on the males' and females' DRP scores showed that there was no statistically significant difference. The result is in line with past findings that most gender differences in personality variables are trivial in size (Goldberg et al., 1998).

Table 29 Gender statistics

Miss data= 43	Rules		Principles	
Male=251; Female =180	Male	Female	Male	Female
Mean	3.19 (SD=0.88)	3.12 (SD=0.97)	3.46 (SD=0.89)	3.53 (SD=0.82)

Figure 11 Males and females DRP scores



9.7.2 Ethnic group analysis

Participants in the following two groups were excluded from the analysis, due to their limited sample size compared with the other three dominant ethnic groups: African group, n=17 people; other mixed background, n=25.

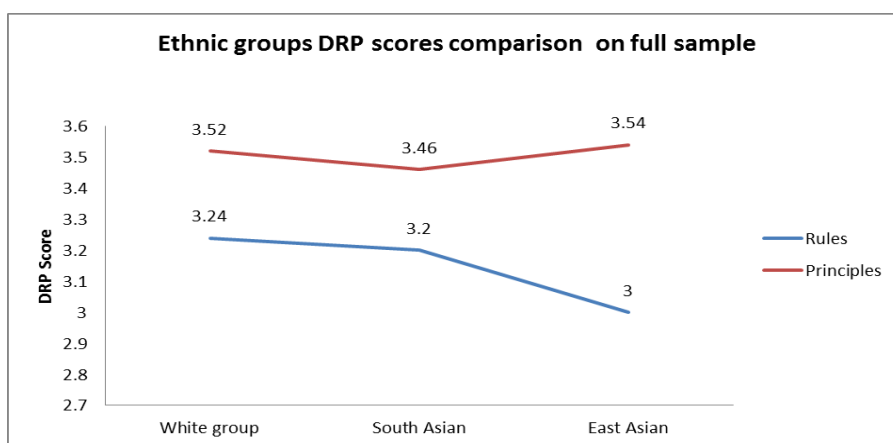
Group 1 = The White group including people from Europe and other white backgrounds such as United States; Group 2= The South Asian group including Indian, Pakistani and Bangladeshi; Group 3= The East Asian group including China, HK, Japan and Korea.

Table 30 Ethnic groups DRP scores

	Ethnic group	n	Mean	SD.
Rules	White	122	3.24	.83
	South Asian	242	3.2	.97

	East Asian	66	3	.81
	Total	429		
Principles	White	122	3.52	.83
	South Asian	242	3.46	.89
	East Asian	66	3.54	.79
		429		

Figure 12 Ethnic groups DRP scores



The ANOVA analysis on the full sample size (n=429) showed that there were no significant mean differences for the rules and principles scores between the White group, the South Asian group and the East Asian group. Furthermore, there was no significant mean difference between the two Asian groups.

9.7.3 Age analysis

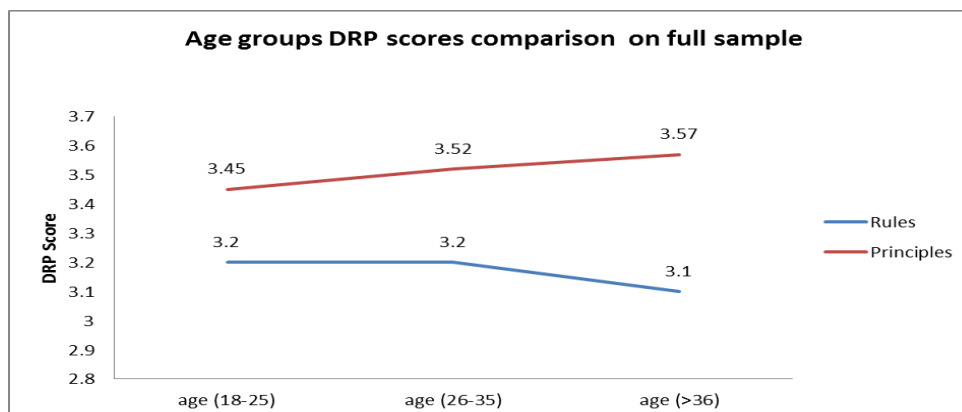
I did not find age to be statistically significant in relation to the DRP scores. One way ANOVA was carried out comparing the means between group 1 (age 18-25), Group 2 (age 26-35) and Group 3 (age are over 36). Miss data: n= 60.

Table 31 Three age groups DRP scores

	Age range	N	mean	SD.
Rules	18-25	178	3.2	.91
	26-35	156	3.2	.89
	>36	80	3.1	.99
	Total	412		
Principles	18-25	178	3.45	.87

	26-35	156	3.52	.84
	>36	80	3.57	.75
	Total	412		

Figure 13 Three age groups DRP scores comparison



One possible reason for the little differences of the DRP scores detected among these three age groups could be due to the fact that the sample for the current study did not have a large age variation, which would have allowed for more statistical differences to emerge.

9.8 Summary and conclusion of part one

In this part of the analysis, I presented the two dimensional structure of the DRP. Factor loadings showed that a 10 items instrument could explain 46% of total variance. The reliability of rules and principles subscales have been examined and established by the Cronbach's alpha and test and re-test procedures. A weak correlation between rules and principles scores indicated relative separation between disposition towards rules and principles. In addition, tests have been performed to investigate the variability of DRP scores and factors including gender, ethnicity and age. Factor structures have also been compared between different demographic groups: in terms of male vs. female; White vs. Asian; younger age vs. mature age group, identical factor structures were found between the two groups being compared. This is to test for measurement equipment. This part of the work showed that DRP as a psychometric instrument is gender and age neutral and does not discriminate people from different ethnic backgrounds.

Chapter 9 Part two: Convergent and Divergent validity of DRP

9.9 Overview

In this section I focus on reporting the convergent and divergent validity of the DRP. This part of the work includes correlation analysis with a list of established instruments chosen for their conceptual relevance. Because of the sufficient sample size, I have chosen listwise method to remove cases with more than one variable missing. This decision caused a variation in the sample sizes for the tests being reported in the following sections.

This part of work helps give an empirical answer to RQ5:

“Whether the DRP will show a meaningful relation with one's other psychological characteristics, and relevant measurements, such as one's thinking style and personality traits?”

9.10 The justification of use shorter version of scales

It is a well-known fact that long full-length instruments encompass better psychometric properties than the shorter versions (Gosling, Rentfrow, & Swann, Jr., 2003, p.505), but there is an inevitable trade-off between cost and effectiveness/precision (Burisch, 1997). More importantly, shorter version instruments allow the researcher, in situations like this, to carry out studies that would otherwise be practically infeasible with long instruments. For the stated practical reasons, and at the expense of some precision in measurement, I have chosen the shorter versions of the following instruments: The Social desirability scale, the Sternberg's thinking style scale, and the shorter version of the Big5 test referred as the TIPI.

9.11 Evidence supporting the validity of DRP

The Pearson correlation coefficients analysis between DRP scores and other relevant measures was used to examine and establish the convergent and divergent validity of the DRP (e.g. see Mumford et al., 2006).

To confirm convergent validity, DRP scores are expected to correlate significantly, but not so highly as to suggest that they are actually measuring identical constructs, in the predicted direction and with relevant and more established measures. In this case, the correlation of the instrument was tested against some of the traits measured by the TIPI test (i.e. openness, extraversion, and conscientiousness), the need for closure scale with its five dimensional subscales, and the dimensional scales in the Sternberg's thinking style scale.

To confirm divergent validity, DRP scores are expected to have marginal or poor correlations with chosen measures, in this case: some traits such as emotional stability as measured by the TIPI, the global score of the DSS (Dialectical Self scale), and regulatory focus as measured by Higgin's RFQ (Regulatory Focus Questionnaire). In addition, to ensure that responses to the DRP are not merely reflecting the need for social approval, a test of correlation with a socially desirability scale is also included: I expect the DRP responses to correlate poorly with the social desirability scale.

The justification for some of the theoretical expectations regarding the directions and relationships between the DRP and these above mentioned instruments has been discussed in detail in chapter five, where various propositions have been hypothesised regarding the conceptual linkages between the DRP and these constructs.

Many other widely recognised psychometric measurements clearly have potential relevance to individuals' dispositions towards using rules and principles (such as the law and compliance scale, the MBTI, Rest's moral reasoning scale DIT), but due to time and resources constraints affecting the collection of data in respect of a battery of tests, the researcher decided to limit the number of convergent and divergent tests to the five mentioned above.

9.11.1 Divergent validity of DRP

9.11.1.1 DRP and Higgins RFQ

RFQ distinguishes between two different kinds of achievement orientation - promotion orientation and prevention orientation (Crowe & Higgins, 1997; Higgins, 1997 & 1998). The RFQ asks 11 questions in total, of which the promotion subset (6 questions) measures individuals' subjective history of promotion success with items such as "How often have you accomplished things that got you 'psyched' to work even harder?" The prevention subset (5 questions) measures subjective history of prevention success with questions such as "Not being careful has gotten me into trouble at times" (reverse scored). The response scales for these questions range from 1 (never or seldom) to 5 (very often).

In this project, the sample size $n = 332$, the mean for the promotion focused score $M = 20$, $SD = 3.46$; the mean for the prevention focused score $M = 16.04$ and $SD = 3.59$.

Table 32 DRP and Higgins RFQ⁵⁵

	Signs ⁵⁶	Promotion	Prevention
DRP Rules scale	V	-.12**	-.01
DRP Principles scale	No	.06	-.02

A significant but small negative correlation was obtained between rules-orientation and promotion-focused orientation. My initial proposition was that rules-orientation would correlate positively with prevention-orientation; whilst principles-orientation would correlate positively with promotion-orientation (chapter 5, section 5.7.3). The present result however does make intuitive and conceptual sense, as highly rules-oriented individual would be less concerned with achieving positive objectives instead they would be more pre-occupied with ensuring the absence of negative outcomes (ensure correct rejections; be careful) and ensuring against the presence of negative outcomes (ensure against errors of commission; avoiding mistakes), thus indicating a

⁵⁵ ***. Correlation is significant at the 0.01 level (2-tailed); **. Correlation is significant at the 0.05 level (2-tailed); *. Correlation is significant at the 0.1 level (2-tailed).

⁵⁶ Expected correlation sign = v; unexpected correlation sign = x; expect no correlation: NO

negative relationship with promotion orientation ($r = -.12^{**}$, $p < 0.05$). As expected, dispositions towards principles did not correlate with prevention-focused orientation.

Despite the fact that a significant correlation was obtained, it was marginal, thus indicating that DRP and RFQ are not measuring the same psychological construct.

9.11.1.2 DRP and the socially desirability test

I used the short version of the Marlow's social desirability (MCSD form C). The MCSD form C developed and validated by Reynolds (1982) consists of 13 items, 5 keyed true and 8 false. Sample $n = 332$. Social desirability scores mean = 19.4, SD = 2.62.

Table 33 DRP and Socially desirability test

	Signs	Rules	Principles
Socialdesire	No	-.03	-.01

The DRP is proven not simply another measure of people's attitudes towards social approval as the MCSD sets out to measure.

9.11.1.3 DRP and the DSS

The Dialectical self-scale assesses dialectical thinking in the domain of self-perception (Spencer-Rodgers et al., 2010). DSS includes three factors: corresponding to contradiction (e.g., "When I hear two sides of an argument, I often agree with both"), cognitive change (e.g., "I often find that my beliefs and attitudes will change under different contexts"), and behaviour change (e.g., "I often change the way I am, depending on who I am with"). The scale was designed to be a 'global' measure of dialecticism, and all three subscales are related to self-concept inconsistency. Therefore, I used an overall DSS score in my analyses. Sample $N = 308$, DSS (mean = 3.74, SD = 0.512).

Table 34 DRP and DSS

	Signs	Rules	Principles
DSS	No	-.07	-.03

There was no significant correlation between the global DSS score and DRP scores, the result therefore supported my theoretical expectation of that the dispositions to rules and principles are conceptually and empirically different from one's cognitive ability to think about contradictory and ambivalent facts and issues.

9.11.2 Convergent validity of DRP

9.11.2.1 DRP and the Ten Item Personality Inventory TIPI

TIPI is a 10 items personality trait instrument (Gosling et al., 2003), which gives a very quick measure of the Big 5 personality traits. Each item consists of two descriptors, separated by a comma, using the common stem, "I see myself as:". Each of the five items was rated on a 7-point scale ranging from 1 (disagree strongly) to 7 (agree strongly).

Sample N=306. Mean for extraversion (mean= 4.32, SD = 1.37); Agreeableness (mean= 4.87, SD = 1.22); Conscientiousness (mean = 5.08, SD = 1.33); Emotional stability (mean = 4.74, SD = 1.35); Openness (mean = 4.95, SD = 1.21).

Table 35 DRP and TIPI⁵⁷

	Signs	Rules	Principles
Extraversion	V	.05	.13 ^{***}
Agreeable	No	.12 ^{**}	.01
Conscientious	V	-.01	.07
Emotion stability	No	-.04	-.02
Openness	V	-.10	.14 ^{**}

The above table shows that: there are the patterns of correlations persisting across three out of the five personality traits (Extraversion, agreeableness, and openness). Although the correlations were statistically significant, they only accounted for small

⁵⁷ ***. Correlation is significant at the 0.01 level (2-tailed); **. Correlation is significant at the 0.05 level (2-tailed); *. Correlation is significant at the 0.1 level (2-tailed); Expected sign =v; unexpected sign = x; expect no correlation: NO.

portion of the variances, which indicated that DRP is not a measure of personality trait. In line with my propositions in chapter five (section 5.5), I found that individuals who are predominantly principles-oriented were more extraverted ($r=.13^{**}$, $p < 0.05$) than people who are more rules-oriented ($r=.05$, not significant). Further, people who are predominantly rules-oriented were less likely to be open-minded ($r=-.10$), whilst a principles-orientation correlated significantly and positively with openness ($r=.14^{**}$, $p < 0.05$). An unexpected positive and significant correlation emerged between the disposition towards rules and agreeableness ($r=.12^{**}$, $p < 0.05$), implying that people who are rules-oriented tend to be more cooperative and participative to work with others, this might explain the fact that people who like rules tend to be more susceptible to external influence. Such a characteristic fits in the profile of a person with an external locus of control (chapter five, section 5.6.1).

Contrary to my expectations, the conscientiousness of the Big5 personality traits did not correlate significantly with either the rules or principles score. In chapter five (section 5.5.1), I proposed that the multiple facets of the conscientiousness would correlate positively and significantly with either rules or principles. Nonetheless in this present version of the TIPI, it only provides a global score of the conscientiousness, as a result, no significant relation was detected between the conscientiousness and the DRP scores. Further research will have to adopt a more sophisticated version of the personality traits scale to investigate the specific relationships between rules and principles and the multiple facets of the conscientiousness.

As expected, no meaningful correlation was found between the emotional stability with the DRP subscales, which suggests that emotional stability does not affect the individuals' rules and principles dispositions.

9.11.2.2 DRP and Need for closure

The original 'need for closure' scale was developed by Webster and Kruglanski in 1994. It includes 47 items. There are five factors underpinning one's 'need for closure' construct. They are: preference for order and structure; affective discomfort caused by ambiguity; decisiveness of judgments and choices; desire for predictability; and closed-mindedness.

The sample size for this correlation $n = 138$, this test has a noticeably smaller sample size than the other tests due to the fact that it had a lie detector requirement which removed the subjects whose scores in the 'lie items' were greater than 15.

The statistics for the NFC: Global score, $M = 148.7$, $SD = 38.07$; Order, $M = 39.42$, $SD = 10.35$; Predictability, $M = 28.70$, $SD = 7.76$; Decisiveness, $M = 26.09$, $SD = 8.12$; Ambiguity, $M = 34.02$, $SD = 9.95$; Close-mindedness, $M = 23.71$, $SD = 5.24$.

Table 36 DRP and Need for closure⁵⁸

	Signs	Rules	Principles
Needforclosure	V	.03	-.09
Order	V	.20**	.04
Predictability	V	.18**	-.24***
Decisiveness	V	-.16*	.02
Avoid ambiguity	No	.06	-.02
Close-minded	V	.26***	-.15*

The NFC global score was not related significantly to either disposition towards rules or principles. However, there were significant and expected correlations between the NFC dimensional scales and DRP scores. The overall patterns in terms of the directions and magnitudes of the correlations were in line with what I have expected from the examination of the prior literature (see chapter five subsection 5.7.1).

The characteristics of an individual who is predominantly rules-based includes items such as: high preferences for predictability ($r = .18^{**}$, $p < 0.05$) and order ($r = .20^{**}$, $p < 0.05$) and more close-minded ($r = .26$, $p < 0.01$). The ambiguity subscale however, did not correlate significantly with either rules or principles scores, the pattern being that rules scores had a higher need to avoid ambiguity ($r = .06$), while principles scores

⁵⁸ ***. Correlation is significant at the 0.01 level (2-tailed); **. Correlation is significant at the 0.05 level (2-tailed); *. Correlation is significant at the 0.1 level (2-tailed); Expected sign = v; unexpected sign = x; expect no correlation: NO.

correlated negatively with tolerance for ambiguity ($r = -.02$), indicating that the more principles-oriented a person has the higher tolerance for ambiguity.

The correlations between principles scores and predictability ($r = -.24^{***}$, $p < 0.01$) and closed-mindedness ($r = -.15^*$, $p < 0.1$) were significant and negative, the results were in line with prior research. For instance, people who have a higher ‘urge’ to reach decision and are less willing to wait for emerging information (Kruglanski et al., 2007). In other words, this type of person may be inclined to be close-minded and to ‘seize’ upon the information which is already available. Often this translates into the first appropriate solution they encounter (Mannetti et al., 2006) and then they ‘freeze’ (do not let subsequent information affect their conclusion). This style is in contrast with the use of a principles-based approach.

A marginally significant but negative correlation was obtained between disposition towards rules and one’s decisiveness dimension ($r = -.16^*$, $p < 0.1$). Decisiveness subscales comprise items such as “I tend to struggle with most decisions” and “When trying to solve a problem I often see so many possible options that it's confusing” (reverse item). My results showed that more reliance on rules would cause one to be less decisive. Indeed, individuals with higher rules-orientations tend to have higher need for clear-cut answers in order to avoid confusion and ambiguity.

9.11.2.3 DRP and Sternberg’s thinking style

In this project, the Thinking Styles Inventory –revised II (TSI-R2) version was used. The Thinking Styles Inventory is based on Sternberg’s theory of mental self-government (Zhang, 2010, p. 276). The Thinking Styles Inventory (TSI, Sternberg and Wagner, 1992) is a self-report test about different strategies and ways that people use to solve problem, to carry out tasks, and make decisions. It involves 65 items, each item falling into one of the 13 different style scales.

The mean scores for the 13 thinking styles, respectively are: Legislative ($M = 4.80$, $SD = 1.07$); executive ($M = 4.68$, $SD = 1.13$); Judicial ($M = 4.69$, $SD = 1.07$); Global ($M = 4.25$, $SD = 0.96$); Local ($M = 4.4$, $SD = 1.09$); Liberal ($M = 4.59$, $SD = 1.14$); Conservative ($M = 4.39$, $SD = 1.15$); Hierarchic ($M = 4.77$, $SD = 1.12$); Monarchic ($M = 4.6$, $SD = 1.06$); Oligarchic ($M = 4.41$, $SD = 1.1$); Anarchic ($M = 4.26$, $SD =$

1.1); Internal (M = 4.49, SD = 1.0); External (M = 4.75, SD = 1.1). Sample size, n=334. A more detailed discussion on each thinking style can be found in chapter 5, section 5.7.2.

Table 37 DRP and Sternberg's thinking style⁵⁹

	Signs	Rules	Principles
Legislative	V	.03	.15***
Executive	V	.17***	.05
Judicial	No	.05	.09
Global	V	.06	.04
Local	V	.19***	.12**
Liberal	No	.02	.06
Conservative	V	.13**	.01
Hierarchic	V	.10	.15***
Monarchic	No	.10	.11**
Oligarchic	V	.12**	.10*
Anarchic	V	.15***	.03
Internal	No	.004	-.01
External	V	.11**	.10

Note: Table 5 in chapter five has elaborated on each thinking style.

I found that in terms of thinking functions: rules-oriented individuals tended to display a more executive thinking style ($r=.17^{***}$, $p < 0.01$). The result fits with the conceptual description of an executive style which has preference for following and implementing rules and instructions (Sternberg, 1997). Principles orientation on the other hand, correlated positively and significantly with a legislative thinking style ($r=.15^{***}$, $p < 0.01$). A principles-based approach in decision-making allows space for individual judgment and discretion (ICAS, 2006a). Thus, people with a legislative style of thinking are more likely to prefer a principles-based approach in decision-making.

⁵⁹ ***. Correlation is significant at the 0.01 level (2-tailed); **. Correlation is significant at the 0.05 level (2-tailed); *. Correlation is significant at the 0.1 level (2-tailed); Expected sign =v; unexpected sign = x; expect no correlation: NO; sample size= 334.

Both rules ($r=.12^{**}$, $p < 0.05$) and principles ($r=.10^*$, $p < 0.1$) obtained positive and significant correlations with oligarchic style, which is characterised as lack of skill in prioritising tasks and managing resources and time (Sternberg, 1997). These people often need some extra direct guidance or other forms of assistance to make them more effective in setting priorities. This result is not unusual, within organisational contexts, as rules and principles are often being put in place to help employees with time and task management. The stronger relationship between rules and oligarchic style somehow suggested that, compared with principles, people with oligarchic style tend to rely more on rules to provide orders,

Principles-orientation was found to correlate positively and significantly with both monarchic ($r=.11^{**}$, $p < 0.05$) and hierarchic thinking styles ($r=.15^{***}$, $p < 0.01$). The result revealed that while people with principles orientation tend to take in a network of competing information, they prefer to prioritise or weigh these tasks or information according to their significance and relevance, and focus on one aspect at a time.

I found both rules- and principles-orientation correlated highly and positively with a local thinking level. Previously, in chapter five, I have proposed that rules-orientation will be more likely to direct one's attention to concrete and minor details (local style) (Sternberg, 1997; Zhang, 2006). The comparisons of the magnitude of correlation between rules ($r=.19^{***}$, $p < 0.01$) with local think style, and principles ($r=.12^{**}$, $p < 0.05$) with local thinking style showed that a rules-orientation will be more likely to be local level-focused. Furthermore, these types of people also tend to be more conservative, rather than liberal, in their thinking ($r = .13^{**}$, $p < 0.05$). This implies that they tend to stick with rules and procedures, minimise the opportunity for change, avoid ambiguous situations, and prefer routines in life (Sternberg, 1999).

The correlations between the DRP and liberal thinking styles were not significant. However the magnitude of the correlation between liberal style and disposition to principles score ($r=.06$) was higher than its correlation with rules score ($r=.02$); the direction of magnitude was in line with my previous proposition (section 5.7.2).

Finally, individuals who are predominantly rules-based tend to have an anarchic style ($r = .15^{***}$, $p < 0.01$), People with anarchic thinking style are more aware of each

individual rule but have difficulty in linking them together to evaluate how the task at hand contributes to the overall picture (Zhang, 2006, p.1179).

An unexpected significant and positive correlation was found between rules and external thinking style ($r=.11^{**}$, $p<0.05$). The literature leads us to speculate that a rules-based person would be more internally based. Meanwhile, no significant correlation was found between principles score and external thinking.

9.12 Summary of the convergent and divergent validity of the DRP

9.12.1 Convergent validity of the DRP

Table 38 Correlations supporting the convergent validity of the DRP

	Signs	Rules	Principles
Order	V	.20**	.04
Predictability	V	.18**	-.24***
Decisiveness	V	-.16*	.02
Ambiguity	V	.06	-.02
Closemindedness	V	.26***	-.15**
Extraversion	V	.05	.12**
Agreeableness	V	.12**	.01
Openness	V	-.1	.14**
Legislative	V	.03	.15**
Executive	V	.17**	.05
Local	V	.19***	.12**
Conservative	V	.13**	.01
Hierarchic	V	.1	.15***
Monarchic	V	.1	.11**
Oligarchic	V	.12**	.10*
Anarchic	V	.15***	.03
External	V	.11**	.1

9.12.2 Divergent validity

Table 39 Correlations supporting the divergent validity of the DRP

	Signs	Rules	Principles
Promotion	V	-.12**	-.01
Prevention	V	.06	-.02
Social desire	No	-.03	-.01
DSS	No	-.03	-0.1
Emotional stability	No	-.04	-.02

9.12.3 Interpretation of the overall result

Table 40 Psychological profile of rules-based vs. principles based individuals

Expected linkages	Negative linkages	Positive linkages
Rules-orientation	Less promotion-focused (r=-.12**, p<0.05).	Need for order (r=.20**, p < 0.05); predictability (r =.18**, p < 0.05); close-minded (r =.26***, p < 0.01); executive thinking style (r=.17**, p < 0.05); oligarchic style (r=.12**, p < 0.05); Local style (r=.19***, p< 0.01); conservative (r =.13**, p < 0.05); anarchic style (r =.15***, p < 0.01); external in thinking style (r=.11**, p< 0.05).
Principles-orientation	Less closed-minded (r=-.15**, p< 0.05), higher tolerance for unpredictability (r=-.24***, p < 0.01).	Extraverted (r=.12**, p< 0.05); more open-minded and flexible (r=.14**, p< 0.05); legislative in their thinking (r=.15**, p< 0.05); monarchic (r=.11**, p< 0.05) and hierarchic (r=.15**, p< 0.05) in their way of synthesising information.

Rules-oriented individuals tend to be less promotion-focused ($r = -.12^{**}$, $p < 0.05$), but have a relatively stronger need for order ($r = .20^{**}$, $p < 0.05$) and for predictability ($r = .18^{**}$, $p < 0.05$). They are more close-minded ($r = .26^{***}$, $p < 0.01$). I have found that in terms of thinking functions: rules-oriented individuals will tend to display a more executive thinking style ($r = .17^{**}$, $p < 0.05$), which is characterised as a preference for following and implementing rules and instructions (Sternberg, 1997). Rules-oriented individuals would tend to be high in oligarchic style ($r = .12^{**}$, $p < 0.05$), which signifies that these people rely heavily on rules in prioritising tasks and allocating resources (Sternberg, 1997).

People who are rules-oriented tend to find comfort in working on tasks that mainly require them to focus on concrete and minor details (local style) ($r = .19^{***}$, $p < 0.01$) (Sternberg, 1997; Zhang, 2006). These people also tend to be more conservative, rather than liberal, in their thinking ($r = .13^{**}$, $p < 0.05$), which suggests that they tend to stick with rules and procedures (Sternberg, 1999). Finally, individuals who are predominantly rules-based tend to have an anarchic style ($r = .15^{***}$, $p < 0.01$): focusing narrowly on details and segments rather than seeing a bigger picture.

Contrary to my expectation, I also found people with a rules-orientation tend to be more externally based in their scope of thinking ($r = .11^{**}$, $p < 0.05$), indicating that they prefer socialising.

Principles-oriented individuals are more extraverted ($r = .12^{**}$, $p < 0.05$), less closed-minded to new situations ($r = -.15^{**}$, $p < 0.05$), and have higher tolerance for unpredictability ($r = -.24^{***}$, $p < 0.01$). They are more open to new information and are flexible ($r = .14^{**}$, $p < 0.05$). They are more legislative in their thinking ($r = .15^{**}$, $p < 0.05$) indicating their confidence with using their own judgment. Their way of synthesising information is more monarchic ($r = .11^{**}$, $p < 0.05$) and hierarchic ($r = .15^{**}$, $p < 0.05$), which shows that they are more willing to take in a wide array of information and prioritise them according to their contribution to the tasks/ decisions at hand.

However, contrary to the theoretical expectations, I did not find evidence supporting

the theoretical associations between promotion focused, global and liberal thinking and preferences towards a principles-based approach. This indicated that further empirical work may be needed to look into this in more depth.

I had expected conscientiousness and external thinking to correlate positively and significantly with principles-orientation. The result did not support my presumptions. Future work would include performing correlation analysis with a more sophisticated Big five instrument, like the 20 items TIPI for instance.

9.13 Discussion and Summary of the validity test results

No study to date has provided empirical evidence of a direct relationship between the construct of dispositions to rules and principles and other psychological constructs such as regulatory focus, thinking styles as well as need for closure. I sought to do so by investigating the relationships between DRP and a spectrum of eminent psychometric constructs. How do my findings square with the propositions that were developed in chapter five? In this current case, I found various small but expected correlations between the DRP constructs and the identified constructs, and have been able to demonstrate to some degree, that individuals' dispositions to rules and principles are not measuring the same constructs as any of the measurements which have been applied here, although they are conceptually related.

The correlation analysis showed relatively stronger relationships between the DRP and the constructs at the level of the cognitive styles such as: Need for closure and Sternberg's thinking style. The correlations between the DRP and some of the Big5 personality traits seem to be significant but only counted for small portion of variance. These findings support my theoretical expectation with respect to the psychological location of the DRP, it is should be regarded as more to do with the cognition of the individuals rather than the personality traits. Nevertheless, in order to be in a position to draw strong causal inferences from the DRP regarding behaviours, I will need to move on from correlation analysis, to tests of the predictive validity of the DRP instrument (chapter nine, part three).

Chapter 9 Part three: Predictive validity of the DRP

9.14 Predictive validity

I examined the predictive validity of DRP in a sub-sample drawn from the total sample (n=474). This sample comprised 89 participants. This part of analysis is to provide answer to research question RQ4:

“Are dispositions towards rules and principles predictive of individual’s actual behaviour in response to rules or principles-based social cognitive tasks / situations?”

In section 9.5.1 and 9.5.2, I have established that DRP is stable and persist over time. In part two of this chapter, I have also established that DRP is related to other stable individual characteristics in expected and meaningful way. That is, it captures measurable, stable and enduring individual characteristics. As such, am interested to see whether one’s DRP scores would have a significant correlation with one’s behavioural intentions in response to the designed real-life task scenarios. In other words, the predictive validity of a psychometric instrument is to examine how accurate it can predict an individual’s actual behavioural intention across contexts. I recognise that in general, a measure of global characteristics, such as the DRP should not be expected to predict with high accuracy in every specific context. The DRP should, however, predict the expected intentions (Obermiller & Spangenberg, 1998). I acknowledge that much of the variance in individual behaviour is attributable to the situation and the specific contextual features of that situation. I also examine how well the combination of the both one’s rules and principles scores can help improve the predictions of one’s behavioural intentions across all eight scenarios as measured by multiple regression models.

9.14.1 Attitudes, behavioural intention and behaviour

There is a consensus that the single best predictor of an individual’s behaviour is simply his or her intention to engage in that behaviour (Fishbein & Ajzen, 1977; Ajzen, 1991). Behavioural intention (BI) is indicator of readiness and plan to perform a particular behaviour (Fishbein & Ajzen, 1977). Thus, BI is “assessed by the

subject's indication of his or her intention or willingness to engage in various behaviours with respect to a given person or object questions" (Kim & Hunter, 1993, p.332). Likert scale is used to measure the strength of the intention. BI is operationalised by questions such as "I intend to take/ act / choose (rules or principles-based approach" in this current project. In this study, I was primarily interested in investigating the empirical link between dispositions towards rules and principles and behavioural intentions. I did not attempt to develop a full behavioural model in the way Fishbein & Ajzen (1977) did.

BI has been found to have sufficient predictive validity in relation to behaviour, suggesting that respondents in general are able to accurately rate their intention to perform certain behaviour in question (CHIRr online research source⁶⁰). Within the domain of health behaviours, BI explains 19% to 38% of variance of behaviour choice (see CHIRr online research source for a list of relevant research). According to Fishbein & Ajzen (1977), the explained variance become bigger when 1) there is a high level of specificity, for instance: specific behaviour directed towards a given target in a given context at a given time should predict the specific behaviour quite well because this attitude exactly corresponds to the specific behaviour; 2) subjects feel their perceived control over the circumstance is high. The variance will be more likely to be high in this case: Measuring students' attitudes towards attending the management accounting lectures every Thursday at 2pm in the lecture room ABC (a hypothetical location). In other cases a behavioural criterion could be more general in terms of it is aggregated a range of actions, targets, contexts and times, in these cases, the variances would be lower.

9.14.2 A summary of eight scenarios

Like prior studies such as Mirshekary et al (2009), I too created both professional and personal vignettes. Five of the scenarios were about professional tasks and the rest three were about personal life, on a scale of 1 to 4, participants were asked to "reflect on your own behaviour and indicate in what kind of approach you would take". These

⁶⁰ <http://chirr.nlm.nih.gov/behavioral-intention.php> accessed in July 2013.

scenarios were written in very simple and clear English so participants could scan them quickly. I have deliberately avoided composing too complex scenarios in terms of using technical jargons.

There were several considerations in creating the content of the scenarios: 1) I have consulted prior literature and found that some accounting/business issues have been frequently used in vignettes, such as: financial reporting, investment decision, customer cares and finally health and safety issues (Black et al., 2007); 2) the content should not be too obvious to warrant predominantly one-sided approach rather than inviting a more balanced choice. 3) The issue should be relevant and important to the chosen subjects such as: flat cleaning rota, work-life balance, and managing one's social life. And finally, all eight scenarios were reviewed by two supervisors and consequently, I believe they were comprehensive enough to capture the target participants' common experiences with rules and principles.

Table 41 Summary of the eight scenarios

Scenario	Summary
S1	Approaches in financial reporting
S2	Managing one's own fitness regime
S3	Approaches in researching potential investment targets
S4	Managing one's own work-life balance
S5	Managing one's flat cleaning rota
S6	Approaches in allocating financial loans
S7	Approaches in ensuring health and safety in a large organisation
S8	Approaches in ensuring customer satisfaction

Three out eight scenarios had reversed rating in terms of the scenario choices. This was used to control for users who would select a fixed number across all scenarios.

9.15 Part one: DRP and BI (correlation analysis and multiple regression)

9.15.1 The correlation analysis

Correlation analysis is used to examine whether there is a connection between one's DRP scores and her BIs with respect to rules and principles-based cognitive tasks. In the next step, multiple regression models are used to examine whether there is a causal relationship, and if so, how much behavioural variation can be explained by one's DRP scores.

Previous researches have shown that in general, the attitude or motivational type of scales tend to be negatively skewed (Pintrich, et al., 1993, p.810). Although the frequency distributions are not provided here, the means are the followings: for the DRP scales, the rules scores are negatively skewed ($M = 3.13$, $SD = 0.75$) and principles scores are also negatively skewed ($M = 3.64$, $SD = 0.62$). The scores for scenario 2, 5 and 7 out of the eight scenarios were reversed, to ensure the consistency of the meanings of all scenarios' scorings. The current usable sample size, for the predictive testing was $n = 89$.

Table 42 Descriptive Statistics of the eight scenarios

	N	Mean	SD	Skewness	Kurtosis
S1	89	2.43	.85	.18	-.53
S2	89	2.29	.96	.26	-.84
S3	89	2.40	.76	.25	-.21
S4	89	2.09	.94	.41	-.77
S5	89	2.48	1.07	.07	-1.02
S6	89	2.24	.77	.18	-.30
S7	89	2.31	.91	.16	-.77
S8	89	2.28	.84	.25	-.44
Scenario Average	89	2.31	.56	-.19	.43

The correlation table showed that both rules and principles scores correlated significantly with each individual score of across eight scenarios (see table 43). Rules scores correlated significantly with seven out of the eight scenarios. Principles scores also correlated significantly with seven out of the eight scenarios. In scenario 4,

balancing one's work and life, principles score did not correlate with the preferred approach. In scenario 5, cleaning rota for a shared flat, rules score did not correlate with the preferred approach. It is interesting to notice that both these two scenarios are personal in nature. Later analysis will look more into this.

A scenario average score (SAV) was then calculated by taking the average of the aggregate scores for eight scenarios: SAV (M= 2.31, SD=0.56). The DRP scores explained 40% of the BI with respect to rules and principles-based social tasks. It is a relatively high predictive value in the field of cognitive behaviour research, especially for a new instrument. For instance, Ghiselli and Barthol (1953) concluded that predicting / criteria correlation were range from 0.14 to 0.36 with a central tendency of 0.22. Guion and Gottier (1965) conclude that a predictive validity of personality inventories very seldom exceeded a correlation of 0.30. Schmitt, Gooding, Noe, & Kirsch (1984) suggest a middle value of 0.21. More recent research in reasoned action theory shows BIs account for between 20% and 30% of the variance in health behaviours (Gibbons, online resources⁶¹).

Table 43 Summary of the rules and principles correlations with eight scenarios⁶²

	S1	S2R	S3	S4	S5R	S6	S7R	S8	SAV
Rules	.27***	.24**	.30***	.26***	.14	.23**	.25**	.33***	.40***
Principles	-.21**	-.18*	- .29***	-.13	- .34***	- .28***	-.20*	- .36***	- .40***

Note: For the scenario scoring: chose option1=prefer a principles-based approach; choose option 2= prefer a principles -based approach than a rules-based approach; choose option 3=prefer a rules-based approach than a principles -based approach; choose option 4= prefer a rules-based approach. S2, S5 and S7 are reverse scored. SAV =average score across the eight scenarios

⁶¹ <http://cancercontrol.cancer.gov/brp/constructs/intent-expect-willingness/index.html> accessed on the July 2013.

⁶² ***. Correlation is significant at the 0.01 level (2-tailed); **. Correlation is significant at the 0.05 level (2-tailed); *. Correlation is significant at the 0.1 level (2-tailed).

9.15.2 Part two: The Multiple Regression analysis

A series of regression analyses were conducted using rules and principles scores as predictors and the scenario scores as the dependent variable. I entered variables into the regression models in three models. In the first model, I regressed scenario score on the rule score. In the second model, I entered the principle score instead of the rule score. By entering the variables in steps, I can evaluate the relative significance of the contribution of the each variable (comparisons between the ΔR^2)⁶³. In the final model, I entered both rule and principles scores as independent variables. The results for the eight scenarios are shown in the following Tables.

9.15.2.1 Analysis for the professional scenarios

Table 44 Multiple regression for professional scenarios

Scenario 1: Approaches in Financial reporting								
Variables	B	Std. error	Standardised β	t	P	Adjusted R^2	Overall F	Significance of F
<u>Model 1</u>								
Constant	1.49	.38						
Rules	.30	.12	.26***	2.55	0.01	6%	6.49	.01
<u>Model 2</u>								
Constant	3.47	.53						
Principles	-.29	.14	-.21**	-2.0	0.05	3%	4.0	.05
<u>Model 3</u>								
Constant	2.49	.65						
Rules	.28	.12	.25**	2.43	0.02			
Principles	-.26	.14	-.19*	-1.86	0.07	8%	5.06	.008
Scenario 3: Approaches in researching takeover targets								
Variables	B	Std. error	Standardised β	t	P	Adjusted R^2	Overall F	Significance of F
<u>Model 1</u>								
Constant	1.47	.34						
Rules	.30	.10	.30	2.88	.005	8%	8.28	.005

⁶³ Adjusted R^2 (ΔR^2) was chosen because it gives a good indication of how well the model generalises and its value should be identical to R^2 .

<u>Model 2</u>								
Constant	3.7	.47						
Principles	-.36	.13	-.29	-2.8	.006	8%	7.9	.006

<u>Model 3</u>								
Constant	2.73	.57						
Rules	.28	.10	.27	2.77	.007			
Principles	-.33	.12	-.27	-2.7	.008	14%	8.08	.001

Scenario 6: Approaches in allocating financial loans

Variables	B	Std. error	Standardised β	t	P	Adjusted R^2	Overall F	Significance of F
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<u>Model 1</u>								
Constant	1.51	.34						
Rules	.23	.11	.23	2.17	.03	4%	4.72	.03

<u>Model 2</u>								
Constant	3.48	.47						
Principles	-.34	.13	-.28	-2.67	.009	8%	7.12	.009

<u>Model 3</u>								
Constant	2.74	.59						
Rules	.21	.10	.21	2.04	.04			
Principles	-.32	.13	-.26	-2.55	.01	10%	5.76	.004

Scenario 7: Approaches in ensuring health and safety issue in a large organisation

Variables	B	Std. error	Standardised β	t	P	Adjusted R^2	Overall F	Significance of F
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<u>Model 1</u>								
Constant	1.36	.41						
Rules	.31	.13	.25	2.43	.02	5%	5.89	.02

<u>Model 2</u>								
Constant	3.39	.57						
Principles	-.30	.16	-.2	-1.91	.06	3%	3.63	.06

<u>Model 3</u>								
Constant	2.39	.71						
Rules	.29	.12	.24	2.31	.02			
Principles	-.27	.15	-.18	-1.77	.08	8%	4.58	.01

Scenario 8: Ensuring customer services satisfaction

Variables	B	Std. error	Standardised β	t	P	Adjusted R^2	Overall F	Significance of F
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<u>Model 1</u>								
Constant	1.14	.36						
Rules	.37	.11	.33	3.23	.002	10%	10.45	.002

<u>Model 2</u>								
Constant	4.05	.5						
Principles	-.49	.14	-.36	-3.6	.001	12%	13	.001
<u>Model 3</u>								
Constant	2.89	.60						
Rules	.34	.11	.30	3.16	.002			
						21%	12.13	.0001
Principles	-.46	.13	-.34	-3.5	.001			

All three models were significant for the professional scenarios as shown in the table above. In scenario one, both rules and principles scores were significant predictors for the scenario scores: for rules, $t(87) = 6.49$, $p = 0.01$; for principles, $t(87) = 4$, $p = 0.05$. From the magnitude of the t-values I can say that the rules score had slightly more impact than the principles score. The final model consisted both rules and principles score, $F = 5.06$ and was also highly significant ($p < 0.01$). Rules score had a higher standardised beta value than the principles score, this revealed that rules score contribute more to the outcome of the model. The coefficient (b) for rules score was positive indicating a positive relationship between one's rules score and BI. In contrast, b value was negative for principles score, suggesting a negative relationship between one's dispositions to principles and BI. In model 1, rules score by itself accounted for 6% of overall variance in individuals' scenario choices. In model 2, principle score by itself accounted for 3% of the overall variance. Finally the last model, when both scores were added as predictors, the explanatory power increased to 8%.

For scenario three, when it comes to choose an approach in researching takeover targets, both rules and principles scores contributed highly and significantly to the model, $F = 8.08$, $p < 0.01$. The pattern continued as the rules score had a positive relationship ($b = .27$) with the BI, while the principles score had a negative relationship ($b = -.27$).

In scenario six, principles score ($t = -2.67$, $p < 0.01$) had more impact on the one's scenario score than rules score ($t = 2.17$, $p < 0.05$). In the third model, when both rules

and principles were used, the explanatory power of the model increased to 10% from 4% as predicted by rules score on its own.

For health and safety issues, rules score seemed to contribute more to the model, $t=2.43$, $p<0.05$. Whereas for principles score, $t= - 1.9$, $p< 0.1$, and it was only slightly significant at 90% confidence level. The final model had the biggest explanatory power, ΔR^2 : 8%.

In scenario eight, principles score ($t=-3.6$, $p< 0.01$) had more impact on the one's scenario score than the rules score ($t=3.23$, $p< 0.01$). In the final model, when both rules and principles were used, the explanatory power of the model increased to 21%.

In scenario five, six and eight I recognised that principles scores contribute more to the scenario choice as measured by t and ΔR^2 . In scenario one and seven, rules score was seen as contributing more to the model. Lastly, in scenario three, rules and principles scores had made an equal contribution to the model.

Scenarios 8 obtained the highest ΔR^2 (21%) value compare with the rest of the seven scenarios. This may suggest that participants were more strongly engaged with this one particular scenario. My speculation for the high ΔR^2 is that it could be something to do with participants' individual personal experience. They were mostly familiar with the theme of this scenario. The scenario was concerned with using principles-based or rules-based approaches to better serve customers.

9.15.2.2 Analysis for the private life scenarios

Interesting results were observed for the rest of the three private life scenarios. In general, lower ΔR^2 were obtained across three scenarios in comparison with the ΔR^2 in the professional context.

Table 45 Multiple regression for personal life scenarios

Scenario 2: Managing one's own fitness regime (private life)								
Variables	B	Std. error	Standardised β	T	P	Adjusted R^2	Overall F	Significance of F
<u>Model 1</u>								
Constant	1.32	.43						
Rules	.31	.13	.24	2.35	0.02	5%	5.53	.02
<u>Model 2</u>								
Constant	3.31	.6						
Principles	-.28	.16	-.18	-1.73	0.09	2%	2.98	.09
<u>Model 3</u>								
Constant	2.29	.74						
Rules	.29	.13	.23	2.24	.02	7%	4.08	.02
Principles	-.25	.16	-.16	-1.59	.12			
Scenario 4: Managing one's own work-life balance								
Variables	B	Std. error	Standardised β	t	P	Adjusted R^2	Overall F	Significance of F
<u>Model 1</u>								
Constant	1.07	.42						
Rules	.33	.13	.26	2.54	.01	6%	6.44	.01
<u>Model 2</u>								
Constant	2.79	.59						
Principles	-.19	.16	-.13	-1.19	.24	1%	1.42	.24
<u>Model 3</u>								
Constant	1.69	.73						
Rules	.32	.13	.25	2.45	.02			
Principles	-.16	.16	-.11	-1.04	0.3	6%	3.76	.03
Scenario 5: Managing one's flat cleaning rota								
Variables	B	Std. error	Standardised β	t	P	Adjusted R^2	Overall F	Significance of F
<u>Model 1</u>								
Constant	1.86	.48						
Rules	.2	.15	.14	1.33	.19	1%	1.77	.19
<u>Model 2</u>								
Constant	4.58	.64						
Principles	-.58	.17	-.34	-3.31	.001	10%	10.97	.001
<u>Model 3</u>								
Constant	4.01	.81						
Rules	.17	.14	.12	1.15	.25			
Principles	-.56	.17	-.33	-3.22	.002	11%	6.17	.003

In the context of managing one's own fitness regime, rules score tended to have a bigger impact than the principles score. The final model showed that both rules and principles scores contributed significantly to the BI.

Rules score was a useful predictor in the context of helping to manage one's own life-work balance: $t = 2.54$, $p = 0.01$. Whereas, principles score did not predict the BI significantly.

Principles score was useful in predicting choices in managing one's flat cleaning rota, $t = -3.31$, $p = .001$, and was responsible for 10% of one's behavioural variance.

9.15.2.3 Overall result and summary

Regression model with DRP predicting the average scores of all eight scenarios

Table 46 Multiple regression for scenario average score

Scenario Average Variables	B	Std. error	Standardised β	t	P	Adjusted R^2	Overall F	Significance of F
Model 1								
Constant	1.4	.24						
Rules	.29	.07	.39	4.0	.0001	15%	15.9	.0001
Model 2								
Constant	3.6	.33						
Principles	-.35	.09	-.39	-3.95	.0001	15%	15.6	.0001
Model 3								
Constant	2.65	.38						
Rules	.27	.07	.37	4.0	.0001			
Principles	-.33	.08	-.36	-4.0	.0001	27%	17.12	.0001

The overall result demonstrated that both rules and principles scores were useful predictors in predicting one's BI with respect to rules and principles related approaches. The rules-oriented individuals tend to have a strong and consistent tendency to choose rules-based approaches in dealing with cognitive tasks; on the other hand, the principles-oriented individuals tend to have a consistent and strong tendency to choose principles-based approaches for the same task. In particular, for

the scenario average score, both model 1 (rules score as the sole independent variable) and 2 (with principles score as the sole independent variable) were significant and they explained up to 15% of the variance. This result suggested that both rules and principles scores had equivalent predictive power. The 3rd model which included both scores, yielded the largest explanatory power ($\Delta R^2 = 27\%$). This showed that when both DRP scores are used, the model has the largest predictive power.

9.16 Using DRP rules and principals scores as predictors

In previous sections, I have established that DRP scores were significant and useful predictors when it comes to predicting one's BIs. In this section, one way ANOVA was used to provide empirical evidence to show that: People who have predominantly chosen rules-based scenario approaches would have higher rules scores than people who have predominantly chosen principles-based scenario approaches, and vice versa.

Before carrying out ANOVA analysis, three assumptions have to be met. Firstly, to meet the independence of observation assumption is met by the designed the project in which, each participant filled in the online survey once and independently. Secondly, skewness and kurtosis values were checked to establish the normality of the dependent variables (Table 42). Finally, Levene's test of equality of error variances was performed. Among the eight scenarios, the homogeneity assumption for scenario 1, 3, 5 and 8 was violated. Nonetheless "the measures of homogeneity of variance⁶⁴ act more as a warning than as a disqualifier" (George & Mallery, p. 2005, p.151). Thus, to rectify the homogeneity assumption, an adjusted F test (The Welch statistic) was performed, instead of the Levene's test.

9.16.1 Two categories of scenario scores

The ANOVA analysis compared 1) the rules scores between people who have chosen a rules-based approach and people who have chosen a principles-based approach for the same scenario. 2) Same analysis procedure was applied to the principles scores.

⁶⁴ Homogeneity of variance: in other words, the spread of scores in each condition should be roughly similar (the spread of scores is reflected in the variance, which is simply the standard deviation squared).

The dependent variables were one's DRP scores, and the independent variable was the rules and principles category. Subjects were categorised into two groups as identified by their scenario scores. Group 1 included the people who have chosen choice 1 and 2. Group 2 included people who selected choice 3 and 4.

9.16.4.1.1 Professional scenario analysis

For scenario 1, people who have chosen a rules-based scenario approach had a higher rules score ($M= 3.38$, $SD=0.6$) than people who have chosen a principles-based scenario approach ($M=2.94$, $SD=0.81$). And this difference was significant, Welch $F(1, 87) = 8.89$, $p=.004$ significant at 99% confidence level. On the other hand, there was no significant mean difference for the principles scores between people who have chosen a rules-based scenario approach and people who have chosen a principles-based scenario approach, $F(1, 87) = 2.7$, $p= .10$.

In scenario 3, people who have chosen a rules-based scenario approach had a higher rules score ($M= 3.37$, $SD =0.53$) than people who have chosen a principles-based scenario approach ($M=2.97$, $SD= 0.85$). And such difference was significant, Welch $F(1, 87) = 7.84$, $p=.006$ significant at 99% confidence level. On the other hand, people who have chosen a principles-based scenario approach ($M= 3.73$, $SD= 0.65$) had a higher principle scores than people were in the rules-based scenario approach group ($M= 3.5$, $SD=0.55$), and the mean differences was significant, $F(1, 87) = 3.15$, $p=.08$ significant at 90% confident level.

Table 47 Two categories of ANOVA for professional scenarios

Scenario 1: Approaches in Financial reporting (professional life) ⁶⁵				
Dispositions	People who were in Rules approach group	People who were in Principles approach group	F	Sig
Rules scores	3.38 (SD: 0.6)	2.94 (SD: 0.81)	8.89**	.004
Principles scores	3.51 (SD: 0.68)	3.72 (SD:0.55)	2.7	.10
Scenario 3: Approaches in research potential targets ⁶⁶				

⁶⁵ Sample size: Principles $n=50$, rules $n=39$

⁶⁶ Sample size: Principles $n=52$, rules $n=37$

Dispositions	People who were in Rules approach group	People who were in Principles approach group	F	Sig
Rules scores	3.37 (SD: 0.53)	2.97 (SD: 0.85)	Welch 7.84***	.006
Principles scores	3.50 (SD: 0.55)	3.73 (SD: 0.65)	3.15*	.08
Scenario 6: Approaches in allocating financial loans ⁶⁷				
Dispositions	People who were in Rules approach group	People who were in Principles approach group	F	Sig
Rules scores	3.34 (SD: 0.65)	3.03 (SD: 0.79)	3.47*	.07
Principles scores	3.43 (SD: 0.65)	3.74(SD: 0.58)	5.29**	.02
Scenario 7: Approaches in ensuring health and safety in a large organisation ⁶⁸				
Dispositions	People who were in Rules approach group	People who were in Principles approach group	F	Sig
Rules scores	3.31 (SD: 0.71)	3.01 (SD:0.77)	3.5*	0.06
Principles scores	3.61 (SD: 0.56)	3.65 (SD: 0.66)	0.11	0.74
Scenario 8: Approaches in ensuring customer satisfaction ⁶⁹				
Dispositions	People who were in Rules approach group	People who were in Principles approach group	F	Sig
Rules scores	3.4 (SD: 0.59)	2.98 (SD: 0.80)	Welch 8.07***	.006
Principles scores	3.37 (SD: 0.67)	3.80 (SD: 0.53)	10.59***	.002

In scenario 6, people who have chosen a rules-based approach had a higher rules score than people who have chosen a principles-based approach in the context of allocating financial loans; $F(1, 87) = 3.47, p=.07$; people who have chosen a principles-based approach had a higher principles score than people who have chosen a rules-based approach, $F(1, 87) = 5.29, p=.02$ significant at 95% confidence level.

⁶⁷ Sample size: Principles n=58; rules n=31

⁶⁸ Principles n=52; rules n=37

⁶⁹ Principles n=56; rules n=33

In scenario 7, people who have chosen a rules-based approach had a higher rules score than people who have chosen a principles-based approach in the context of ensuring health and safety, $F(1, 87) = 3.5$, $p=0.06$, significant at 90% confidence level; no significant difference was found for principles score between these two categories, $F(1, 87) = 0.11$, $p=0.74$.

In scenario 8, people who have chosen a rules-based approach had a higher rules score than people who have chosen a principles-based approach in the context of ensuring customer satisfaction; Welch $F(1, 87) = 8.07$, $p=.006$ significant at 99% confidence level; Similarly, people who have chosen a principles-based approach had a higher principles score than people who have chosen a rules-based approach, $F(1, 87) = 10.59$, $p=.002$ significant at 99% confidence level.

9.16.4.1.2 Personal scenario analysis

Table 48 Two categories of ANOVA for personal life scenarios

Scenarios 2: Managing one's own fitness regime ⁷⁰				
Dispositions	People who were in Rules approach group	People who were in Principles approach group	F	Sig
Rules scores	3.29 (SD: 0.56)	3.03 (SD: 0.85)	Welch 3.01*	.09
Principles scores	3.51 (SD: 0.59)	3.71 (SD: 0.63)	2.18	.14
Scenarios 4: Managing one's own work-life balance ⁷¹				
Dispositions	People who were in Rules approach group	People who were in Principles approach group	F	Sig
Rules scores	3.36 (SD: 0.73)	3.03 (SD: 0.75)	3.92**	.05
Principles	3.54 (SD: 0.63)	3.68 (SD: 0.62)	1.03	.31
Scenarios 5: Managing one's flat cleaning rota ⁷²				

⁷⁰ Sample size: principles n=54, rules n= 35

⁷¹ Sample size: Principles n=59; rules n=29

⁷² Sample size: Principles n=47; rules n=42

Dispositions	People who were in Rules approach group	People who were in Principles approach group	F	Sig
Rules scores	3.21(SD: 0.68)	3.06(SD: 0.82)	.88	.35
Principles scores	3.49 (SD: 0.63)	3.76(SD: 0.58)	4.43**	.04

For managing one's fitness regime, there was a significant mean difference for rules between people in the rules-based approach scenario and people in the principles-based approach scenario, Welch $F = 3.01$ and slightly significant at 90% confidence level.

When using dispositions to rules to predict scenario two with respect to managing one's work-life balance, there was a significant mean difference between the rules-based and principles-based approach groups, $F(1, 87) = 3.92$, $p = 0.05$ significant at 95% confident level; For principles score, $F(1, 87) = 1.03$, $p = 0.31$ not significant.

There was a significant difference between two groups' principles scores with respect to the scenario which described managing the flat cleaning rota, $F(1, 87) = 4.0$, $p = .04$ significant at 95% confidence level. No significant difference was found for one's rules scores between the two groups, $F(1, 87) = .88$, $p = .35$.

9.16.4.1.3 Overall result and discussion

Taken all results together, participants tended to respond to the cognitive task scenarios in line with their dispositions towards rules and principles scores. In particular, people who have chosen a rules-based approach in scenarios would tend to have significantly higher rules scores than those who have chosen a principles-based approach for the same scenario. On the other hand, people who have chosen a principles-based approach in scenarios tend to have significantly higher principles scores than those who have chosen a rules-based approach for the same scenario.

9.16.2 Four categories of scenario scores

My primary goal was to determine whether there are any significant differences between participants' rules scores and principles scores as categorised by four scenario choices. I also wanted to know which specific pairs of means are significantly different, therefore I continued with a post hoc test. If the assumption of

homogeneity of variance has been met (Equal Variance Assumed) – the most commonly used test is the Tukey (HSD) test. If the assumption of homogeneity of variance has been violated (Equal Variance Not Assumed) – the Games-Howell test is then selected.

Subjects were assigned into four groups as identified by their scenario scores. Group 1 were the people who have chosen a definitely principles-based approach. Group 2 contained individuals who have chosen the more principles than rules based approach. Group 3 were the ones who have chosen the more rules than principles based approach. Last group 4, included the people who have chosen the definitely rules-based approach.

9.16.4.2.1 Professional context scenarios analysis

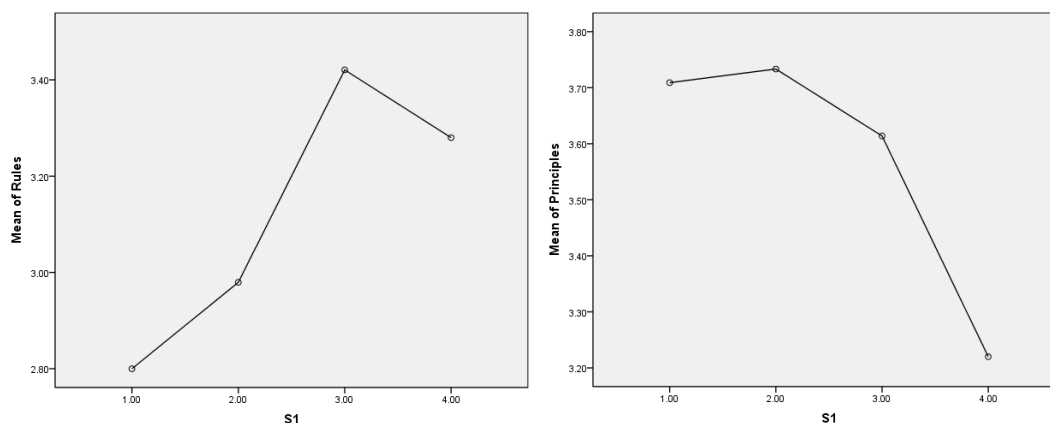
Table 49 Four categories ANOVA scenario 1

Scenario 1: Financial reporting						
Preferred Approaches	Group 1 (n=11)	Group 2 (n=39)	Group 3 (n=29)	Group 4 (n=10)	F	Sig
Rules	2.8 (SD:0.80)	2.98 (SD:0.82)	3.42 (SD:0.64)	3.28 (SD:0.48)	2.98**	0.04
Principles	3.71 (SD:0.74)	3.73 (SD:0.50)	3.61 (SD:0.67)	3.22 (SD:0.67)	1.95	0.13

In scenario one, I found that there were significant differences of one's rule score among four groups categorised by participant's scenario scores, $F(3, 85) = 2.98$, $p = .04$ significant at 95% level. The same pattern did not found for the principles scores. In other words, there were no significant differences of one's principles scores for people in the four groups as separated by the scenario scores.

The plots also have been adjusted (re-scaled) to provide a clearer picture of the linear relationship between the variables. That is, the plot is to show notable difference between the groups.

Figure 14 Four categories ANOVA scenario 1



Levene test showed insignificant results for DRP, I then proceeded to Tukey post hoc analysis.

Post Hoc Test results by preferred approach to scenarios

Scenario 1		Preferred four approaches	Mean Difference	Std. Error	Sig.
Rules score	Group 3	Group 1	.62*	.26	.08
		Group 2	.44*	.18	.07

Post hoc comparisons using the Tukey HSD test indicated that people in group 3 ($M = 3.42$, $SD = 0.64$) had a significantly higher rules score than people in group 1 ($M = 2.8$, $SD = 0.8$) and group 2 ($M = 2.98$, $SD = 0.82$). However the rules scores for people in group 4 was not significantly different comparing with the rules scores for people in group 2 and 1. These results suggested that disposition to rules score indeed has a significant impact on individuals' BI in scenario one.

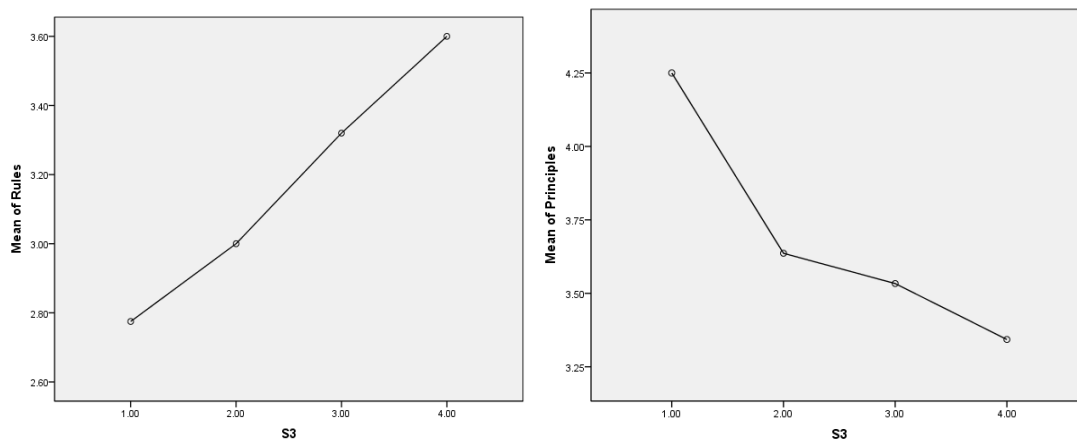
Together with the graphs, the overall result showed that people who have chosen a more rules-based approach tended to have significantly higher rules scores than people who have chosen a more principles-based approach in scenario 1.

Table 50 Four categories ANOVA scenario 3

Scenario 3: Researching takeover targets						
Preferred Approaches	Group 1 (n=8)	Group 2 (n=44)	Group 3 (n=30)	Group 4 (n=7)	F	Sig
Rules	2.78 (SD:1.12)	3 (SD:0.8)	3.32 (SD:0.52)	3.6 (SD:0.50)	2.72**	.05
Principles	4.25 (SD:0.42)	3.64 (SD:0.64)	3.53 (SD:0.52)	3.34 (SD:0.70)	3.74***	.01

I found that one's DRP scores differed significantly between the four groups. For rules, $F(3, 85) = 2.72$, $p = .05$ significant at 95% confident level; for principles: $F(3, 85) = 3.74$, $p = 0.01$ significant at 99% confident level.

Figure 15 Four categories ANOVA scenario 3



For rules scores, Levene statistic is significant, the assumption of homogeneity of variance has been violated (Equal Variance Not Assumed); I proceeded to use Games-Howell results instead.

Scenario 3		Preferred approaches	Mean Difference	Std. error	Sig.
Rules score	Group 2	Group 4	-.6*	.23	.09

Scenario 3		Preferred four approaches	Mean Difference	Std. error	Sig.
Principles score	Group 1	Group 2	.61**	.23	.04
		Group 3	.72**	.24	.02
		Group 4	.91***	.31	.02

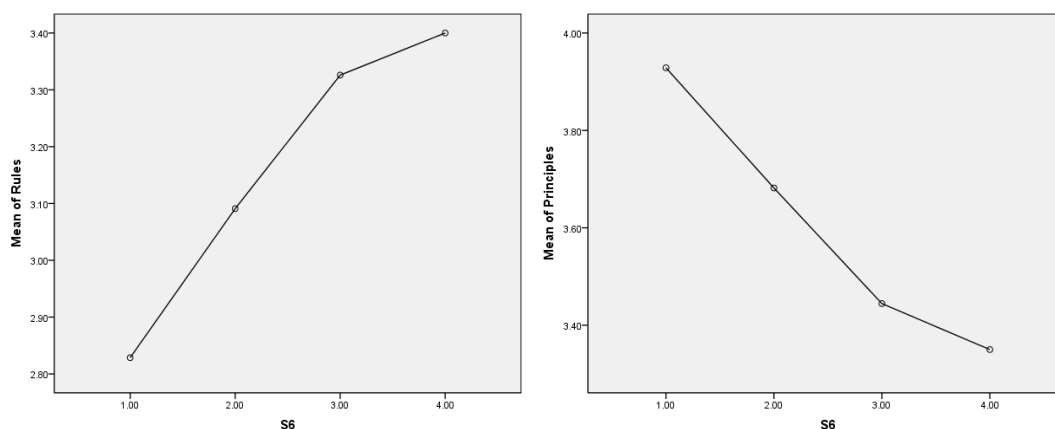
Post hoc comparisons using the Games- Howell test indicated that people in group 2 ($M = 3$, $SD = 0.8$) had a significantly lower rules score than people in group 4 ($M = 3.6$, $SD = 0.5$). People in group 1 ($M=4.25$, $SD= 0.42$) had a significantly higher principles score than people in all the other three groups (2, 3 & 4). Overall results showed that the DRP scores have an effect on individual BI in scenario three. Specifically, people with higher principle scores would tend to be more likely to choose a more principle-based approach. People with higher rule scores would be more attracted to a more rules-based approach.

Table 51 Four categories ANOVA scenario 6

Scenario 6: Allocating financial loans						
Preferred Approaches	Group 1 (n=14)	Group 2 (n=44)	Group 3 (n=27)	Group 4 (n=4)	F	Sig
Rules	2.83 (SD:0.9)	3.09 (SD:0.75)	3.33 (SD:0.68)	3.4 (SD:0.49)	1.60	.20
Principles	3.93 (SD:0.69)	3.68 (SD:0.54)	3.44 (SD:0.62)	3.35 (SD:0.94)	2.38**	.05

Consistent with the previous results, I found that the dispositions towards principles scores differed significantly among the four groups: $F(3, 85) = 2.38$, $p=0.05$ significant at 95% confident level. In particular, the higher one's principles score, the more likely one was attracted to a principles-based scenario approach. In contrast, there were no significant differences of the rules scores for people in the four groups as separated by the scenario scores.

Figure 16 Four categories ANOVA scenario 6



Scenario 6	Preferred approaches	Mean Difference	Std error	Sig.
Principles score	Group 1 Group 3	.48**	.19	.05

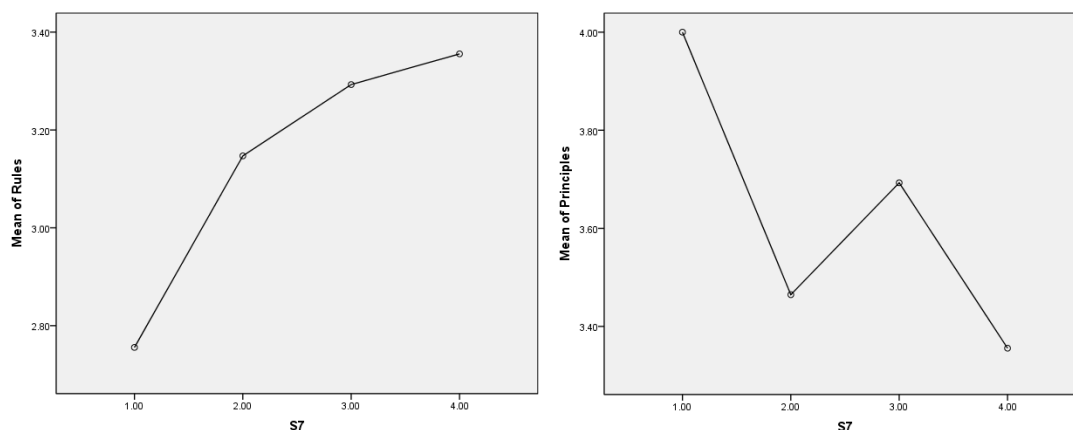
Post hoc analysis suggested that the disposition towards principles scores differed significantly between people in group 1 ($M=3.93$, $SD=0.62$) and people in group 3 ($M=3.44$, $SD=0.69$). It showed that the higher one's principles score the more likely one is to choose a principles-based approach in the context of the allocation of financial loans.

Table 52 Four categories ANOVA scenario 7

Scenario 7: Health and safety issue						
Preferred Approaches	Group 1 (n=18)	Group 2 (n=34)	Group 3 (n=28)	Group 4 (n=9)	F	Sig
Rules	2.76 (SD:0.80)	3.15 (SD:0.73)	3.29 (SD:0.73)	3.36 (SD:0.68)	2.29*	.09
Principles	4.0 (SD:0.53)	3.47 (SD:0.66)	3.69 (SD: 0.47)	3.36 (SD:0.75)	4.01***	.01

The ANOVA result showed that DRP scores had significant effect on one's preferred approach in the context of ensuring health and safety: For rules score, $F(3, 85) = 2.29$, $p=.09$ significant at 90% level. For principles score, $F(3, 85) = 4.01$, $p=0.01$ significant at 99% confidence level.

Figure 17 Four categories ANOVA scenario 7



The diagram for principles scores by group (Figure 17) showed a sudden spike in the group 3, suggesting that people with higher principles scores have chosen a rules-based approach rather than a more principles-based approach. One way to explain this result, is to use the ‘strong vs. weak’ context argument offered by Hayenes et al (2008, p.88). According to them, powerful situations such as safety and healthy was assumed to elicit BI specific to the situation while in weak situations individual differences may become more apparent. In this scenario, contextual features such as safety and health concern seems to ‘activate’ a rules-orientation in individuals who otherwise have a more stable and consistent principles-orientation in other situations. Future studies could be focused more on exploring this contextual interaction and one’s DRP scores.

Scenario 7	Preferred four approaches	Mean Difference	Std error	Sig.	
Rules score	Group 1	Group 3	-.54*	0.22	.08

Scenario 7	Preferred four approaches	Mean Difference	Std error	Sig.	
Principles score	Group 1	Group 2	.54***	0.17	.010
		Group 4	.64**	0.24	.04

Post hoc analysis revealed that the DRP scores were significantly different between four groups. In particular, people who have chosen a more rules-based scenario approach ($M= 3.29$, $SD=0.73$) had a significant higher rules score than those in group

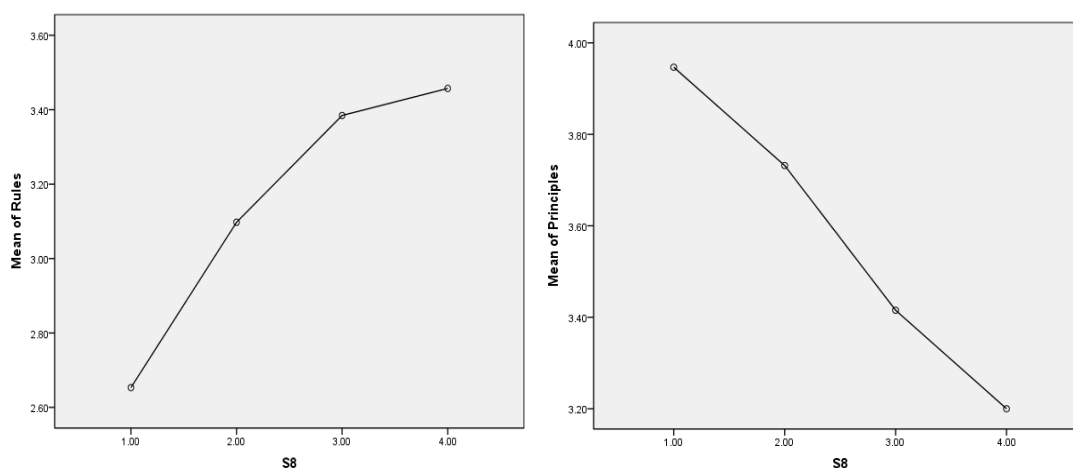
3 (M= 2.76, SD=0.8). The same pattern was found for principles scores: there was a significant difference between group 1 (M=4, SD=0.53) and both group 2 (M=3.47, SD=0.66) and group 4 (M=3.36, SD=0.75). It showed that the higher one's principles score the more likely one is to choose a principles-based approach in the context of financial loans allocation.

Table 53 Four categories ANOVA scenario 8

Scenario 8: Customer satisfaction						
Preferred Approaches	Group1 (n=15)	Group 2 (n=41)	Group 3 (n=26)	Group 4 (n=7)	F	Sig
Rules	2.65 (SD:0.83)	3.1 (SD:0.76)	3.38 (SD:0.63)	3.46 (SD:0.43)	3.78***	.01
Principles	3.95 (SD:0.65)	3.73 (SD:0.48)	3.42 (SD:0.66)	3.2 (SD:0.74)	4.28***	.007

Finally, once again in scenario eight, I found that the DRP scores were significantly different between four groups: For rules: $F(3, 85) = 3.78$, $p=.01$ significant at 99% confident level. For principles: $F(3, 85) = 4.28$, $p=.007$, significant at 99% confident level.

Figure 18 Four categories ANOVA scenario 8



Scenario 8		Preferred four approaches	Mean Difference	Std error	Sig.
Rules score	Group 1	Group 3	-.73***	.23	.01
		Group 4	-.8*	.33	.08

Scenario 8		Preferred four approaches	Mean Difference	Std error	Sig.
Principles score	Group 1	Group 3	.53**	.19	.03
		Group 4	.75**	.27	.03

People who have chosen a more rules based scenario approach (group 3 and 4) had a significant higher rule score than people who have chosen a more principles-based approach (group 1). The same pattern was held for principles scores: a significant difference between group 1 and both group 3 and 4. Specifically, it showed that there was a matching effect between one's disposition towards rules and principles and their BI in dealing with customer services.

9.16.4.2.2 Personal context scenarios analysis

Table 54 Four categories ANOVA scenario 2

Scenario 2: managing one's fitness regime						
Preferred Approaches	Group 1 (n=20)	Group 2 (n=34)	Group 3 (n=24)	Group 4 (n=11)	F	Sig
Rules	2.8 (SD:0.88)	3.17 (SD:0.81)	3.23 (SD:0.55)	3.43 (SD:0.56)	2.12	.10
Principles	3.74 (SD:0.66)	3.69 (SD:0.62)	3.59 (SD:0.48)	3.35 (SD:0.79)	1.14	.34

Figure 19 Four categories ANOVA scenario 2

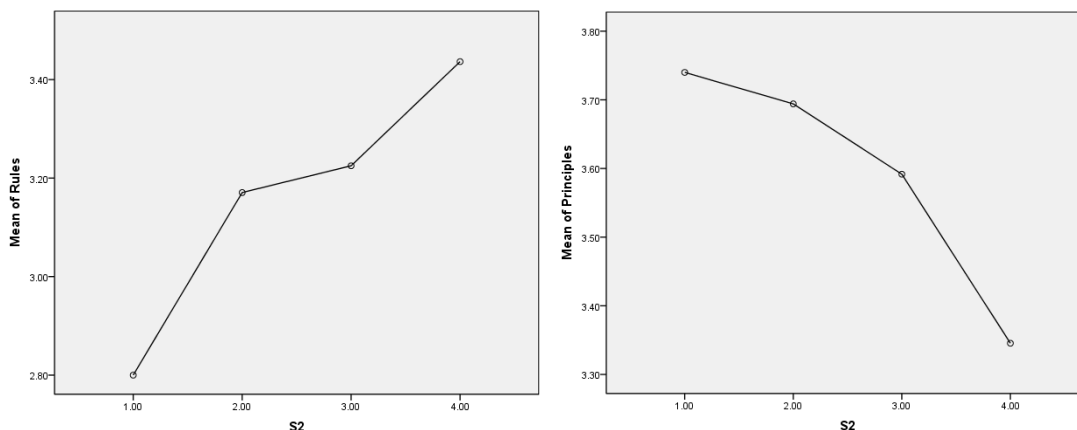
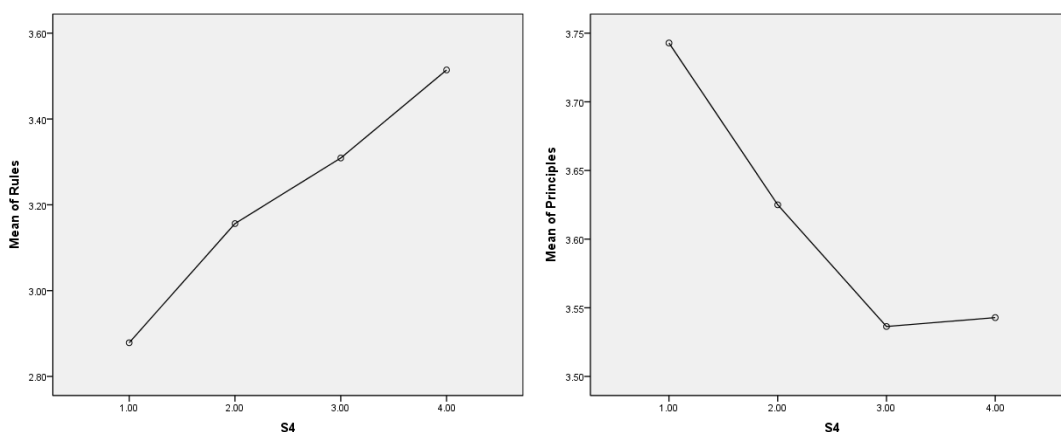


Table 55 Four categories ANOVA scenario 4

Scenario 4: One's life work balance						
Preferred Approaches	Group 1 (n=28)	Group 2 (n=32)	Group 3 (n=22)	Group 4 (n=7)	F	Sig
Rules	2.88 (SD:0.82)	3.16 (SD:0.67)	3.31 (SD:0.77)	3.51 (SD:0.61)	2.15	.1
Principles	3.74 (SD:0.62)	3.62 (SD:0.61)	3.54 (SD:0.62)	3.54 (SD:0.71)	.52	.67

Figure 20 Four categories ANOVA scenario 4



Scenario two and four did not show significant results. The speculated reason for the lack of significance is due to the highly personal nature of the contents of these scenarios: governing one self's personal fitness and work-life balance. These are the

areas in one's life which could be operated with minimal social constraint. However although not significant the general tendencies of the directions of the mean differences were in line with my expectations and the results obtained in the professional scenarios.

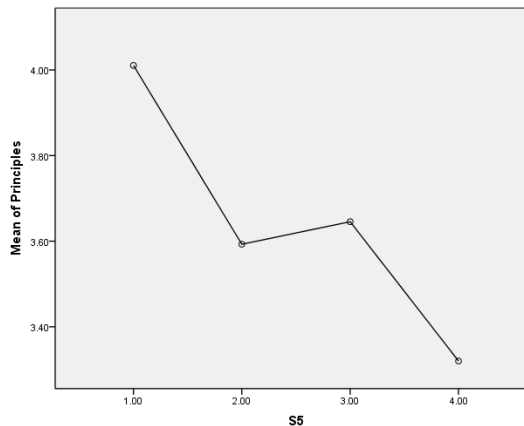
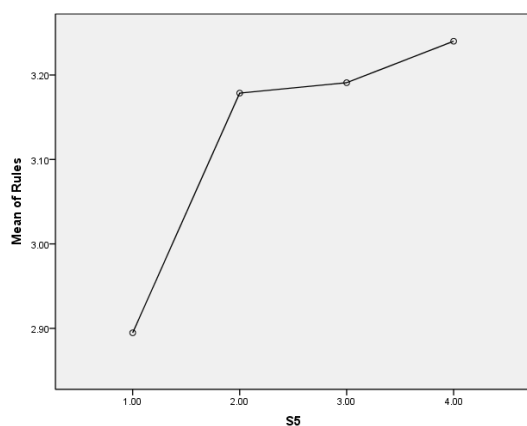
Table 56 Four categories ANOVA scenario 5

Scenario 5: Cleaning flat rota						
Preferred Approaches	Group 1 (n=19)	Group 2 (n=28)	Group 3 (n=22)	Group 4 (n=20)	F	Sig
Rules	2.89 (SD:0.76)	3.18 (SD:0.85)	3.19 (SD:0.72)	3.24 (SD:0.64)	.84	.48
Principles	4.01 (SD:0.56)	3.59 (SD:0.55)	3.65 (SD:0.62)	3.32 (SD:0.62)	4.61***	.005

I found that disposition towards principle scores were significantly different across all four groups: $F(3, 85) = 4.61$, $p=0.005$ significant at 99% confident level. No significant rules scores differences were detected between the four groups.

Figure 21 Four categories ANOVA scenario 5

Scenario 5	Preferred four approaches	Mean Difference	Std. error	Sig.
Principles score	Group 1 - Group 4	.69***	0.19	.002
	Group 1 - Group 2	.42*	0.17	.08



Together with the graphs, the post hoc result revealed that the higher one's principles scores the more likely one will choose a principles-based approach in managing flat cleaning rota.

9.16.4.2.3 Overall result and discussion

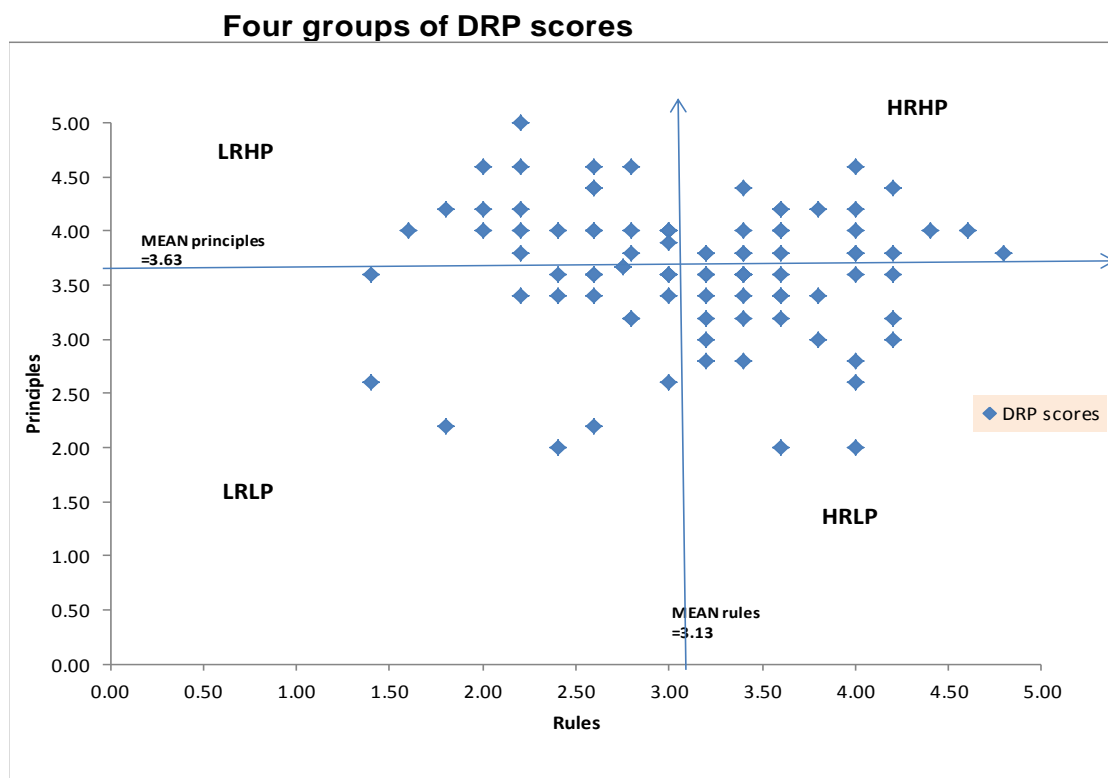
The results from four categories analysis are consistent with those of previous two categories analysis. The overall results showed that there were significant differences of one's DRP scores among the four groups as categorised by one's scenario scores. The analysis confirmed the earlier results (two categories analysis 9.16.1), that is a rules-oriented scenario approach will be more likely to be chosen by predominantly rules-oriented individuals. The same pattern holds true for the principles-based scenario approaches. Another issue observed from the ANOVA results is that the DRP scores have relatively more predictive power in the domains that are professional in nature rather than personal. This shows that the dispositions towards rules and principles scores may be more pertinent to professional and organisational contexts rather than private life situations.

9.17 Four categories of DRP scores

This part of analysis is to examine the differences among different levels (high, low as judged by the score's distance from the mean) of one's DRP scores in relation to one's scenario scores. Mean for rules $M=3.13$, $SD= 0.75$; mean for principles scores $M= 3.63$, $SD= 0.62$. This part of analysis highlights the extent that, individual's DRP scores are consistent across contexts.

Figure 9.12 Distribution of the four categories DRP scores

Figure 22 Four groups of DRP scores



Interesting patterns are found in the above diagram: The scores of the dispositions to rules and principles are orthogonal; scores are evenly distributed across segments. In other words, the four segments are intended to be orthogonal (uncorrelated) from each other, though there are small positive correlations between the four categories. In geometry⁷³, orthogonal means “at right angles to something else”; in psychology orthogonal means “statistically independent of an experimental design: such that the variants under investigation can be treated as statistically independent,” for example, “the concept that creativity and intelligence are relatively orthogonal (i.e., unrelated statistically) at high levels of intelligence.”

The one-way ANOVA for the four groups⁷⁴ as categorised by one’s DRP scores produced a consistent overall pattern: Group two (HRLP) and group four (LRHP) had

⁷³ Internet source <http://www.skeptically.org/logicalthreads/id15.html> access on the 1st of Feb 2014, 13:44pm.

⁷⁴ HRHP = individuals who score higher than average on both rules and principles scores (coded as 1)

the largest and most significant mean differences across scenarios. Since the DRP scores consistently predicted better in the professional domain rather than in the personal domain, I primarily focused on examining the business / public life scenarios⁷⁵:

Table 57 Four categories DRP scores ANOVA for professional scenarios

	Scenario	HRHP N=22	HRLP N=27	LRLP N=19	LRHP N=21	F value	Sig.
Scenario 1 Financial reporting	Mean	2.4 (SD:0.73)	2.78 (SD:0.85)	2.21 (SD:0.85)	2.19 (SD:0.87)	2.6	.05
Scenario 3 Take-over targets	Mean	2.32 (SD:0.78)	2.78 (SD:0.70)	2.53 (SD:0.61)	1.9 (SD:0.7)	6.38	.001
Scenario 6 Allocating loans	Mean	2.14 (SD:0.77)	2.48 (SD:0.7)	2.32 (SD:0.75)	1.95 (SD:0.8)	2.14	.09
Scenario 8 Ensure customer satisfaction	Mean	2.36 (SD:0.9)	2.67 (SD:0.68)	2.16 (SD:0.90)	1.8 (SD:0.68)	5.0	.003

The post hoc analysis showed that a similar pattern across all four business scenarios. Across all four scenarios, group two (HRLP) had the highest scores whereas group four (LRHP) obtained the lowest scores. The differences were significant across all four scenarios. In addition, in scenario three, there was also a significant mean difference between group three and group four.

Table 58 Post Hoc analysis for 4 groups of DRP scores

	Groups	Mean Difference	Std.error	Sig.
Scenario 1	Group 2 – Group 4	0.59*	.24	.07
Scenario 3	Group 2 – Group 4	0.87***	.20	.001
	Group 3 – Group 4	.62**	.22	.03
Scenario 6	Group 2 – Group 4	.53*	.22	.08
Scenario 8	Group 2- Group 4	.86***	.23	.002

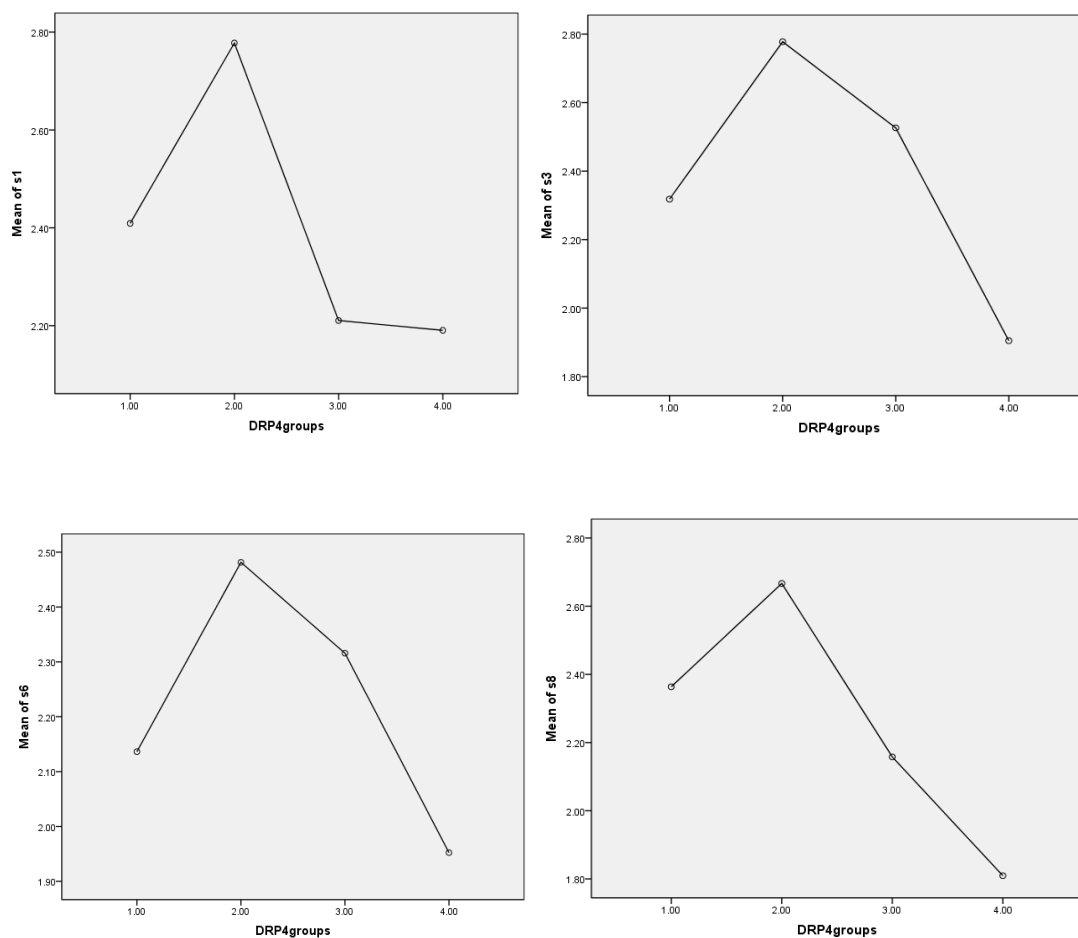
HRLP = individuals who have higher than average rules scores but with lower than average principles scores (2).

LPLR = individuals who have both their rules and principles scores lower than the average scores (3).

LRHP = individuals who have lower than average rules scores but with higher than average principles scores (4)

⁷⁵ Scenario seven was not reported here due to its insignificant results.

Figure 23 Mean plots of the four categories of DRP scores in professional scenarios



The graphs showed that Individuals with evidencing a DRP predisposition are held to be more likely to choose their matching approach in these situations.

9.17.1 Overall result and discussion

In line with my expectations, the largest and most significant mean differences came from group 2 and group 4. This result was consistent with all previous analysis and confirmed that DRP scores are meaningful when comes to predict individuals' BI across varying contexts: The more rules-oriented one is the more likely one will choose a more rules-based approach. In contrast, individuals who are predominantly principles-oriented will be more likely to choose principles-based approaches.

9.18 Scenario context analysis

In this project, I am primarily interested in examining the disposition-BI link, which is “internal and generally less susceptible to uncontrollable external factors” (Kim & Hunter, 1993, p.333). I am however aware that the salient contextual features might trigger different people differently as prior literature found (Haynes et al., 2008). For instance, in section 9.16.4.1, scenario seven, I found that relatively principles-oriented people have chosen a rules-based approach in ensuring health and safety in a large organisation; this showed that the context (safety and health) seemed to activate a rules-orientation in otherwise principles-oriented people. I intend to explore this ‘framing’ effect between the contextual features and one’s DRPs in future empirical work.

Another interesting finding is that the DRP scores possibly contributed more to one’s decision-making in the domain of professional life (ΔR^2 : 21%) than personal life (ΔR^2 : 11%). The result is in line with Haynes, et al (2008)’s study, who found that accounting students seemed to adopt quite different personality profiles in different situations (at work vs. private socialising). In particular, they found that psychometric assessments such as the MBTI (Myers-Briggs type Indicator) and the TBI (Typotypical behaviour indicator) accounted 40% of preferences for thinking styles in business settings, but decreased to 13% in social situation.

9.19 Demographic variable analysis

In this part of work, I focus on investigating whether various demographic factors affect the interactions between individuals’ dispositions towards rules and principles and their BI across contexts.

9.19.1 Checking the gender neutrality of the scenarios

A series of t-tests on both genders’ individual scenario scores have been conducted to check for the gender biases of the scenarios. The overview t-test results confirmed that there was no apparent (at least statistically powerful enough) gender biases present in the eight scenarios.

9.19.2 A summary of the regression model of demographic variables

To control the demographic variables effects on people's BI, I run a regression model while control for gender and ethnicity effect.

Table 9.41 Regression models while control for demographic variables

Scenario average Variables	B	Std. error	Beta	T	P	Adjusted R ²	Overall F	Significance of F
<u>Model 1</u>	2.8							
Constant								
Rules	.3	.1	.4***	4.2	.0001	28%	7***	.0001
Principles	-.4	.1	-.4***	-4.1	.0001			
Gender	.2	.1	.16	1.6				
Ethnicity	-.1	.1	-.09	-.95				

It was found that DRP still significantly predict BI after controlled the effects of the personal variables such as gender and ethnicity, and the coefficients showed none of these two variables were significant.

9.19.3 Gender analysis in relation to contexts

Extant literature in various areas of academic research has consistently reported both psychological and cognitive differences between genders (Chung & Monroe, 1998). Females for example, are often viewed to have more interdependent, relational, sense of self (Madson & Trafimow, 2001; Gilligan, 1988) and to be more empathetic than males (Neff, 2003). Thus one might expect women to be more mindful towards demands arising from the contexts. On the other hand, there is evidence to support that females are more submissive and tend to focus on conforming and maintaining harmony (Chapman et al., 2007).

In order to determine whether there are any differences between males' and females' DRP scores, in relation to scenarios, one way ANOVA analysis was held. Male was coded as 1; female was coded as 2. Male n=45; female n=37, miss data n= 7

Table 59 The Mean comparisons for rules scores between male and female

The Mean comparisons for rules scores between male and female								
	Group 1		Group 2		Group 3		Group 4	
	Male	Female	Male	Female	Male	Female	Male	Female
S1	2.86 (SD:1.0)	2.7 (SD:0.35)	2.7 (SD:0.73)	3.2 (SD:0.92)	3.18 (SD:0.66)	3.68 (SD:0.46)	3.56 (SD:0.38)	3.1 (SD:0.42)
S2	2.55 (SD:0.69)	3.04 (SD:0.97)	2.8 (SD:0.95)	3.42 (SD:0.61)	3.16 (SD:0.51)	3.47 (SD:0.7)	3.52 (SD:0.52)	3.2 (SD:0.72)
S3	2.32 (SD:0.76)	3.53 (SD:1.34)	2.83 (SD:0.79)	3.16 (SD:0.87)	3.19 (SD:0.51)	3.46 (SD:0.44)	3.8 (SD:0.45)	3.1 (SD:0.14)
S4	2.36 (SD:0.62)	3.21 (SD:0.76)	3.12 (SD:0.64)	3.31 (SD:0.78)	3.2 (SD:0.83)	3.34 (SD:0.7)	3.5 (SD:0.42)	3.8 (SD:1.1)
S5	2.52 (SD:0.6)	2.31 (SD:0.71)	3.05 (SD:0.7)	3.42 9SD:1)	3.04 (SD:0.89)	3.2 (SD:0.52)	3.26 (SD:0.73)	3.16 (SD:0.52)
S6	2.26 (SD:0.6)	3.37 (SD:0.87)	2.98 (SD:0.63)	3.21 (SD:0.88)	3.3 (SD:0.87)	3.42 (SD:0.51)	3.53 (SD:0.5)	3* ⁷⁶
S7	2.64 (SD:0.76)	2.94 (SD:0.88)	3.06 (SD:0.68)	3.31 (SD:0.83)	3.13 (SD:0.91)	3.37 (SD:0.56)	3.17 (SD:0.6)	3.73 (SD:0.81)
S8	2.49 (SD:0.75)	3.1 (SD:0.99)	2.95 (SD:0.66)	3.19 (SD:0.89)	3.31 (SD:0.75)	3.47 (SD:0.49)	3.53 (SD:0.50)	3.53 (SD:0.42)

Across all eight scenarios, females participants consistently showed larger rules scores than males' participants for all four groups. The same pattern did not hold true for principles scores.

Table 60 The Mean comparisons for principles scores between male and female

The Mean comparisons for principles scores between male and female								
Principle	Choice 1		Choice 2		Choice 3		Choice 4	
	Male	Female	Male	Female	Male	Female	Male	Female
S1	3.71 (SD:0.83)	3.7 (SD:0.68)	3.79 (SD:0.47)	3.72 (SD:0.60)	3.7 (SD:0.73)	3.5 (SD:0.62)	2.88 (SD:0.73)	3.45 (SD:0.41)
S2	3.8 (SD:0.74)	3.69 (SD:0.62)	3.89 (SD:0.75)	3.58 (SD:0.56)	3.51 (SD:0.53)	3.7 (SD:0.45)	3.33 (SD:0.76)	3.4 (SD:1.0)
S3	4.32 (SD:0.46)	4.13 (SD:0.42)	3.67 (SD:0.75)	3.59 (SD:0.61)	3.54 (SD:0.49)	3.51 (SD:0.59)	3.16 (SD:0.75)	3.8 (SD:0.28)
S4	3.87 (SD:0.66)	3.66 (SD:0.6)	3.64 (SD:0.74)	3.6 (SD:0.53)	3.57 (SD:0.62)	3.43 (SD:0.73)	3.3 (SD:0.89)	4 ⁷⁷
S5	4.1 (SD:0.50)	3.9 (SD:0.63)	3.58 (SD:0.7)	3.57 (SD:0.46)	3.7 (SD:0.67)	3.58 (SD:0.65)	3.31 (SD:0.69)	3.28 (SD:0.61)

⁷⁶ Single respondent.

⁷⁷ Two respondents.

S6	3.89 (SD:0.89)	4 (SD:0.54)	3.7 (SD:0.62)	3.67 (SD:0.48)	3.52 (SD:0.63)	3.32 (SD:0.67)	3.13 (SD:0.5)	4 ⁷⁸
S7	4.04 (SD:0.52)	3.94 (SD:0.59)	3.56 (SD:0.72)	3.27 (SD:0.64)	3.72 (SD:0.61)	3.71 (SD:0.39)	3 (SD:0.67)	4.07 (SD:.12)
S8	3.85 (SD:0.71)	4.2 (SD:0.43)	3.88 (SD:0.54)	3.61 (SD:0.46)	3.36 (SD:0.61)	3.48 (SD:0.74)	2.87 (SD:1.0)	3.4 (SD:0.53)

The table showed whether the mean differences would be statistically significant.

Table 61 ANOVA analysis between males and females

	Scenario Choice ⁷⁹	DRP		Sum of squares	df	Mean square	F	Sig.
S1	Group 2	Rules	Between groups	2.18	1	2.18	3.16*	.08
			Within Groups	22.05	32	.69		
			Total	24.23	33			
S2	Group 3	Rules	Between groups	1.77	1	1.77	5.17**	.03
			Within Groups	8.91	26	.34		
			Total	10.68	27			
S3	Group 4	Rules	Between groups	0.7	1	.7	4.27*	.09
			Within Groups	0.82	5	.16		
			Total	1.52	6			
S4	Group 1	Rules	Between groups	4.8	1	4.8	9.5***	.005
			Within Groups	13.14	26	.51		
			Total	17.95	27			
S5	Group 1	Rules	Between groups	2.97	1	2.97	6.8**	.02
			Within Groups	7.39	17	.43		
			Total	10.35	18			
S6	Choice 1	Rules	Between groups	3.98	1	3.98	7.38**	.02
			Within Groups	5.93	11	.54		
			Total	9.91	12			
S7	Group 4	Principles	Between groups	2.28	1	2.28	7.03**	.03
			Within Groups	2.27	7	.32		
			Total	4.55	8			

No gender difference was detected for scenario eight: Serving customers.

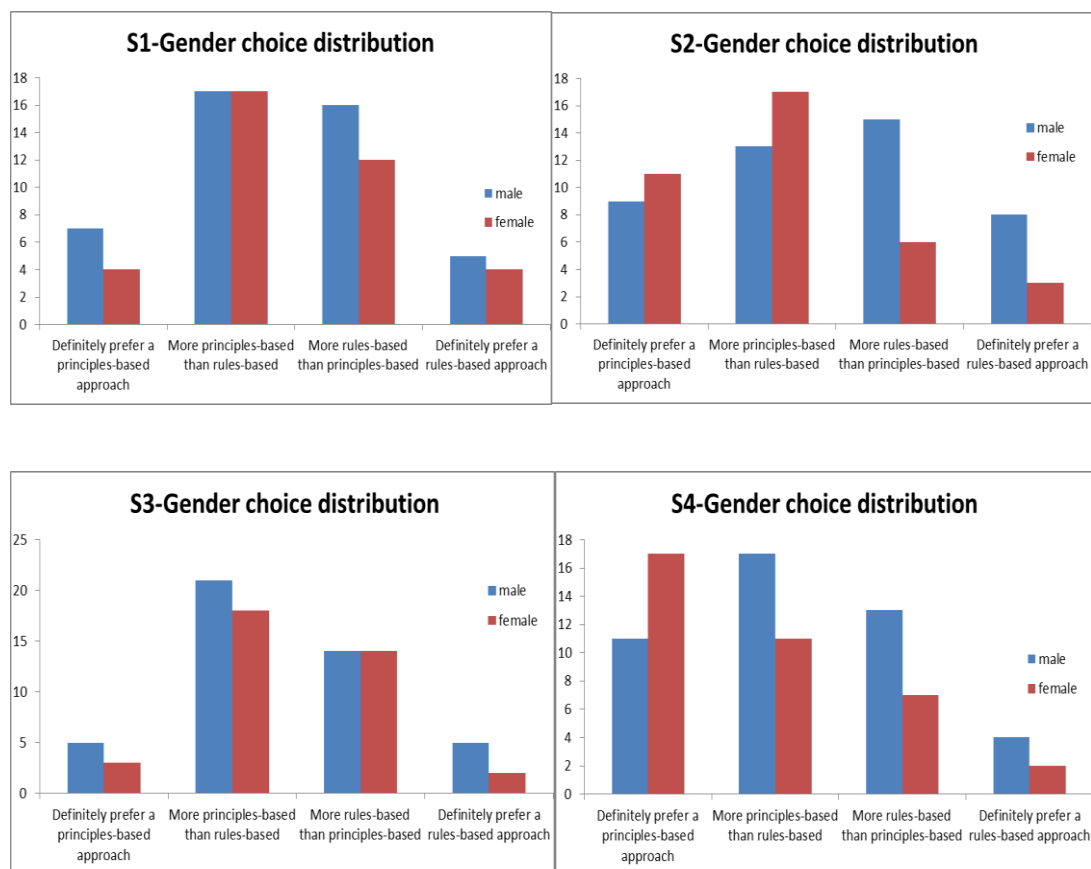
ANOVA analysis evaluating the difference between the rules scores of males and females showed significant interaction between gender and context. For instance, in scenario one: there was a significant rules score difference between males (M=2.7,

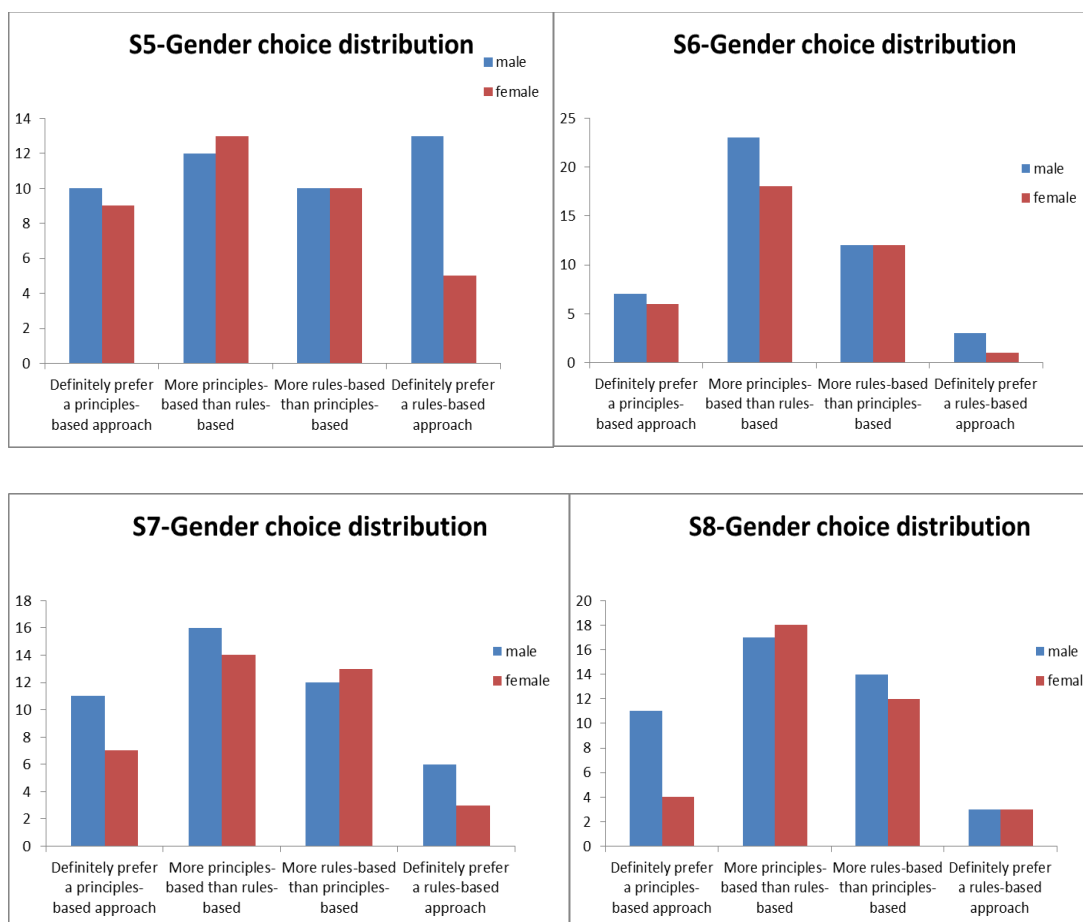
⁷⁸ Single respondent

⁷⁹ Grouped by scenario choices from 1-4.

SD= 0.7) and females (M= 3.2, SD= 0.9) for group 2, $F(1, 32) = 3.16$, $p=.08$ significant at 90% confident level. Out of the seven scenarios that show significant differences, scenario seven was the only one in which the disposition to principles was significantly different for people in group 4 between males and females, $F(1, 8) = 2.28$, $p=0.03$. Nonetheless, one needs to be cautious in interpreting this result due to the limited sample size ($n=9$) in group 4.

Figure 24 Gender choice distributions across eight scenarios





The graphs showed the sample sizes of different scenario choice for males and females across eight scenarios.

Table 62 Regression model for gender and DRP

Scenario	Overall F (Sig)		ΔR^2		Male β		Female β	
	Male	Female	Male	Female	Rule Scores	Principle score	Rule score	Principle score
S1: Approach on Financial reporting	3.48**	2.0	10%	5%	.27*	-.20	.28	-.22
S2: Managing own fitness regime	6.55***	.6	20%	3%	.41***	-.18	.16	-.11
S3: Approach on researching takeover targets	10.2***	.4	30%	3%	.44***	-.28**	.06	-.16
S4: Managing one's own work-life balance	5.6***	.4	17%	3%	.41***	-.13	.16	-.05
S5: Managing one's own flat cleaning rota	5.1***	1.8	16%	4%	.25*	-.31**	-.04	-.30*

S6: Approach on allocating financial loans	6.2***	2.1	20%	6%	.41***	-.16	.08	-.34**
S7: Approach on ensuring health and safety	4.0**	1.2	12%	1%	.16	-.34**	.25	.05
S8: Approach on ensuring customer satisfaction	8.7***	3.2**	26%	11%	.37***	-.32**	.26	-.35**
Scenario average	16.1***	3.1**	41%	10%	.49***	-.35***	.27	-.33**

As expected, the regression results showed that there were gender differences in the interaction between DRP scores and BI as evidenced by scenario responses: The DRP predicts male behaviour better than the female behaviour. The DRP scores collectively explained a large 41% of male BI, while only 10% for female BI. In other words, contextual cues activated males and females dispositions to rules and principles to different degrees. Men tend to be more consistent with their dispositions towards rules and principles and stick with such dispositions across contexts. In particular, the ANOVA results showed that the more rules-oriented a male is, the more likely he would stick to a rules-based approach. Women, on the other hand, are more sensitive to contextual cues and therefore, the impact of their dispositions on behaviour was relatively weaker than for men, instead, their rules and principles related BI are more likely to be dictated by contexts. The small predicted variance obtained for the female participants, however should not be regarded as a reason to dismiss the predictive validity of DRP entirely for women. Rather it is possible that the measurement would be valid and reliable for women in some specific contexts.

My overall result appears to fit the gender differences postulated by the contemporary research in psychology, that women will ‘compromise’ their principles according to the contexts; they are more sensitive to the contextual cues. One explanation for the current result offered by the self-efficacy literature is that women may feel less powerful and have less objective power in organisational settings. In other words, they encompass lower self-efficacy and have less self-confidence. Another possible explanation is that women are more adaptable and agreeable to others and their surroundings (Chapman et al., 2007). Moreover, they are more nurturing and cooperative in teams and organisations than men (Huang, 2002). As a result of these two combinations, women are better at reading the complex contextual cues as tested in

our social tasks than men. This made them to be more mindful about the contexts rather than sticking to their dispositions as men do.

9.19.4 Ethnicity differences analysis

A one way-ANOVA was carried out to determine whether or not the White group differed from the Asian group in relation to their DRP scores with respect cognitive tasks. The results supported the presumption that there is a cultural difference in the way people response to rules- and principles-based contexts. Sample size: n= 80, missing data n= 3, other backgrounds (mixed or Black), n=6, excluded from analysis. The Western group (including all EU countries, USA) was coded as 1, n=36; The Asian group (including Chinese, Pakistani, Indian, Japanese, Korean) was coded as 2, n=44.

Table 63 The Mean comparisons for rules scores between two ethnic groups

The Mean comparisons for rules scores between Western and Asian group								
	Choice 1		Choice 2		Choice 3		Choice 4	
	Western	Asian	Western	Asian	Western	Asian	Western	Asian
S1	3.1 (SD:0.66)	2.8 (SD:0.89)	2.6 (SD:0.74)	3.28 (SD:0.83)	3 (SD:0.56)	3.75 (SD:0.54)	3.2 (SD:0.28)	3.4 (SD:0.49)
S2	2.4 (SD:0.6)	3.26 (SD:0.89)	2.75 (SD:0.71)	3.5 (SD:0.80)	3.11 (SD:0.50)	3.32 (SD:0.62)	3.45 (SD:0.41)	3.57 (SD:0.61)
S3	2.55 (SD:0.97)	3.47 (SD:1.2)	2.6 (SD:0.65)	3.34 (SD:0.85)	3.11 (SD:0.36)	3.4 (SD:0.59)	3.4 (SD:0.52)	4 ⁸⁰ (0000)
S4	2.8 (SD:0.76)	3.1 (SD:0.88)	2.9 (SD:0.71)	3.5 (SD:0.52)	2.8 (SD:0.6)	3.4 (SD:0.8)	3.1 (SD:0.2)	3.8 (SD:0.7)
S5	2.7 (SD:0.6)	3.4 (SD:0.7)	2.8 (SD:0.8)	3.6 (SD:0.8)	2.7 (SD:0.7)	3.3 (SD:0.8)	3.2 (SD:0.5)	3.3 (SD:0.7)
S6	2.6 (SD:0.8)	3.1 (SD:1.0)	2.8 (SD:0.6)	3.6 (SD:0.7)	3.5 (SD:0.7)	3.3 (SD:0.7)	3 ⁸¹ (SD:1.0)	3.8 (SD:0.3)
S7	2.5 (SD:0.6)	3.4 (SD:0.8)	2.9 (SD:0.7)	3.3 (SD:0.8)	3.1 (SD:0.6)	3.4 (SD:0.8)	2.9 (SD:0.5)	3.7 (SD:0.6)
S8	2.6 (SD:0.7)	2.9 (SD:1.0)	2.7 (SD:0.7)	3.3 (SD:0.8)	3.0 (SD:0.6)	3.7 (SD:0.5)	3.5 (SD:0.4)	3.4 (SD:0.5)

⁸⁰ Two respondents

⁸¹ Two respondents

Table 64 The Mean comparisons for principles scores between two ethnic groups

The Mean comparisons for principles scores between Western and Asian group								
	Choice 1		Choice 2		Choice 3		Choice 4	
	Western	Asian	Western	Asian	Western	Asian	Western	Asian
S1	3.5 (SD:0.53)	3.68 (SD:1.0)	3.84 (SD:0.45)	3.59 (SD:0.55)	3.55 (SD:0.73)	3.72 (SD:0.47)	3.4 (SD:0.85)	3.06 (SD:0.54)
S2	3.78 (SD:0.68)	3.62 (SD:0.7)	3.72 (SD:0.67)	3.79 (SD:0.46)	3.51 (SD:0.49)	3.53 (SD:0.47)	3.75 (SD:0.19)	2.9 (SD:0.79)
S3	4.35 (SD:0.55)	4.2 (SD:0.35)	3.66 (SD:0.65)	3.52 (SD:0.69)	3.5 (SD:0.35)	3.68 (SD:0.45)	3.6 (SD:0.46)	2.8 ⁸² (0000)
S4	3.9 (SD:0.5)	3.5 (SD:0.8)	3.5 (SD:0.7)	3.7 (SD:0.5)	3.7 (SD:0.6)	3.5 (SD:0.5)	3.7 (SD:0.2)	3.4 (SD:0.9)
S5	4.0 (SD:0.6)	3.9 (SD:0.6)	3.5 (SD:0.6)	3.7 (SD:0.5)	4.0 (SD:0.3)	3.6 (SD:0.5)	3.5 (SD:0.5)	3.2 (SD:0.7)
S6	4.2 (SD:0.6)	3.6 (SD:1.0)	3.6 (SD:0.6)	3.8 (SD:0.4)	3.7 (SD:0.1)	3.4 (SD:0.6)	3.7 (SD:0.4)	3 (SD:1.4)
S7	4.1 (SD:0.5)	3.8 (SD:0.7)	3.5 (SD:0.6)	3.4 (SD:0.6)	3.6 (SD:0.4)	3.7 (SD:0.5)	3.6 (SD:0.5)	3.2 (SD:0.9)
S8	4.1 (SD:0.53)	3.8 (SD:1.0)	3.7 (SD:0.5)	3.7 (SD:0.4)	3.5 (SD:0.6)	3.4 (SD:0.6)	3.4 (SD:0.5)	3.1 (SD:0.9)

The mean comparison tables between Western and Asian groups showed that in general, Asian participants had higher rules scores than Western participants.

ANOVA analysis is to show whether the mean differences would be statistically significant.

Table 65 ANOVA analysis between two ethnic groups

	Scenario Choice ⁸³	DRP		Sum of squares	df	Mean square	F	Sig.
S1	Group 2	Rules	Between groups	3.8	1	3.8	6.16**	.02
			Within Groups	20.4	33	.62		
			Total	24.2	34			
	Group 3	Rules	Between groups	3.72	1	3.72	12.30***	.002
			Within Groups	7.56	25	.30		
			Total	11.28	26			
S2	Group 1	Rules	Between groups	3.29	1	3.29	5.4**	.03
			Within Groups	9.76	16	.61		
			Total	13.15	17			
S3	Group 2	Rules	Between groups	5.19	1	5.19	8.98***	.005
			Within Groups	20.81	36	.58		
			Total	26	37			
S4	Choice 2	Rules	Between groups	2.8	1	2.8	7.3***	.01

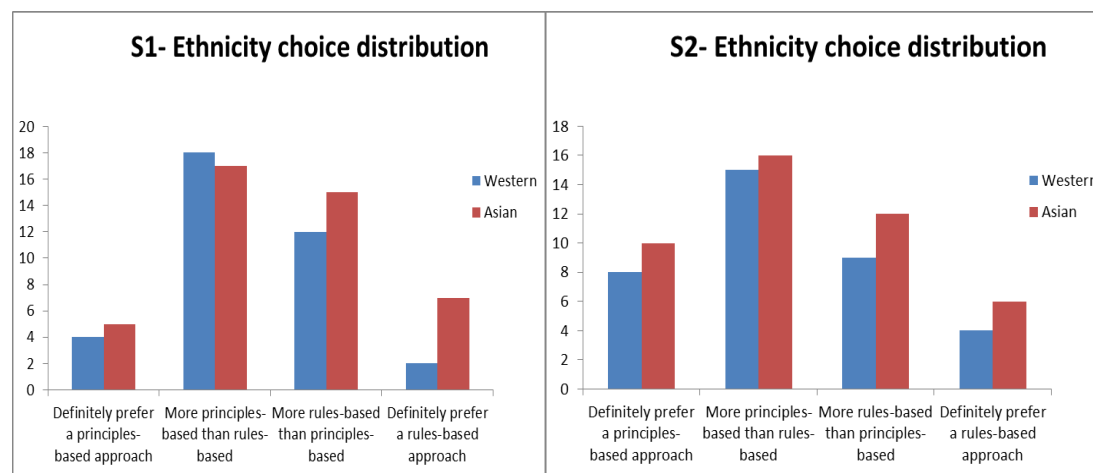
⁸² Two respondents

⁸³ Grouped by scenario choice from 1-4.

			Within Groups Total	10.3 13.1	27 28	.4		
S5	Group 1	Rules	Between groups Within Groups Total	2.1 6.1 8.2	1 14 15	2.1 0.4	4.9**	.05
S6	Group 2	Rules	Between groups Within Groups Total	5.7 18.2 23.9	1 41 42	5.7 .4	12.9***	.001
	Group 4	Rules	Between groups Within Groups Total	.64 .1 .74	1 2 3	.64 .04	16*	.06
S7	Group 1	Rules	Between groups Within Groups Total	2.7 6.2 8.9	1 13 14	2.7 .5	5.7**	.03
	Group 4	Rules	Between groups Within Groups Total	1.5 2.2 3.7	1 7 8	1.5 .3	4.7*	.07
S8	Choice 3	Rules	Between groups Within Groups Total	3.1 7.0 10.1	1 23 24	3.0 .3	10.1***	.004

The ANOVA analysis showed that rules scores differed significantly between the Western and the Asian groups across scenarios. For instance, in scenarios one: the Asian group had a significant higher rules score than the Western group in both group 2 and group 3, $F(1, 33) = 6.16$, $p = .02$ significant at 95% confident level.

Figure 25 Ethnic choice distributions across eight scenarios



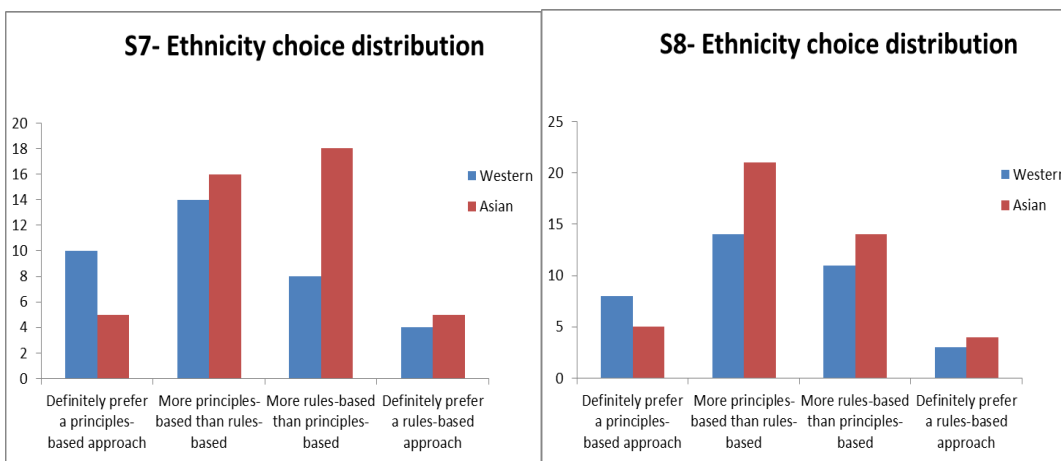
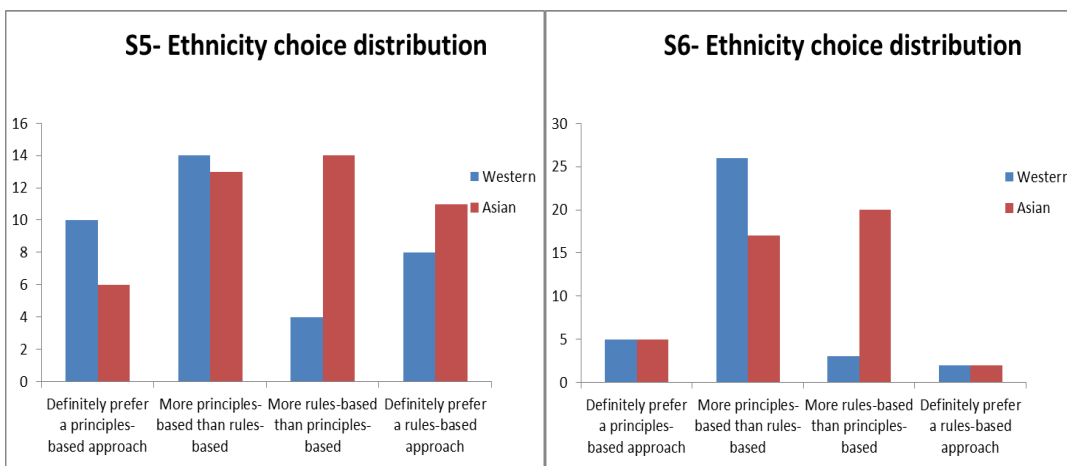
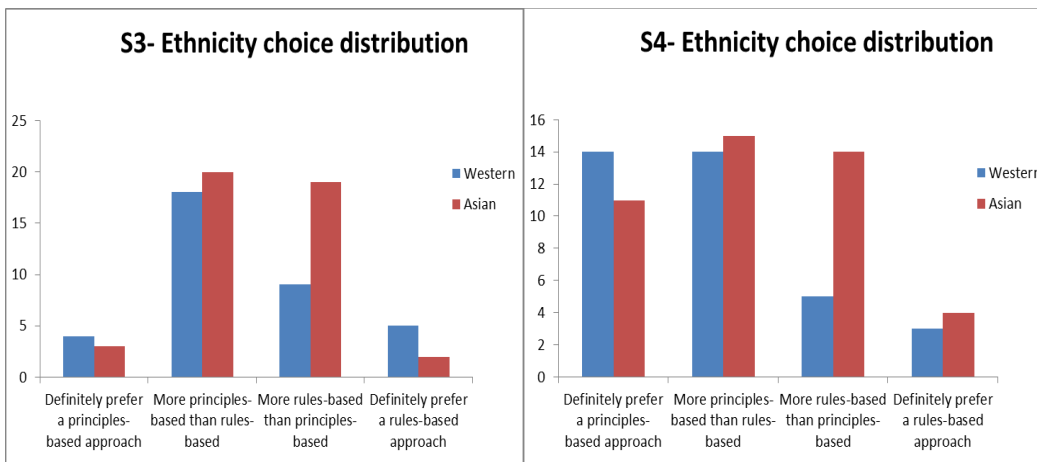


Table 66 Regression analysis for ethnicity and DRP

Scenario	Overall F (Sig)		ΔR^2		Western β		Asian β	
	Western	Asian	Western	Asian	Rules Scores	Principles score	Rules score	Principles score
S1: Approach on Financial reporting	.5	3.6**	3%	11%	.1	-.1	.33**	-.27*
S2: Managing own fitness regime	5.2***	3.1**	19%	9%	.50***	.01	.13	-.36**
S3: Approach on researching takeover targets	5.9***	1.8	22%	3%	.42***	-.22	.14	-.27*
S5: Managing one's own flat cleaning rota	2	3.4**	6%	10%	.2	-.2	-.1	-.35**
S6: Approach on allocating financial loans	1.4	2	8%	9%	.22	-.13	.1	-.30*
S8: Approach on ensuring customer satisfaction	4.7**	5***	22%	20%	.32**	-.29*	.31**	-.37**
Scenario average	7.0***	6***	25%	19%	.42***	.29*	.26*	-.44***

The result of the regression analysis on Western vs. Asian group showed that DRP scores predicted well for both cultural groups (t were significant for all scenarios apart from scenario four and seven). The overall result suggests that both rules and principles scores contribute significantly to Western and Asian groups' responses to rules- and principles-based cognitive tasks: the ΔR^2 are 25% for Western group, and 19% for Asian group. The comparison between the ΔR^2 revealed that DRP scores could possibly predict BI better for the Western participants than for the participants from Asian background. In other words, the Westerners are more logical and consistent with injunctive norms (such as rules and principles) in their decision-making (Spencer-Rodgers et al., 2009). In contrast, Asians are more context-driven, in the sense that they watch the external cues closely and are flexible to modify their approaches to suit the actual situation and pragmatism (Spencer-Rodgers et al., 2009).

For instance, using Twenty Statements Test (TST), it has been found that the East Asians participants modified their view of the self to reflect the context they were in (Spencer-Rodgers et al., 2009).

9.19.5 Summary: demographic variables in relation to context

Personal variables such as gender and ethnicity have significant impacts on the interaction between one's DRP scores, in particular the rules scores and their BI across contexts. Both rules and principles were useful predictors in decision-making involving rules and principles. Results from regression models however, showed that DRP scores were particularly powerful predictors for men and Westerners. On the other hand, the impact of dispositions towards rules and principles is less powerful for women and Asians. This might be explained by the fact that the BI of women and Asians are more contexts driven (Buchtel & Norenzayan, 2009; Gilligan, 1982). In addition, the examination of the DRP scores of each ethnic group confirmed that on the whole, Asians had significantly higher rules scores than Westerners, as suggested by prior research (Hofstede, 1997).

The analysis for all three demographic variables showed that the Durbin-Watson statistics only drops below the critical value of 1.0 in two scenarios out of eight, more importantly the rest of six Durbin-Watson statistics were close to 2. Thus our method of analysing the data was acceptable.

9.20 Conclusion and summary of chapter nine

In this chapter, I have reported and presented the process to further refine the DRP instrument, on a diverse international sample (n=474). The principle component analysis confirmed that the instrument comprised two clear factors whilst explained 46% of total variance. The present 10 items DRP has good internal reliability and a test-re test score showed that such disposition is stable and consistent over time. DRP is significantly correlated to conceptually relevant psychological constructs such as openness, extraversion of the Big5 personality traits, need for closure and various thinking styles as measured by Sternberg's thinking style. The correlations were small to moderate indicating that DRP is not a replicate to any of these applied

measurements. Meanwhile, DRP had marginal or poor correlation with constructs such as Higgins' regulatory orientation, social desirability scale, and dialectical self-scale, this showed that DRP measures a distinctive constructs.

DRP scores are able to predict individuals' BI with sound accuracy and consistency across contexts. A predominantly rules-oriented individual tends to be drawn to a more rules-based approach; whereas, a predominately principles-oriented individual will be more attracted to a more principles-based approach. The overall results suggested that DRP does have significant predictive power and people tend to strive to be congruent in their BI as reflected in the scenario scores with their internal predispositions. Although DRP as an instrument is gender, ethnic and age neutral, I found that there were significant gender and ethnicity differences when using the DRP scores to predict BI. The gender and ethnicity differences in the interaction between one's DRP scores and context are not a reflection of the intellectual competence or capabilities; instead they reflect differences in behavioural preferences/ styles.

Chapter 10: Conclusion and future thoughts

10.1 Overview

The main objectives of this final chapter are to provide a brief review of the project, reflecting on the main findings arising from the empirical work, and on the main contributions, in context of the research objectives set at the outset. This chapter will also provide a more critical evaluation of the strengths and limitations of the different methods employed, and more importantly an extension of this discussion to address what these limitations imply for the validity and reliability of the finding of the project has produced. This chapter will also identify the implications and contributions of the work. Moreover, it offers some recommendations for further research that could make use of, or become possible because of, the psychometric instrument - DRP, developed here.

The empirical work of this PhD is geared to the development and validation of a psychometric instrument. I have documented and reported the empirical work and outcomes in detail in chapter eight and nine. Therefore, in this final chapter my reflection on the empirical findings will focus on how they bear on the research questions proposed in chapter one (section 1.5). For a summary of the relation of research questions and findings see table 63.

The chapter is structured as follows: section 10.2 provides a summary of the empirical findings; section 10.3 provides a critical evaluation of the research methods adopted here; section 10.4 discusses the contributions of the research; section 10.5 speculates on the implications of this project; section 10.6 provides some thoughts on the further work can be done with the instrument. Section 10.7 concludes the chapter.

10.2 Summary of the findings

I developed and validated a psychometric instrument to measure individual's dispositions towards rules and principles. The development of the instrument was

theory driven (see chapter seven). The final refined scale comprises 10 items: five items for measuring dispositions for rules and five items for measuring dispositions for principles, respectively. These two subscales (rules-based and principles-based dispositions) have proven sound psychometric properties in terms of construct validity and reliability.

Table 67 A summary of research findings in response to research questions

Research questions	Section	Results	Procedure
RQ1: Do individuals have (stable) dispositions towards Rules and Principles?	(9.5.2)	Yes	Test-retest of the rules and principles scales.
RQ2: Are individuals' dispositions towards rules and principles independent and distinctive? In other words, does the relationship between individuals' dispositions towards rules and principles tend to be orthogonal?	(8.4.5) (9.6)	Yes	There is a weak relationship between rules and principle sub-scales, indicating they are independent from each other.
RQ3: What are the conceptual structure generally underlying individuals' dispositions to rules and principles (DRP)?	(9.4)	Identification of a 2 factor structure	A 2 factors structure emerged from the data analysis. The factors are: preferences for rules; preferences for principles.
RQ4: Are dispositions towards rules and principles predictive of individuals' actual behaviour in response to rules or principles-based social cognitive tasks / situations?	(9.15) (9.16)	Yes	Predominately rules-oriented individual would be more likely to choose a rules-based approach across contexts rather than a principles-based approach; and, vice versa for a predominately principles-oriented individual.
RQ5: Do DRP scores have a meaningful and expected relation with individuals' other psychological characteristics, and relevant measurements, such as thinking style and personality trait measures?	Chapter 9, part 2	Yes	The overall conclusion is that the DRP instrument captures distinct psychological constructs. This conclusion was supported by the fact that DRP instrument was correlated with psychological constructs it related to more significantly than the ones it supposed not to.

RQ6: Are there any gender and cultural differences in terms of individuals' dispositions to rules and principles?	(9.7) (9.19)	Yes	The instrument is gender and age neutral and does not discriminate people from different ethnic groups. However, I did find that gender and ethnicity have effects on the interaction between one's DRP scores and contexts.
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RQ1: Do individuals have (stable) dispositions towards Rules and Principles?

Test-retest reliability analysis with 30 Glasgow University full time students found that over a period of three months, both rules and principles subscales have significant correlations with the scores obtained in the first attempt. This part of the work proved that dispositions towards rules and principals are stable across time.

RQ2: Are individuals' dispositions towards rules and principles independent and distinctive? In other words, does the relationship between individuals' dispositions towards rules and principles tend to be orthogonal?

The conceptualisations of rules and principles studied in this project were based on Dworkin's view (1979; see chapter four, section 4.4). Prior research consisted mainly of conceptual discussions on the pros and cons of rules and principles. In particular, there was not yet, to my knowledge, any direct empirical testing of individuals' views of rules and principles and whether their views were in line with, for instance, Dworkin's conceptualisation. More detail on criticisms of Dworkin's rules and principles conceptualisation can be found in chapter four, section 4.5. My extensive qualitative research, including focus group discussions (section 6.6), peer groups and subject expert review sessions, examined Dworkin's views of rules and principles. The discussions provided some direct, although preliminary, empirical evidence supporting the view that individuals view rules and principles as separate constructs, rather than as points on a continuum separate in degree, and that their views on the nature of a principle are, by and large, consistent with Dworkin's view.

Chapter eight (section, 8.4.5) reports on how I conducted a test on people's ability to distinguish rules from principles based on Dworkin's conceptualisation. The overall

result across nine statements showed that individuals were capable of distinguishing rules from principles, and the basis of their judgment is in agreement with the conceptual distinctions between rules and principles as postulated by Dworkin (chapter four).

In section 9.6, I reported the results of Pearson and Spearman's Rho correlation between the DRP's rules and principles scores of a large sample (n=474). While a weakly significant but marginal correlation of 12% was obtained in Pearson test, Spearman's Rho showed that there was no statistically significant relationship between disposition to rules and principles. The overall result lends empirical evidence for the orthogonal relationship between rules and principles.

RQ3: What are the conceptual structure generally underlying individuals' dispositions to rules and principles (DRP)?

Section 9.4 showed a factor analysis solution of the DRP. That result confirmed that previous factor solution emerged in chapter eight, section 8.6.3. There were two distinctive and dominant factors underlying the construct: preference for rules and preference for principles. The interpretation of the two factors can be found in section 9.4.1.

RQ4: Are dispositions towards rules and principles predictive of individuals' actual behaviour in response to rules or principles-based social cognitive tasks / situations?

A series of statistical analysis was conducted between the rules and principles scores and the scores of the eight scenarios: correlation analysis (9.15.1); one-way ANOVA (9.16), multiple regression analysis (9.15.2). The findings were consistent across all methods: the DRP has sound predictive validity (chapter 9 part 3). DPR is able to predict individual's BIs in terms of choosing either rules or principles-based approaches in cognitive tasks. The ΔR^2 for the average scenario score is 27%, which is comparable to the published research in the field of attitudes and behaviour prediction (Fishbein & Ajzen, 1977).

RQ5: Do DRP scores have a meaningful and expected relation with individuals' other psychological characteristics, and relevant measurements, such as thinking style and personality trait measures?

A detailed discussion in response to RQ5 can be found in chapter 9, part 2. The convergent and divergent validity of the DRP have been examined and established. DRP correlated more strongly with cognitive styles such as the need for closure and some dimensions of the Sternberg's thinking style, than it's with personality traits such as openness, extraversion as well as the agreeableness. As a result, with caution, I interpret that dispositions towards rules and principles should be viewed more as a cognitive style rather than a personality trait. Future empirical work may investigate the relationships between the DRP and other psychological constructs such as Rest's moral reasoning capability.

RQ6: Are there any gender and cultural differences in terms of individuals' dispositions to rules and principles?

With regard to RQ6, the instrument itself is gender and age neutral and does not discriminate people from different ethnic backgrounds (section, 9.7). However, I found that demographic variables such as gender and ethnicity have effects on the interaction between people's DRP scores and their scenario choices (chap nine, section 9.19). Furthermore, when using DRP scores to predict BI, I found that men are more stable than women in their choice of a rules- or principles-based approach. At the same time their BIs are better predicted by their dispositions towards rules and principles (ΔR^2 is 41%). Consistent with prior research (Neff, 2003; Gilligan, 1982), women on the other hand, are more responsive to the contextual cues. That is, the impact of their dispositions on BIs was relatively weaker than for men (ΔR^2 is 10%).

When using the DRP instrument to predict Western and Chinese groups' behavioural choices in relation to rules- or principles-based approaches, I found that overall, the Asian group had significant higher rule scores than the Western group. More importantly, the regression model revealed that Westerners behaved more consistently with their DRP's rules and principles scores (section 9.19.4: ΔR^2 is 25%). In other words, the East Asian respondents seem to be more context sensitive and less

governed by an internal disposition (ΔR^2 is 19%). Such a cultural behavioural difference might be explored from the point of view of the difference between analytical and holistic thinking patterns (Spencer-Rodgers et al., 2009). Spencer-Rodgers et al (2009, p.30) reviewed a number of prior studies on cross-situational consistency of the self-concept, and they conclude that East Asian hold more 'context-specific' self-beliefs and perceptions. To illustrate, Nisbett et al. (2001) found that East Asian would be more flexible and willing to adjust their self-beliefs according to situational cues. In contrast, Westerners are more consistent in their internal disposition and BIs, this shows in their tendency of more linear in thinking and higher 'need for consonance' (Spencer-Rodgers et al., 2009).

10.3 Critical assessment of the methods applied

10.3.1 A positivist stance

As any other research projects, this current work also inevitably suffers some problems due to the research methods it has adopted. In the following section, a critical assessment to the strengths and limitations of the different research methods employed will be provided. More importantly, an extension of this discussion will address what these limitations imply for the validity and reliability of the findings, this PhD has produced.

The research is conducted pre-dominantly within a positivist paradigm. Therefore a quantitative survey method was adopted as the main research method. In chapter two and eight, I have explained the rationales for adopting such a method as it allows efficient data collection and ensures high accuracy in data input. Consequently, data analysis process can be more accurate and efficient. Furthermore, the use of online format allows obtaining quantitative data from a large number of people.

The limitations of an online-based survey approach are: 1) it dismisses the rich contextualised interpretation of the research phenomenon that is under investigation; 2) in this project, participants were left to complete the survey in their own time in the locations of their convenience. In other words, the completion of the online survey

was without the supervision of the researcher. It is well known that the internet has a large amount of information and my survey was competing for the participants' attention online. Thus, it was suggested that a more tightly controlled experimental environment would give more concentrated responses, hence better statistical results.

This research is not entirely positivistic, since it has also benefited from employing qualitative methods such as focus groups and subject matter experts interviews especially at the early stage of item generation. Ping (2004) for instance, notes that "...focus groups can reveal the specific language the study population uses to communicate regarding these constructs. This information is then used to improve the phrasing of the item stems, and thus reduce measurement error." (p.134). Therefore, the use of focus groups has facilitated a more accurate instrument calibration for this project.

Due to lack of an instrument that taps into the exact same psychological constructs, the construction of the items for the DRP instrument was mainly theory-driven. Theory-driven constructs pay dividends in terms of face validity and operational guidance. The terms used to characterise dimensions underlying rules and principles therefore, represent more than merely lexical preferences. As a result, it could be that some items are not written as clearly as they could have been. But again, many confusing and ambiguous items were filtered out via subject-matter expert's review and peer review panels at early stage. In total, the whole set of items have been piloted on more than 30 people before it went public. This empirical approach was therefore capable of yielding a description of the measured construct unbiased by my own blind spots.

10.3.2 Using hypothetical scenarios to proxy BI

The predictive validity of DRP was determined by assessing participants' likelihood to perform certain actions by rules- and principles-based approaches, not their actual behaviours or abilities to performances in those situations. Thus, a potential limitation of the current study was that BI was measured by a vignettes-based approach instead of actual decision-making and or problem-solving using rules or principles. This

limitation can be addressed through further research, for instance, experiments on actual accounting decision-making involving rules and principles-based approach.

Vignettes are “stories about individuals and situations which make reference to important points in the study of perceptions, beliefs and attitudes” (Hughes, 1998, p. 381 cited by Leighton, 2010, p.234). Some studies have concluded that people respond to vignettes in much the same way as they would if faced with a real life situation (Leighton, 2010, p.234) and that respondents are less likely to give socially acceptable responses than if asked directly (Leighton, 2010, p.234).

Further advantages of using vignettes within this context include:

- They do not require participants to have in-depth or technical knowledge of topics and provides a focus for those without any working experiences.
- They offer a useful tool to highlight people’s experiences with using rules and principles in daily decision-making and problem-solving.

Perhaps the biggest methodological questions for those using vignettes in quantitative research have been about validity (Flaskerud, 1979 cited by Wilks, 2004, p.82). In other words, how far the situation depicted in a vignette genuinely represents the phenomenon being explored (Wilks, 2004, p.82). The common remedy for that is to have experts who are not the target subjects of the study to ‘pilot’ the scenarios to check the ‘realness’ of the hypothetical account presented (Leighton, 2010, p.235). For this project, all eight scenarios were submitted to both two PhD supervisors to evaluate the appropriateness of the contents.

In this research, a spectrum of real-life based scenarios was constructed which ranges from one’s social life, flat cleaning to professional settings such as financial reporting; student loans allocation; customer services etc. The potential advantage of such wide range of social conditions is that dispositions towards rules and principles can be investigated across varied contexts. A potential drawback of using several vignettes is that respondents may not answer all the vignettes. In this study, 89 participants had

completed all eight vignettes. The speculated reason for it was probably due to the relevance and comprehensiveness of the scenarios.

10.3.3 Using test-retest in validating reliability

Disposition to rules and principles are hypothesised to be stable over time. Thus, test-retest reliability was adopted to demonstrate this. However, the test retest reliability was limited by: 1) access to data sources; 2) memory biases for instance: the memory of the first attempt of the administration may influence the second (Eysenck 1994)⁸⁴; 3) the result may also deflate as the people views and or experiences with the test subject has changed substantially over the period during two administrations; 4) participants may not be as careful when completing the instrument a second time.

Another potential criticism to the test retest method is that the time intervals for an instrument are subjective: ranging from a few hours to as long as 6 month after the initial testing. However, two weeks to one month is generally considered as acceptable for re-testing (Waltz et al., 2005 cited by Devon et al, 2007, p. 160). The chosen the time interval should be long enough that participants do not remember their original answers, but not long enough for their attitudes to the material to have changed. A three months period has been chosen for this purpose, and the results have supported the RQ1.

Besides the use of test-retest reliability, I have also used Cronbach's alpha coefficient to show internal consistency reliability. It is the prevalent methods used in field of questionnaire development and validation. The benefits of Cronbach's alpha include: it can be performed with single test administration, requiring less efforts than methods such as split half, test-retest (Devon, et al., 2007). Moreover, it is the best estimate of reliability because most major sources of error are due to the sampling of instrument contents (Nunally, 1967). The potential problem with this measure is that an inflated alpha can be achieved by simply adding more items into the scale (Rattrary et al.,

⁸⁴ The result may inflate as participants remember how they responded to items on the first administration and simply answer that way again.

2007). Thus, in this current project, coefficient alpha was computed for rules and principles subscales distinctly rather than for the entire scale.

For future research, it is suggested that the current instrument should be re-tested in a variety of settings and with different samples to assess how far groups of people are able to use the DRP.

10.3.4 The sample and sampling method

Finally, from a sampling perspective, due to budget and time constrain, this project used a convenience sampling approach. The convenience sample primarily included a significant proportion of young adults who are students in their mid and late twenties. Such way of sampling may suffer coverage ‘error’ (Dillman, 2000) or sample selection bias which may compromise population inferences (Tomaskovic-Devey et al., 1994). However, it is believed that this is a practical limitation that all research has to face. Ashton & Karmer (1980) experiments showed that when study judgment in general for practical situations, using students as surrogates is justifiable. Nonetheless, if the objective of the study is the specific implementation of an accounting standard, then it is desirable to have practitioners as subjects.

I realise that a more diverse set of age ranges of the participants and a more randomised sampling procedure could have been adopted to improve the validity of the exploratory study. As a result, the generalisability of the findings might be restricted to some extent. Therefore, there is room for improvement. Thus, further research is also recommended to be conducted with different groups of people in order to ascertain whether similar results would be achieved. For instance, for further research opportunities: the Institute of Chartered Accountants of Scotland (ICAS) has kindly agreed to let us access its members via a mailing-list In this way, I could conduct further empirical research using accounting practitioners as subjects.

10.4 Contribution

The development of an instrument that can psychometrically measure individuals' dispositions to rules and principles is a very ambitious project. In addition, the research is located in an interdisciplinary space, between accounting, legal philosophy and regulation theory, and psychology, more importantly, where there is relatively little empirical work to guide it, as compared with PhD projects more unilaterally located in traditionally heavily researched accounting topics. Another factor which made this project challenging was that the project took the research student beyond the ground of her basic training in accounting and law, into areas of psychology, as for the purpose of the research she had to read and follow the theories and methodological procedures in the psychological literature. Despite these challenges, this PhD has achieved what it set out to achieve and was able to make some considerable contributions to both the theories and practices within the accounting regulatory reform arena and beyond. One primary outcome of this PhD is to have produced an instrument that is general enough to explore a large variety of possible theoretical and practical problems, not just confined in the domain of accounting and finance.

10.4.1 Contribution to the theory

That conceptual confusion abounds amongst researchers can be seen consistently in the publications of rules vs. principles debate (Hail et al., 2010). For the first time, this project advances the rules and principles debate research paradigm from a conceptual to an empirical domain, in the form of the individuals' dispositions to rules and principles measurement that is the DRP instrument. Principally, this current research has tested and supported Dworkin's paradigm on rules and principles debate. This specifically related to the conceptualisations of rules and principles (1979; see chapter 4, section 4.4 for more details) where more conceptually-oriented approach predominate. In addition, adopting an interdisciplinary approach and advancing the rules and principles debate literature via the adoption of a mixed methods approach are also considered original theoretical contributions of this kind.

10.4.2 The potential value of the DRP in behavioural accounting research

Becker (1967) distinguishes behaviour accounting research from other forms of accounting research by suggesting that behavioural research applies theories and methodologies from behavioral sciences to take into account the characteristics of practitioners on accounting information processing. On the basis of this view, the current instrument can potentially make a considerable contribution to the academic research in the field of behavioural research in relation to rules- and principles-based regulation. In fact, the prior lack of these measurements may be one of reasons why progress has been static in studies of variation of practitioners' behaviour in relation to different types of regulations in accounting and auditing. I believe that this PhD work will provide a stimulus for future research along the lines of rules and principles related behaviour in accounting and auditing. The current research was driven by a relatively new research focus: 'fit' effect between the type of the accounting regulation (rules vs. principles) and the type of the practitioners (rules vs. principles) (Herron & Gilbertson, 2004; Jamal & Tan, 2008; 2010; see chapter 1, section 1.4). DRP instrument can be applied in areas examining the interplay (fit vs. misfit) between the nature of the accounting/ financial regulations and the information processing and judgement of the users. The 'fit' effect is worth pursuing as researchers have argued that when there is a fit present between the type of accounting regulation and dispositions of the individuals, a higher level of ethical reasoning might be produced (Abdlmohammadi et al., 2009; Herron & Gilbertson, 2004; Jamal & Tan, 2008; 2010).

10.4.3 Understanding accountants psychological profile

Within the domain of social psychology, rules and principles are often implied to being linked to stable personal characteristics (need for closure, some dimensions of the thinking styles as well as some of the traits from the Big5 personality trait model). However the presumptions lack clear empirical evidence. This PhD unprecedentedly attempted to explore these psychological linkages and provided empirical responses to these presumptions. Psychometric profiling of the individuals will help to determine

whether predominate rules / principles-based individuals will display systemically different characters as indicated by other psychological constructs.

Wheeler (2001) calls for more empirical research to be carried out to investigate the personality of accounting students and professionals, to “better understand the personality traits of the individuals who make up the profession and how that affect their performance” (Haynes, et al. 2008, p.82). Moreover, it is also important to “be aware how they might compare with the patterns of people of other disciplines” (Brown, 2006, p.302).

Booth and Winzar (1993, p.114) concluded that accounting students prefer structured learning experiences supported by frameworks of rules and concepts; furthermore, they do not perform as well with unstructured, ambiguous case or essay questions. One view, then, is that the typical accounting professional’s personality fits well with a rule oriented construction of the work required in an accounting and auditing context. On this view accountants, by personal inclination and training, are thought to favour clear rules with the literal text requiring a focus on well specified facts. On the other hand, this “typical”⁸⁵ accountant can be characterized as likely to be less comfortable when dealing with less structured (less rule determined) situations, that required some balancing of competing considerations and attention to a spectrum of relevant information to be considered in a more holistic fashion in light of the abstract principles (Maines, Bartov, Fairfield, Iannaconi, Mallett, Schrand, Skinner & Vincent. 2003; Sullivan, 1992; Korobkin, 2000).

Conventional research usually applies MBTI for measuring the personality type of the accounting professionals. Prior evidence shows that the most common type is the ‘STJ’ (sensing, thinking and judging) (Stetson, 2007; Wolk & Nikolai, 1997). A STJ type of individual fits well with a rules-based construction of the work required in auditing and accounting context (Brown, 2006). Despite being a hugely popular

⁸⁵ I do not mean to subscribe to a stereotyped view of the accountant, but recognize such views a one type of reason underlying some preferences and arguments in respect of the rules versus principles question in an accounting context.

instrument, MBTI has been suffering low 'test-retest reliability'. Further, the construct validity of the MBTI has been called into question: the psychometric properties of MBTI are deemed to be dubious and it has been argued that some subscales such as S-N and T-F suffer of low validity⁸⁶. Given the overwhelming amount of research that has been done using MBTI for investigating individual differences of accounting professionals, generalisability of these findings remains limited. DRP allows the study of individual differences beyond personality, and, in this respect, it offers a valid and convenient measure. Therefore, there would be fruitful future research to be carried out using an alternative instrument such as the current DRP.

10.4.4 Contributing to the gender and ethnicity studies in accounting

Given the scant evidence in the behavioural accounting research regarding the gender and ethnicity differences in terms of decision-making related to accounting / auditing issues (Francis, Hasan, Park, & Wu, 2013), the findings of this PhD filled in the void by highlighting the differences in behavioural styles of each demographic group when predicted by DRP. In the context of the international trend for convergence on a global accounting standard, and gender equality at work place, the knowledge of the gender and ethnicity differences in relation to dispositions to rules and principles as measured by DRP, would help the regulatory bodies to identify different needs of each gender, and to develop more effective training strategies or courses to facilitate members of different ethnic backgrounds or countries.

The individuals' dispositions to rules and principles measurement could potential make a contribution to the better understanding and further examination of the systemic differences between male and female students in relation to their learning styles. Given there are research supporting that male and female seem to have distinctive way of perceiving and processing information (Francis, Hasan, Park & Wu, 2013) , the course contents of university accounting education tend to be

⁸⁶ <http://www.psychometric-success.com/personality-tests/personality-tests-popular-tests.htm#sthash.CrMRfzYj.dpuf> accessed on the September of 2013.

criticised as being too rules-based and over emphasizing on mastery of the calculations rather than helping students to develop skills (DeBerg & Chapman, 2012) the knowledge of such would be fed back to lecturers or teachers to help them to better appreciate the gender differences and adjust their approaches to these two groups.

10.5 The implications

10.5.1 Implication of DRP in Accounting research

Further analysis of behavioural variation in relation to rules and principles will be possible now given that researchers have a means to classify people into either rules- or principles oriented groups easily. Given that the instrument has reasonable predictive power, it can be used in conjunction with experiments where participants will be asked to solve real accounting problems and tasks (such as earning management, aggressive financial reporting decisions, ethical decision-making). This design can answer research questions such as: whether a rules-based auditor will be more or less likely to curb earnings management, or whether there are any systematic differences between the abilities to curb earning management and between rules-oriented and principles-oriented auditors. Understanding how practitioners make judgments and decisions under conditions of rules and or principles is important to suggest remedies.

10.5.2 Implication of DRP in recruitment and HR

As recognised in the personality and performance research, there is an ‘attraction’ effect/ or ‘pre-selection’, whereby people actively select educational and professional experience whose requirements fit with their dispositions and styles (Caspi, Roberts, & Shiner, 2005). Individuals experience higher on-job satisfaction and performance when there is an alignment between their individual styles and the job criteria (Hogan & Holland, 2003). In contrast, individuals will experience more tension and stress when there is a ‘misfit’. In this way, the knowledge of one’s rules and principles dispositions becomes essential at the recruitment screening stage. It helps to quickly identify and group individuals into either 'comfortable with rules' or 'comfortable with

principles' groups. Furthermore, appropriate training programs can be developed to more quickly create and reinforce those desirable characteristics and reduce the effects of those less desirable ones. On the other hand, if high-quality performances appears to be triggered by stimulus built into the work setting and tasks, firms (other researchers) understand why these 'embedded contextual triggers' are effective. This is particularly pertinent if an organisation is considering modifying or removing some of these contextual cues.

- Talent screening and selection

Companies strive to recruit individuals who are good fit to the company culture and environment. It is vital for the HR to have a reliable and quick tool to assess people at the screening stage and only focus on the candidates who have a natural fit with the company culture. DRP can be used in conjunction with other psychometric instruments to build a psychological profile of the candidates to help HR to select suitable candidates.

- 'Fit effect' between dispositions and the nature of the task

When there is a 'fit effect' between the nature of the task and the dispositions of an individual, she/he will experience an increased feeling of enthusiasm and efficacy for the task. It is therefore vital to match the right people with the right kind of job.

- Gender and ethnicity differences

According to findings of the current PhD, men and women have different behavioural styles when it comes to specific contexts in relation to rules and principles. This knowledge is useful in identifying any specific needs of females or males when working with rules-/ principles-based approach. Allowances may need to be made in training for the fact that female practitioners may be more responsive to context than male colleagues, in contrast male practitioners may not be as responsive to contextual nudges designed to guide their behaviour.

A cross-cultural work force is increasingly becoming the norm for major multinational organisations. Rules or principles-based approach may not be effective as a mean to communicate with Asian people⁸⁷, whereas Westerners may appreciate more and learn more effectively from rules and principles. A more context-based approach may be more effective to the Asians since they tend to place more attention and emphasis on context-specific information (Nisbett et al., 2001; Spencer-Rodgers et al., 2009).

10.5.3 Implication of DRP in policy-making

Dispositions are not necessarily set in the stone, in other words, they may be relatively malleable in the sense that appropriate training can either reinforce or deactivate certain dispositions (Katz, 1993). This gives rise to the importance of matching the forms of the on-job continual training and the mentalities of the accounting practitioners. Coglianese and his colleagues highlight this need, by arguing that, “many accountants are not sufficiently trained to make the requisite business-based judgment calls. Under a principles-based system, many accountants could need to undergo significant training to acquire new skills” (2004, p.14).

As shown in section 9.17, individuals can be identified and categorised into high or low groups according to their DRP scores. The highly rules-oriented individuals could benefit from a more context-based, inductive training, which builds concepts from the specific to the general (Blundell & Booth, 1988, cited by Booth & Winzar, 1993, p.114). Such form of training might compensate these people’s cognitive biases such as ‘urge’ to ‘freeze’ on information and lower tolerance for ambiguity. For instance, tasks involving the generation of hypotheses may benefit from a more principle-based approach. Remedies to improve the ability to work with different accounting regulations may include: facilitating elements such case studies, problem-solving exercises and interactive group works. These tools would be beneficial for training

⁸⁷ The test-re test was conducted on a sample mainly comprised local students (British) with a few exceptions of Asian participants, the reliability of the DRP for the Asian group is yet to be examined separately in a later study.

individuals to feel more competent with the use of principles (Brown, 2006). On the other hand, highly principle-oriented individuals may also take value from learning to approach certain tasks in a more linear, step by step manner. Such an approach deems more favourable in situations where keeping records and detailing of voluminous administrative information are critical.

- Implication to other financial services related professions

The implication of research using DRP instrument also has potential in other financial services related professions and roles, beyond the scope of accounting and auditing professions, for instance: insurance function, investment banking, and pension fund, etc.

10.6 Future work

10.6.1 Scale structure

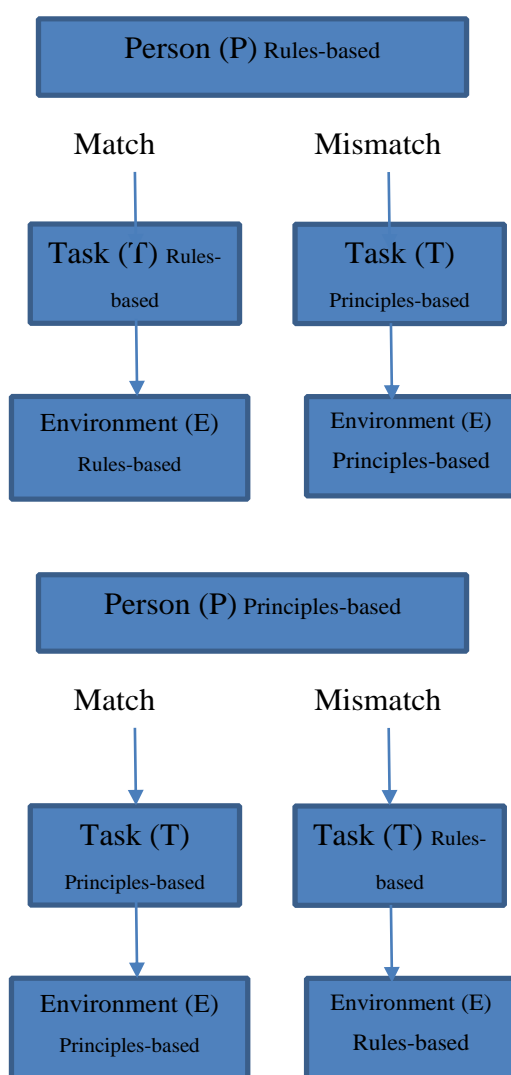
DRP is still an exploratory instrument requiring further research. The instrument at its current state however, is able to measure the individual dispositions towards rules and principles reliably. The current factor structure is simple and there could be space for a more complex structure. A sophisticated structural equation modelling method could be applied to further confirm the internal theoretical structure of the questionnaire. Future improvement can also be carried out to investigate the correlation between each individual item of the DRP (10 items in total) against the scores of predictive tests on a sample mainly comprises professionals.

10.6.2 Examine the ‘fit & misfit’ effect

In line with current regulatory reform, future work could explore the fit (misfit) effect between person, task and environment. Person variables relate to the rules and principles orientation of the decision-maker; Task variables are concerned with characteristics of the task: fraud detection vs. administrative documentation for instance; environment variable is referred to the conditions and characteristics surrounding an individual while she conducts a task: auditing environment vs.

taxation environments for instance. Based on the prior findings of the regulatory focus theory (more details see chapter one, section 1.4): When there is a fit effect (match) between an individual's preferred mean for goal pursuits and their regulatory orientation, the quality of decision-making and or performance tends to be higher than when there is a mismatch between these variables. Therefore, the logical hypothesis would be when there are matches between person, task and the environment in terms of rules and principles orientations (see the figure below) individual practitioner would be expected to produce between decisions or performance. In contrast, the quality of decision-makings will be lower if there is misfit between these variables.

Figure 26: The fit effect: framework for experimental studies on the interactions between rules and principles and individual judgment and decision-making



10.6.3 Examine the ‘priming effect’

Dispositions are stable and supposed to be chronic, but it may be induced by context temporarily. For instance, by framing the circumstances and their presentations to an individual certain orientations may even be deliberately induced; framing effects are well explored in ‘regulatory focus’ research (Freitas, Liberman, & Higgins, 2002). For instance, a principles-oriented individual might be ‘primed’ into more ‘rules-oriented’ in her approach to decision-making because of the way a task is presented to her. In other words, people are responsive to contextual stimulus. In chapter nine, section 9.18, it was found that relatively principles-oriented people have chosen a rules-based approach in ensuring health and safety in a large organisation; this showed that the context (safety and health) seemed to activate a rules-orientation in otherwise principles-oriented people.

10.6.4 Examine the moderating variables

In addition, variables such as trust and risk-taking might play moderating roles in affecting individuals’ behaviours in relation to rules and principles. Subsequently, future work could extend the current research by examining the moderating role of trust and risk propensity on individuals’ rules and principles dispositions and BIs.

10.6.5 Using DRP in conjunction with verbal protocols

Another way to use the DRP in future empirical work will be to use it in conjunction with verbal protocols. It is a method which subjects are asked to verbally explain to the researcher their thought process when they are performing a task. For instance, a researcher could ask an auditor to think aloud while she performs a hypothetical auditing problem using a rules and principles-based approach. In this way, a researcher could identify the significant variables that are most likely to account for a large amount of variation in one’s decision-making process.

10.7 Conclusion

Accounting regulatory reform remains critical for countries such as United Kingdom, which has over half million qualified accountants and students who are studying to become qualified accountants, that is nearly the highest number per capita in the world and more than the rest of the European Union put together⁸⁸. A disposition to be comfortable and competent with either rules or principles may have large aggregate effect for the accounting profession, especially regarding the recruitment and continuous on-job training. Furthermore, as perhaps evidenced by a series of auditing malpractice cases and the recent credit crisis, the one-size fits all approach to training and policy design may not be the most effective in terms of getting the best out of people. In addition, the number of female accounting professionals entering the industry and the number of international students who aim at obtaining an accounting degree are growing rapidly. Whilst, the conventional way of conducting accounting trainings still treats all the participants homogenously and practitioners are expected to behave in uniformity regardless of their gender and/or ethnicity. The empirical results from this research highlight the fact that the individual element, and in particular dispositions towards rules and principles, should not be disregarded when accounting policies, training, and education are being considered and developed.

⁸⁸ <http://www.theguardian.com/commentisfree/2009/jun/13/accountants-audit-corruption-fraud>
accessed on the September 2013.

Appendices

Appendix 1 – Preliminary item pool (323 items) with respective source

	14 Dimensions	Source of inspiration
1	1. Need for closure	
2	High Rule	
3	24. I tend to get worried if I do NOT have clear Rules to help me make a definite final decision.	Webster & Kruglanski, 1994
4	97. I regularly find myself in time-constrained situations, where I really need exact Rules to help me clarify things and reach decisions.	Need for Closure Scale
5	79. I often find myself wishing that there were more precise Rules to guide me through complex and unstructured situations.	Need for closure scale
6	202. In the absence of firm Rules it is really difficult to get closure and that can be quite depressing.	Tolerance to ambiguity scale
7	224. I like the finality of clear cut Rules.	Bailey et al. 2007
8	188. People need clear Rules to tell them when to stop looking for more factors to draw into their decision making.	Bailey et al. 2007
9	59. I rely on Rules to fulfil my desire for a firm answers.	Bailey et al. 2007; Need for closure scale
10	103. Perhaps the best thing about Rules is that they put boundaries to the information that is needed for decision-making.	Cunningham, 2007
11	236. There is something very satisfying about the way Rules settle things.	Need for closure scale, tolerance to ambiguity scale
12	270. If I don't have precise Rules to guide me, I find decision-making tends to become stressful and tiring.	Need for closure scale, tolerance to ambiguity scale
13	273. I prefer to work with Rules because I know that they will always deliver an answer.	Mayseless & Kruglanski 1987
14	315. The great thing about Rules is that they impose a kind of closure.	Need for closure scale, tolerance to ambiguity scale
15	Low Rule	

16	92. Rules might give quick answers but often those answers turn out to be unsatisfactory and need to be reopened.	Mayselless & Kruglanski 1987
17	199. Rules are for people who want the closure of a decision, even if it is NOT a very good decision.	Bailey et al. 2007
18	219. Rules tend to end up being applied mechanically, with every box needing to be ticked, and that makes it irritatingly difficult to get closure.	Sunstein, 1996
19	192. Without clear and strong Rules it is very easy to sink into an intolerable chaos of indecision.	Bailey et al. 2007
20	High Principle	
21	1. Principles support swift decision making by keeping an open-ended evidences collecting process, this ensures a accurate evaluation of the situation.	Bailey et al. 2007
22	Solutions based on Principles tend to be more durable than decisions based on other approaches	Bailey et al. 2007
23	I tend to prefer to use Principles, because rather than offer simple answers, they could open things up for the exercise of professional judgment.	ICAS, 2006; Ford, 2010
24	Low Principles	
25	2. Principles are just time consuming and energy-draining, In the case of facing pressing deadlines,	Bailey et al. 2007
26	296. I tend to become anxious when using Principles-based approaches to decision making because they leave me uncertain about whether I have got the right answer.	Need for closure scale
27	257. The problem with Principles is that they rarely give definite answers to problems, they always leave room for argument and for someone to try and reopen things.	Need for closure scale
28	13. When working with Principles, I sometimes find myself slowly grinding to a halt in an agony of indecision.	Sternberg's thinking style
29	88. The problem with Principles is that they do NOT have the kind of structure that lets you be confident that you have really and finally got a firm answer.	Sternberg's thinking style
30	45. I don't like Principles-based approaches to decision making since they never seem to give clear-cut solutions, and if you are unlucky, you have to go back and revise the decision.	Experts opinion
31	I don't like Principles-based approaches to decision-making since they never seem to give clear-cut solutions, and if you are unlucky, you have to go back and revise the decision.	Bailey et al. 2007
32	2. Ethics / Morality	
33	High Rule	

34	153. Tighter Rules and regulations are the key to the improvement professional moral standards in the business world.	Nigel, 1973: attitude to Law
35	145. I feel guilty if I break Rules.	Nigel, 1973; Tangney, 1999
36	158. I feel ashamed if I break Rules.	Tangney, 1999
37	233. Rules support morality by helping people to overcome their personal biases.	Arjoon, 2006
38	207. Rules should be obeyed because they generally indicate the morally right course of action.	Nigel, 1973: attitude to Law
39	146. I don't often feel able to question Rules	Nigel, 1973: attitude to Law
40	89. We have a moral duty to obey Rules, even when they don't seem to yield the best solution.	McBarnet & Whelan, 1991; Schmicke et al., 1997
41	277. Following the given Rules is usually the surest way to moral behaviour.	Alexander, 1999;
42	279. It is alright to put your own interests first so long as you do not actually violate any Rules.	ICAS, 2006;
43	Low Rule	
44	193. A Rules based systems undermines professional judgment and thereby provides an environment where manipulation can flourish.	Herron & Gilbertson, 2004, ; Herdman, 2002; Sama & Shoaf, 2005
45	14. Rules focus attention to issues of obedience and disobedience, rather than doing the right thing.	Satava et al., 2006
46	183. Rules allow people to distance themselves for the immorality of actions they are involved in.	Nigel, 1973
47	184. Rules promote 'box-ticking' mentalities and undermine real ethical awareness and concern.	Cunningham, 2007
48	106. Rules often make things seem right that really are very wrong.	Focus group; Turiel, 1983
49	One big problem with rules is that some people keep following them even when they are clearly morally dubious.	Arjoon, 2006; ICAS, 2006
50	7. An arrogant "I know best" mentality always lies somewhere behind rule breaking.	Experts opinion
51	114. When someone says 'I followed the Rules' you can be sure they have done something morally wrong.	Focus group

52	281. Moral development comes through the kind of reasoning and debate that Rules make redundant.	Kohlberg, moral reasoning stages model, Turiel, 1983
53	222. The breaking of Rules is morally justified if it is done to achieve Principles.	Kohlberg, moral reasoning stages model; ICAS, 2006
54	249. The more Rules we have, the more we have to rely on so-called experts and they are just not in a position to deal effectively with moral issue.	Ford, 2010
55	232. Rule following is usually a way of avoiding one's responsibility to think and act morally.	Schmicke et al., 1997; McBarnet & Whelan, 1991; ; Alexander, 1999
56	High Principle	
57	228. Principle-based approaches in business field will promote a more socially responsible decision-making.	Cunningham, 2007
58	309. The use of Principles enables true morality since they require decision makers to have understanding of those who are affected.	Cunningham, 2007
59	238. The great thing about Principles-based approaches to regulation is that they build ethical commitment into compliance with the intentions of the standard setters.	Cunningham, 2007
60	313. Principles-based approaches enable open communications across levels in an organization, and that's the best way to combat unethical conduct.	Cunningham, 2007
61	138. I prefer to work with Principles as they allow me to shape decisions in line with my moral values.	Arjoon, 2006
62	Low Principle	
63	190. Principles are just too vague and weak to deal with the intensity and frequency of unethical behaviour in public and business life	Bratton, 2004; Alexander, 2009
64	230. Principles are NO good for the ethical development of young professionals; they learn better with clear Rules-based guidelines.	Experts view
65	218. I think few people at work understand how to use Principles to assess the ethical implications of their professional conducts.	Experts view
66	285. People disagree so much about what Principles mean and imply that they can never serve as a sensible basis for ethical decision making in the public and business spheres.	Cunningham, 2007
67	3. Creativity	
68	High Rule	
69	221. Rules help to shape and focus problems and provide clear structures	Kern, 2006

	for creative problem solving.	
70	2. Real creativity whether in art, science, or business always emerges from a deep understanding of the rules that shape the field.	Kern, 2006
71	3. Rules help to shape and focus problems and provide clear structures for creative problem solving.	Kern, 2006
72	255. Real creativity whether in art, science, or business always emerges from a deep understanding of the Rules that shape the field.	Kern, 2006
73	34. One should NOT expect experts to conform to Rules.	Kern, 2006
74	Low Rule	
75	206. Intensive Rule-based working environment limit the inventiveness of the people who work there.	Amabile, 1998; McCrae,1987; Beraidi and Rickards, 2006
76	41. Rules tend to get in the way of innovation because they always lag behind the pace of innovation.	Amabile, 1998; McCrae,1987; Beraidi and Rickards, 2006
77	191. Rules are entirely unfit for the management of highly dynamic domains such as financial innovation.	FSA, 2007; ICAS, 2006; Ford, 2010
78	61. Whether in poetry or business the tighter the Rules the more fun there is to be had in the creative process.	Experts suggestion
79	197. Rules do not encourage original thinking as they assume themselves equal to any situation.	Amabile, 1998; McCrae,1987; Beraidi and Rickards, 2006
80	38. Rules get in the way of innovation and the new; they are always designed for yesterday.	FSA, 2007; ICAS, 2006; Ford, 2010
81	High Principle	
82	211. I am most comfortable working with Principles because they allow freedom for imagination and creative thinking.	Focus group
83	2. A principles-oriented working environment fosters creativity.	Beraidi and Rickards, 2006
84	148. One of the best things about principles is that their adaptability allows us to be reasonably confident that we have the tools to cope with new problems and issues as they crop up.	Black, 2008
85	Principles based approaches improve decision-making by enabling decision makers to approach problems from new perspectives.	Ford, 2010
86	214. To cope with new and changing situations, where creativity is at a premium, you really need Principles.	Kirsi-Mari Vihermaa 2008

87	304. Using a Principle- based approach, I often gain an overall feeling about a project which enables creative solutions to flow.	Amabile, 1998; Sternger, 1999
88	7. I am most comfortable working with principles because they allow freedom for creative thinking.	Amabile, 1998
89	8. The beauty of principles is that they can be creatively extended in their scope to help generate justifiable solutions to novel problems.	Amabile, 1998
90	130. Principles based approaches to problems provide a valuable space for debate in which good creative solutions can be developed.	Focus group
91	Low Principle	
92	1. Principles are fine in theory but in practice the often put break on innovation and creative thinking.	Carter & Marchant, 2011
93	288. Principles are not able to keep pace with, and regulate, the kind of creativity that has characterized the financial sector in recent times.	Alexander, 2009
94	3. Principles are too broad and vague to be any use in devising creative solutions.	Hoffman & Patton, 1997
95	73. Working with Principles is not practical because it makes demands of decision-makers in terms of creativity and imaginativeness that very few people can meet.	Experts view
96	4. Complexity	
97	High Rule	
98	318. Creating more Rules is the most effective way to regulate any complex situation.	Alexander, 2009
99	2. Decision-making in complex situations quickly becomes very tedious if it isn't determined by clear rules.	Tolerance to ambiguity scale
100	3. I often find myself wishing that there were more precise rules to guide me through complex and unstructured situations.	Sternberg's thinking style; tolerance to ambiguity scale
101	295. I like to deal with complex situations by breaking them parts and finding and applying the right Rules for each part.	Sternberg's thinking style
102	Low Rule	
103	117. In complex situations it becomes is very difficult to predict how Rules will be interpreted and applied, in which case they are pretty much worthless.	Focus group; Ford, 2010
104	254. I sometimes feel that we are all being slowly crushed by the weight of evermore detailed Rules.	FSA 2007,
105	181. Rules-based approaches to things often break-down in complicated	Sternberg's thinking

	cases.	style
106	121. I really can't keep up with all the new Rules I ought to know about.	Black, 2001
107	60. Rules really only work in very simplest of situations.	Braithwaite, 2002
108	128. I find that in complex situations the letter of the Rules always begins to obscure the underlying substance of the situation.	FSA, 2007; ICAS, 2006
109	227. If you get into the habit of relying on Rules, you will soon find that you aren't able to think for yourself when faced with new and tricky situations.	ICAS, 2006; Sternberg, 1999; Black, 2001
110	262. With the increasing complexity of modern life the necessity for tightly framed and very specific Rules and procedures becomes ever more obvious.	Focus group
111	301. Rules always seem to multiply and become ever more complicated so that eventually only a few specialists are able to understand and interpret them.	Black, 2001
112	322. Rule - based systems seem inevitably to develop to the point of "Rule overload"; the point where they begin to collapse under the weight of their internal inconsistencies and contradictions.	Black, 2001
113	High Principle	
114	141. Principles are indispensable when interests conflict, because they allow decision makers room for the creative construction of compromise solutions.	Braithwaite, 2002
115	280. Principles work well in situations where there are conflicting interests, because they make room for communication involving the affected parties that leads to more thorough and reliable analysis.	Black, 2008
116	78. Principles are vital in complex business situations such as negotiation and contracting, where solutions often best built on consensus about objectives and values.	Braithwaite, 2002
117	229. If things are at all complicated you need Principles to fill in the gaps left by Rules.	Braithwaite, 2002
118	87. In complicated problem solving situations where the way forward is NOT obvious, effective solutions must be built on Principles.	Braithwaite, 2002
119	177. I prefer to keep things simple by working with a few key Principles.	Braithwaite, 2002
120	303. I prefer to work with Principles because they allow some freedom for negotiation of solutions which I find is the only way to effectively cope with the complexity of this rapidly changing and uncertain world.	Braithwaite, 2002; Ford, 2010; FSA, 2007
121	Low Principle	
122	282. The problem with Principles is that people interpret them differently and it can become impossible to disentangle the confusions that grow up around the competing interpretations.	Dickey & Scanlon, 2006; Carter & Marchant, 2011

123	291. Because Principles are unpredictable they make decision making much more complicated than it needs to be.	Dickey & Scanlon, 2006; Carter & Marchant, 2011
124	137. I often feel as though I am being tricked when people start making artful use of Principles to negotiate complicated situations.	Dickey & Scanlon, 2006; Carter & Marchant, 2011
125	67. Principles are too open to interpretation and do NOT cope well in complex situations where there are substantial conflicts of interest.	Experts opinion
126	245. Principles introduce pointless complexity in decision-making by allowing room for unnecessary debate.	Dickey & Scanlon, 2006; Carter & Marchant, 2011
127	31. The problem with Principles is that they need to be interpreted and interpretation can quickly become an impossibly complicated business.	Ford, 2010; Coglianesse et al., 2004; Carter & Marchant, 2011
128	147. I don't like having to resort to Principles because justifications for which Principles should apply and what relative weights they should carry always seem to be either obscure or impossibly complicated.	Dickey & Scanlon, 2006; Carter & Marchant, 2011
129	5. Empowerment	
130	High Rule	
131	I feel more confident in situations where I know there are precise rules to follow.	Focus group
132	239. I like to know that my decisions have got the weight of Rules behind them and that they are going to hold, whether people like it or not.	Hall & Renner, 1991
133	4. Clear rules let people know what they need to do and give them the foundation and justification to get on with it.	Focus group
134	244. When I have clear Rules to work with I become much more confident and decisive.	Thomas & Velthouse, 1990
135	115. I am rarely so painfully aware of my powerlessness as when working with Rules.	Bratton, 2003
136	62. I am always more confident in decisions which I know have been made on the basis of firm Rules.	Bratton, 2003
137	4. I tend to lack confidence, and feel rather nervous, in situations where I have NOT been given Rules.	Self-efficacy theory: Bandura, 1991 and 1998
138	Low Rule	
139	35. You need to loosen the net of Rules around people if you want to engage their energies.	Focus group; Locus of control

140	319. It's hard to find value and inspiration in activities that are dominated by Rules.	Focus group; Locus of control
141	3. It's really difficult for me to get enthusiastic about activities that are all about rule following.	Focus group; Locus of control
142	107. I always feel rather detached and disengaged from Rule following tasks.	Focus group; Locus of control
143	86. The real purpose of Rules is to provide reasons to punish people.	Focus group; Locus of control
144	157. Rules put an end to discussion and debate and in the long run undermine community values and cohesion that thrive on such exchanges.	Skitka and Morgan -'the double-edged sword of a moral state of mind'.
145	High Principle	
146	212. I like the fact that Principles, rather than offering simple answers, open things up for the exercise of judgement.	Cohen et al., 2011; Black, 2001
147	2. Principles promote more engagement and responsibility among employees thereby increasing their enthusiasm for the task.	Focus group
148	171. Only a proactive Principle-based approach supports the development of good judgement.	Thomas & Velthouse 1990
149	298. The use of Principles forces people to think about what they are doing, they then put more of themselves into the task and derive more value from it.	Cohen et al., 2011; Locus of control by Rotter, 1966
150	314. I enjoy Principle-based approaches to problem solving and decision-making because they tend to involve me in debates and discussion.	FSA 2007; focus group
151	I become more vocal when defending myself with Principles.	Focus group
152	21. Having the freedom to use Principles at work signals acceptance and trust, and is in itself a great motivator.	Focus group; locus of control; Cohen et al., 2011
153	263. Using Principles has helped me to become more aware of my capacities and confident in my judgment.	Focus group; locus of control; Cohen et al., 2012
154	Low Principle	
155	108. When working with Principles, I often find myself indecisive and unable to be confident in my own judgment.	ICAS, 2006; Dunn et al., 2003
156	300. It is difficult to be fully committed to decisions based on Principles, because they always seem rather arbitrary and never quite securely justified.	Dunn et al., 2003

157	198. I do NOT really feel comfortable using Principles.	Dunn et al., 2003
158	6. Manipulation	
159	High Rule	
160	70. To discourage people from manoeuvring within the Rules we need more and tighter Rules.	Alexander, 2009
161	208. I prefer Rules because they are objective.	Sunstein, 1995
162	75. I favour Rules in many situations because they tend to minimize the scope for self-interested manipulation.	Ford, 2010; Carter & Marchant, 2011
163	268. We need more precise Rules to curb unwanted creativity in the financial market.	Alexander, 2009; Cunningham, 2007
164	Low Rule	
165	1. Rules manipulation creates an unlevel playing field, providing an unfair advantage to those who are smart enough to practice "get around the rules".	Shah, 1996
166	96. Rules fail as regulation because they try to impose the kind of controlling and directing relationship that people tend to react against, subvert, and manipulate.	Ford, 2010; Black, 2001; Arjoon, 2006
167	223. Rule-based regulation is seldom very effective, because no matter how tightly it is designed it always leaves exploitable ambiguities and loopholes.	FSA, 2007; ICAS, 2006
168	290. Rules fail as regulation because they play into the hands of the unscrupulous, those who are most willing to take conscious advantage of them.	ICAS, 2006
169	292. Rules are never effective against the determined manipulator who will always find another loophole.	Shah, 1996
170	7. Rules are never a very effective way of controlling behaviour, because 'clever' people will always think of ways to get around them.	Sawabe, 2005; Benston et al., 2006; McBarnet & Whelan, 1991
171	215. The trouble with Rules is that the powerful can always manipulate them in their own interests without actually breaking them.	Bratton, 2003
172	65. More detailed and strictly enforced Rules are the answer to the kind of manipulations that have gone on in the financial market.	Alexander, 2009
173	320. The problem with Rules is that they encourage a mentality that learns how to exploit the gap between the letter and the spirit of regulation.	ICAS, 2006a&b; McBarnet & Whelan, 1991
174	High Principle	

175	250. Principles based approaches are generally effective and free of manipulation because they focus on the real risks and desired outcomes, rather than on mere compliance.	ICAS, 2006
176	275. Principles facilitate a co-operative and trusting relationship between the regulators and those regulated, and thus reduce the risk of manipulation.	Ford, 2010; Black, 2001
177	3. Principles promote the self-regulation among business practitioners and public could be monitoring over these business practices.	Black, 2001; Black, 2008; Ford, 2010
178	4. Principles require users to justify their decision making process, thus reducing the potential for manipulation.	Black, 2001; Black, 2008; Ford, 2010
179	132. I prefer Principles-based approaches because they engage people positively and openly in the decision making process and thus reduce the likelihood of manipulation.	Black, 2001; Black, 2008; Ford, 2010
180	6. The great advantage of Principles-based approaches decision-making is that they involve personal judgement and that restores some personal responsibility to the process.	Sennetti et al., 2007; Carpenter et al 2011; Cohen et al., 2011
181	Low Principle	
182	136. The introduction of consideration of Principles by decision-makers gives an unfair advantage to the articulate who are good at justifying their point of view.	Carter & Marchant, 2011
183	186. Principle-based approaches would only work if everyone acted in good faith and that doesn't happen in the real world.	Carter & Marchant, 2011
184	4. Principles are by their nature too loose to be of any use in deterring manipulative misconduct.	Carter & Marchant, 2011
185	33. Principles are always wide open to manipulation because they require interpretation, which is often arbitrary.	Carter & Marchant, 2011
186	44. Because the use of Principles is highly subjective, it is very vulnerable to subtle, sometimes almost unnoticed, pressure and distortion.	Carter & Marchant, 2011
187	217. Smart people can always twist Principles to suit their own point of view.	Carter & Marchant, 2011
188	265. Principles allow the unscrupulous to abuse the trust that people put in them.	Carter & Marchant, 2011
189	7. Security and comfort	
190	High Rule	
191	151. The great thing about Rules is that they take the blame if things go wrong and that is very liberating.	Ohman, et al 2006; Pentland, 1993

192	91. It's reassuring to know that there are Rules that will supply clear answers to issues that I might face.	Salter & Niswander, 1995; Donelson, McInnis, & Mergenthaler, 2012
193	271. If I am criticized my first reaction is to look to the Rules to check that I have in fact done the right thing.	Ohman, et al 2006; Pentland, 1993
194	4. I feel less threat of unfair treatment when I know that people who manage me follow the rules of conducts.	Ohman, et al 2006; Pentland, 1993
195	234. I am most comfortable when I know my behaviour conforms with Rules.	Ohman, et al 2006; Pentland, 1993
196	102. Rules, and Rule compliance, are absolutely vital defenses against troublesome litigation.	Salter & Niswander, 1995; Donelson, McInnis, & Mergenthaler, 2012
197	Low Rule	
198	162. I always feel vulnerable when using Rules because they make errors obvious and hard to dispute.	Dickey & Scanlon, 2006; Mergenthaler et al., 2012
199	120. Rules are dangerous because they help people to cocoon themselves from criticism, even from self-criticism.	Dickey & Scanlon, 2006; Mergenthaler et al., 2012
200	178. Rule-based decision making is designed to insulate decision makers' from criticisms and accusations.	Dickey & Scanlon, 2006; Mergenthaler et al., 2012
201	187. I find that it is impossible to comply with all of the Rules all of the time and that leaves me feeling anxious.	Dickey & Scanlon, 2006; Mergenthaler et al., 2012
202	80. I hate precise rules and always feel that they are hanging over me waiting to catch me out.	Dickey & Scanlon, 2006,
203	220. I think Rules are made to keep us on the defensive; to keep us always open to the blame that we have broken this or that Rule.	Dickey & Scanlon, 2006, SEC, 2003; Swinson, 2004, cited by Arjoon, 2006
204	High Principle	
205	144. Using Principles give me an extra layer of protection since I always know that I can at least justify my use of principles to myself.	ICAS, 2006; Bogoslaw, 2008; Arjoon, 2006
206	"119. I feel at ease and confident when making decisions based on Principles, perhaps because I know that it is difficult to challenge such	ICAS, 2006; Bogoslaw, 2008;

	decisions and impossible to show that they are definitely wrong.	Arjoon, 2006
207	18. I feel comfortable with tasks that involve the interpretation and use of Principles.	ICAS, 2006
208	Low Principle	
209	125. The subjective judgments associated with Principles are uncomfortably difficult to defend if ever put under serious challenge.	Mergenthaler et al., 2012
210	111. It is difficult to justify decisions based on Principles and that can leave you feeling vulnerable.	Mergenthaler et al., 2012
211	99. Principles leave the people who have to use them wide open to harmful accusations of personal bias in their decision-making.	Focus groups; Somerville, 2003; Dickey & Scanlon, 2006
212	36. Principles-based approaches to decision-making leave far too much to chance.	Black, 2008; Dickey & Scanlon, 2006
213	15. The problem with Principles is that they are easy to understand but difficult to know for sure whether they have been used appropriately.	Somerville, 2003; Dickey & Scanlon, 2006
214	22. The problem with Principles is that you never really know where you are with them; You can NOT be confident about how they will be interpreted and weighed.	Coglianesse, 2004; Black, 2008; Carter & Marchant, 2011
215	200. I never feel secure when making decisions based on Principles.	Mergenthaler et al., 2012
216	276. When decisions are based on Principles they are inevitably subjective and that introduces a personal element that I can never really be comfortable with.	Mergenthaler et al., 2012
217	286. With Principles-based decision making there is no absolutely firm ground for the decision-maker to dig her heels into and over time and under pressure it is very easy for standards to slip.	Carter & Marchant, 2011
218	8. Fairness	
219	High Rule	
220	58. Fairness generally requires that the Rules be followed to the letter.	ICAS, 2004
221	2. I prefer to follow strict codes of conducts to achieve fairness	ICAS, 2005
222	3. If not guided by binding rules, decision making is always liable to become corrupted and unfair.	Focus group
223	139. Strict compliance with Rules can seem impersonal and cold but that is actually a small price to pay for the fairness that strict Rules deliver.	Dworkin, 1979

224	68. I feel that I am under threat of unfair treatment unless I know that people are constrained by Rules.	Blader & Tyler, 2003 a & b
225	I tend to judge the fairness of an outcome according to the degree of its compliance with Rules.	Van Den Bos, Lind, & Wilke, 1997
226	7. In a decent society people have a right to expect that they will be treated strictly in accordance with the Rules.	Authoritarian personalities by Rigby, 1982
227	54. At work, I tend to treat all Rules as binding Rules and feel compelled to follow them well.	Authoritarian personalities by Rigby, 1982
228	28. Fairness follows from the consistent application of strict Rules.	Blader & Tyler, 2003 a & b
229	317. Rules are never perfect of course, but all in all sticking to them generally the fair thing to do.	Authoritarian personalities by Rigby, 1982
230	Low Rule	
231	267. No Rule takes all relevant factors into account and for this reason Rules are commonly very unfair.	Sunstein, 1995; Schauer, 1991a; Shapiro, 2009
232	149. Rules are dangerous because they ask to be applied without regard to consequences in the particular case.	Sunstein, 1995; Schauer, 1991a; Shapiro, 2009
233	123. I sometime recognize that Rules I have applied have, all things considered, resulted in unfair outcomes.	Sunstein, 1995; Schauer, 1991a; Shapiro, 2009
234	122. The problem with Rules is that they try to treat people and cases as if they were all the same when in fact they are different.	Sunstein, 1995; Schauer, 1991a; Shapiro, 2009
235	240. If you want to be fair you need to have the courage to break Rules	Schminke et al., 1997
236	104. Rules are very often just an excuse for acting unfairly.	Sunstein, 1995; Schauer, 1991a; Shapiro, 2009
237	289. One should never let Rules stand in the way of acting in accordance with one's own sense of what is right and fair.	Schminke et al., 1997
238	305. It seems to me that Rules generally tend to be applied to benefit of certain people over the others.	Authoritarian personalities by Rigby, 1982
239	High Principle	

240	269. A Principle-based approaches to problem solving are fairer because they tend to be more open to debate and bargaining.	Ford, 2010
241	135. Only Principles-based decision making can provide solutions that are adequately tailored to individual cases.	Dworkin, 1967; 1997; ICAS, 2006
242	308. Fairness requires that we always treat people in accordance with Principles; because Principles allows no short-cuts.	Dworkin, 1967; 1997; ICAS, 2006
243	155. Principles-based approaches promote fairness in decision making by requiring an open consideration and weighing of relevant factors and information.	Dworkin, 1967; 1997; ICAS, 2006
244	7. Principles-based decisions are generally more transparent and open to demands for justification, and thus generally fairer.	Ford, 2010, ICAS, 2006
245	53. Principles-based decision-making requires that attention be paid to the particular features of the case and that leads to fairer outcomes.	Dworkin, 1967; 1997; ICAS, 2006
246	Low Principle	
247	169. The outcomes of decision-making based on the weighing of Principles are just too unpredictable to be thought of as fair.	Cunningham, 2007
248	The introduction of consideration of Principles by decision-makers gives an unfair advantage to the articulate who are good at justifying their point of view.	Carter & Marchant, 2011
249	Principles-based decision makings are too subjective and value-laden to be considered as fair.	Ford, 2010; Carter & Marchant, 2011
251	9. Efficiency	
252	High Rule	
253	310. Clear and detailed Rules are the recipe for optimal efficiency in decision making	Focus group
254	195. If I don't have precise and binding Rules to keep me on the right track I become hopelessly inefficient.	Twining & Miers, 2001
255	226. Rules save time and energy by giving people a clear structure to work with.	Sunstein, 1995
256	243. I find that consideration of the applicable Rules generally takes me quickly to the heart of a problem.	Focus group
257	134. For me Rules are vital time-saving devices.	Sunstein, 1995
258	112. People get things done more easily and faster when they have exact Rules to guide them.	
259	32. The more Rules people have to guide them the more efficient they become.	Experts view

260	Low Rule	
261	170. In practice it is rare to find Rules that can be applied smoothly and efficiently; they never seem to quite precisely fit the case.	Pincus, 2000
262	69. The time one spends on studying and learning the Rules of an organization will delay the real problem solving process.	Focus group
263	209. Rules simplify and speed up decision-making processes but at the too high a price of excluding some considerations.	Dworkin, 1997; Cunningham, 2007
264	260. Rules suit people who don't have the patience for really thoughtful decision making.	Braithwaite(2001) cited Frederick Schauer's 'argument from efficiency'
265	20. Rules get in the way of efficient decision-making.	Farber, 1999
266	40. Rules impose an essentially inefficient approach to decision-making that requires "that all the boxes be ticked", all the supposedly relevant data gathered, before a decision is made; even when the decision maker already knows the right thing to do.	ICAS, 2006
267	52. Rules don't take account of the full picture of a given situation so the answers they give often need to be revisited.	Sternberg's thinking style
268	283. Rules restrict the use of judgement and thereby tend to get in the way of good decision-making.	ICAS, 2006
	142. The problem with Rules is that they quickly multiply to the point where decision-making gets entirely bogged down in impenetrable webs of Rules and exceptions.	ICAS, 2006; Sternberg, 1999; Black, 2001
271	High Principle	
272	150. In my experience, Principles often operate like rules of thumb, cutting efficiently through to the crucial factors.	Korobkin, 2000
273	124. Principles support swift and firm decision making by keeping evidence collecting and evaluation processes well focused on the key features of the situation.	Korobkin, 2000
274	46. Principles improve efficiency in situations that require case specific solutions.	Alexander, 1999
275	30. Principles tend to be a durable basis for problem solving in changing circumstances.	Ford, 2010; FSA, 2007
276	82. Solutions based on Principles tend to be more durable than solutions that are based on other approaches.	Ford, 2010; FSA, 2007
277	83. The flexible nature of Principles promotes efficiency.	Korobkin, 2000
278	248. Principles efficiently focus attention and evidence gathering on the factors that are really important in the case at hand.	Alexander, 1999

279	Low Principle	
280	174. Few people have both the capability and experience needed to efficiently work with Principles.	Experts opinion
281	2. Principles allow people to indulge in unnecessary debates and this slows down the problem solving process.	Dworkin, 1997
282	261. Principles based approaches to decision-making require deliberation in every case and that's a depressing inefficient way to go about things.	Tebbit, 2005
283	126. Decision-making based on Principles always requires the weighing of competing Principles, and that is generally a rather time consuming activity.	Dworkin, 1997
284	10. Effectiveness	
285	High Rule	
287	253. Rules may not be perfect, but they get the job done and within tolerable levels of error.	Sunstein, 1995
288	116. It is when things must be done and done right that I most appreciate the value of Rules.	Sunstein, 1995
289	241. Rules are the most effective mechanism to safeguard public interests.	Alexander, 2009
290	180. Rules are the effective way to get things done in difficult situations.	Sunstein, 1995
291	76. Rules are the most effective tool for someone who has a low tolerance for mistakes.	Sunstein, 1995
292	Low Rule	
293	143. People tend to feel isolated and anxious, and eventually become rather ineffective, when they are managed by rigid Rules.	Focus group
294	94. Rules focus on process not outcomes and are rarely an effective means of achieving desired ends.	ICAS, 2006
295	173. Rules are fine in simple and stable situations but quickly lose any effectiveness when serious conflicts of interest come onto the scene.	Braithwaite, 2002
296	113. Rules promote a formalist, 'box-ticking', mentality which just isn't effective in novel situations not clearly foreseen by the Rule makers.	Schauer, 2001
297	302. The more Rules are applied to people, the less effective they seem to be in controlling them.	Picciotto, 2007
	312. To be effective and get "results" you need to be able to break the Rules.	Zhang & Arvey, 2009
298	High Principle	
299	172. In situations where there are serious conflicts of interests, decisions	Braithwaite, 2002

	need to be hammered out in terms of Principles because they provide real effective resolution.	
300	205. Principles are the most effective tool against arbitrary and unreasonable decisions.	Braithwaite, 2002
301	237. The most effective decision making comes through the use of a high level Principles because they encourage a focus on outcomes rather than on complicated prescriptions and procedures.	Ford 2008; Hopper & Stainsby, 2006 cited by Carter & Marchant, 2011
302	252. Principles are very effective because they engage and promote self-regulation.	FSA, 2007
303	306. The great thing about Principles-based approaches to problems is that they go on generating effective solutions in new and challenging environments where other approaches break down.	FSA, 2007
304	Low Principle	
305	258. Principles are usually too vague to effectively determine or even seriously guide decisions in real world situations.	Bailey et al., 2007; Carpenter., 2007
306	1. People who use Principles tend to be less effective in detecting or deterring misconduct.	Cunningham, 2007
307	272. In practice decision-makers rarely have the level of expertise that's needed to support effective Principles-based decision-making.	Experts opinion
308	3. Principles only work effectively when those involved all behave in good faith and in a trusting manner.	Cunningham, 2007
309	11. Uniformity vs. Flexibility	
310	High Rule for uniformity	
311	We need Rules to help us identify and eliminate sub-standard behaviour.	Gary 1988; Sunstein, 1995
312	204. I like to see everyone working and competing under the same Rules.	Gary 1988; Hofstede, 1997
313	294. In the current climate, there is an urgent need for more Rules to standardize conduct.	CPI (California Personality inventory)
314	6. I like to work in settings where tasks and expectations are defined and standardized by clear rules.	CPI (California Personality inventory)
315	Low Rule for uniformity	
316	11. Rules block any further development of the children and novices.	Turiel, 1983; Rest DIT
317	The problem with rules is that they try to treat people and cases as if they were all the same when in fact they are different.	CPI (California Personality

		inventory)
318	4. We need urgently to cut back on our reliance on rules, and allow people freedom to develop and grow.	Focus group
319	High Principle for flexibility	
320	194. I find Principles based approaches to issues most satisfactory because they allow a satisfying consistency and coherence to be developed, on the basis of common principles, operating across different cases and fields.	Zhang & Arvey, 2009
321	161. Principles are effective in complex situations, where other approaches often break-down, because their flexibility allows them to stretch and remain applicable either directly or by analogy.	Braithwaite, 2002
322	247. Treatment based on Principles is almost always more satisfactory than that emerging from other approaches because Principles allows more flexibility to be exercised in consideration of the precise features and mitigating circumstances of a case.	Dworkin, 1997
323	17. What I like best about Principles, is their flexibility and the fact that I can use them to create solutions that are that is tailored to the needs of the particular, individual, case.	Dworkin, 1997
324	Low Principle for flexibility	
325	37. Principles are too flexible to be helpful in supporting comparisons among decisions made in different cases.	Cunningham, 2007
326	179. Unfortunately, the inherent flexibility and responsiveness of Principles based-approaches tends to be quickly undermined by practitioners forging tacit agreements about how Principles should be interpreted and applied.	Carter & Marchant, 2011
327	216. The problem with Principles is that their very flexibility introduces an unacceptable risk that in some cases they will be interpreted and applied in idiosyncratic, even perverse ways.	Carter & Marchant, 2011
328	12. Abstract vs. concrete	
329	High Rule for concrete	
330	164. I find that even in supposedly simple situations I can easily become “tied in knots” if I do NOT have clear rules to work with.	Sternberg's thinking style
331	110. Hard and specific Rules, with all vagueness cut away, are the best foundation for sensible decision making.	Hart, 1961; Raz, 1975
332	105. The plainer and more concrete the Rules get, the easier they are to use and better are the outcomes they provide.	Sunstein, 1995
	56. I prefer things to be set in the form of concrete Rules	Bailey et al. 2007; Need for closure scale

333	Low Rule for concrete	
334	1. Over time Rules, in any area, have the tendency to become ever more cumbersome, so that eventually they are hindrance rather than a help.	Black, 2008; 2001
335	2. I sometimes feel that we are all being slowly crushed by the weight of evermore detailed Rules.	Black, 2008; 2001
336	3. I sometimes feel as if I am living in a kindergarten since there are just too many detailed Rules forbidding me from doing things.	Focus group
337	4. I really can't keep up with all the new Rules I ought to know about.	Black, 2008; 2001
338	5. More often than not detailed concrete Rules are an obstacle to rational judgment and good decision-making.	Focus group
339	High Principle for abstract	
340	307. I tend to be comfortable with the ambiguities associated with Principle-based decision-making.	Sternberg's thinking style
341	201. Principles appeal to me as I like ideas that are expressed in abstract forms.	ICAS, 2006; Cunningham 2007; Black, 2001; Mergenthaler, 2009
342	109. The best decision making emerges from the intelligent application of abstract Principles to concrete cases.	Dworkin, 1997, 1967
	Principles appeal to me because I find that their abstraction makes them easy to work with and adapt to particular cases.	Dworkin, 1997, 1967
343	Low Principle for abstract	
344	256. Principles just aren't "down-to-earth" enough to either sensibly guide or control people's behaviour.	Cunningham, 2007
345	287. Principles are too vague to be of any use for real decision-making making.	Cunningham, 2007
346	12. When I start work on a new task, I really need more concrete guidance which can NOT be given by Principles.	Cunningham, 2007
347	5. Principles should be replaced by more specific rules for decision making.	Cunningham, 2007
348	13. Legitimacy	
349	High Rule	
350	127. Decisions made in accordance with the Rules, have a natural legitimacy.	Tyler (2006) ; Hart, 1961; Raz, 1975
351	246. I get very irritated by people who think they know better than the Rule-makers, and who think they have the right to decide which rules to	Tyler (2006)

	apply and which to ignore.	
352	159. Rules made by authorized bodies ought to be respected and followed.	French & Raven (1959)
353	77. Rules give decision-making a valuable legitimacy that helps give people the confidence they need to follow through on the required action.	French & Raven (1959); Raz, 1975
354	49. When you take on a role you take on the responsibility to follow, without question, the Rules associated with that role	Tyler, 2006; Authoritarian personalities by Rigby, 1982
355	Low Rule	
356	163. People really have to start evaluating the legitimacy of any given Rules before they decide to follow them.	Milgram, 1965; Locus of control
357	100. Any legitimacy that seems to attach to Rules is generally false or spurious.	Milgram, 1965; Locus of control
358	165. Rules are made to suit the powerful.	Dworkin, 1967, 1997
359	259. In the end even the best intentioned of Rules are illegitimately twisted, in interpretation and application, to serve the powerful.	Dworkin, 1967, 1997
360	274. Rules are often used by smart people to add “legitimacy” to their illicit motivations and actions.	Dworkin, 1967, 1997
361	High Principle	
362	101. Principles-based decisions tend to be more legitimate because they draw on values and engage the subjectivity, integrity and care, of the decision makers.	Ford, 2010; Black, 2008
363	284. Action that is based on Principles has the strongest claim to legitimacy.	Dworkin, 1997
364	225. Decisions are really legitimate only when they are based on Principles that are well anchored in established values.	Dworkin, 1997
365	297. Action based on Principles tends to be strongly legitimated by the social grounding of the Principles drawn into the analysis by the participants.	Dworkin, 1967, 1997; Ford, 2010; Black, 2001
366	26. Decisions based on Principles have the strongest claim to legitimacy because they are grounded in a rational analysis and weighing of issues.	Ford, 2010; Dworkin, 1997; 1967
367	189. For me, respect for Principles is central to professional life.	Expert opinion
368	Low Principle	
369	166. Principles are very often not actually produced by any properly constituted “law-making” body and in such case they have NO real	Cunningham, 2007

	legitimacy.	
370	168. Principles tend to involve subjective bias which undermines their legitimacy.	Cunningham, 2007
371	131. Principles often seem just to have been plucked from the air, and have NO legitimacy as such.	Cunningham, 2007
372	264. There is never much legitimacy to be found in the trading-off of one Principle and consideration against another in the real practice of principles-based decision-making.	Cunningham, 2007
373	16. Principles are too subjective to carry any real legitimacy.	Cunningham, 2007
374	14. Certainty	
375	High Rule	
376	1. Rules appeal to me because they bring certainty into an otherwise chaotic world.	Focus group
377	210. People prefer Rule-based decisions because they deliver more definite directions.	Need for closure scale
378	140. The world is in a sorry state of chaos because people NO longer have the respect for Rules that past generations did.	Focus group
379	4. The value and attraction of Rules originates in their precise and certain nature.	Nelson, 2003; Twining & Miers, 1999; Cunningham, 2007
380	43. Rules are my survival toolkit in unfamiliar and risky situations.	Hofstede, 2001; Tolerance of ambiguities scale
381	50. By reducing uncertainty and making it easy to predict actions and their consequences, clear Rules really help me to feel more able to get things done.	Focus group
382	176. I like the predictability of Rules give; the way they settle in advance what is to be done in particular situations.	Focus group
383	Low Rule	
384	156. Unfortunately Rules seldom fit cases so perfectly that they determine the outcome.	ICAS, 2006
385	196. The trouble with Rules is that they involve interpretation and therefore seldom deliver the certainty they promise.	Black, 2001
386	3. The problem in practice with even clear Rules is that you can rarely be absolutely sure if and how they will be applied.	ICAS, 2006
387	48. Rules have a formal uniformity, but in practice they need to be interpreted and applied, and that introduces enormous variability and unpredictability.	ICAS, 2006

388	High Principle	
389	1. The advantage of Principle-based approaches is that they facilitate communication about the issues and we can be certain that the outcomes emerging really take careful account of all the important factors.	Dworkin, 1997; ICAS, 2006
390	2. When Principle-based approaches to problems are working well, the outcomes generated will predictably, and with some certainty, reflect the values, culture, and interests of those affected.	Dworkin, 1997; ICAS, 2006
391	293. The use of Principles promotes dialogue, helps to build mutual understanding, and leads to lasting solutions.	Ford, 2010
392	4. Principles work well in situations where there are conflicting interests, because they make room for communication involving the affected parties that leads to more thorough and reliable analysis.	Dworkin, 1997; Braithwaite, 2002
393	323. The really wonderful thing about working with Principles is that some room is made for new perspectives to emerge in the analysis: That is worth giving up control for.	Sternberg's thinking style; Locus of control
394	Low Principle	
395	316. Principles give too much discretion to decision-makers, and undermine the predictability that is so crucial to social cohesion.	Schipper 2003; Sennetti et al., 2011; Carter & Marchant, 2011
396	182. The fundamental problem with Principles-based approaches to decision-making is that the outcomes of the process are unpredictable; you never know what to expect.	Schipper 2003; Sennetti et al., 2011; Carter & Marchant, 2011
397	185. If people are allowed to operate on the basis of Principles control is given up, subjectivity comes into play, and outcomes become unpredictable: I can never be comfortable with that.	Schipper 2003; Sennetti et al., 2011; Carter & Marchant, 2011
398	71. Principles-based decision-making undermines the certainty and uniformity of treatment of cases that is vital in many walks of life.	Schipper 2003; Sennetti et al., 2011; Carter & Marchant, 2011

Appendix 2- Introductory message for the online survey

Dear Respondent,

My name is Ying Feng and I am a PhD student at the University of Glasgow, Scotland (U.K.), studying individual's dispositions in relation to Rules and Principles. I would be very grateful if you would assist me in my research by completing the questionnaire, below, which should take you about 30-45 minutes to complete.

I appreciate that I am asking you to give a considerable amount of time to this, but it is really only with the help of generous individuals that I can gather the data I need to complete my work.

I am confident that the output of my studies will be useful in helping to develop our understanding of how people respond to Rules and Principles which eventually will be of considerable practical value.

I hope that you will find the questionnaire interesting and perhaps thought provoking. I believe that it contains nothing of disturbing nature and I see no risks associated with its completion. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. Basic data collected will be held within my immediate research group which consists just of myself and my two PhD supervisors at the University of Glasgow: Professor Paddy O' Donnell and Dr John McKernan. I hope ultimately to publish my work in my PhD thesis which, if accepted, will be a publicly available document.

Your participation is of course entirely voluntary.

Regardless of whether you choose to participate, please let me know if you would like a summary of my findings. To receive a summary, please e-mail me at y.feng.1@research.gla.ac.uk.

Thank you very much for your time and support.

Yours Sincerely,

Ying Feng

I consent to the use of my responses to this questionnaire for the research purposes referred to above
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This study concerns rules and principles and for clarification I want to begin by explaining what I mean by the terms “rule” and “principle”:

Rules, for the purposes of this study, are always applicable in an all-or-nothing fashion. Rules don't have weights in other words, when a rule is valid, we have to take it into consideration; when it is not valid, it contributes nothing to the decision. A typical rule dictates that in circumstances X, behaviour of type Y ought, or ought not to be followed.

Some rules:

- 1) "A will is invalid unless signed by three witnesses";
- 2) "A fire door must be made available within 100 feet of each employee";
- 3) "In the event of fire the elevator must not be used, except by persons who require the assistance of a wheelchair, and who are accompanied by an authorized safety officer".

Principles, in contrast to rules, do have weights and they contribute to a decision by bringing different reasons into consideration rather than by dictating a particular decision. Principles can conflict with each other, and decision makers have to assign weights to different principles to resolve such conflicts.

Some principles:

- 1) "No man shall profit from his own wrong";
- 2) "Promises should be kept";
- 3) "Everyone has a right to freedom of speech".

Appendix 3- Descriptive Statistics for 323 items (including miss data analysis)

	Sample	N			Mean	Std. Deviation	Skewness	Kurtosis
		Valid	Missing	% Missing				
Q1	90	89	1	1.1	3.85	.97	-1.30	1.84
Q2	90	88	2	2.2	3.51	1.06	-.38	-.96
Q3	90	89	1	1.1	3.66	1.02	-.72	-.19
Q4	90	88	2	2.2	2.48	1.15	.35	-1.08
Q5	90	88	2	2.2	3.36	1.12	-.41	-.86
Q6	90	87	3	3.3	3.74	1.05	-1.36	1.37
Q7	90	86	4	4.4	3.37	1.09	-.23	-1.22
Q8	90	89	1	1.1	3.73	1.04	-.67	-.49
Q9	90	89	1	1.1	3.35	1.03	-.43	-.72
Q10	90	88	2	2.2	2.75	1.25	.31	-1.01
Q11	90	88	2	2.2	2.60	1.12	.54	-.47
Q12	90	87	3	3.3	2.86	1.13	.13	-1.29
Q13	90	89	1	1.1	2.90	1.13	.01	-1.23
Q14	90	87	3	3.3	3.78	1.03	-.66	-.38
Q15	90	89	1	1.1	3.67	.96	-.86	.29
Q16	90	88	2	2.2	3.16	1.21	.00	-1.38
Q17	90	89	1	1.1	3.75	.99	-1.20	.93
Q18	90	88	2	2.2	3.82	.85	-.78	.25
Q19	90	89	1	1.1	4.17	.84	-1.96	5.64
Q20	90	89	1	1.1	3.30	1.04	-.08	-1.10
Q21	90	89	1	1.1	3.92	.88	-.96	1.01
Q22	90	87	3	3.3	3.49	1.00	-.63	-.45
Q23	90	89	1	1.1	3.51	1.07	-.50	-.54
Q24	90	88	2	2.2	2.75	1.19	.16	-1.26
Q25	90	88	2	2.2	2.93	1.14	.14	-1.06
Q26	90	88	2	2.2	3.38	1.02	-.55	-.62
Q27	90	89	1	1.1	3.27	1.23	-.12	-1.23
Q28	90	89	1	1.1	2.73	1.24	.31	-1.04
Q29	90	89	1	1.1	3.45	.93	-.41	-.93
Q30	90	88	2	2.2	3.75	.70	-1.47	1.90
Q31	90	89	1	1.1	3.53	.97	-.47	-.88
Q32	90	88	2	2.2	2.49	1.06	.38	-.96
Q33	90	89	1	1.1	3.35	1.12	-.48	-.78
Q34	90	89	1	1.1	2.64	1.35	.29	-1.30
Q35	90	89	1	1.1	3.57	.93	-.44	-.30
Q36	90	89	1	1.1	2.90	1.06	.21	-1.17
Q37	90	85	5	5.6	3.04	1.05	-.01	-1.27
Q38	90	87	3	3.3	3.38	1.18	-.35	-.94
Q39	90	89	1	1.1	3.72	.97	-1.03	.54
Q40	90	89	1	1.1	3.49	1.08	-.32	-1.04
Q41	90	88	2	2.2	3.48	.98	-.57	-.72
Q42	90	89	1	1.1	3.22	1.18	-.15	-1.27
Q43	90	87	3	3.3	3.16	1.25	-.46	-1.03
Q44	90	89	1	1.1	3.53	1.01	-.68	-.44
Q45	90	89	1	1.1	2.73	1.08	.40	-.97
Q46	90	88	2	2.2	3.76	.90	-.97	1.11
Q47	90	87	3	3.3	3.82	.97	-1.02	.73

	Sample	N			Mean	Std. Deviation	Skewness	Kurtosis
		Valid	Missing	% Missing				
Q48	90	86	4	4.4	3.34	1.10	-.17	-1.10
Q49	90	89	1	1.1	3.24	1.31	-.51	-1.12
Q50	90	88	2	2.2	3.38	1.17	-.64	-.54
Q51	90	88	2	2.2	3.63	1.16	-.63	-.72
Q52	90	88	2	2.2	3.78	.86	-.88	.28
Q53	90	88	2	2.2	3.77	.83	-.43	-.19
Q54	90	88	2	2.2	3.31	1.14	-.63	-.74
Q55	90	89	1	1.1	3.85	1.06	-1.10	.79
Q56	90	89	1	1.1	2.69	1.19	.06	-1.24
Q57	90	87	3	3.3	3.74	.96	-.99	.60
Q58	90	89	1	1.1	3.04	1.21	-.24	-1.01
Q59	90	88	2	2.2	2.80	1.15	.04	-1.24
Q60	90	88	2	2.2	3.18	1.13	-.07	-1.27
Q61	90	88	2	2.2	2.30	1.08	.71	-.22
Q62	90	88	2	2.2	3.08	1.17	-.29	-1.07
Q63	90	88	2	2.2	2.58	1.25	.56	-.83
Q64	90	87	3	3.3	3.62	.99	-.49	-.51
Q65	90	88	2	2.2	3.26	1.25	-.19	-1.14
Q66	90	88	2	2.2	3.78	.95	-1.02	.79
Q67	90	88	2	2.2	3.17	1.18	-.12	-1.22
Q68	90	88	2	2.2	3.44	1.15	-.71	-.42
Q69	90	89	1	1.1	3.01	1.21	.21	-1.16
Q70	90	87	3	3.3	2.45	1.20	.44	-.89
Q71	90	88	2	2.2	3.00	1.16	-.04	-1.11
Q72	90	89	1	1.1	4.00	.87	-1.29	2.47
Q73	90	88	2	2.2	2.63	1.04	.56	-.75
Q74	90	87	3	3.3	3.17	1.19	-.30	-1.04
Q75	90	88	2	2.2	3.23	1.24	-.19	-1.27
Q76	90	88	2	2.2	3.60	1.13	-1.12	.46
Q77	90	88	2	2.2	3.68	.84	-1.38	1.80
Q78	90	88	2	2.2	3.97	.85	-1.43	2.93
Q79	90	89	1	1.1	2.82	1.23	.16	-1.21
Q80	90	89	1	1.1	3.13	1.24	.03	-1.36
Q81	90	89	1	1.1	3.01	1.22	.05	-1.20
Q82	90	89	1	1.1	3.66	.92	-.81	.55
Q83	90	88	2	2.2	3.40	1.01	-.40	-.43
Q84	90	87	3	3.3	3.75	.94	-1.09	.85
Q85	90	88	2	2.2	2.97	1.08	.13	-1.18
Q86	90	88	2	2.2	2.35	1.30	.84	-.45
Q87	90	89	1	1.1	3.52	1.05	-.69	-.14
Q88	90	89	1	1.1	3.24	1.10	-.22	-1.17
Q89	90	89	1	1.1	3.22	1.30	-.43	-1.12
Q90	90	89	1	1.1	3.58	1.09	-.52	-.71
Q91	90	88	2	2.2	3.40	1.07	-.98	-.06
Q92	90	89	1	1.1	3.51	1.01	-.55	-.51
Q93	90	89	1	1.1	3.38	1.17	-.66	-.57
Q94	90	89	1	1.1	3.30	1.15	-.07	-1.12
Q95	90	89	1	1.1	3.38	1.10	-.40	-.95
Q96	90	89	1	1.1	3.72	.93	-.97	1.13
Q97	90	87	3	3.3	3.06	1.11	-.17	-1.15
Q98	90	89	1	1.1	3.22	1.28	.03	-1.45

	Sample	N			Mean	Std. Deviation	Skewness	Kurtosis
		Valid	Missing	% Missing				
Q99	90	87	3	3.3	3.37	1.04	-.28	-.83
Q100	90	89	1	1.1	2.67	1.05	.87	-.24
Q101	90	88	2	2.2	3.44	1.04	-.54	-.52
Q102	90	86	4	4.4	3.49	.95	-.46	-.56
Q103	90	89	1	1.1	3.34	1.01	-.86	-.35
Q104	90	88	2	2.2	2.82	1.08	.43	-.83
Q105	90	89	1	1.1	3.34	1.07	-.48	-.49
Q106	90	88	2	2.2	3.39	1.09	-.11	-1.16
Q107	90	87	3	3.3	3.23	1.17	.07	-1.32
Q108	90	88	2	2.2	2.55	1.12	.53	-.91
Q109	90	89	1	1.1	3.70	1.04	-.61	-.30
Q110	90	89	1	1.1	2.71	1.08	.11	-1.07
Q111	90	89	1	1.1	3.01	1.11	-.17	-1.38
Q112	90	89	1	1.1	3.45	1.01	-.80	-.13
Q113	90	88	2	2.2	3.66	.97	-.89	.24
Q114	90	88	2	2.2	2.70	1.11	.25	-.87
Q115	90	88	2	2.2	3.15	1.07	-.13	-.94
Q116	90	87	3	3.3	3.24	1.20	-.40	-1.11
Q117	90	87	3	3.3	3.44	1.11	-.42	-.84
Q118	90	89	1	1.1	3.30	1.03	-.32	-.73
Q119	90	89	1	1.1	3.19	1.05	-.10	-1.18
Q120	90	88	2	2.2	3.50	1.06	-.35	-.98
Q121	90	89	1	1.1	3.24	1.14	-.01	-1.30
Q122	90	87	3	3.3	3.86	.95	-1.03	.58
Q123	90	89	1	1.1	3.64	.93	-.51	-.59
Q124	90	88	2	2.2	3.49	.86	-.58	-.08
Q125	90	88	2	2.2	2.92	1.04	-.09	-1.18
Q126	90	88	2	2.2	3.36	1.01	-.58	-.89
Q127	90	89	1	1.1	3.17	1.18	-.51	-.94
Q128	90	88	2	2.2	3.52	.98	-.77	-.28
Q129	90	89	1	1.1	3.15	1.16	-.20	-1.02
Q130	90	88	2	2.2	3.81	.77	-1.19	2.17
Q131	90	88	2	2.2	2.36	1.05	.61	-.44
Q132	90	89	1	1.1	3.37	.99	-.59	-.50
Q133	90	89	1	1.1	3.09	1.08	-.07	-1.15
Q134	90	87	3	3.3	3.17	1.03	-.42	-.73
Q135	90	86	4	4.4	3.27	1.09	-.11	-1.14
Q136	90	88	2	2.2	3.30	1.01	-.28	-.88
Q137	90	88	2	2.2	3.20	1.08	-.20	-1.38
Q138	90	89	1	1.1	3.69	.95	-1.12	.99
Q139	90	88	2	2.2	3.07	1.14	-.37	-.91
Q140	90	89	1	1.1	2.81	1.31	.12	-1.36
Q141	90	89	1	1.1	3.70	.87	-1.05	1.22
Q142	90	87	3	3.3	3.64	1.01	-.47	-.87
Q143	90	88	2	2.2	3.60	1.11	-.55	-.57
Q144	90	89	1	1.1	3.56	1.10	-.74	-.33
Q145	90	89	1	1.1	3.35	1.16	-.36	-.91
Q146	90	89	1	1.1	2.55	1.25	.27	-1.34
Q147	90	89	1	1.1	2.71	1.12	.31	-1.00
Q148	90	89	1	1.1	3.62	.94	-1.46	1.78
Q149	90	89	1	1.1	3.30	1.11	-.43	-.83

		N			Mean	Std. Deviation	Skewness	Kurtosis
	Sample	Valid	Missing	% Missing				
Q150	90	88	2	2.2	3.39	1.09	-.39	-.86
Q151	90	89	1	1.1	3.20	1.16	-.50	-.83
Q152	90	89	1	1.1	3.03	1.16	-.20	-1.09
Q153	90	88	2	2.2	2.65	1.27	.14	-1.24
Q154	90	89	1	1.1	3.22	1.12	-.21	-.88
Q155	90	87	3	3.3	3.86	.75	-.78	.88
Q156	90	88	2	2.2	3.32	1.13	-.27	-1.13
Q157	90	89	1	1.1	3.39	1.15	-.28	-1.09
Q158	90	88	2	2.2	2.93	1.28	-.04	-1.19
Q159	90	89	1	1.1	3.61	.89	-1.23	1.78
Q160	90	89	1	1.1	3.01	1.21	-.30	-1.21
Q161	90	88	2	2.2	3.76	.92	-1.30	1.70
Q162	90	89	1	1.1	2.78	1.07	.07	-1.15
Q163	90	88	2	2.2	3.52	1.11	-.80	-.13
Q164	90	89	1	1.1	2.85	1.26	-.03	-1.29
Q165	90	89	1	1.1	3.25	1.23	-.19	-1.18
Q166	90	89	1	1.1	2.80	1.18	.23	-1.13
Q167	90	88	2	2.2	2.78	1.25	.06	-1.36
Q168	90	88	2	2.2	2.86	1.15	.04	-1.07
Q169	90	88	2	2.2	2.73	1.18	.34	-1.03
Q170	90	89	1	1.1	3.26	1.11	-.28	-1.04
Q171	90	89	1	1.1	3.46	1.01	-.77	-.09
Q172	90	88	2	2.2	3.66	1.00	-.59	-.46
Q173	90	89	1	1.1	3.62	1.06	-.64	-.50
Q174	90	87	3	3.3	3.14	1.22	-.31	-1.17
Q175	90	88	2	2.2	3.67	1.00	-.76	-.02
Q176	90	89	1	1.1	3.45	1.06	-.64	-.39
Q177	90	88	2	2.2	3.74	.93	-1.13	.97
Q178	90	88	2	2.2	3.56	.96	-.53	-.79
Q179	90	87	3	3.3	3.56	.89	-.35	-.59
Q180	90	87	3	3.3	2.82	1.09	-.01	-1.02
Q181	90	87	3	3.3	3.61	.93	-.81	-.08
Q182	90	88	2	2.2	3.07	1.01	-.34	-1.02
Q183	90	88	2	2.2	3.63	1.08	-.67	-.31
Q184	90	88	2	2.2	3.67	1.10	-1.00	.24
Q185	90	88	2	2.2	2.78	1.14	.06	-1.21
Q186	90	88	2	2.2	3.41	1.10	-.40	-.67
Q187	90	88	2	2.2	3.10	1.11	-.41	-.98
Q188	90	87	3	3.3	2.89	.98	-.07	-1.46
Q189	90	87	3	3.3	3.91	1.05	-1.04	.61
Q190	90	86	4	4.4	2.74	1.18	.16	-1.05
Q191	90	86	4	4.4	3.01	1.13	.03	-.89
Q192	90	87	3	3.3	2.98	1.11	-.01	-1.16
Q193	90	87	3	3.3	3.38	1.10	-.43	-.96
Q194	90	87	3	3.3	3.59	.90	-.86	.53
Q195	90	87	3	3.3	2.57	1.20	.42	-.93
Q196	90	87	3	3.3	3.18	1.12	-.17	-1.12
Q197	90	87	3	3.3	3.66	1.11	-.64	-.64
Q198	90	86	4	4.4	2.19	1.08	1.00	.28
Q199	90	87	3	3.3	3.41	1.16	-.59	-.49
Q200	90	87	3	3.3	2.31	1.09	.67	-.51

		N			Mean	Std. Deviation	Skewness	Kurtosis
	Sample	Valid	Missing	% Missing				
Q201	90	86	4	4.4	3.53	1.00	-.46	-.68
Q202	90	87	3	3.3	2.78	1.11	.03	-1.27
Q203	90	87	3	3.3	2.53	1.18	.47	-.77
Q204	90	86	4	4.4	3.24	1.11	-.34	-.67
Q205	90	86	4	4.4	3.31	1.11	-.28	-.85
Q206	90	87	3	3.3	3.55	1.06	-.79	-.14
Q207	90	88	2	2.2	2.85	1.19	-.09	-1.23
Q208	90	88	2	2.2	2.85	1.11	-.01	-1.17
Q209	90	88	2	2.2	3.47	1.05	-.49	-.76
Q210	90	88	2	2.2	3.38	1.02	-.68	-.41
Q211	90	87	3	3.3	3.49	1.08	-.64	-.60
Q212	90	87	3	3.3	3.83	.89	-1.06	.97
Q213	90	88	2	2.2	3.32	1.14	-.37	-.72
Q214	90	87	3	3.3	3.66	1.03	-1.01	.47
Q215	90	87	3	3.3	3.76	1.05	-.75	-.13
Q216	90	86	4	4.4	3.52	.98	-.61	-.26
Q217	90	87	3	3.3	3.55	1.03	-.56	-.49
Q218	90	87	3	3.3	3.30	1.06	-.57	-.60
Q219	90	87	3	3.3	3.48	1.04	-.58	-.45
Q220	90	88	2	2.2	3.20	1.19	-.24	-1.00
Q221	90	88	2	2.2	3.03	1.13	-.36	-1.13
Q222	90	87	3	3.3	3.51	1.18	-.60	-.56
Q223	90	88	2	2.2	3.45	1.05	-.21	-1.22
Q224	90	88	2	2.2	3.06	1.19	-.28	-.97
Q225	90	86	4	4.4	3.50	1.08	-.60	-.60
Q226	90	87	3	3.3	3.52	1.03	-.99	.25
Q227	90	88	2	2.2	3.59	1.06	-.96	.30
Q228	90	88	2	2.2	3.64	1.04	-.65	-.11
Q229	90	87	3	3.3	4.02	.73	-.77	1.09
Q230	90	88	2	2.2	2.33	1.21	.61	-.74
Q231	90	88	2	2.2	3.24	1.09	-.28	-.98
Q232	90	86	4	4.4	3.38	1.08	-.18	-1.15
Q233	90	87	3	3.3	3.21	1.06	-.37	-.99
Q234	90	87	3	3.3	3.17	1.12	-.20	-.85
Q235	90	86	4	4.4	3.80	.81	-.99	1.47
Q236	90	88	2	2.2	2.99	1.17	-.20	-.99
Q237	90	87	3	3.3	3.53	.97	-.78	.13
Q238	90	87	3	3.3	3.48	1.04	-.83	.04
Q239	90	86	4	4.4	3.07	1.06	-.14	-.94
Q240	90	87	3	3.3	3.48	1.10	-.47	-.72
Q241	90	87	3	3.3	3.15	1.05	-.37	-.93
Q242	90	85	5	5.6	2.95	1.10	-.18	-1.12
Q243	90	86	4	4.4	3.06	1.02	-.25	-.65
Q244	90	87	3	3.3	3.03	1.18	-.24	-1.05
Q245	90	87	3	3.3	2.62	1.01	.48	-.81
Q246	90	87	3	3.3	3.13	1.22	-.13	-1.10
Q247	90	87	3	3.3	3.47	.94	-.65	-.16
Q248	90	85	5	5.6	3.42	.96	-.53	-.74
Q249	90	86	4	4.4	3.08	1.08	.24	-1.05
Q250	90	87	3	3.3	3.31	1.07	-.30	-.91
Q251	90	86	4	4.4	3.23	1.10	-.42	-.77

		N			Mean	Std. Deviation	Skewness	Kurtosis
	Sample	Valid	Missing	% Missing				
Q252	90	85	5	5.6	3.60	1.09	-.77	-.17
Q253	90	87	3	3.3	3.59	.90	-.66	-.01
Q254	90	86	4	4.4	3.55	1.09	-.51	-.78
Q255	90	84	6	6.7	2.93	1.21	-.11	-1.12
Q256	90	87	3	3.3	2.80	1.07	-.07	-1.01
Q257	90	86	4	4.4	3.38	1.00	-.99	-.02
Q258	90	87	3	3.3	2.98	1.12	-.26	-1.14
Q259	90	86	4	4.4	3.50	1.00	-.43	-.75
Q260	90	87	3	3.3	3.69	.99	-.80	.11
Q261	90	87	3	3.3	2.97	1.03	-.32	-1.07
Q262	90	87	3	3.3	3.09	1.06	-.13	-.87
Q263	90	87	3	3.3	3.72	1.06	-.90	.10
Q264	90	86	4	4.4	2.83	.90	.05	-.75
Q265	90	87	3	3.3	3.30	1.05	-.51	-.73
Q266	90	87	3	3.3	3.08	1.12	-.16	-1.11
Q267	90	87	3	3.3	3.39	1.07	-.61	-.63
Q268	90	87	3	3.3	3.03	1.18	-.07	-.92
Q269	90	87	3	3.3	3.40	.96	-.65	-.16
Q270	90	87	3	3.3	2.83	1.09	-.09	-1.14
Q271	90	87	3	3.3	2.99	1.18	-.07	-1.24
Q272	90	86	4	4.4	3.16	.94	-.42	-.80
Q273	90	87	3	3.3	2.74	1.14	.15	-1.18
Q274	90	86	4	4.4	3.42	1.12	-.38	-.73
Q275	90	87	3	3.3	3.37	1.07	-.55	-.43
Q276	90	86	4	4.4	2.90	1.20	.21	-1.15
Q277	90	87	3	3.3	2.72	1.26	.15	-1.23
Q278	90	87	3	3.3	3.09	1.15	.01	-1.12
Q279	90	86	4	4.4	2.50	1.18	.31	-1.01
Q280	90	87	3	3.3	3.38	1.00	-.54	-.49
Q281	90	85	5	5.6	3.41	1.07	-.36	-.69
Q282	90	86	4	4.4	3.49	.94	-.70	-.13
Q283	90	84	6	6.7	3.58	.95	-.99	.24
Q284	90	86	4	4.4	3.28	1.07	-.35	-.78
Q285	90	87	3	3.3	2.95	1.15	-.10	-1.13
Q286	90	85	5	5.6	3.06	1.07	-.12	-1.01
Q287	90	87	3	3.3	2.70	1.14	.23	-1.02
Q288	90	87	3	3.3	2.91	1.19	-.16	-1.08
Q289	90	87	3	3.3	3.74	.98	-.72	-.15
Q290	90	85	5	5.6	3.51	1.04	-.31	-.89
Q291	90	86	4	4.4	2.85	1.02	.04	-1.35
Q292	90	86	4	4.4	3.50	1.09	-.44	-.87
Q293	90	87	3	3.3	3.62	.96	-.72	-.22
Q294	90	87	3	3.3	3.06	1.26	-.22	-1.04
Q295	90	87	3	3.3	3.25	1.06	-.59	-.57
Q296	90	87	3	3.3	2.93	1.18	-.08	-1.22
Q297	90	85	5	5.6	3.52	.78	-1.21	1.41
Q298	90	85	5	5.6	3.65	1.02	-.75	-.15
Q299	90	85	5	5.6	3.44	1.11	-.51	-.65
Q300	90	83	7	7.8	2.92	1.13	.06	-1.11
Q301	90	84	6	6.7	3.33	1.03	-.58	-.54
Q302	90	84	6	6.7	3.50	1.05	-.68	-.14

	Sample	N			Mean	Std. Deviation	Skewness	Kurtosis
		Valid	Missing	% Missing				
Q303	90	85	5	5.6	3.45	1.03	-.59	-.44
Q304	90	84	6	6.7	3.74	.85	-.90	.27
Q305	90	85	5	5.6	3.48	1.09	-.61	-.66
Q306	90	83	7	7.8	3.54	.98	-.96	.22
Q307	90	85	5	5.6	3.45	1.19	-.72	-.44
Q308	90	84	6	6.7	3.50	1.10	-.83	-.06
Q309	90	85	5	5.6	3.55	1.05	-.77	-.03
Q310	90	84	6	6.7	3.02	1.18	-.41	-1.20
Q311	90	85	5	5.6	3.67	1.02	-1.11	1.02
Q312	90	83	7	7.8	3.19	1.11	-.01	-.84
Q313	90	84	6	6.7	3.60	1.00	-.68	.17
Q314	90	85	5	5.6	3.75	.97	-.98	.54
Q315	90	84	6	6.7	3.32	1.08	-.32	-.90
Q316	90	85	5	5.6	3.02	1.11	-.15	-1.03
Q317	90	84	6	6.7	3.48	1.09	-.82	-.05
Q318	90	82	8	8.9	2.68	1.21	.12	-1.13
Q319	90	85	5	5.6	3.40	1.10	-.47	-.71
Q320	90	85	5	5.6	3.44	1.12	-.46	-.69
Q321	90	84	6	6.7	3.48	1.07	-.45	-.80
Q322	90	85	5	5.6	3.56	1.02	-.84	.27
Q323	90	85	5	5.6	3.74	.93	-.83	.28

Appendix 4-Covering letter for the sample recruitment (preliminary items pool)

Dear Respondent,

My name is Ying Feng and I am a PhD student at the University of Glasgow, Scotland (U.K.), studying people's dispositions in relation to Rules and Principles in public life domain. I would be very grateful if you would assist me in my research by taking in place in an experiment which you will be asked to complete a questionnaire online, which will take you about 1hr- 1hr 20 minutes to complete.

I appreciate, of course, that this is a lot of time to ask of you, but I hope that the results of my work will be useful in helping to building a theory of how individuals respond Rules and Principles which will be of considerable practical value. This work is vital to my PhD plan and it is therefore very important for me to have your responses to this questionnaire.

Moreover, you will be rewarded. We will pay you around £5 per person plus we will provide some refreshments (Drinks and Cookies) to you during your participation. The location will be in a computer lab in Accounting and Finance department in the Main Building, and you will be instructed to log into a lab computer and then access the questionnaire online, you do not have to prepare anything in advance.

Or if you cannot make it to the lab, but you are interested to take place, please also contact me and I will e-mail you the link to the questionnaire and once you complete it and by informing me, you will receive your rewards.

I believe you to find the questionnaire interesting and perhaps thought provoking. I believe that it contains nothing of disturbing nature and I see no risks associated with its completion. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. I guarantee that responses will be used anonymously and that data will not be held connecting response to named individuals. Basic data collected will be held within my immediate research group which consists just of myself and my two PhD supervisors at the university of Glasgow: Prof. Paddy O'Donnell and Dr John McKernan. I hope ultimately to publish my work in my PhD thesis which, if accepted, will be a publicly available document.

I believe you will take the time to complete this questionnaire and submit it online. Your participation is of course voluntary.

Regardless of whether you choose to participate, please let me know if you would like a summary of my findings.

If you are happy to get involved and participate in it, please e-mail me at y.feng.1@research.gla.ac.uk
Thank you very much for your time and support.

Sincerely,
Miss Ying Feng (Olivia)

Appendix 5-Cronbach's alphas for 28 dimensional scales

Table 1

Certainty _rules	n	mean	Variance	SD	No. of items	
	82	16.95	16.2	4.02	6	
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Item Means	2.83	2.42	3.42	1.0	1.42	.15
Item Variances	1.14	.93	1.26	.32	1.34	.018
Inter-Item Correlations	.27	.07	.52	.44	7.03	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q156REV	14.33	12.54	.30	.12	.70	
q92rev	14.49	12.63	.36	.18	.68	
q173rev	14.53	11.89	.41	.27	.66	
q242	13.98	11.24	.49	.34	.66	
q97	13.87	11.68	.40	.28	.62	
q176	13.51	10.99	.56	.42	.60	
Cronbach's Alpha .70						

Table 2

Certainty _principles	n	mean	Variance	SD	No. of items	
	83	19.88	14.5	3.8	6	
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Item Means	3.31	2.92	3.66	.75	1.26	.10
Item Variances	1.05	.89	1.29	.40	1.45	.02
Inter-Item Correlations	.26	.02	.47	.45	26.51	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q64	16.24	11.01	.38	.36	.65	
q293	16.22	10.59	.50	.33	.61	
q280	16.48	11.25	.34	.16	.66	
q36REV	16.82	10.08	.50	.29	.61	
q182REV	16.96	11.38	.31	.25	.67	
q185REV	16.67	9.95	.45	.36	.62	
Cronbach's Alpha .68						

Table 3

Complexity_ Rules	n	mean	Variance	SD	No. of items	
	84	16.27	18.78	4.3	6	
	Mean	Minimum	Maximum	Range	Maximum/ Minimum	Variance
Item Means	2.71	2.41	3.08	.67	1.28	.07
Item Variances	1.26	1.05	1.58	.53	1.51	.05
Inter-Item Correlations	.30	.10	.57	.47	5.66	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q227rev	13.74	14.44	.39	.20	.70	
q322rev	13.86	14.41	.43	.35	.69	
q301rev	13.83	14.42	.42	.30	.69	
q266	13.61	13.99	.43	.30	.67	
q79	13.19	13.02	.49	.38	.67	
q164	13.43	12.42	.54	.41	.65	
Cronbach's Alpha .72						

Table 4

Complexity_ Principles	n	mean	Variance	SD	No. of items	
	84	19.3	16.8	4.1	6	
	Mean	Minimum	Maximum	Range	Maximum/ Minimum	Variance
Item Means	3.22	2.79	3.56	.75	1.27	.09
Item Variances	1.07	.88	1.23	.35	1.40	.01
Inter-Item Correlations	.33	.17	.46	.30	2.77	.01
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q85	16.37	12.53	.41	.21	.73	
q303	15.88	12.30	.48	.29	.71	
q237	15.77	12.35	.54	.34	.69	
q245rev	15.94	12.51	.46	.30	.71	
q147rev	16.06	11.77	.50	.27	.70	
q137rev	16.52	12.13	.48	.29	.704	
Cronbach's Alpha .74						

Table 5

Concrete_rules	n	mean	Variance	SD	No. of items	
	83	16.29	17.78	4.22	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	2.72	2.51	3.08	.58	1.23	.04
Item Variances	1.26	1.08	1.61	.53	1.50	.04
Inter-Item Correlations	.27	.02	.46	.44	19.83	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q254REV	13.78	13.42	.41	.24	.65	
q98REV	13.51	12.02	.51	.31	.62	
q321REV	13.76	13.90	.33	.20	.68	
q56	13.63	11.41	.61	.47	.58	
q110	13.57	13.76	.37	.30	.67	
q262	13.20	14.36	.30	.20	.69	
Cronbach's Alpha .69						

Table 6

Abstract_principles	n	mean	Variance	SD	No.of items	
	80	20.4	16.3	4.04	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.41	3.11	3.71	.60	1.20	.06
Item Variances	1.12	.92	1.32	.41	1.45	.03
Inter-Item Correlations	.28	.09	.55	.47	6.47	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q109	16.69	12.50	.38	.16	.69	
q201	16.84	12.37	.41	.19	.68	
q175	16.68	13.28	.30	.16	.71	
q287REV	17.12	10.24	.64	.47	.60	
q12REV	17.31	11.50	.46	.32	.66	
q256REV	17.19	11.96	.44	.27	.70	
Cronbach's Alpha .71						

Table 7

Creativity_Rules	n	mean	Variance	SD	No.of items	
	82	16.5	18.6	4.3	6	

	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	2.75	2.35	3.09	.73	1.31	.10
Item Variances	1.24	.99	1.44	.45	1.45	.02
Inter-Item Correlations	.30	.15	.46	.31	3.00	.10
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q299rev	13.94	13.39	.50	.31	.67	
q197rev	14.13	13.11	.53	.33	.66	
q41rev	13.99	14.11	.47	.29	.68	
q255	13.55	13.02	.48	.24	.67	
q221	13.40	13.95	.42	.21	.69	
q268	13.43	14.27	.34	.14	.72	
Cronbach's Alpha .72						

Table 8

Creativity_ Principles	n	mean	Variance	SD	No.of items	
	82	21.2	20	4.5	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.52	3.32	3.79	.48	1.14	.04
Item Variances	1.19	.74	1.73	.99	2.34	.13
Inter-Item Correlations	.36	.18	.54	.36	3.03	.01
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q203rev	17.72	13.86	.52	.29	.74	
q63rev	17.83	12.69	.60	.41	.72	
q73rev	17.79	14.56	.51	.33	.74	
q66	17.35	14.95	.55	.38	.73	
q211	17.63	14.88	.50	.35	.74	
q304	17.40	16.22	.44	.25	.76	
Cronbach's Alpha .77						

Table 9

Ethics_Rules	n	mean	Variance	SD	No.of items	
	85	10.74	10.15	3.19	4	
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Item Means	2.69	2.61	2.85	.24	1.09	.01
Item Variances	1.33	1.14	1.61	.47	.05	.05
Inter-Item	.30	.13	.44	.31	.01	.01

Correlations	Scale Mean if Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
Q232rev	8.11	6.76	.40	.21	.57	
Q106rev	8.13	6.71	.40	.24	.57	
q207	7.89	5.81	.52	.29	.48	
Q153	8.09	6.35	.34	.20	.62	
Cronbach's Alpha .63						

Table 10

Ethics_principles	n	mean	Variance	SD	No.of items	
Statics for scale	85	13.94	9.68	3.11	4	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.49	3.27	3.64	.37	1.11	.02
Item Variances	1.23	1.06	1.47	.41	1.39	.04
Inter-Item Correlations	.32	.08	.62	.53	7.47	.04
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q230rev	10.31	5.17	.55	.43	.49	
q190rev	10.67	6.15	.40	.39	.61	
q309	10.39	6.55	.38	.31	.62	
q238	10.46	6.42	.42	.31	.59	
Cronbach's Alpha .65						

Table 11

Empowerment_Rules	n	mean	Variance	SD	No.of items	
Statistics for Scale	84	16.8	20.1	4.5	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	2.81	2.42	3.39	.97	1.40	.13
Item Variances	1.36	1.18	1.50	.33	1.28	.01
Inter-Item Correlations	.29	.11	.45	.34	4.73	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q90rev	14.41	14.20	.58	.389	.64	
q107rev	14.14	14.65	.42	.237	.68	
q42rev	14.05	14.50	.46	.294	.67	
q50	13.45	14.30	.51	.310	.65	
q244	13.80	14.95	.41	.285	.68	

q4	14.33	15.84	.31	.199	.71	
Cronbach's Alpha .73						

Table 12

Empowerment_ Principles	n	mean	Variance	SD	No.of items	
Statistics for scale	84	20.4	17.7	4.2	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.40	2.97	3.69	.73	1.25	.10
Item Variances	1.17	1.03	1.38	.34	1.33	.02
Inter-Item Correlations	.30	.130	.52	.39	3.7	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q13rev	17.34	12.25	.53	.36	.66	
q111rev	17.46	13.01	.45	.32	.70	
q108rev	17.06	12.44	.47	.29	.68	
q311	16.75	13.45	.44	.37	.70	
q298	16.78	13.34	.45	.33	.69	
q263	16.73	13.44	.41	.25	.71	
Cronbach's Alpha .73						

Table 13

Effectiveness_ Rules	n	mean	Variance	SD	No.of items	
Statistics for scale	79	17.1	15.05	3.88	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	2.85	2.52	3.61	1.09	1.43	.16
Item Variances	1.14	.81	1.28	.48	1.59	.03
Inter-Item Correlations	.25	.10	.44	.35	4.93	.01
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q312rev	14.13	11.78	.31	.17	.65	
q302rev	14.42	11.25	.43	.27	.60	
q292rev	14.42	11.64	.40	.21	.63	
q273	14.16	12.18	.30	.14	.66	
q253	13.29	11.38	.47	.31	.60	
q180	14.04	10.73	.46	.27	.59	
Cronbach's Alpha .67						

Table 14

Effectiveness_ Principles	n	mean	Variance	SD	No.of items	
Statistics for scale	84	18.4	15.3	3.9	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.09	2.37	3.65	1.23	1.54	.24
Item Variances	1.22	1.05	1.41	.38	1.37	.01
Inter-Item Correlations	.21	.06	.42	.41	6.68	.01
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
Q213	15.14	11.84	.30	.18	.60	
Q172	14.79	11.96	.32	.14	.57	
Q87	14.94	11.66	.34	.23	.57	
q186rev	15.84	10.75	.45	.29	.53	
q258REV	15.43	11.12	.36	.19	.56	
q51REV	16.07	11.14	.33	.22	.58	
Cronbach's Alpha .61						

Table 15

Efficiency_ Rules	n	mean	Variance	SD	No.of items	
Statistics for scale	81	10.58	8.45	2.91	4	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	2.65	2.41	3.22	.82	1.34	.15
Item Variances	1.06	.89	1.15	.26	1.29	.01
Inter-Item Correlations	.33	.27	.39	.12	1.46	.002
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q134	7.36	5.36	.43	.19	.62	
q32	8.1	5.09	.47	.22	.59	
q283rev	8.17	5.67	.42	.19	.62	
q40rev	8.11	5	.48	.24	.58	
Cronbach's Alpha .67						

Table 16

Efficiency_ Principles	n	mean	Variance	SD	No.of items	
Statistics for scale	84	12.36	7.2	2.68	4	

	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.09	2.58	3.42	.83	1.32	.16
Item Variances	1.1	.92	1.48	.56	1.61	.07
Inter-Item Correlations	.21	.06	.32	.26	5.44	.01
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q81REV	9.39	4.19	.31	.11	.45	
q126REV	9.77	4.9	.31	.15	.44	
q83	8.96	4.59	.35	.16	.41	
q248	8.94	5.12	.30	.11	.48	
Cronbach's Alpha .52						

Table 17

Fairness_ Rules	n	mean	Variance	SD	No.of items	
Statistics for scale	84	15.5	18.1	4.3	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	2.59	2.18	3.06	.87	1.40	.10
Item Variances	1.26	.83	1.57	.75	1.91	.09
Inter-Item Correlations	.29	.15	.44	.29	2.98	.01
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q289REV	13.34	13.37	.50	.32	.64	
q240REV	13.06	12.85	.50	.26	.64	
q123REV	13.21	14.72	.37	.21	.68	
q28	12.80	12.46	.47	.23	.65	
q167	12.76	13.64	.31	.10	.68	
q139	12.47	12.97	.46	.24	.65	
Cronbach's Alpha .68						

Table 18

Fairness_ Principles	n	mean	Variance	SD	No.of items	
Statistics for scale	77	19.7	18.3	4.3	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.29	2.72	3.81	1.09	1.36	.12
Item Variances	1.29	.68	1.59	.91	2.11	.08

Inter-Item Correlations	.27	.10	.55	.46	4.31	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q5	16.29	14.16	.34	.16	.71	
q53	15.83	15.42	.40	.24	.70	
q308	16.18	14.30	.33	.15	.72	
q169REV	16.45	11.88	.63	.51	.62	
q74REV	16.52	12.86	.53	.37	.66	
q300REV	16.84	12.66	.50	.36	.66	
Cronbach's Alpha .72						

Table 19

Legitimacy_Rules	n	mean	Variance	SD	No.of items	
Statistics for scale	88	17.4	16.4	4.1	6	
	Mean	Minimum	Maximum	Range	Maximum/Minimum	Variance
Item Means	2.89	2.45	3.60	1.10	1.45	.21
Item Variances	1.23	.79	1.77	.97	2.22	.11
Inter-Item Correlations	.25	.04	.55	.51	13.46	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q274REV	14.93	12.44	.32	.19	.64	
q259REV	14.98	12.96	.31	.24	.64	
q163REV	15.05	12.59	.33	.15	.63	
q159	14.34	11.44	.43	.36	.60	
q49	13.95	12.15	.53	.38	.58	
q127	14.26	10.59	.45	.21	.59	
Cronbach's Alpha .66						

Table 20

Legitimacy_Principles	n	mean	Variance	SD	No.of items	
Statistics for scale	82	19.9	17.7	4.2	6	
	Mean	Minimum	Maximum	Range	Maximum/Minimum	Variance
Item Means	3.317	3.061	3.585	.524	1.171	.035
Item Variances	1.227	1.042	1.369	.326	1.313	.016
Inter-Item Correlations	.284	.164	.434	.270	2.648	.007
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	

		Deleted				
q166REV	16.71	13.22	.37	.21	.68	
q131REV	16.32	12.66	.47	.27	.65	
q168REV	16.84	13.05	.40	.17	.67	
q225	16.45	13.29	.42	.22	.67	
q284	16.63	13.27	.42	.20	.67	
q26	16.56	12.74	.54	.31	.63	
Cronbach's Alpha .70						

Table 21

Manipulation_ Rules	n	mean	Variance	SD	No.of items	
Statistical for scale	80	16.6	20.2	4.5	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	2.77	2.48	3.29	.81	1.33	.14
Item Variances	1.24	1.04	1.52	.49	1.47	.04
Inter-Item Correlations	.35	.13	.57	.43	4.24	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q320rev	14.05	15.64	.37	.28	.76	
q290rev	14.11	14.81	.56	.41	.71	
q223rev	14.01	14.14	.63	.45	.69	
q70	14.13	14.75	.45	.28	.74	
q241	13.39	14.80	.54	.36	.72	
q65	13.31	14.29	.47	.27	.73	
Cronbach's Alpha .76						

Table 22

Manipulation_ Principles	n	mean	Variance	SD	No.of items	
Statistical for scale	87	18.17	15.75	3.97	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.03	2.39	3.38	.99	1.41	.18
Item Variances	1.19	.98	1.66	.68	1.69	.06
Inter-Item Correlations	.25	.04	.52	.48	12.24	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q33REV	15.56	12.02	.34	.23	.64	
q10REV	14.99	11.48	.30	.19	.66	

q217REV	15.78	12.13	.36	.20	.63	
q132	14.79	11.59	.37	.32	.59	
q118	14.87	11.39	.47	.36	.59	
q250	14.86	11.52	.43	.37	.60	
Cronbach's Alpha .66						

Table 23

Security_Rules	n	mean	Variance	SD	No.of items	
	87	17.8	21.2	4.6	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	2.96	2.48	3.39	.91	1.37	.10
Item Variances	1.32	1.15	1.54	.39	1.34	.03
Inter-Item Correlations	.34	.14	.60	.46	4.26	.01
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q91	14.37	14.84	.63	.48	.68	
q231	14.54	15.79	.49	.30	.72	
q160	14.77	14.51	.57	.42	.70	
q80REV	14.90	14.63	.53	.29	.71	
q120REV	15.28	16.06	.46	.25	.73	
q220REV	14.94	16.92	.30	.12	.77	
Cronbach's Alpha .75						

Table 24

Security_Principles	n	mean	Variance	SD	No.of items	
	80	19.76	13.83	3.72	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.29	2.68	3.83	1.15	1.43	.20
Item Variances	1.09	.75	1.5	.75	2.0	.07
Inter-Item Correlations	.23	.05	.55	.50	11.70	.02
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q99rev	17.09	10.54	.33	.14	.60	
q286rev	16.77	10.35	.34	.31	.60	
q276rev	16.68	8.96	.46	.36	.55	
q18	15.94	11.12	.34	.15	.60	
q148	16.11	10.46	.43	.30	.57	
q144	16.22	10.43	.31	.20	.61	
Cronbach's Alpha .63						

Table 25

Uniformity_ Rules	n	mean	Variance	SD	No.of items	
	83	18.8	24.7	4.9	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.13	2.74	3.41	.67	1.25	.06
Item Variances	1.50	1.27	1.79	.52	1.41	.04
Inter-Item Correlations	.35	.20	.57	.37	2.83	.01
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q34REV	15.35	17.47	.49	.29	.74	
q11REV	15.44	18.01	.53	.37	.72	
q27REV	16.02	17.12	.59	.44	.71	
q294	15.71	18.04	.47	.30	.74	
q234	15.58	19.56	.39	.19	.76	
q152	15.73	17.60	.58	.40	.71	
Cronbach's Alpha .76						

Table 26

Flexibility_ Principles	n	mean	Variance	SD	No.of items	
	82	19.8	12.7	3.6	6	
	Mean	Minimum	Maximum	Range	Maximum /Minimum	Variance
Item Means	3.29	2.77	3.82	1.05	1.38	.24
Item Variances	1.09	.63	1.48	.85	2.35	.15
Inter-Item Correlations	.19	.07	.36	.29	5.22	.01
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
q194	16.18	10.03	.33	.21	.53	
q235	15.94	10.4	.32	.15	.54	
q161	15.99	9.92	.33	.16	.53	
q67rev	16.99	8.74	.34	.18	.52	
q37rev	16.93	9.03	.33	.17	.53	
q71rev	16.79	9.11	.29	.10	.55	
Cronbach's Alpha .60						

Appendix 6-Eight scenarios

1. As a finance director for an important branch of a large UK company, part of the duties one has is to send quarterly branch accounts to senior management of the parent company. Reporting guidelines have been provided by the head office to help ensure that the accounts show a true and fair view of the branch's performance and position.

Required approach for Paul: (a) discussion of the qualities the senior management expect to find balanced in the accounts, including for example – relevance and reliability; (b) An explanation of the purposes for which the quarterly reports are used and discussion of the reporting headings normally considered relevant to those purposes; (c) Discussion of permissible accounting methods and approaches to important accounting estimations, and discussion of indicators of which methods and approaches might be appropriate in particular cases.

Required approach for Martin: (a) A standard reporting format in terms of which the accounts are to be produced; (b) A detailed “chart of accounts” with associated rules for the classification of all kinds of expenses, income, assets and liabilities; (c) Comprehensive instructions indicating exactly which accounting method should be employed covering a full range of issues and situations; (d) Precise instructions covering how any estimates which are necessary for the purposes of the accounts ought to be made and reported.

Please reflect on your own behaviour and indicate what kind of situation you would be most comfortable in:

1. Just like Paul's
 2. More like Paul's than Martin's
 3. More like Martin's than Paul's
 4. Just like Martin's
2. When Tom makes an effort to improve his physical fitness he likes to set himself quite a specific diet and exercise plan. For example, he will decide in advance the particular days of the week and times when he must attend the gym and the exercise routines he ought to perform on each visit. Tom will enjoy keeping to his regular exercise plan even on those days when he isn't really in the mood for exercise.

When Jim makes an effort to improve his physical fitness he likes to be flexible. He will modify his diet, by for example cutting down on fatty foods, and he will visit the gym more often and generally take advantage of opportunities to increase the amount of exercise he takes. He will not try to impose a particular exercise regime on himself, knowing from experience that such an approach won't work for him.

Please reflect on your own behaviour and indicate what kind of approach you would

take:

- 1 Just like Tom's
 - 2 More like Tom's than Jim's
 - 3 More like Jim's than Tom's
 - 4 Just like Jim's
3. Lucy works as a research analyst for a private equity investment fund. Her main task is to identify target companies that the fund might profitably invest in. Her superiors have provided her with a checklist of issues to consider in her analysis. The checklist has been carefully developed through experience, and it highlights a wide range of economic performance, risk and governance factors which Lucy is expected to use as an “aide memoir” to guide her data collection and to help ensure that important issues are not overlooked. Lucy is required to rate the attractiveness of alternative investment possibilities and provide written justifications of her ratings based on her analysis of data collected and where appropriate her intuition.

Alison works as a research analyst for a private equity investment fund. Her main task is to identify target companies that the fund might profitably invest in. Her superiors have provided her with a checklist to structure her analysis. The checklist includes a carefully thought through set of economic performance, risk and governance factors, and Alison’s task is to gather all of the data the checklist indicates is needed. Once she has gathered all of the data, she enters it into a model which provides a score which is used to determine the attractiveness of each potential investment.

Please reflect on your own behaviour and indicate what kind of situation you would work best in:

1. Just like Lucy's
 2. More like Lucy's than Alison's
 3. More like Alison's than Lucy's
 4. Just like Alison's
4. Jane is aware of the need to keep a balance between her social and work life, but she prefers take a flexible approach. She likes to “go with the flow” and takes advantage of social opportunities when they arise. She tends on average to go out socializing no more than twice a week, and when there is a clash she will generally put work commitments first.

Clare likes to keep her social life well regulated so that it doesn’t interfere with her work which is important to her. She confines herself going out no more than twice a week. Clare would be unhappy to break this rule of hers and she tries to plan ahead so that she is never pressed to do so.

Please reflect on your own behaviour and indicate what kind of approach you would take:

1. Just like Jane's
 2. More like Jane's than Clare's
 3. More like Clare's than Jane's
 4. Just like Clare's
5. John and three friends share an apartment which he likes to be kept clean. He prefers having a specific cleaning rota and wants to be able to know, in advance, who is responsible for what specific cleaning tasks on which days. He gets quite irritated if his flat-mates don't respect the rota.

Mark and three friends share an apartment which he likes to be kept clean. He does not see any need for a rota specifying who must do which tasks and when. He prefers a less formal system, but one in which keeping the flat clean is taken seriously and everyone does their fair share of the cleaning.

Please reflect on your own behaviour and indicate what kind of approach you would take:

1. Just like John's
 2. More like John's than Mark's
 3. More like Mark's than John's
 4. Just like Mark's
6. As a finance advisor for a company that makes loans to university students. One's job is to assess and make decisions on loan applications. The company has established criteria for deciding whether or not a loan should be made to a particular applicant.

Jennifer's approach: She is required to make her decisions by "weighing up" an application in terms of the specified criteria. Some applications are strong on some criteria and relatively weak on others: Jennifer has been given no formula for weighing criteria and is expected to use her judgment in coming to decisions. In difficult cases she takes other factors into account – beyond those identified by the company as standard considerations. She likes and takes pride in the flexibility and discretion allowed to her in the decision-making process. She particularly appreciates the fact that she is never put in the position of having to mechanically reject "deserving cases" or vice versa.

Anna's approach: Her decisions are based on whether the particular applicant matches the specified criteria and all of which must be met before she can properly sanction a loan. She likes the predictability of the process. Just occasionally she feels that "deserving cases" have to be rejected because the application has not met all the necessary criteria, and vice versa. In such cases she takes a pride in neutrally applying the criteria irrespective of her own opinion and feelings about the decision.

Please reflect on your own behaviour and indicate what kind of situation you would find most satisfying:

1. Just like Jennifer's

2. More like Jennifer's than Anna's
 3. More like Anna's than Jennifer's
 4. Just like Anna's
7. As someone has managerial responsibility for health and safety within a university with more than 25,000 students and 3,000 staff. Legislation provides only a bare sketch of the university's duties in respect of health and safety, but over many years those in charge of health and safety within the university have developed detailed guidance and rules covering a wide range of issues and situations.

Bob's approach: He feels it is his duty to promote health and safety in the university by pressing for strict compliance with all the prescribed rules and procedures. Bob's aim is build a culture of respect for health and safety through a "zero tolerance" approach towards breaches of the university health and safety and procedures. When breaches, of any kind, are reported his approach is to demand immediate action, covering rectification of the problem and where appropriate disciplinary action.

Alan's approach: He feels it is his duty to promote health and safety in the university by encouraging a flexible interpretation and application of the relevant rules and procedures that has regard to the real risk that various situations pose. Alan's aim is to build a culture of respect for health and safety by engaging staff in thinking about health and safety matters, and helping them find reasonable solutions to problems, and be more alert to substantive issues and risks. When breaches are reported his approach is to involve the staff concerned in assessing and discussing the situation and negotiating appropriate solutions.

Please reflect on your own behaviour and indicate in what kind of approach you would take:

1. Just like Bob's
 2. More like Bob's than Alan's
 3. More like Alan's than Bob's
 4. Just like Alan's
8. As someone who works as the customer services manager for a local organisation. As part of the job one manages a call centre which is responsible for monitoring customer satisfaction and promoting new services. One is trying to improve the working of the centre in terms of its efficiency, effectiveness, and the quality of its engagements with customers.

Robert's approach: He is now developing new job specifications and advice for the staff working in the centre, covering such things as the principles of time management in call handling, standards of courtesy, and listening skills. He plans to give the staff relatively loosely defined goals and to allow them flexibility in using their discretion in responding to customers concerns, taking various and sometimes contradictory factors into account. Robert recognizes that if service issues and new

service promotion opportunities are satisfactorily covered staff will need training in the development of their knowledge and understanding of the organisations services and new products.

David's approach: He is now developing new job specifications and advice for the staff working in the centre, covering such things as the specific minimum number of calls they ought to make each hour, how long each call should last, and the precise way staff should talk to customers to ensure courtesy and thorough coverage of issues. He plans to give the staff "scripts" to be strictly followed, in so far as is possible, when making calls so that service issues and new service promotion opportunities are satisfactorily covered. The scripts will be responsive to the information, concerning for example service opportunities revealed by the customer, gathered as a call proceeds, and their correct use will require training and monitoring of staff.

Please reflect on your own behaviour and indicate which approach you would implement:

1. Just like Robert's
2. More like Robert's than David's
3. More like David's than Robert's
4. Just like David's

Appendix 7-Other Psychometric scales were used in this project

Ten-Item Personality Inventory-(TIPI)

Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

- 1 = Disagree strongly
- 2 = Disagree moderately
- 3 = Disagree a little
- 4 = Neither agree nor disagree
- 5 = Agree a little
- 6 = Agree moderately
- 7 = Agree strongly

I see myself as:

1. _____ Extraverted, enthusiastic.
2. _____ Critical, quarrelsome.
3. _____ Dependable, self-disciplined.
4. _____ Anxious, easily upset.
5. _____ Open to new experiences, complex.
6. _____ Reserved, quiet.
7. _____ Sympathetic, warm.
8. _____ Disorganized, careless.
9. _____ Calm, emotionally stable.
10. _____ Conventional, uncreative.

TIPI scale scoring (“R” denotes reverse-scored items):

Extraversion: 1, 6R; Agreeableness: 2R, 7; Conscientiousness: 3, 8R; Emotional Stability: 4R, 9;
 Openness to Experiences: 5, 10R.

The Marlowe-Crowne Social Desirability Scale (MCSDS)

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally. It is best to answer the following items with your first judgment without spending too much time thinking over any one question.

Please circle "True" if the statement is true, and circle "False" if the statement is false to you personally.

1. It is sometimes hard for me to go on with my work if I am not encouraged.
True False
2. I sometimes feel resentful when I don't get my way.
True False
3. On a few occasions, I have given up doing something because I thought too little of my ability.
True False
4. There have been times when I felt like rebelling against people in authority even though I knew they were right.
True False
5. No matter who I'm talking to, I'm always a good listener.
True False
6. There have been occasions I took advantage of someone.
True False
7. I'm always willing to admit it when I make a mistake.
True False
8. I sometimes try to get even rather than forgive and forget.
True False
9. I am always courteous, even to people who are disagreeable.
True False
10. I have never been irked when people expressed ideas very different from mine.
True False
11. There have been times when I was quite jealous of the good fortune of others.
True False
12. I am sometimes irritated by people who ask favors of me.
True False
13. I have never deliberately said something that hurt someone's feelings.
True False

Thinking Styles Inventory—Revised II (TSI-R2)

Sternberg, R. J., Wagner, R. K., & Zhang, L. F.

Tufts University, 2007

This questionnaire is about the different strategies and ways people use to solve problems, to carry out tasks or projects, and to make decisions.

To respond to this questionnaire, read each statement carefully and decide how well the statement fits the way that you typically do things at school, at home, or on a job. Circle 1 if the statement does not fit you at all, that is, you never do things this way. For each statement, circle one of the 7 numbers next to the corresponding item number on the answer sheet. Circle 7 if the statement fits you extremely well, that is, you almost always do things this way. Use the values in between to indicate that the statement fits you in varying degrees.

1=Not At All Well, 2=Not Very well, 3=Slightly Well, 4= Somewhat Well,
5=Well, 6=Very Well, 7=Extremely Well

There are, of course, no right or wrong answers. Please read each statement and circle the number on the scale next to the statement that best indicates how well the statement describes you.

Please proceed at your own pace, but do not spend too much time on any one statement.

- | | | |
|-----|--|---------------------------------|
| 1. | I prefer to deal with problems that require me to attend to a lot of details. | 1 |
| | 2 3 4 5 6 7 | |
| 2. | When talking or writing about ideas, I prefer to focus on one idea at a time. | 1 |
| | 2 3 4 5 6 7 | |
| 3. | When starting a task, I like to brainstorm ideas with friends or peers. | 1 2 |
| | 3 4 5 6 7 | |
| 4. | I like to set priorities for the things I need to do before I start doing them. | 1 |
| | 2 3 4 5 6 7 | |
| 5. | When faced with a problem, I use my own ideas and strategies to solve it. | 1 |
| | 2 3 4 5 6 7 | |
| 6. | In discussing or writing on a topic, I think that the details and facts are more important than the overall picture. | 1 2 3 4 5 6 7 |
| 7. | I tend to pay little attention to details. | 1 2 3 4 5 |
| | 6 7 | |
| 8. | I like to figure out how to solve a problem following certain rules. | 1 2 |
| | 3 4 5 6 7 | |
| 9. | I like to control all phases of a project, without having to consult with others. | 1 |
| | 2 3 4 5 6 7 | |
| 10. | I like to play with my ideas and see how far they go. | 1 2 3 4 |
| | 5 6 7 | |
| 11. | I am careful to use the proper method to solve any problem. | 1 2 3 |
| | 4 5 6 7 | |
| 12. | I enjoy working on things that I can do by following directions. | 1 2 |
| | 3 4 5 6 7 | |

13. I stick to standard rules or ways of doing things. 1 2 3 4
5 6 7
14. I like problems where I can try my own way of solving them. 1 2 3
4 5 6 7
15. When trying to make a decision, I rely on my own judgment of the situation. 1
2 3 4 5 6 7
16. I can switch from one task to another easily, because all tasks seem to me to be equally important. 1 2 3 4 5 6 7
17. In a discussion or report, I like to combine my own ideas with those of others. 1
2 3 4 5 6 7
18. I care more about the general effect than about the details of a task I have to do. 1
2 3 4 5 6 7
19. When working on a task, I can see how the parts relate to the overall goal of the task. 1 2 3 4 5 6 7
20. I like situations where I can compare and rate different ways of doing things. 1
2 3 4 5 6 7
21. When working on a project, I tend to do all sorts of tasks regardless of their degree of relevance to the project undertaken. 1 2 3 4 5 6 7
22. When I'm in charge of something, I like to follow methods and ideas used in the past. 1 2 3 4 5 6 7
23. I like to check and rate opposing points of view or conflicting ideas. 1 2
3 4 5 6 7
24. I prefer to work on projects that allow me to put in a lot of detailed facts. 1
2 3 4 5 6 7
25. In dealing with difficulties, I have a good sense of how important each of them is and in what order to tackle them. 1 2 3 4 5 6 7
26. I like situations where I can follow a set routine. 1 2 3 4
5 6 7
27. When discussing or writing about a topic, I stick to the points of view accepted by my colleagues. 1 2 3 4 5 6 7
28. I like tasks and problems that have fixed rules to follow in order to complete them. 1 2 3 4 5 6 7
29. I prefer to work on a project or task that is acceptable to and approved by my peers. 1 2 3 4 5 6 7
30. When there are several important things to do, I do those most important to me and to my colleagues. 1 2 3 4 5 6 7
31. I like projects that have a clear structure and a set plan and goal. 1 2
3 4 5 6 7
32. When working on a task, I like to start with my own ideas. 1 2 3
4 5 6 7
33. When there are many things to do, I have a clear sense of the order in which to do them. 1 2 3 4 5 6 7
34. I like to participate in activities where I can interact with others as a part of a team. 1 2 3 4 5 6 7
35. I tend to tackle several problems at the same time because they are often equally urgent. 1 2 3 4 5 6 7
36. When faced with a problem, I like to solve it in a traditional way. 1 2
3 4 5 6 7
37. I like to work alone on a task or a problem. 1 2 3 4 5
6 7

38. I tend to emphasize the general aspect of issues or the overall effect of a project. 1
2 3 4 5 6 7
39. I like to follow definite rules or directions when solving a problem or doing a task.
1 2 3 4 5 6 7
40. I tend to give equal attention to all of the tasks I am involved in. 1 2
3 4 5 6 7
41. When working on a project, I like to share ideas and get input from other people. 1
2 3 4 5 6 7
42. I like projects where I can study and rate different views or ideas. 1 2
3 4 5 6 7
43. I tend to give full attention to one thing at a time. 1 2 3 4
5 6 7
44. I like problems where I need to pay attention to details. 1 2 3
4 5 6 7
45. I like to challenge old ideas or ways of doing things and to seek better ones. 1
2 3 4 5 6 7
46. I like situations where I interact with others and everyone works together. 1
2 3 4 5 6 7
47. I find that when I am engaged in one problem, another comes along that is just as important.
1 2 3 4 5 6 7
48. I like working on projects that deal with general issues and not with nitty-gritty details.
1 2 3 4 5 6 7
49. I like situations where I can use my own ideas and ways of doing things. 1
2 3 4 5 6 7
50. If there are several important things to do, I focus on the one most important to me and disregard the rest. 1 2 3 4 5 6 7
51. I prefer tasks or problems where I can grade the designs or methods of others. 1
2 3 4 5 6 7
52. When there are several important things to do, I pick the ones most important to my friends and colleagues. 1 2 3 4 5 6 7
53. When faced with a problem, I prefer to try new strategies or methods to solve it. 1
2 3 4 5 6 7
54. I like to concentrate on one task at a time. 1 2 3 4 5
6 7
55. I like projects that I can complete independently. 1 2 3 4
5 6 7
56. When starting something, I like to make a list of things to do and to order the things by importance. 1 2 3 4 5 6 7
57. I enjoy work that involves analyzing, grading, or comparing things. 1 2
3 4 5 6 7
58. I like to do things in new ways not used by others in the past. 1 2 3
4 5 6 7
59. When I start a task or project, I focus on the parts most relevant to my peer group.
1 2 3 4 5 6 7
60. I have to finish one project before starting another one. 1 2 3
4 5 6 7
61. In talking or writing down ideas, I like to show the scope and context of my ideas, that is, the general picture. 1 2 3 4 5 6 7
62. I pay more attention to parts of a task than to its overall effect or significance. 1
2 3 4 5 6 7

63. I prefer situations where I can carry out my own ideas, without relying on others.
 1 2 3 4 5 6 7
64. I like to change routines in order to improve the way tasks are done. 1 2
 3 4 5 6 7
65. I like to take old problems and find new methods to solve them. 1 2
 3 4 5 6 7

$$\text{legislative} = (q_5 + q_{10} + q_{14} + q_{32} + q_{49}) / 5 .$$

$$\text{executive} = (q_8 + q_{11} + q_{12} + q_{31} + q_{39}) / 5 .$$

$$\text{judicial} = (q_{20} + q_{23} + q_{42} + q_{51} + q_{57}) / 5 .$$

$$\text{global} = (q_7 + q_{18} + q_{38} + q_{48} + q_{61}) / 5 .$$

$$\text{local} = (q_1 + q_6 + q_{24} + q_{44} + q_{62}) / 5 .$$

$$\text{liberal} = (q_{45} + q_{53} + q_{58} + q_{64} + q_{65}) / 5 .$$

$$\text{conservative} = (q_{13} + q_{22} + q_{26} + q_{28} + q_{36}) / 5 .$$

$$\text{hierarchical} = (q_4 + q_{19} + q_{33} + q_{25} + q_{56}) / 5 .$$

$$\text{monarchic} = (q_2 + q_{43} + q_{50} + q_{54} + q_{60}) / 5 .$$

$$\text{oligarchic} = (q_{27} + q_{29} + q_{30} + q_{52} + q_{59}) / 5 .$$

$$\text{anarchic} = (q_{16} + q_{21} + q_{35} + q_{40} + q_{47}) / 5 .$$

$$\text{internal} = (q_9 + q_{15} + q_{37} + q_{55} + q_{63}) / 5 .$$

$$\text{external} = (q_3 + q_{17} + q_{34} + q_{41} + q_{46}) / 5 .$$

Dialectical Self Scale (DSS)

Instructions

Listed below are a number of statements about your thoughts, feelings, and behaviors. Select the number that best matches your agreement or disagreement with each statement. Use the following scale, which ranges from 1 (strongly disagree) to 7 (strongly agree). There are no right or wrong answers.

1-----2-----3-----4-----5-----6-----7
 Strongly disagree Neither agree Strongly agree
 agree
 Nor disagree

- DT1 I am the same around my family as I am around my friends. (reversed)
- DT2 When I hear two sides of an argument, I often agree with both.
- DT3 I believe my habits are hard to change. (reversed)
- DT4 I believe my personality will stay the same all of my life. (reversed)
- DT5 I often change the way I am, depending on who I am with.
- DT6 I often find that things will contradict each other.
- DT7 If I've made up my mind about something, I stick to it. (reversed)
- DT8 I have a definite set of beliefs, which guide my behavior at all times. (reversed)
- DT9 I have a strong sense of who I am and don't change my views when others disagree with me. (reversed)
- DT10 The way I behave usually has more to do with immediate circumstances than with my personal preferences.
- DT11 My outward behaviors reflect my true thoughts and feelings. (reversed)
- DT12 I sometimes believe two things that contradict each other.
- DT13 I often find that my beliefs and attitudes will change under different contexts.
- DT14 I find that my values and beliefs will change depending on who I am with.
- DT15 My world is full of contradictions that cannot be resolved.
- DT16 I am constantly changing and am different from one time to the next.
- DT17 I usually behave according to my principles. (reversed)
- DT18 I prefer to compromise than to hold on to a set of beliefs.
- DT19 I can never know for certain that any one thing is true.
- DT20 If there are two opposing sides to an argument, they cannot both be right. (reversed)
- DT21 My core beliefs don't change much over time. (reversed)
- DT22 Believing two things that contradict each other is illogical. (reversed)
- DT23 I sometimes find that I am a different person by the evening than I was in the morning.
- DT24 I find that if I look hard enough, I can figure out which side of a controversial issue is right. (reversed)
- DT25 For most important issues, there is one right answer. (reversed)
- DT26 I find that my world is relatively stable and consistent. (reversed)
- DT27 When two sides disagree, the truth is always somewhere in the middle.
- DT28 When I am solving a problem, I focus on finding the truth. (reversed)
- DT29 If I think I am right, I am willing to fight to the end (reversed).
- DT30 I have a hard time making up my mind about controversial issues.
- DT31 When two of my friends disagree, I usually have a hard time deciding which of them is right.
- DT32 There are always two sides to everything, depending on how you look at it.

The following SPSS syntax may be helpful:

```
COMPUTE rdt1 = 8 - dt1.  
COMPUTE rdt3 = 8 - dt3.  
COMPUTE rdt4 = 8 - dt4.  
COMPUTE rdt7 = 8 - dt7.  
COMPUTE rdt8 = 8 - dt8.  
COMPUTE rdt9 = 8 - dt9.  
COMPUTE rdt11 = 8 - dt11.  
COMPUTE rdt17 = 8 - dt17.  
COMPUTE rdt20 = 8 - dt20.  
COMPUTE rdt21 = 8 - dt21.  
COMPUTE rdt22 = 8 - dt22.  
COMPUTE rdt24 = 8 - dt24.  
COMPUTE rdt25 = 8 - dt25.  
COMPUTE rdt26 = 8 - dt26.  
COMPUTE rdt28 = 8 - dt28.  
COMPUTE rdt29 = 8 - dt29.  
  
COMPUTE Score = MEAN(rdt1,rdt3,rdt4,rdt7,rdt8,rdt9,rdt11,rdt17,rdt20,rdt21,  
rdt22,rdt24,rdt25,rdt26,rdt28,rdt29,dt2,dt5,dt6,dt10,dt12,dt13,dt14,dt15,dt16,  
dt18,dt19,dt23,dt27,dt30,dt31,dt32) .
```

Need for Closure Scale

Read each of the following statements and decide how much you agree with each according to your beliefs and experiences. Please respond according to the following scale:

strongly disagree
 moderately disagree
 slightly disagree
 slightly agree
 moderately disagree
 strongly disagree

01. I think that having clear rules and order at work is essential for success.
02. Even after I've made up my mind about something, I am always eager to consider a different opinion.
03. I don't like situations that are uncertain.
04. I dislike questions which could be answered in many different ways.
05. I like to have friends who are unpredictable.
06. I find that a well ordered life with regular hours suits my temperament.
07. I enjoy the uncertainty of going into a new situation without knowing what might happen.
08. When dining out, I like to go to places where I have been before so that I know what to expect.
09. I feel uncomfortable when I don't understand the reason why an event occurred in my life.
10. I feel irritated when one person disagrees with what everyone else in a group believes.
11. I hate to change my plans at the last minute.
12. I would describe myself as indecisive.
13. When I go shopping, I have difficulty deciding exactly what it is I want.
14. When faced with a problem I usually see the one best solution very quickly.
15. When I am confused about an important issue, I feel very upset.
16. I tend to put off making important decisions until the last possible moment.(rev)
17. I usually make important decisions quickly and confidently.
18. I have never been late for an appointment or work.
19. I think it is fun to change my plans at the last moment.
20. My personal space is usually messy and disorganized.
21. In most social conflicts, I can easily see which side is right and which is wrong.
22. I have never known someone I did not like.
23. I tend to struggle with most decisions.
24. I believe orderliness and organisation are among the most important characteristics of a good student.
25. When considering most conflict situations, I can usually see how both sides could be right.
26. I don't like to be with people who are capable of unexpected actions.
27. I prefer to socialize with familiar friends because I know what to expect from them.
28. I think that I would learn best in a class that lacks clearly stated objectives and requirements.
29. When thinking about a problem, I consider as many different opinions on the issue as possible.
30. I don't like to go into a situation without knowing what I can expect from it.
31. I like to know what people are thinking all the time.
32. I dislike it when a person's statement could mean many different things.
33. It's annoying to listen to someone who cannot seem to make up his or her mind.
34. I find that establishing a consistent routine enables me to enjoy life more.
35. I enjoy having a clear and structured mode of life.

36. I prefer interacting with people whose opinions are very different from my own.
37. I like to have a plan for everything and a place for everything.
38. I feel uncomfortable when someone's meaning or intention is unclear to me.
39. I believe that one should never engage in leisure activities.
40. When trying to solve a problem I often see so many possible options that it's confusing.
41. I always see many possible solutions to problems I face.
42. I'd rather know bad news than stay in a state of uncertainty.
43. I feel that there is no such thing as an honest mistake.
44. I do not usually consult many different options before forming my own view.
45. I dislike unpredictable situations.
46. I have never hurt another person's feelings.
47. I dislike the routine aspects of my work (studies).

Scoring the Need for Closure Scale

1. Reverse items:

2-5-7-12-13-16-19-20-23-25-28-29-36-40-41-47.

2. Sum the following items to form a lie score:

18-22-39-43-46.

3. Remove the subject if the lie score is greater than 15.

4. Sum all the items except for the above listed lie items to form the need for closure scale.

5. If factors are required, use the following scoring system.

Order: 1-6-11-20-24-28-34-35-37-47.

Predictability: 5-7-8-19-26-27-30-45.

Decisiveness: 12-13-14-16-17-23-40.

Ambiguity: 3-9-15-21-31-32-33-38-42.

Closed Mindedness: 2-4-10-25-29-36-41-44

Higgins RFQ

1 never or seldom

2

3 sometimes

4

5 very often

1 "Compared to most people, are you typically unable to get what you want out of life?";

2 " " Growing up, would you ever 'cross the line' by doing things that your parents would not tolerate?";

3 "How often have you accomplished things that got you "psyched" to work ever harder?";

4 " Did you get on your parents' nerves often when you were growing up?";

5 "How often did you obey rules and regulations that were established by your parents?"

6 " "Growing up, did you ever act in ways that your parents thought were objectionable?"

7 " "Do you often do well at different things that you try?";

8 "Not being careful enough has gotten me into trouble at times."

9 "When it comes to achieving things that are important to me, I find that I don't perform as well as I ideally would like to do.";

10 "I feel like I have made progress toward being successful in my life."

11 " I have found very few hobbies or activities in my life that capture my interest or motivate me to put effort into them."

Regulatory Focus Questionnaire:

COMPUTE promote = (6 - resp_1) + resp_3 + resp_7 + (6 - resp_9) + resp_10 + (6 - resp_11).

COMPUTE prevent = (6 - resp_2) + (6 - resp_4) + resp_5 + (6 - resp_6) + (6 - resp_8)

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