Developing Experimental Methodologies for Examining the Proactivity Process

Laura C. Kirby

Doctoral Candidate, Department of Psychology

Macquarie University, Sydney, Australia

Postgraduate Diploma in Psychology, Macquarie University

Bachelor of Arts (Psychology), Macquarie University

Thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Organisational Psychology

Submitted on the 22nd day of July 2013

Table of Contents

Summary

A number of different concepts and approaches toward measuring proactivity and identifying antecedent factors have been adopted by proactivity researchers (Crant, 2000). More recently, proactivity has been conceptualised as a *process*, whereby proactivity is understood as a goal-driven and motivated 'way of behaving' (Grant & Ashford, 2008; Parker, Bindl, & Strauss, 2010). To empirically test the relationships and processes identified by this concept, the present dissertation research focuses on the development of experimental methods for examining key relationships within this conceptualisation.

Following the literature review of research investigating proactive work behaviour, the first paper describes an experimental study using a computer-simulated rail control task to explore discretionary behaviour, including proactivity and organisational citizenship behaviours. Due to the opportunity to manipulate contextual variables in the laboratory setting, the study also explores the influence of task complexity and its relationship with proactive action directed towards future impact and citizenship behaviours, given the proposal that complexity is a key antecedent of proactivity (Grant & Ashford, 2008). The second paper consists of two studies that test a proof-of-concept methodology to explore motivational drivers of proactivity. Both studies in the second paper use an in-basket problem-solving task (Shalley, 1991) to provide a context in which proactive planning and anticipation through problem solving can be assessed. A set of observer evaluation criteria was developed as an independent assessment of proactivity in solutions to these in-basket problems. A final chapter discusses common findings and implications for experimental studies of proactivity.

Declaration

This thesis has not been submitted for a higher degree to any other university or institution. The work is predominantly that of the Doctoral candidate. Components of the thesis that involved collaboration have been noted as such. The Macquarie University Ethics Committee approved the research reported in this thesis on the 14th December 2010 (Ref: 5201000541) and further approval was gained for additional aspects of the research on the 23rd May 2011 (Ref: 5201100399).

Laura Kirby   DATE

Acknowledgements

First and foremost, I would like to express my enormous gratitude to Dr Ben Searle, whose advice, guidance, and supervision throughout my candidature have been truly invaluable. Ben has readily and consistently offered his expertise, considered feedback, and moreover, his time. As a result of his significant contribution, my research dissertation is of a much higher quality than it would have been without his support.

I would also like to acknowledge Associate Professor Mark Wiggins for the contribution he provided me in helping to prepare my dissertation. My thanks also extend to Dr Alan Taylor for his time and advice in relation to the statistical analyses. Thank you also to Jaime Auton for the time and assistance she provided in the assessment process for the latter studies, and to my fellow candidates for their general understanding and empathy.

Lastly, I would like to thank my friends and family, particularly my colleagues at CommuniCorp Group, my sister Rachel, and my partner Ben. Their unwavering support, words of encouragement, and coffee-fuelled time-outs have truly helped me throughout my candidature.

1. A Review of the Nature and Measurement of Proactivity

Proactivity is particularly important in the context of modern workplaces' increased decentralisation, competition and demand for innovation (Parker & Collins, 2010). Across the research literature, a number of characteristics are consistently associated with proactivity. It is typically represented as involving the act of taking initiative and involving anticipatory action (Crant, 2000; Grant & Ashford, 2008). Further, the fundamental aim of being proactive is commonly defined as impacting or changing one's surrounding environment, with the goal of improving current circumstances. A consistent emphasis on an active orientation also appears to be at the core of defining and researching proactivity, as proactivity is contrasted to passive or reactive patterns of behaviour (Crant, 2000).

Despite some uniform characteristics, research investigating the features of proactivity and approaches to measuring proactivity has not developed as a unified stream in the organisational behaviour literature (Crant, 2000). Rather, a number of constructs that fit under the umbrella of proactivity, including personal initiative, various forms of proactive behaviour, and proactive personality have been explored. Most research on proactivity has also been phenomenon-driven, such that researchers have noticed a particular behaviour and then developed theory and collected data to describe, predict, and explain it as a distinct phenomenon (Grant & Ashford, 2008). There has not been a single agreed definition, theory, or measure propelling this body of research, with a number of different approaches taken toward identifying the features, antecedents, and consequences of proactive behaviour (Crant, 2000).

Historically, proactivity has been measured via the Proactivity Personality Scale (Bateman & Crant, 1993), which aligns with the view of proactivity as a relatively fixed personality trait. Aside from the shortcomings of the concept of proactivity as a personality trait, a number of methodology issues are also associated with the instruments used to

measure proactivity under this concept. The self-report nature of the Proactive Personality

Scale (Bateman & Crant, 1993) subjects responses to social desirability biases, and the

definition underpinning this scale, being personality characteristics, potentially impacts the

interpretation of results when using this measure of proactivity more broadly.

A more recent concept has emerged to address some of these limitations, which

positions proactivity as a more encompassing, goal-oriented process that involves a number of

stages before the production of proactive behaviours (Grant & Ashford, 2008; Parker, Bindl,

& Strauss, 2010). According to this view, proactivity is not simply a disposition or a set of

specific behaviours, but rather a way of behaving that can be applied to any number of tasks

or contexts. Although this view combines and adapts previous conceptualisations of

proactivity, a remaining issue is the methodology employed to assess proactivity. Alternative

research designs have attempted to overcome the research challenges associated with

measuring proactivity via self-report, including longitudinal field studies (e.g. Frese, Garst, &

Fay, 2007; Parker, 1998) and the use of intensive diary studies that track intra-individual

change over time (e.g., Fritz & Sonnentag, 2009). In more novel approaches, other studies

have assessed and investigated proactivity via the use of judgments based on detailed

interviews (Frese et al., 1997), using context-specific scenario-based approaches (Parker,

Williams & Turner, 2006), and using a situational judgment test (Bledow & Frese, 2009). In

addition to overcoming issues associated with self-report approaches, such designs adopt a

more experimentally-based approach, thereby presenting more independent assessments of

proactivity. The opportunity afforded by experimental design to develop impartial or

independent ways of assessing proactivity means that this approach addresses one of the

historically key challenges in measuring this process, which few other studies have addressed.

Given it is a relative gap in existing approaches, one of the primary aims of the present

research was to advance the use of experimental studies investigating proactivity. This thesis

explores the application of such experimental methodology to investigate aspects of the more recent conceptualisation of proactivity as a process, including the relationship between proactivity and antecedent factors. To understand the foundation on which the present research is developed, the following sections will examine key definitions of proactivity, including commonalities and differences. Three core conceptualisations arising from the proactivity literature and methods for measuring proactivity are further discussed, with the implication that a more encompassing concept of proactivity is required to better understand this phenomenon and its relation to antecedent and consequential factors. Alternative methods for measuring and assessing proactivity will then be explored, with the aim of demonstrating the need for developing methods to address shortcomings in existing approaches, and to more objectively measure and assess an individual's performance of proactivity.

Definitions of Proactivity

Across the proactivity domain, a number of definitions have been used to reflect the concept of proactivity. One of the earliest definitions involved the use of the term 'proactive' to describe a person who took responsibility for one's life, rather than looking for external causes or circumstances to direct one's purpose (Frankl, 1959). This definition involved the comparison between proactive individuals who possessed an internal locus of control and non-proactive individuals who shared an external locus of control. Bateman and Crant (1993) later provided the definition of proactivity as a dispositional construct identified by the extent to which individuals take action to influence or change their environments. This explanation suggests that proactivity is concerned with altering causes in the external environment, rather than changing conditions within oneself. Proactivity was also encompassed in the concept of personal initiative, which was regarded as a "behaviour syndrome" (Fay & Frese, 2001, p. 97), reflected by an individual taking an active and self-starting approach to work-related goals and tasks and persevering in overcoming barriers and setbacks (Frese, Kring, Soose, &

Zempel, 1996). The focus on behaviours was also present in Griffin, Neal and Parker's (2007) exploration of proactivity, which identified proactivity according to different kinds of behaviours aimed at different levels of an organisation (i.e. individual, team or organisation). Lastly, proactivity has also been defined as future-oriented behaviour that aims to bring about change in a situation or oneself (Parker, Williams & Turner, 2006), which recognises an individual's propensity to direct change internally, as well as involving some level of anticipatory action due to the future-orientation (Grant & Ashford, 2008).

Common characteristics amongst these definitions of proactivity are the active, rather than passive, approach to directing one's circumstances, as well as its self-directed and self-initiated nature. The notion of initiative also suggests that proactive individuals have some level of anticipation and planning with respect to their actions, as emphasised in the definition of proactivity as future-oriented. Despite some shared features, the particular emphases within each definition differ. The earlier definitions appeared to place emphasis on proactivity occurring as a result of personal disposition, however Bateman and Crant's (1993) definition highlighted the change-oriented aspects related to proactivity, rather than just the active versus reactive focus. In contrast to this dispositional view, other definitions emphasised the behaviour-based aspect of the concept, which specifies proactivity as encompassing a range of self-determined behaviours. This shifts the focus of the concept onto actions representative of proactivity, rather than the individual characteristics which influence an individual to engage in those behaviours. The direction or target of the proactivity also differs amongst definitions. For example, Grant and Ashford's (2008) definition suggested that an individual can direct change at oneself, whereas Bateman and Crant's (1993) definition seemed to propose only external targets of change. Grant and Ashford's (2008) definition also reflected the emerging consensus that proactivity is not just a set of specific behaviours, nor is it simply a personality trait, but rather it is better identified as a process involving anticipation, planning and

endeavouring to make an impact. Further views based on this concept have also included the importance of goal-setting and goal-striving within the proactivity process (Parker, Bindl, & Strauss, 2010). This definition of proactivity provides a more encompassing view of the concept by incorporating the different emphases of previous definitions and developing the focus on a *way* of behaving.

This view of proactivity as a process or way of behaving is the one adopted by the present research, whereby proactivity is defined as a self-initiated, anticipatory, goal-driven process aimed at bringing about change in the situation or self to achieve a proactive goal.

Review of the Proactivity Concept

Understanding the discrepancies between proactivity definitions is important, as these distinctions are also reflected in the research literature. The focus of some research has been the relationship between personal dispositions (including proactive personality) and proactive behaviours (e.g. Bateman & Crant, 1993), whereas other research emphasises the occurrence of proactive behaviour as a consequence of situational cues (e.g. Morrison & Phelps, 1999). Relatively little research has examined proactivity across a range of organisational behaviours, with much attention given to the specific forms of behaviour that occur in a particular context. From the proliferation of research and definitions utilised, three broad conceptualisations of proactivity have been identified: Proactivity as a personal disposition; proactivity as a constellation of behaviours; and proactivity as a process. Each of these proactivity concepts is explored in the following sections, including the implications and limitations of measuring proactivity according to the different conceptualisations.

Proactivity as a Personal Disposition

Traditionally, proactivity was considered an individual personality construct, which differed between individuals in their inherent level of proactivity (e.g. Bateman & Crant, 1993). Under the definition of proactivity as a personality trait (e.g. Bateman & Crant, 1993),

proactivity was recognised as the dispositional tendency to perform behaviours that directly

alter the environment, otherwise determined as 'proactive personality'. This concept of

proactive personality was reflective of an individual who is relatively unconstrained by

situational forces, and who brings about environmental change (Bateman & Crant, 1993).

Building on the interactionist view of psychology (Bandura, 1977), individuals high in

proactive personality were asserted to be driven by the need to manipulate and control the

environment. Prior definitions of proactivity also suggest that this drive to change the

environment is related to an internal locus of control (Frankl, 1959). An internal sense of

drive and determination to effect change within one's environment is, therefore, crucial to this

concept of proactive personality. Reflective of this view, the trait is characterised by the

behavioural elements of scanning for opportunities, showing initiative, taking action, and

persevering until having reached closure by bringing about change (Bateman & Crant, 1993).

In comparison, individuals who react to, adapt to, or are shaped by their environment would

be described as relatively passive (Bateman & Crant, 1993).

Positive correlations have consistently been found between proactive personality and a

number of work-based behaviours. For example, proactive personality has been positively

linked with proactive socialization tactics in the workplace, driven by the desire of individuals

high in proactive personality for control and manipulation in order to get ahead (Ashford &

Black, 1996). This reflected in individuals' engagement in activities such as deliberately

seeking out further information (information seeking), socialising with others in a

professional sense (networking), and job-change negotiation. Proactive personality has also

been positively associated with other change-related work behaviours, including initiating

improved ways of completing core tasks, developing novel methods for improving team

performance, and suggestions for improving the efficiency of an organisation (Griffin, Neal &

Parker, 2007). The change-orientation and intention to manipulate circumstances consistent

across these behaviours is reflective of characteristics that determine whether a particular behaviour is considered proactive.

Proactivity as a personal disposition - measures, methodology and limitations. The conceptualisation of proactivity as a personality trait has significant implications for its role in the workplace. Foremost, if proactivity is conceptualised as a personal disposition, reflecting some personal quality (e.g. Bateman & Crant's (1993) view that individuals are disposed to enact change in their environment), then it might be argued that there is relatively little that can be done to encourage proactivity. A caveat to this perspective would be the extent to which other dispositional, other than proactive personality, or situational factors impact the likelihood of proactive behaviours being elicited. For example, Ashford (1986) found that individuals low in self-confidence engaged in less feedback-seeking (a type of proactive, change-related work behaviour) than individuals with higher self-confidence, which they argued was because lower-confidence individuals wanted to avoid receiving negative messages. Additionally, Grant and Ashford (2008) speculated that, in situations of low accountability, individuals who are higher in conscientiousness as well as higher on the proactive personality scale are less likely to act proactively due to the fear of their initiative failing and being singled out as disadvantaging the organisation. In contrast, in high accountability situations, people who demonstrate higher levels of conscientiousness and proactive personality are suggested to have greater levels of initiative due to the role requiring them to take personal responsibility for their actions. Such research suggests that other dispositional traits influence whether an individual engages in proactive behaviour, hence these behaviours are not wholly accounted for by proactive personality.

This conjecture provides contrary evidence for the assumption that proactive individuals act proactively across numerous contexts, regardless of the contingencies of a situation. In the previous example, the environmental condition of accountability was proposed to produce

variations in the occurrence of proactive behaviours, thereby suggesting that situational features play a role in the incidence of proactivity. Job autonomy is a further situational factor found to completely attenuate the relationship between proactive personality and job performance, such that individuals higher in proactive personality but lower in perceived job autonomy demonstrated reduced job performance, which was measured via change-related behaviours such as continuous improvement and problem-solving skills (Fuller, Hester, & Cox, 2010). Contrary to Bateman and Crant's (1993) view of proactive personality as resistant to situational forces, the outcomes of this research support the view that situational factors do indeed play a role in whether an individual is proactive. The notion of proactivity as a personality trait, unconstrained by environmental forces, suggests that proactive personality should be a "strong personality" trait, which are traits that should be "less constrained by situations than weak ones" (Locke & Latham, 2004, p. 395). However, as Fuller and colleagues (2010) asserted, the research evidence for the role of situational factors in determining the level of proactivity suggests that proactive personality is not a "strong personality" trait, and therefore, that proactive individuals may not always perform proactive behaviours irrespective of their circumstances. Based on this evidence, the concept of proactivity as a personal disposition has limitations as a complete view of the proactivity paradigm.

  With respect to the measurement of proactivity as conceived as a personal disposition, the majority of studies investigating proactive personality have measured the trait using the Proactive Personality Scale (PPS; Bateman & Crant, 1993). This self-assessment reflected individual tendencies to engage in certain 'proactive behaviours' (Bateman & Crant, 1993), aligning with the view of proactivity as a relatively 'unchangeable' disposition. The original version of the scale had 17 items, which focused on trait-features of an individuals' typical behaviour, meaning what the individual 'always' or 'usually' does. The scale has

demonstrated sound convergent, discriminant, and predictive validity, with evidence of good test-retest reliability (Crant, 2000), suggesting that it is a particularly robust psychometric tool. Factor analyses and reliability estimates support the scale as uni-dimensional (Crant, 2000). Although the scale is based solely on self-report, its psychometric properties suggest that the scale is an effective measure of a stable disposition.

Shorter versions of this scale have been utilised, including five, six, and ten item versions, with both the six and ten item versions demonstrating acceptable reliability and consistency (Claes, Beheydt, & Lemmens, 2005). These findings suggest that perhaps the original PPS, based on Bateman and Crant's (1993) view of proactivity, captures elements unnecessary for the proactivity construct as they have conceptualised it. For example, item 17 in the original scale refers to "helping out in any way if someone is in trouble". This item seems to describe altruistic helping behaviour that is otherwise unaccounted for in the proactivity literature, and achieved factor loadings across three sample populations ranging from 33 to 41. Similarly, another item refers to "believing in something and making it happen despite the odds" (factor loadings ranged from 61 to 74). This seems to reflect ideas of self-efficacy and the belief in oneself in achieving success over obstacles, which is argued to be a separate construct from proactive personality (Parker, 1998). These items in particular, seem to diverge from the Bateman and Crant (1993) view of proactivity as strictly an individual trait reflected by being relatively unconstrained by situational forces, and aiming to effect environmental change. Furthermore, this concept of proactivity is based on the assertion that the disposition is driven by an underlying need to manipulate or control the environment, which is fundamentally cognitive or motivational. However, the items seem to focus on the performance of certain behaviours or acts, and none of the items seem to tap into this particular belief that an individual feels the need to control one's environment. Accordingly, it

might be argued that this reflects a discrepancy between the measure of proactive personality and its fundamental conception.

The disparities identified in the PPS (Bateman & Crant, 1993) measure suggest limitations in utilising this method for assessing proactivity. Furthermore, the concept of proactivity as a personal disposition is underpinned by the view that the proactive individual will enact change irrespective of situational forces. However, the evidence discussed suggests that situational factors do influence the impact of proactive personality. From a purely definitional perspective, this concept of proactivity also does not account for changes aimed at oneself, focusing instead only on external circumstances. Thus, whilst this conceptualisation does not necessarily predict proactivity in all situations, it does reflect a useful construct for identifying individuals who are more likely to initiate the proactivity process. Given the evidence linking proactivity personality to a number of proactive behaviour outcomes, it must be acknowledged that a proactive disposition certainly plays a role in determining an individual's level of proactivity. To this effect, proactive personality is recognised as key antecedent factor in proactivity as a process conceptualisation, although it forms a component part of a broader view of the proactivity construct, as discussed in later sections.

Proactivity as Behaviour

In addition to the conceptualisation of proactivity as a personal disposition, proactivity has been conceptualised as a constellation of behaviours. A key difference between these views is that the latter concept focuses on the characteristics of these behaviours as reflective of proactivity, rather than the personality characteristics which drive these behaviours to be performed. The development of this concept of behaviours is argued to have developed from the nature of proactivity research being a phenomena-driven approach, thereby leading to an array of behaviours being investigated for their proactive components. A limitation of this approach, as will be discussed, is the lack of understanding as to how these individual

behaviours relate to one another, despite some attempts to categorise and classify behaviours (e.g. Parker & Collins, 2010).

A definition that lends itself to this concept of behaviours is Personal Initiative (PI). Within this concept, initiative is represented as a "behavioural syndrome" that results in an individual taking an active and self-starting approach to one's work, as well as going beyond the formal requirements of the job (Frese, Kring, Soose, & Zempel, 1996). Many of the characteristics of personal initiative are consistent with the common features of proactivity. However, in contrast with other concepts, these characteristics are typically constrained to a class of behaviours (Fay & Frese, 2001). A central feature of proactivity under the PI construct is that the behaviour leads to the development of self-started goals because it is oriented toward the future. The self-initiating and self-starting characteristic is also a prominent feature of other research investigating proactivity as behaviours. For example, Parker and Collins (2010) identified self-initiation as essential to two fundamental elements of proactivity. The first element was "being anticipatory", which is reflected in taking action in advance of a future situation. The second element was taking control to cause something to happen, rather than waiting to respond to something that happens. Across these two elements, the emphasis of self-initiation is on taking a particular form of action.

The action prescribed by the PI concept also seems to draw on goal-setting theory (Locke & Latham, 1990) as the actions are characterised around the pursuit of a goal and goal development. This suggests a broader intent than to impart change, as suggested by the proactive personality concept (Bateman & Crant, 1993), reflecting that the intent of proactive behaviour is to achieve a desired goal. Fay and Frese (2000) also identify the need for the actions toward this goal to have some "psychological distance" from the path taken than a "normal" path would take, with PI reflecting actions that have greater psychological distance from a set of actions that would otherwise be considered straightforward.

To help classify behaviours within this concept, Parker and Collins (2010) reported three higher-order categories of proactive behaviour, under which individual proactive behaviours were classified. The three categories were identified as: proactive work behaviour, which encompassed general work behaviours, such as taking charge and voice; proactive Person-Environment (PE) fit behaviours, which included behaviours aimed at helping an individual improve one's "fit" or success within the workplace, such as feedback inquiry and career initiative; and lastly, proactive strategic behaviour, which reflected behaviours focused on considering the future and bringing about change within the organisation. Proactive PE fit behaviours differed from previous definitions of proactivity, in that these behaviours can be focused on the self, rather than only on external circumstances. Proactive work and strategic behaviours reflected the consistent characteristic of self-initiation and future-orientation or anticipation highlighted earlier.

The concept of personal initiative incorporated three dimensions common across proactive behaviours, including self-starting, proactive, and persistent. According to this perspective, the proactive dimension is distinguished as involving a long-term focus and not waiting until it is a requirement to respond to a demand (Frese & Fay, 2001). In other words, problems and opportunities are anticipated, and the person actively addresses them, consistent with Parker and Collin's (2010) definition. These three dimensions of PI were argued to co-occur (Frese, Fay, Hilburger, Leng, & Tag, 1997). In analysing this further, it seems that if the three dimensions co-occur because the individual is characteristically more likely to anticipate the future, set goals, and take pre-emptive action, PI is more reflective of individual dispositions, and is aligned with the earlier concept of proactivity. However, if the dimensions co-occur because of the relations and synergies between the behaviours, it is reasoned that it is not reflective of individual differences, but rather demonstrates a purely behavioural

perspective. It is unclear which of these arguments is aligned with the view represented by the PI concept.

Proactivity as behaviour - measures, methodology and limitations. Many of the common characteristics of proactivity are reflected in the definitions encompassed in the concept of proactivity as behaviour. However, the emphasis on self-initiated *action* suggests a significant distinction from other concepts of proactivity. In the concept of proactivity as a personal disposition the focus of enacting change and changing one's circumstances was central, whereas the central focus in the view of proactivity as behaviours is transferred to taking action, and intent to change is not reflected in the action-orientation of personal initiative. This distinction from the concept of proactivity as a dispositional construct is further apparent in the self-report questionnaire measure of personal initiative which emphasises descriptions of "actively", "immediately", "quickly", but includes no notion of performing action to achieve change. There may be an underlying assumption that engaging in any form of action, regardless of its intent, will result in some form of change. This is the premise argued by Fay and Frese (2001), that intention to change is merely implied by the personal initiative concept. Change-orientation was also treated as a separate construct from personal initiative in Fay and Frese's (2001) investigation of the impact of personal initiative, suggesting that orientation to change is made explicit only outside of the confines of personal initiative, which contrasts with one of the primary characteristics of the proactivity concept used elsewhere in the literature.

Similarly, the definition of personal initiative is to take an active approach, as characterised by its self-starting and proactive nature in the pursuit of a goal and overcoming obstacles where necessary (Fay & Frese, 2001). The focus on action suggests that doing anything, so long as it is aimed at achieving some form of goal, constitutes proactivity or personal initiative, which overlooks many of the other important characteristics that comprise

proactivity and may be too encompassing a definition. The focus on actions towards a goal also means that it is difficult to differentiate the concept from the act of goal-striving, which shares a similar focus, but is considered to be a specific component of proactivity or a distinct construct. It may also be argued that it is difficult to assess whether someone has engaged in actions that divert from "normal" path of actions in striving toward a goal, as this requires a judgement call by even an independent assessor, and is difficult to measure in the typical self-report format.

On the issue of the measurement of PI behaviours, Frese et al. (1997) developed a self-report behavioural questionnaire to measure an individual's level of PI. This questionnaire required individuals to rate their frequency of past initiative on a range of behavioural aspects that focused primarily on whether the individual had engaged in action-oriented behaviour. Although the measure is similar to the Proactive Personality Scale (Bateman & Crant, 1993), the researchers argued that the questions are directed at behaviours, rather than a personal disposition. Items from this measure included "I actively attack problems", and "Whenever there is a chance to get actively involved, I take it". Reflecting on the nature of the questions, however, the items seem to capture an individuals' tendency to engage in specific behaviours, hence closely aligning with the proactive personality measure and concept. This appears to contrast with the overall concept of proactivity as behaviours and the assertion that the questionnaire is intended to elicit a more behavioural indication rather than reflect dispositional tendencies. Furthermore, the focus on action in the measure's items is subject to the limitations discussed earlier in relation to focusing on this characteristic of proactivity.

In acknowledging the social desirability concerns with self-report measures and the issue that self-report questions tend to measure self-concepts rather than reflect real behaviour, Frese et al. (1997) attempted to overcome these issues by including a structural

interview-based method with the self-report questionnaire. In this approach, an interviewer probed an individual for exemplar or past behaviours and the interviewer and a second rater evaluated the interviewee's responses using a fixed protocol that covered all the key features of PI to determine an individuals' level of PI (Fay & Frese, 2001). An advantage of this approach for the 'proactivity as behaviours' concept is that the method attempted to focus on real examples of behaviour, using a more objective assessment as to whether the behaviours had genuinely been displayed. This is an important distinction, as the underlying view suggests that proactivity is captured in the behaviours themselves, rather than in a personal tendency or as result of an individual's characteristics. The additional PI interview-based measures developed by Fay and Frese, (2001) were designed to measure inter-individual differences in behaviours, with the advantage of being less prone to self-report biases due to the use of detailed questioning about specific actions to determine the level of initiative and self-starting behaviour undertaken by the individual. These measures, therefore, provide a valuable tool for assessing aspects of proactive initiative, due to the greater objectivity in assessment than other measures, as well as evidence of the reduced risk of biases and problems associated with anchor points in the results self-report measures.

However, a significant disadvantage of these measures is that they rely on individuals' knowledge of past events and are, therefore, likely to be affected by the effects of memory (Fay & Frese, 2001). Furthermore, the methodology may be insufficient to determine whether an individual's reported actions were undertaken independently and truly self-initiated, or whether they were only displayed following prompting and assistance from others.

In further attempts to overcome the issue of self-reporting, Fay and Frese (2001) included the measure of "overcoming barriers" as an indication of persistence in pursuit of a goal. Adapted from the methodology employed for situational interviews and situational judgement tests (Latham & Saari, 1984), participants were presented with a series of work-

related problems that they were required to solve. Participants' problem-solving responses were rated by the interviewer according to their proactivity and active approach, in addition to the level of active, initiating, goal- and plan-oriented behaviour that they described. In contrast to the self-report methodologies, this approach to measuring proactivity utilised a form of behavioural observation to capture proactivity in real time, as well as measuring inter-individual differences in proactive behaviour. Consistent with Fay and Frese's (2001) contention, an advantage of this approach, given that there was a common basis for coding the answers to these standardised problems, is that the measures are less prone to show bias (e.g. common method bias with other questionnaire measures) and also reduce the problem of differential anchor points that often occurs in questionnaire research (e.g. what does an individual mean when he/she indicates a "high" degree of initiative, compared to whom?).

Overall, a merit of the concept of proactivity as behaviours lies in the implication that individual differences, situational factors, as well as attitudes and cognitive states all play an influencing role in the initiation of proactive behaviours, which provides further development of the proactivity construct beyond dispositional tendencies. The enhanced focus on behaviours directed at a particular goal and the focus on goal striving also lends this view to the concept of proactivity as engaging a process involving various stages and influences, to more thoroughly account for when and why an individual may be proactive. However, the present concept restricts the view of proactivity to a collection of behaviours, and does not necessarily capture one of the key characteristics of proactivity as enacting to cause change. Further, this view of the construct as fundamentally a set of behaviours means that any behaviour could be proactive if it meets the classifications specified within this view. This may oversimplify the construct of proactivity and overlook the influence of antecedent and causal factors. A more encompassing concept of proactivity, which addresses the

dispositional, state and behavioural aspects, is provided in the concept of proactivity as a process.

Proactivity as a Goal-directed or Multi-stage Process

Grant and Ashford's (2008) concept of proactivity as a process has provided a more integrative approach to the various definitions of proactivity, incorporating dispositional and behavioural factors within the process to acknowledge the context in which proactivity occurs. This concept positioned proactivity as a more encompassing, goal-oriented process which involves a number of stages before the production of proactive behaviours. A number of models and frameworks have been developed within this concept, each building on the body of evidence suggesting that proactive behaviours occur in the context of situational factors, dispositional factors, and even motivational factors. Two key models supporting this view guided the present thesis research.

The first model of proactivity presented the construct as a dynamic process and identified key situational antecedents of proactivity, as well as key phases related to engaging proactivity (The Proactivity Dynamics Framework; Grant & Ashford, 2008). This framework defined proactivity as "anticipatory action that employees take to impact themselves and/or their environments" (Grant & Ashford, 2008, p. 8). It incorporated three core "phases" that form the basis of the framework: anticipation, planning, and action directed toward future impact. Consistent with the definitions relating to the behavioural concept of proactivity, this framework and definition highlighted the requirement for proactivity to be acting in advance, which encompasses the notion of anticipation, planning, future-focus, and a level of cognition involved. Grant and Ashford (2008) also highlighted the importance of intended impact, which acknowledges the emphasis of change-orientation consistent with the personal disposition concept of proactivity. It also acknowledges that change can be intended to impact either the self, or the external environment or circumstances.

This view is differentiated from the concept of proactivity as behaviour, which designated specific kinds of extra-role activities that are always considered "proactive", as this framework suggested that proactivity is not limited to a distinctive set of actions but rather, is a process that "can be applied to any set of actions through anticipation, planning, and striving to have an impact" (Grant & Ashford, 2008, p. 9). This concept is based on the proposition that proactivity should be viewed not as a noun, but as an "adverb": as a *process* or a *way of doing things*. This means that any behaviour can be performed proactively, and that these activities do not necessarily have to be 'extra-role' behaviours, as was central to much of the research within the concept of proactivity as behaviour.

A similar definition and concept is presented in the second key model of proactivity, which highlighted three key attributes: self-starting, change-oriented and future focused (model of proactive motivation; Parker, Bindl, & Strauss, 2010). Drawing on self-regulation theory (Bandura, 1991), Parker et al. (2010) proposed proactivity to be a goal-driven process, which requires that proactive action is motivated and conscious, and that specific motivation and goal processes account for the self-directed, change-oriented behaviour that characterises proactivity. Their exploration of motivational theories as underpinning their model of proactivity to understand what stimulates, suppresses and shapes proactivity constitutes one of the major contributions of this particular model. Situational motivation, as included in this framework, may explain research findings that individuals engage in proactive behaviours at some times and not others, which is an issue that is not adequately explained by previous conceptualisations of proactivity.

Parker Bindl and Strauss (2010) classified motivational states into 'can do' states (e.g. self-efficacy), 'reason to' states (e.g. intrinsic motivation), and 'energised to' states (positive affect). The 'reason to' motivational states included several of the situational types of motivation established by self-determination theory (Deci & Ryan, 1985), including intrinsic,

integrated and identified forms of motivation. The impact of situational motivation has been explored in the context of related constructs, such as creativity; however, there is limited investigation of this within the context of proactivity. Additionally, intrinsic motivation (contrasted with extrinsic motivation) has tended to be the only motivational factor explored, rather than the full spectrum of autonomous and controlled motivations. By including a more macro-level assessment of motivation in the proactivity process, it allows for a deeper exploration of the different reasons why people are proactive, including how external goals are internalised and how multiple autonomous and external motivations might play out in terms of proactivity.

In one of the few studies illustrating the relationship between motivation and proactivity, Ohly and Fritz (2007) conducted a questionnaire-based study using a sample of employees from a software development company. Participants were instructed to complete a questionnaire that measured four types of work motivation suggested to enhance proactive behaviour: intrinsic work motivation, role-breadth self-efficacy, job self-efficacy, and role orientation. Participants were also asked to provide a questionnaire to a co-worker with whom they worked closely, which required the co-workers to rate the participant's proactive behaviour using the seven-item personal initiative scale (Frese, Fay, Hilburger, Leng, & Tag, 1997). The results indicated that role breadth self-efficacy (RBSE), as a form of work motivation, was positively correlated with proactive work behaviour. RBSE was operationalised as the extent to which people have the confidence that they are capable of carrying out a broader role, which is consistent with the 'can do' motivational states identified in the proactive motivation model (Parker, Bindl & Strauss, 2010). On the other hand, intrinsic work motivation was not related to proactive behaviour, in contrast with previous research assertions that having work that is personally interesting or satisfying is not sufficient for an individual to engage in proactive behaviour (Ohly & Fritz, 2007). Ohly and

Fritz's (2007) finding contrasts with the inclusion of intrinsic motivation as a 'reason to' motivational state in the proactive motivation model, and seems to diverge from the very definition of proactivity which arguably lends itself to intrinsic forms of motivation. For example, for an action to be self-initiated (a key characteristic of proactivity) one would assume that the individual would have to experience an internal force driving that action. It is difficult to imagine that an individual could show self-initiative as a result of an externally controlled force. Likewise, anticipatory action requires that individuals are agentic, and envision a desired future outcome and modify circumstances to create that outcome; this suggests that individuals experience personal satisfaction and achievement by enacting these processes, consistent with more internal, intrinsic forms of motivation. A sense of personal efficacy in mastering challenges has also been asserted to generate greater inherent interest in the activity (Bandura & Schunk, 1981), which suggests that self-efficacy should enhance the intrinsic motivation an individual associates with setting and striving for proactive goals. From this perspective then, it would seem reasonable to argue that both 'can do' and 'reason to' motivations should equally contribute to the conceptualisation of motivation and suggest reason to investigate both in relation to the proactivity process phenomenon. However, 'reason to' states may be far more task-dependent in terms of the impact on individual displays of proactivity, depending on the nature of how the intrinsic drive is engaged by the individual – whether it relates to the task itself or whether it is in relation to the individuals' desire to act proactively.

Further support for the role of internal motivation as driving proactivity is provided by Fay and Frese (2001) who argued that individuals are motivated to use their initiative if they believe that they will be in control of the situation (control appraisals) and of their own actions (self-efficacy), and if they believe that they can deal with the potential negative consequences of using their initiative (change orientation). Accordingly, Parker and Collins

(2010) proposed that engaging in proactive behaviours is likely to involve a deliberate decision process in which the individual assesses the likely outcomes of these behaviours. Similarly, Morrison and Phelps (1999) demonstrated that taking charge, a specific proactive behaviour, involves a calculated decision process in which individuals assess the likelihood that they will be successful, as well as the likely consequences of their action, such as whether the risks of taking charge outweigh the benefits. This supports the notion provided by the proactivity process concept, that behaviours occur as a result of a conscious process, where there is a clear element of deliberate cognition and choice, which are guided by an individual's perceived capacity and motivation.

Whilst the impact of self-determined motivation on other work-related factors has been investigated (e.g. the impact of autonomous and controlled motivations on excessive and compulsive forms of workaholism; Van den Broeck et al., 2011), there is limited research exploring the role of motivation in the proactivity process. More broadly, there is also limited empirical investigations of the proactivity process. This may be attributable to the fact that the concept of proactivity as a process is a relatively recent concept in the broader proactivity literature. Nonetheless, the view of proactivity as a multi-stage or goal-directed process provides an encompassing concept which incorporates prior conceptualisations of proactivity. A significant advancement of this concept is the view of proactivity as a process or a way of doing things, and hence, becomes a broader term that is not limited to a set of actions or a trait, and encapsulates the common characteristics and features traditionally associated with proactivity. This definition, as well as the inclusion of motivation and goal processes, helps to explain when and why an individual may be proactive and how any number of tasks can be performed proactively.

One of the difficulties faced in interpreting the two key models of proactivity as a process is understanding how to combine the two models to provide a cohesive

conceptualisation of the proactivity process. For example, according to Grant and Ashford's (2008) model, there are psychological mechanisms that enable someone to undertake proactive behaviour phases, including anticipation and planning. However, Parker and colleagues (2010) view positions proactive motivational states as the psychological drivers of an individual engaging in cognitive aspects of preparing for proactive action, including envisioning and planning. It may be that the underlying motivational states determine the psychological mechanisms described by Grant and Ashford (2008). To further align the two views, it would also seem that Parker and colleagues' (2010) view of proactive goal generation parallels with Grant and Ashford's (2008) anticipation and planning phases, whilst proactive goal striving aligns with the action directed toward future impact phase. However, the dimensions component of Grant and Ashford's (2008) model is less easily assimilated, and may require further exploration to determine how these elements may relate to the proactive goal generation and striving activities suggested by Parker et al. (2010).

Furthermore, both views of the proactive process suggest that a proactive individual engages in cognitive anticipation and planning activities prior to engaging in a particular behaviour or action; this seems to suggest that someone acting proactively has consciously decided to engage in this behaviour, and by definition proactivity cannot be impulsive or spontaneous. This certainly differentiates from the view of proactive behaviour, being any behaviour that fits within a certain classification, such that someone who is engaging in feedback seeking, for example, may not be proactive unless they had considered and planned this behaviour in respect to some psychological driver. This suggests that it may be a more complicated process to measure and assess, particularly in an organisational setting which may utilise other-rater assessments to determine an individual's level of proactivity. Future research examining and testing the relationships and components of each of the process views

of this conceptualisation of proactivity would be highly beneficial to understanding how these models may integrate and how they may be empirically investigated.

Experimental Approaches to Measuring Proactivity

The lack of empirical research involving the conceptualisation of proactivity as a process is representative of the proactivity literature more broadly, which does not bear a great deal of experimental investigation. Rather, this research domain relies largely on approaches involving self-report measures and cross-sectional design, which have significant limitations.

General methodological issues. A more general issue in the use of a self-report measure to assess proactivity is that this approach is inherently subject to a number of biases, and therefore the measure may not accurately capture individual proactivity. As proactivity is generally considered a positive attribute, individuals are more likely to inflate their report of engaging in proactive behaviours, thus subjecting the scale results to social desirability biases. The self-report methodology is, therefore, measuring an individual's belief that he/she performed the behaviours described, rather than a measure of the actual performance of behaviours reflected in the measure. Even if an individual was to respond honestly, the responses may not reflect personality, since there is evidence to indicate that situational factors influence the impact of proactive personality on behaviours, and therefore, an individual's response to many items may be shaped by his/her situation more than disposition. This may be particularly confounded when the measure is deployed in a workplace setting, where various job factors may play a significant role in how individuals respond to the measure.

In addition to issues of self-report biases, because the personal disposition measure places an emphasis on change, it can be confrontational and uncomfortable. Thus, where peer assessment is used to determine proactivity, proactivity may not always be welcomed by supervisors or colleagues and can be assessed negatively by them (Frese, Fay, Hilburger,

Leng, & Tag, 1997). Parker, Bindl and Strauss, (2010) also suggested that if peer raters are passive in their own approach, they are unlikely to recognize or positively appraise the target's proactivity and therefore the trait proactivity of this peer rater should also be evaluated when using their ratings in determining an individuals' proactivity. Therefore, whilst self-rated assessments may inflate reporting, peer-rated assessments in organisational settings may reflect issues of under-reporting, due to potential confounding factors.

In addition to the issues associated with self-report and related biases, a concern for cross-sectional designs is that this approach fails to capture changes in proactivity across different time periods. More importantly, this method raises the issue of inferences about causality and common method variance. Parker and Collins (2010) also recognise that cross-sectional design findings should be interpreted with caution, particularly findings related to antecedent factors. Rigorous longitudinal design studies have been employed to overcome some of the shortcomings of such designs (e.g. Frese et al., 2007; Parker, 1998), with a key advantage being the superiority of this design in identifying causal directions. However, a challenge with a longitudinal study in this research is the issue of choosing an appropriate time frame in which to examine proactivity (Bindl & Parker, 2010), and without suitable time framing within a longitudinal design it may be difficult to capture the causal direction of relations between key variables. Due to the historic focus on cross-sectional approaches, little is known about the temporal linkages between antecedents and proactivity, such as how long it takes for certain work factors to promote proactivity, or the time that it takes for proactivity to produce or influence recognised outcomes (Bindl & Parker, 2010).

A second advantage of longitudinal designs is that some common impacts on variance (e.g. stable factors like personality) can be controlled in longitudinal analyses. However, longitudinal design studies have also often failed to control or consistently measure all of the independent and dependent variables at all time points, which limits the ability to partial out

the variance caused by the measure of interest over time (Bindl & Parker, 2010). Furthermore, where a study uses multiple self-report scales (e.g. in the case of studies investigating motivation and behaviour), these will be subject to common method bias at any given measurement period, such that confounding factors, such as mood, could affect responses to both motivation and behaviour scales.

In comparison, experimental studies allow investigations of causal relationships and experimental design also reduces the likelihood of common method variance, since fewer variables are measured using self-report. For example, creativity is construct which has been shown to be positively associated with intrinsic motivation (e.g. Amabile, 1998). A cross-sectional survey would not be able to indicate whether creativity is the consequence of intrinsic motivation, or whether the experience of creativity is motivating in itself. Likewise, if a longitudinal study does not capture how individuals felt immediately before and immediately after the creative behaviour, it may reveal little more in the way of causal direction than the cross-sectional study. An experimental approach, however, can control the situation to allow direct measurement of intrinsic motivation before and after an opportunity for creativity. The same can be applied to the study of proactivity in investigating the role of motivation within the proactivity process.

A further issue when engaging cross-sectional design methodologies is the dynamic nature of proactivity. As supported by the multi-stage process model of proactivity, proactivity interacts with a number of factors at any one time, and the proactivity process is likely to progress and change over time. Hence, methods that allow in-depth investigation of processes, such as intra-individual techniques like diary studies (e.g. Fritz & Sonnentag, 2009) and laboratory studies (e.g. Morrison, 2006) are useful for clarifying the stages and factors within the proactivity process (Bindl & Parker, 2010). The inclusion of qualitative

methods that allow for a more exploratory approach may also be valuable for understanding the processes that underpin proactivity (e.g. Boies & Howell, 2009; Bindl & Parker, 2010).

The importance of utilising an experimental approach and manipulation lies primarily in the ability to create an environment in which to test the relationships between proactivity and other variables. Potentially, this may also allow for the exploration of the mechanisms as to when and why proactivity occurs. Laboratory and experimental studies are recognised as excellent methods for assessing theoretical predictions and avoiding possible contaminations (LePine & Van Dyne, 2001), which is critical when investigating new theories and models. This is particularly important in the context of the concept of proactivity as a process, as the relationships between contextual factors and proactive processes are yet to be tested and validated in such a setting. Whilst experimental methods have been utilised in proactivity research before, a key aim of the present thesis was thus to develop an experimental methodology to explore key contextual factors, complexity and motivation, in relation to the proactivity process. Experimental design was also critical to the present research, as it is also able to help control for norms or cultures that might constrain an individual's behaviour and prevent individual difference effects from emerging (LePine & Van Dyne, 2001), which is important when exploring the multi-stage process model of proactivity as in the present thesis, as individual factors play a significant role in the process.

An experimental design also provides equal opportunity and reason for all participants to engage in proactivity, as the setting provides an 'even playing field' where there is no history or background as is typically the case in organisational settings. In non-laboratory settings, situational factors such as opportunity or other confounding factors may impact on whether individuals display proactivity, and may, therefore, skew the accuracy of results. This highlights a further benefit that determined the use of experimental approaches in the present

research to advance the understanding of proactivity as a multi-stage process and identify the factors and influences that initiate proactivity.

Potential use for experimental approaches in proactivity research. One application of experimental method to the examination of proactivity would be through simulating a work setting. This could be achieved via the use of work-related tasks, such as responding to emails in an in-basket, or identifying solutions to work-based problems, which creates the opportunity for individuals to perform a task proactively. Situational and other antecedent variables could also be manipulated and individual difference factors could be measured using both survey measure and behavioural observation to determine the effect of different antecedents on the process of proactivity, as proposed in existing theories and models of proactivity. This approach has been successfully demonstrated in previous studies in which the effect of antecedent factors was explored, independent of errors or biases in the assessment of the situation. For example, Parker, Jimmieson and Amiot (2009) used an experimental inbox task to investigate the impact of demand and control on individuals' task satisfaction and perceived goal attainment. The experimental setting allowed the situational factors of demand and control to be manipulated via the instructions provided to participants. The results of this study were able to provide a clear determination as to the influence of these factors on individual perceptions, revealing that increased task demand resulted in increased focus on extrinsic rewards. The success of Parker et al.'s (2009) methodology provided a foundation on which the present methodologies (in Chapter 3) were developed to apply a similar approach to test and expand the impact of motivation on the proactivity process. In the present research, the experimental inbox task was adapted to focus on proactive problem-solving in response to the inbox items to explore how individual motivation impacts on this aspect of the proactivity process. One of the advantages of this experimental task is that it can be modified and expanded to include other contextual aspects

of the proactivity process and therefore continue to test and validate this concept of proactivity.

In a small number of studies, this approach to manipulating situational and environmental factors has been utilised when exploring specific examples of proactivity-related behaviours. For example, Morrison (2006) developed an experimental method to investigate the impact of situational factors on a proactive form of behaviour called pro-social rule breaking. In this study, a scenario-based laboratory task was engaged whereby participants were required to read two short vignettes, following which they had to assess the likelihood that they would break a rule in that given scenario. Job meaning, autonomy and co-worker behaviour were manipulated as the situational factors, and risk-taking propensity, as well as dispositional factors, including proactive personality, were assessed as individual factors. The results revealed that proactive personality did not directly predict the likelihood of individuals engaging in pro-social rule breaking, which supports the argument that proactivity is more than just a dispositional construct. This finding may have otherwise been less clear in a survey-based research study. Results also revealed that the majority of participants believed the vignettes to be realistic and that they could imagine themselves being in that particular scenario, which supported the efficacy of this experimental method in creating a realistic real life setting. A contribution of this study, therefore, was the ability to distinguish the impact of the situational and individual factors on participants' likelihood of engaging in the proactive behaviour, in a setting that described and mimicked a work-based scenario. A similar approach was adopted by the experimental method utilised in the present research (Chapter 3), wherein the inbox tasks utilised vignette-style situations in a work-related context to simulate a realistic work-based scenario in which participants' proactivity could be investigated.

LePine and Van Dyne (2001) also adopted an experimental approach in their investigation of personality factors, voice behaviour (a form of proactive behaviour), and task performance. In their study, groups of participants engaged in a computerised decision-making task that required group members to exchange information before a decision could be made. Participants were provided the opportunity to express change-oriented constructive communication (voice behaviour) should they wish to provide input as to how they would receive or share information. In this study, participants did not have any prior relationships that impacted on their choice to engage in proactive behaviour, controlling for some of the typical confounding factors prevalent in organisational settings. The controlled setting also allowed equal opportunity for participants to engage in proactive voice behaviour. Furthermore, by controlling the situation, the researchers were able to ascertain more accurately, the impact of personality variables, noting that conscientiousness, extraversion and agreeableness related more strongly to voice behaviour than to task performance. As the nature of the performance task was work-based, this allowed the researchers to draw inferences about how the findings could apply in an organisational setting, together with the potential implications for organisational behaviour. A potential limitation of this research, however, was the requirement for participants to use a particular computer-based program to complete the experimental task and interact with others. Participants' familiarity with using similar programs or level of comfort in performing computer-based tasks may have confounded whether participants readily engaged in the task. With this in mind, the research conducted in the present thesis required participants to have no previous experience in performing similar tasks or attempted to provide tasks that required basic levels of technical skill. Nonetheless, the efficacy of experimental research like that demonstrated by LePine and Van Dyne (2001) and Morrison (2006) provides support for the use of experimental methods in providing a controlled environment in which to explore proactive behaviour, to determine

direct influences of contextual factors on proactivity. This was an important component of the methodology engaged in the present research (Chapter 2), whereby the laboratory setting allowed the contextual factor of complexity to be manipulated and controlled and therefore its impact on the proactivity process to be tested, hence expanding the theoretical understanding of this contextual factor on proactivity.

These exemplar studies provide evidence for the utility of experimental research in investigating proactivity, which is argued to have particular importance for the exploration of the concept of proactivity as a process. Experimental methodology is recognised as a valuable approach to understanding the micro-processes of goal generation and striving within proactivity, which has not received significant attention in the research literature to date (Parker, Bindl & Strauss, 2010). As the concept is a relatively contemporary one, a laboratory method would be beneficial to establishing and testing the relationships asserted by this concept and, in particular, the impact of motivational states.

Whilst the impact of motivation in terms of proactive goal generation and striving has limited empirical examination, experimental methodology has been used to explore the impact of motivation on work-related variables, as demonstrated by Parker, Jimmieson, and Amiot (2013). Parker, Bindl, and Strauss (2010) utilised a work simulation to explore the effects of self-determined work motivation on the relationship between job control and employee stress. The work simulation involved an email inbox task that required participants to respond to a certain number of emails "before a meeting with the boss in 20 minutes". Participants' autonomy in relation to the task was also manipulated according to different instructions as to how to respond to the emails, with the low control condition instructing participants more forcefully and the high control condition allowing participants more freedom in how to respond to the emails. Motivation was operationalised as the micro forms of motivation consistent with self-determination theory (Deci & Ryan, 1985). The

experimental approach employed in this study afforded the researchers to report on the differential outcomes on stress and motivation type according to the demand and control conditions (Parker et al., 2010).

Replicating this approach and methodology in the context of proactivity, to similarly explore the impact of a manipulated condition on proactivity and motivation is considered to be advantageous. Adopting this approach would assist in extending the existing proactivity literature, and would allow the ability to test some of the theoretical relationships between proactivity and related antecedent factors, as well as enhancing the understanding of the conditions that are conducive to proactive behaviour. As experimental methodology has been used successfully in the past to explore similar research aims, it provides a useful model for engaging such an approach for the exploration of proactivity. In particular, experimental methodology should assist in expanding the evidence for the impact of motivation, and test the kinds of motivation that are important in generating proactivity. The findings of this research may also be applied within real work settings, as direction for which motivations to stimulate in order to optimise proactivity.

The potential for experimental research to contribute to the contemporary understanding of proactivity, as well as the capacity for this approach to explore and clarify antecedent and causal factors related to proactivity, led to the focus of the combined papers in the present dissertation. That is, the present research developed experimental approaches to the investigation of proactivity.

Summary of Critique

In reflection of the different concepts of proactivity explored, a number of contributions and limitations demonstrated by these concepts have been drawn upon to develop the research aims of the present studies. The concept of proactivity as personality illustrates that some individuals are more likely to act proactively than others and also

provides a validated measure to reflect an individual's propensity to engage in proactivity. However, this does not adequately account for circumstances where individuals higher in proactive personality would not act proactively. The concept of proactivity as behaviour provided a neat classification system for identifying proactivity and how it can be demonstrated, in addition to advancing the methodological approach to measuring proactivity. However, similar to the critique of proactive personality, this concept does not reflect the antecedent factors that influence an individual to demonstrate such behaviours. Whilst previous theories and models of proactivity helped to explain certain influences (e.g. personality) and outcomes (e.g. specific behaviours) of an individual engaging in proactivity, neither of the two concepts explored provide an explanation of the cognitive and individual processes that determine proactivity. The contemporary view of proactivity as a process involving multiple stages of cognition and action addresses these identified gaps, although limited experimental research exists presently in order to explore and demonstrate the relationship between different stages asserted by the theory. A number of the antecedent factors identified by literature on this view have also not been empirically tested or validated, warranting further research in this vein.

Research Aims, Scope and Objectives

The identified future directions for experimental research, as well as the opportunity to extend the evidence for the concept of proactivity as a process, guided the direction and aims of the research presented in this thesis. Specifically, this research was designed to explore experimental approaches to investigate proactivity; test the relationship between proactivity and key situational factors, including complexity and accountability; and investigate the role of motivation in proactivity. Despite the assertion that these factors should influence the performance of proactivity, little research has been conducted by way of establishing the relationships. Therefore, the purpose of engaging an experimental investigation manipulating

these key variables was to gain a clearer understanding of the direct effects of situational factors, as well as the effects of transient states on proactivity. The situational factors of complexity and accountability have been successfully manipulated in other experimental research (e.g. Maynard & Hakel, 1997; Tetlock, 1985), and both are supported by Grant and Ashford (2008) as key antecedents to the proactivity process. Further, these are two important factors within the context of modern working life, particularly with the changing and highly dispersed nature of workplaces. Therefore, these common situational factors were determined as warranting additional attention to understand their impact on proactivity. Likewise, Parker, Bindl and Strauss (2010) indicated motivational state as critical to understanding why an individual may be proactive, although only theoretical predictions were made in relation to which kinds of states are most important for positively enhancing proactivity. The present research was, therefore, designed to help establish and clarify this issue. In doing so, the intention was to extend the current understanding of proactivity as a process, as well as to develop a method to independently assess the extent to which an individual engages in proactive behaviour.

The first research paper contributed some initial testing of an experimental methodology for exploring proactive action and Organisational Citizenship Behaviours (OCB), in a simulated work setting. Proactivity was explored in relation to action directed toward future impact, through the manipulation of feedback seeking, with the view to extending the understanding of this conceptualisation of proactivity provided by Grant and Ashford (2008). Due to the ability to manipulate contextual variables in an experimental setting, the influence of complexity as a situational factor and its relationship with proactivity and OCB was also explored, given the support for this variable as an antecedent to the proactivity process (Grant & Ashford, 2008). Adopting an experimental approach to explore the proactivity and OCB paradigms, also allowed the opportunity to eliminate and control

confounding factors which are otherwise problematic in an organisational setting. Drawing on self-determination theory (Deci & Ryan, 1985), and stressor-strain based theory (Karasek, 1979), this study explored predictions of the effect of this situational factor on the discretionary behaviours respectively. The success of the experimental method in manipulating this contextual factor demonstrated a potential future application of the experimental approach for measuring this factor; however, future modifications are suggested for the manipulation of discretionary behaviours given the difficulty in eliciting these in the present method.

The second paper comprised two studies that were designed to apply a laboratory-based method for successfully eliciting proactivity, to further investigate components of the proactivity process, including motivation. A key contribution of this study was the examination of the anticipation and planning phases of proactivity (Grant & Ashford, 2008) via proactive problem solving. The investigation of this phase of proactivity also followed Parker and colleagues (2010) concept of proactive goal generation. The first of the two studies was conducted with first year psychology students, and a set of criteria for assessing proactivity independently was developed, providing a useful method for independently assessing an individuals' display of proactivity. In the second study, the research was replicated with an industry sample of participants and the proactivity criteria and research method were refined to address shortcomings identified in the first study, as well as to further explore the independent method for assessing proactivity, particularly the anticipation and planning phases through proactive problem solving.

Research Methodology

To explore the research questions and objectives outlined for each of the studies, a core contribution of this collective research was in the development of experimental and laboratory-based methods for expanding and testing contextual aspects, complexity and

motivation, with respect to the proactivity process. The process concept of proactivity is a relatively recent model of this construct and therefore limited research has tested and validated many of the components of this concept, particularly contextual factors. Hence, this research aims to contribute to the existing concept by engaging methods to explore and test specific components asserted by this model.

In doing so, two different empirical approaches were used in the present studies. The first method utilised a rail control simulator in a laboratory setting, wherein participants completed a computer-based task mimicking work tasks performed by rail control operators. Additional behavioural-based tasks were manipulated in the laboratory, in the attempt to elicit specific discretionary behaviours, whilst controlling potential confounding factors typically present in the workplace. This research aimed to extend Rodell and Judge's (2009) theoretical understanding of the impact of complexity on organisational citizenship behaviours, through a lens of stressor-strain theory (Karasek, 1979), as well as the surmised impact on proactivity, via self-determination theory (Deci & Ryan, 1985) as per Grant and Ashford's (2008) model. The effect of complexity was manipulated through varying the level of demand in the simulator experimental task across conditions. A contribution of this research was the expansion on current theories of discretionary behaviour through exploring the impact of a key contextual factor, complexity. The experimental method employed also illustrated the opportunity to engage in similar methodologies in future research in which to test and manipulate other contextual factors.

The second method employed in the present research involved an online email inbox task requiring participants to assume the role of a Human Resources manager and respond to inbox items (Shalley, 1991). Each of the items reflected different workplace scenarios and required the participant (as the Human Resources manager) to attempt to solve the inherent problem and provide some suggested solutions. The provided solutions were then reviewed

by independent assessors who used a set of criteria to determine the level of proactivity that the participant had engaged. The criteria were developed using current literature definitions of proactivity and reviewed by a leading proactivity researcher; this approach thereby provided a novel method to independently assess proactivity, rather than using a self-assessment method which faces issues related to self-rater bias. The method also adapted methods previously used in creativity research to demonstrate an approach to measuring and investigating proactivity that provides opportunity to analyse cognitive components of the proactivity process. This expands on Grant and Ashford's (2008) assertion that proactivity involves phases of anticipation and planning (cognitive elements) and develops a method that could be replicated in future research to further test these components of proactivity in other contexts. Participants' motivation in performing the proactive problem solving was assessed using a measure based on self-determination theory (Deci & Ryan, 1995), which expanded on Parker, Bindl and Strauss' (2010) model of the proactive process. This research hence aimed to test and explore the relationship between motivation and proactivity, to further understand the influences that determine when and why an individual might engage in proactivity.

In combination, the present research developed original experimental and laboratory-based methods for examining proactivity, including elements of the concept of proactivity as a process. The results of the research explore the implications of using proactivity criteria to independently assess proactivity, including the implications of utilising this approach to develop future research methods and designs. Furthermore, the understanding of the relationship between proactivity and variables represented within the concept of proactivity as a process, including complexity and motivation, is deepened, and methods for assessing these relationships are tested. Findings contributed by the present research, as well as implications for future experimental studies of proactivity, are discussed in conclusion.

2. Introduction to Paper: The Impact of Complexity on Discretionary Behaviour: An Experimental Simulation Study

The following section presents research findings from a study conducted within a laboratory setting, exploring several types of discretionary behaviours. While the general focus of the present collection of research is proactivity, the present study also explored organisational citizenship (OCB) and counterproductive work (CWB) behaviours due to these behaviours having shared situational antecedents. By measuring non-proactive task performance and discretionary behaviour alongside proactive action, the opportunity was also presented to identify unique predictors of proactivity. This is important in helping to distinguish, and independently manage, proactivity from pre-existing constructs such as task performance and OCB.

The shared situational antecedent examined in the present research was that of situational complexity. A key purpose of manipulating this antecedent was to address limited experimental explorations of its influence on these behaviours. Grant and Ashford (2008) proposed in their multi-stage process concept of proactivity that situational autonomy is likely to increase proactivity as a result of the experienced self-efficacy enhanced by greater decision making in situations involving greater complexity. A further reason for selecting situational complexity was that it is difficult to assess effectively using self-reports, as it can easily be confounded by dispositional and other situational factors, but it can be operationalised in an experimental setting.

In developing a laboratory-based method for exploring the relationships between complexity and discretionary behaviour, a computer task simulating a rail control environment was utilised due to a number of identified benefits. This method allowed task and situational features to be manipulated and controlled to test and establish relationships. This method also simulated a realistic work setting, which is important given the inherently

work-based nature of the discretionary behaviour types examined in the research. The novel nature of the task also meant that participants would be participating in a neutral setting, so confounding factors such as experience or previous performance would not interfere with individuals' ability to perform the task.

Each of the discretionary behaviours included in the present study were represented by a specific kind of behaviour or action, based on behaviours asserted to be impacted by complexity and those able to be tested and manipulated within an experimental setting. Feedback-seeking was selected as a representative of the action directed towards future impact component of the proactive process (Grant & Ashford, 2008), given the current method allowed this action to be used to enhance participants' performance, consistent with the theory underlying reasons for individuals acting proactively in situations involving high complexity. Feedback-seeking has also been successfully elicited in experimental settings in previous studies (e.g. Ashford & Northcraft, 1992). OCB was represented by pro-social helping behaviour, which was guided by existing social psychology experimental research (e.g. Wright & Sablynski, 2008) in which researchers have demonstrated effective methods for eliciting and manipulating such behaviours. Finally, CWB was represented by sabotage and self-promotion behaviours, primarily due to the opportunity to manipulate the behaviour within the context of the experiment procedure utilised in the present research.

A definition of task complexity as involving multiple elements that need to be processed and executed in a task (Wood, 1986) was used to direct the manipulation of this situational antecedent factor in the present research. The novel experimental task therefore contrasted a high complexity condition, wherein individuals had to direct multiple rail lines and record multiple data components, with a control condition in which the rail task was simplified and the data record only required a single element to be recorded.

The use of a laboratory-based rail control simulator to explore discretionary behaviour is a novel approach. The ability to manipulate complexity was tested via this method, in addition to investigating the impact of this antecedent factor on the highlighted discretionary behaviours. The specific methods for manipulating complexity and providing opportunity to perform the discretionary behaviours were based on exemplar methods from previous studies in order to strengthen the potential for success in eliciting the desired behaviours.

A primary aim of this paper was to demonstrate an experimental approach to examining and manipulating task complexity and different discretionary behaviours, and to develop a better understanding the relationship between these variables. Illustrating the relationship between proactive action and complexity would also provide empirical support for the role of this factor, in relation to autonomy, in the concept of proactivity as a process presented by Grant and Ashford (2008).

Despite providing participants with the opportunity to perform CWB in the present experiment, the study was unsuccessful in eliciting these behaviours from participants. Consequently, the research related to this aspect of the study is reported in a separate section following the paper, entitled "The Exploration of Counterproductive Work Behaviour in an Experimental Simulation Study".

A paper based on the research reported in the following Chapter was successfully accepted for presentation at the Industrial and Organisational Psychology Conference in 2011. This paper is included in Appendix E.

The Impact of Complexity on Discretionary Behaviour: An Experimental Simulation

Study

Laura C. Kirby

Macquarie University

Abstract

In research by Grant and Ashford (2008) and Rodell and Judge (2009), task complexity has been proposed to increase the performance of two types of discretionary behaviour, respectively: proactivity, and organisational citizenship behaviour. The present study investigated these predictions through the use of a novel laboratory approach. Experimental design was employed due to the limitations of survey methodologies for investigating socially desirable behaviours. Complexity was manipulated via the experimental tasks undertaken by participants, with expectations that this antecedent factor would enhance both proactive action and citizenship behaviours. Hypotheses were tested on a sample of 37 psychology students who participated in a computer-simulated rail control task. Task complexity was found to increase citizenship behaviour, whereas no differences in the complexity and control conditions were found for proactive action. Future research directions and improvements to build on the present findings are discussed.

The Impact of Complexity on Discretionary Behaviour: An Experimental

Simulation Study

Behaviour that goes beyond the confines of traditional job performance and contributes to ongoing organisational success is particularly important in the modern workplace, which features increased competition, accountability and employee dispersion across the workforce. This environment highlights the importance of organisations demonstrating initiative, innovation, flexibility and resourcefulness in order to advance. An outcome of this organisational development is a greater demand for individuals to display discretionary behaviours that are related to self-management, adaptivity, forward-thinking, and a willingness to go beyond minimal requirements to achieve organisational success (Barling, 1999). Two classifications of behaviours from the organisational literature relate directly to these needs: proactive behaviour, and organisational citizenship behaviour. These two behaviours have several similar characteristics, including a number of shared antecedent factors; hence, this study was designed to investigate the impact of a shared situational antecedent on the two behaviours. However, the behaviours were investigated from different perspectives, as the form of proactivity designed to be elicited was specifically focused on action directed toward future impact, consistent with a component of the proactivity process (Grant & Ashford, 2008). This operationalisation is discussed further herein.

Task complexity was the antecedent factor explored, with the aim of expanding the understanding of the relationship between complexity and the behaviours as there is limited empirical research investigating this to date despite theoretical support for the relationships (Grant & Ashford, 2008; Rodell & Judge, 2009). Typically, survey measures rather than experimental manipulations have been used to explore these relationships (e.g. Andrews & Gordon, 1970; Amabile et al., 1996; Lee, Kim, & Kim, 2013). To understand the direct influence of this situational factor and its relationship to each of the discretionary behaviours,

the present study utilised an experimental design. A rail control simulation was engaged, allowing the researchers to manipulate task complexity and provide opportunity for individuals to perform the discretionary behaviours of interest.

The present experimental approach contrasts with much of the existing literature, which primarily relies on self-report measure and is therefore unable to determine the direct effect of antecedent factors such as complexity (e.g. Miao, 2009; Todd & Kent, 2006; Joo, 2009). The research hypotheses were thereby developed from existing theoretical assertions regarding the expected relationship between proactive behaviour, organisational citizenship behaviour and complexity.

Proactive Behaviour – Action Directed Toward Future Impact

Typically proactive behaviour is regarded as a form of motivated work behaviour considered to be self-starting in nature, adaptive to situations, requiring initiative, anticipation and forward-planning, with the intention to impart some positive change or improvement to current circumstances (Crant, 2000; Frese & Fay, 2001; Parker, Williams, & Turner, 2006). Forms of proactive behaviour commonly studied include feedback-seeking (e.g. Ashford & Cummings, 1985), socialisation (e.g. Morrison, 2002), taking charge (e.g. Morrison & Phelps, 1999), voice (e.g. LePine & Van Dyne, 1998), proactive problem solving and idea implementation (e.g. Parker, Williams, & Turner, 2006), among others. A recent conceptualisation of proactivity suggests that it is not simply a behaviour, or a personality variable, but rather encompasses a number of phases and components that represent a broader process (Grant & Ashford, 2008). Grant and Ashford (2008) identify three phases of proactivity: Anticipation, planning, and action directed toward future impact. The present research focused on the action directed future impact phase of the proactivity process to test and expand this concept of proactivity.

Although a wide range of proactive *behaviours* have been studied, very few have explored this particular component of proactivity and few have utilised experimental research to examine associated variables. Thus, current knowledge is heavily based on self-report measures rather than behavioural responses. Commonly used measures include taking charge (Morrison & Phelps, 1999) and voice behaviour (Van Dyne & LePine, 1998), which focus on an individual's (or a peer's) perceived tendency to perform certain actions. The Proactive Personality Scale (Bateman & Crant, 1993) is also used in proactive behaviour studies, although this measure reflects a dispositional tendency to perform these behaviours. The inclusion of this measure in the present study was due to the expectation that this would be a predictor of individuals more likely to engage in the proactive action. By engaging participants in a laboratory-based task, experimenters could use observable action to determine whether an individual had been proactive, hence utilising an independent rater approach to measuring proactivity.

The present study focused on the specific proactive action of feedback-seeking. The primary reason for selecting feedback as illustrative of proactivity was due to the ability to create a situation in which individuals would be motivated to improve their performance, and therefore demonstrate proactive action directed towards future action, consistent with Grant and Ashford's (2008) model of the proactivity process. Feedback seeking was also able to be more realistically elicited under experimental conditions, in contrast to behaviours like taking charge. The latter may be difficult to simulate in a neutral laboratory setting, since, by definition, it requires individuals to understand how tasks are executed within the context of an environment to effect functional change. Thus, it may be more relevant to situations involving ongoing issues or opportunities (Morrison & Phelps, 1999). In contrast, feedback can be sought in relation to short-term and novel tasks and therefore the opportunity to enact this behaviour can be manipulated under experimental conditions.

A further reason for utilising feedback-seeking is that successful experimental methods for eliciting this behaviour have been demonstrated in previous studies. For example, Ashford and Northcraft (1992) investigated the impact of impression management motives on individuals' willingness to seek feedback. Individuals performing an in-basket task were found to be less likely to request feedback when an observer was present, which they contended to be as a result of participants wishing to avoid appearing weak or uncertain. In a secondary study, Ashford and Northcraft (1992) found that participants with a superior performance record were more inclined to request feedback from an observer to enhance the observers' impression of the participant. Similarly, there is evidence to suggest that as the perceived diagnostic value of feedback increases, individuals are more likely to seek feedback (Ashford, 1986; Morrison & Cummings, 1992). Stapel and Tesser (2001) demonstrated that if an individual believes a task-related ability is important for task attainment or performance, feedback-seeking on that ability is more likely. In this case, participants engaged in greater feedback-seeking when they were informed that their performance would be evaluated. Although investigating different motivation factors for seeking the feedback from Ashford and Northcraft (1992), Stapel and Tesser (2001) suggest that, in conditions that mimic an organisational setting, participants are more inclined to seek feedback when there is some instrumental use for obtaining feedback.

In addition to highlighting the value of investigating feedback-seeking in the context of proactive behaviour, Stapel and Tesser (2001) also demonstrated the utility of experimental manipulation for eliciting feedback-seeking behaviour and allowing researchers to examine the conditions under which people seek feedback. The ability to create an opportunity for feedback-seeking in settings mimicking organisational demands was also demonstrated (Stapel & Tesser, 2001). In building on such findings, the goal of the present study was to create an empirical task that mimicked an organisational setting but also provide some

instrumental use for seeking feedback, or otherwise created a motivating reason for participants to engage in feedback-seeking as an illustration of proactive behaviour.

Organisational Citizenship Behaviour

Like the proactivity literature, a diversity and array of exemplar behaviours and methods of investigation is also evident in the organisational citizenship behaviour (OCB) literature. A number of types of behaviours have been categorised under the umbrella of 'OCB', including helping behaviours, sportsmanship, organisational loyalty, organisational compliance, civic virtue, and self-development (Podsakoff, Mackenzie, Paine, & Bachrach, 2000). Of these, one of the more common representations of citizenship is helping behaviours, which is generally manifest in an individual performing voluntary actions directly intended to help another person with a work-related task (e.g. Organ, 1988), which was the representative form of OCB in the current study. A motivation for selecting this behaviour was to compare non-proactive and proactive behaviours, and this kind of helping behaviour, which is solicited by others, and relatively altruistic and passive, is distinct from the self-initiated goal-directed behaviours classified as proactive. Thus, while some researchers have questioned the distinction between proactive and citizenship behaviours (e.g. Graham, 1991), should the present experimental manipulation reveal that solicited helping is influenced by factors different from those influencing proactivity, the distinction between the two may be substantiated.

Amongst the different kinds of factors argued to influence citizenship and proactive behaviours, there is evidence to suggest that contextual factors may be more effective for predicting citizenship behaviours than personality or affective variables (Podsakoff, et al., 2000). Specifically, aspects of workplace incentives and rewards, such as leader advocacy reward behaviour, the value of the reward, and distance from the control of the reward, have been shown to have a relatively strong relationship with citizenship behaviours, in contrast to

the negligible relationship between dispositional variables and these behaviours (Organ, 1994). Despite such findings, there is limited experimental research examining the relationship between situational factors and OCB to clarify these effects (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Rather, self-report and third-person report surveys have often been used. Given the limitations associated with these kinds of measures, applying experimental methods is a promising area of investigation to gain a greater understanding of situational factors that contribute to or detract from the performance of citizenship behaviours.

Contextual Impact of Complexity

As proactive action and OCB are work-based discretionary behaviours, understanding the impact of relevant work characteristics on these behaviours can help identify the context in which the behaviours are likely to be performed. Complexity is a work condition empirically supported (e.g. Karasek & Theorell, 1990) as an important influence on incumbents' health (Karasek & Theorell, 1990), intellectual flexibility (Kohn & Schooler, 1978) and work motivation (Hackman & Oldham, 1976). Complexity has been defined by the number of elements that need to be processed and executed in a task, as well as the strength of the relationship between information cues and outputs (Wood, 1986). More complex tasks or work involves more elements and may have numerous cues and outputs. A greater number of elements implies that the work provides more opportunity or options for decision making; as such, complexity has been conceptually linked to a number of other work characteristics, such as task/job control, given both refer to decision possibilities (Karasek & Theorell, 1990). In such situations, individuals are also afforded greater autonomy through increased decision making and the opportunity to take initiative. From a stressor-strain perspective, greater complexity has also been argued to provide a source of challenge to individuals, providing a

rewarding work experience that increases opportunity for personal growth (Rodell & Judge,

2009).

In this context of complexity, voluntary behaviour is a vital element in organisational

functioning, as formal task performance and assigned duties may not comprise important

behaviours for successful organisational functioning in the context of greater autonomy, such

as initiative, cooperation, flexibility, forward-thinking, and innovativeness (Spector & Fox,

2002). As the modern workforce becomes more dynamic and decentralised, an increasing

importance is placed on employee behaviours that see individuals take control of their own

environments and seek ways to impact and improve them (Crant, 2000). Given that complex

tasks or environments afford the opportunity to engage in these kinds of behaviours, it

warrants further exploration to determine the impact of this context on relevant discretionary

behaviour, proactivity and citizenship behaviour.

Proactivity and complexity.

Situations requiring greater decision making and input into how a task is completed, as

in the case of complex tasks, have been shown to stimulate proactive thinking, self-starting

approaches, and overcoming barriers, all which are features of proactivity (Frese, Garst, &

Fay, 2004). Work involving higher complexity is also associated with a greater sense of

responsibility for the work (Hackman & Oldham, 1976) and greater proactive role orientation

(Parker, Wall, & Jackson, 1997). According to Grant and Ashford (2008), the psychological

mechanism underlying this pattern of behaviour is motivated by employees' experience of

efficacy. From a self-determination theory (Deci & Ryan, 1985) perspective, the enhanced

autonomy through opportunity for decision making in complex conditions is likely to increase

individuals' sense of efficacy and meet intrinsic needs for competence. Upon encountering

autonomy, individuals have the opportunity to experience the belief that they have the

knowledge, skills and abilities anticipate, plan, take charge, exert control, and exercise influence, consistent with the proactivity process (Grant & Ashford, 2008).

In the context of complex work characteristics, one of the proactive methods individuals seek to use to self-regulate is active feedback seeking (Ashford & Tsui, 1991). Greater autonomy in tasks also implies having an influence on the ability to determine the impact of one's work (Frese, 1989) and therefore feedback-seeking is likely to assist in the improvement of one's performance (Grant & Ashford, 2008). For this reason, feedback has particularly high levels of instrumental value in the context of complexity, and individuals are proposed to seek feedback more frequently in this context. For example, when individuals commence a new job active feedback seeking allows them to gain understanding of the work characteristics and other valuable information for fostering their acclimatization (Ashford, 1986; Ashford & Cummings, 1985; Morrison, 1993; Frese, Garst, & Fay, 2004). In an experimental example, where individuals had greater control over their work they were more likely to seek feedback to improve their performance (Dodd & Ganster, 1996). In the present research, individuals were provided the opportunity to seek feedback in the context of improving their performance on the rail control task, which was being evaluated. Based on self-determination theory (Deci & Ryan, 1985), it was expected that participants with greater opportunity for decision-making and control in the complexity condition would be motivated to improve their performance and therefore engage in proactive action towards enabling this outcome, by seeking feedback. Thus, it was expected that greater feedback seeking would be observed in the complexity condition, according to the following hypothesis:

> *Hypothesis 1: Participants in the complexity condition will demonstrate higher rates of proactive action (feedback-seeking) than participants in the control condition.*

Organisational citizenship behaviour and complexity. Although there is limited research testing the impact of complexity on proactive behaviour, some predictions could be

made for the impact on OCB via drawing on the broader construct. Characterised by everyday acts of spontaneous, pro-social gestures towards the work needs of others or for the good of the organisation, citizenship behaviours are essential in modern workforces to sustain innovative and spontaneous activity in the face of challenge provided by the likes of complexity (Katz, 1964). Rodell and Judge (2009) argued that complexity is a feature of situations involving challenge, and in such situations citizenship behaviours are more likely to occur, as a consequence of the increased attentiveness of individuals in such situations. Underpinned by a stressor-strain view (Lazarus & Folkman, 1984), the increased attentiveness is surmised to result from the positive affect from experiencing stress in the form of 'challenge'. A number of work-related stressors have been associated with increased citizenship behaviour, such as work overload (Miles, Borman, Spector, & Fox, 2002) which may be argued to share similar characteristics with complexity. As this form of stress provides challenge, which enhances positive affect, individuals are more likely to engage in positive behaviours that enhance their interaction with others, in this case organisational citizenship behaviour. Rodell and Judge (2009) also suggested that individuals who experience a challenge stressor (such as a complex task) see it as an opportunity to gain resources, and are therefore more likely to strive to increase their potential for gaining additional or future resources through undertaking citizenship behaviours. An individual's perceived experience of task complexity is argued to enhance challenge, and hence individuals are more likely to perform citizenship behaviours in situations involving high complexity (Campbell, 1988). Thus it was anticipated in the present study that complexity would increase the occurrence of citizenship behaviour, according to the hypothesis:

Hypothesis 2: Participants in the complexity condition will demonstrate higher rates of organisational citizenship behaviour than participants in the control condition.

Experimental Methodology

A secondary aim of the present study was to test a novel methodology for experimentally examining the two types of discretionary workplace behaviours in a manipulated context of complexity. As highlighted earlier, much of the previous research conducted in the discretionary behaviour domain utilises self-report and other-report measures as a means to investigating the prevalence of these behaviours. An inherent issue in the use of self-report measures is the inability to avoid self-report and social desirability biases. Proactive and citizenship behaviours are widely framed as positive attributes for individuals to demonstrate in the workplace, and as such it is likely that respondents to surveys about the occurrence of these behaviours will positively enhance their performance of these behaviours. Hence, results based on this kind of measure may be positively inflated. A further issue with survey methodology of behavioural constructs is the fact that they are not measuring the behaviour itself, but are rather measuring perceptions or recollections about performance of these behaviours. A primary issue with recollections about performance is the inaccuracy of individual memory in recalling such behaviour, as humans are subject to a number of biases that affect memory (Schacter, 1999). Additionally, a major challenge to identifying the impact of work characteristics is to ensure that their objective levels are not confounded by other organisational factors, such as occupational status, supervision, and social cues from colleagues (Dodd & Ganster, 1996). In a field setting it is often impossible to control these variables, whereas an experimental setting affords the opportunity to manipulate the contextual factor and control others. Given the limitations associated with the use of survey and field methods for investigating the variables of interest in this research, the present study aimed to develop and trial a novel experimental methodology to overcome such methodological issues.

Method

Participants

Participants were 37 first year psychology students who participated in the study for course credit. There were 21 females and 16 males. The mean age of all participants was 20.22 years (SD =4.14). None of the participants were familiar with or had experience in rail control.

Design

The present study used a single independent variable with two levels (high complexity and control conditions).The two discretionary behaviours, proactive behaviour and OCB formed the dependent variables. The study employed a between-subjects design, and participants were randomly allocated to one of the task characteristic conditions to counterbalance the allocation to different conditions. This random allocation was conducted according to gender, to ensure a balanced distribution of males and females across conditions. Experimental conditions were also randomly assigned according to the order of participants to counterbalance conditions. Participants performed the study individually.

Procedure

At the commencement of the experimental session participants received an information and consent sheet that described what would be involved in participating in the study. The true aims of the research (i.e. the study ostensibly investigated individual reactions to novel work tasks) were concealed to prevent priming the participants for the behaviour tasks. Participants were informed that if they do not perform satisfactorily on the rail control task they would be asked to perform the task again, and they were also advised that the top performers would receive a prize. This was designed to motivate participants to invest effort in the task, and, indirectly, to seek feedback after the "first" task given the opportunity to use this mechanism to improve their performance. Participants then completed a questionnaire on their demographic details.

Participants were then assigned to one of the two experimental conditions and received written instructions on how to complete the experimental rail control task, of which there would be two trials. Following this, participants were provided with a practice trial. For the duration of the task the experimenter remained seated behind a partition so as to minimise potential social desirability biases, due to Ashford's (1986) evidence that the presence of an observer can detract from the performance of discretionary behaviour. Following the first experimental trial, participants' completed the self-report measure assessing their perceptions of complexity. The participants were then advised that the 'second' experimental trial would commence. Participants were advised that there would be two trials to encourage the benefit of requesting feedback for improving their performance on the second trial. However, a computer error was deliberately designed to occur at the start of this second trial to create the opportunity for the participant to engage in the citizenship behaviour task. Following this task, participants were fully debriefed.

Experimental Task

　　Rail control simulator. The rail control task required participants to monitor five train lines and change the platform to which the train was arriving according to whether the line was even or odd (see screen shot, Appendix A). Changing the designated platform was performed by clicking the mouse on the line that required changing. In all experimental conditions this task was approximately 12 minutes in duration. Depending on the allocated condition, participants received a secondary task requirement.

　　Control condition. Participants were provided with an information sheet that explained in sufficient detail the task requirements for the rail control experimental task. Participants in this condition were also provided with a practice trial to become familiar with the rail control system and the task itself. The secondary task required participants to record

whether the specified train arrived on the specified platform by circling Yes or No (see

Simple Docking Sheet, Appendix B).

Complexity condition. Participants were provided with an information sheet that

explained in sufficient detail the task requirements for the rail control experimental task (as

per the control condition). Participants were also provided with a practice trial to become

familiar with the rail control system and the task itself. The secondary task was more complex

than in the other conditions as it required participants to record whether the specified train

arrived on the specified platform by circling Yes or No, indicate whether they clicked the line

to change the designated platform, and indicate whether the train speed was fast or slow (see

Complex Docking Sheet, Appendix C).

Discretionary Performance Tasks

Proactive action. All participants were given the opportunity to request feedback about their

performance following their completion of the first experimental rail trial to prepare for the

expected second trial. Feedback was in the form of a computer-generated report listing errors made

in the previous trial. Participants were instructed to ask the experimenter following the first trial if

they wished to obtain feedback about their performance. The use of a written report to deliver

feedback was deliberately chosen so as not to provide participants with any more reason to identify

with the experimenter and to minimise this interaction. The experimenters recorded whether the

participant did or did not request feedback.

Citizenship behaviour. Due to the extra time remaining in the study as a result of the

apparent computer error, all participants were offered the opportunity to assist the experimenter by

proof-reading items for a 'new personality test' and record any suggestions for improvement. This

task provided an example behaviour that is consistent with other measures of OCB, including that it

involves volunteering to do things not formally required or rewarded, and making innovative

suggestions to improve quality (e.g. Kelloway et al. 2002). Participants were advised that this task

was unrelated to the current study and did not earn additional course credit. To determine the level of citizenship, four aspects of assessment established by Schnake and Dumler (2003) were utilised: The number of pages read; the number of proofing errors detected; the number of suggestions for improvement, and; a count of the actual marks and letters recorded. A total combined score on these four aspects determined the level of OCB for each participant. Two independent raters assessed the document on which the participant conducted the helping task, with the raters' scores for each participant compared for consistency and a mean of the two scores recorded.

Measures

A manipulation check measure of perceived complexity assessed via survey compared the two experimental conditions.

Perceived complexity. Maynard and Hakel's (1997) four item subjective task complexity scale was utilised as a measure of participants' perception of the complexity of the rail control task. Participants were required to rate their level of agreement on a 7-point Likert scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). The responses to these four items were averaged to produce a total perceived complexity rating ranging from 1 to 7. An example item from the scale is "I found this to be a complex task". The scale has acceptable psychometric properties, with internal consistency reliability estimates using Cronbach's alpha found to be .90. This scale was primarily employed as a check for the manipulation of task complexity.

Proactive Personality. Proactive personality was measured using Siebert, Crant and Kraimer's (1999) 10-item shortened form of Bateman and Crant's (1993) 17-item Proactive Personality Scale. Bateman and Crant presented evidence for the original scale's reliability (Cronbach's alphas across three samples ranged from .87 to .89, and the test-retest reliability coefficient was .72 over a 3-month period) and convergent, discriminant, and criterion validity. The shortened version contains the 10 items with the highest average factor loading

scores across Bateman and Crant's (1993) three samples. Siebert, Crant and Kramer (1999) demonstrated good psychometric properties for the shortened scale, with Cronbach's alpha of .86 and a correlation with the original 17-item scale at .96. Given that the shortened scale demonstrates comparable validity to the original scale, in the interest of reducing time demands, the shortened scale was utilised in the present study. Example items from the shortened scale include: "I am constantly on the lookout for new ways to improve my life", and "I excel at identifying opportunities".

Results

Preliminary Analyses

Results from an initial exploratory analysis indicated that the scores for OCB were non-normally distributed, with skewness of 1.79 (SE = 0.34) and kurtosis of 2.51. A square root transformation was performed and skew and kurtosis were successfully adjusted to a reasonable level (skewness of 0.88, SE = 0.31and kurtosis of 0.37; Kim & White, 2004).

Manipulation Check

A one-way analysis of variance with contrasts comparing the experimental conditions was conducted to check that the experimental manipulation of complexity had been successful. This was supported as the complexity condition elicited significantly higher ratings of complexity $F(1, 34) = 5.25$, $p = .03$, than the control condition, as shown in Table 1.

The Relationship between Complexity and Discretionary Performance

Chi-square analysis revealed that, inconsistent with Hypothesis one, participants were not more likely to seek feedback in the complexity condition than in the control condition, $\chi^2(1, N=37) = 1.55$, $p = .21$. No association between proactive personality and feedback-seeking was found. Of the 9 participants who sought feedback, 6 participated in the control condition, and 3 in the high complexity condition.

Table 1

Differences in Perceived Complexity across Conditions

Condition	Perceived Complexity	
	M	SD
1. Control	3.75*	1.38
2. Complexity	4.80	1.37

p <.05 2-tailed. **p* <.01 level 2-tailed.

Chi-square analyses of citizenship behaviour and task complexity confirmed that the direction of this relationship is consistent with Hypothesis 2, as it was anticipated that more citizenship behaviours would be performed in the complexity condition. Results reflected that participants were more likely to perform the citizenship task in the complexity condition than in the control conditions, $\chi^2(1,N=29) = 5.11$, $p = .05$.

Discussion

The present research was designed to demonstrate an experimental approach to investigating the contextual factor of complexity and discretionary behaviour, via the utilisation of a work simulated setting. While limitations associated with the manipulations designed to elicit the discretionary behaviours restricted the efficacy of this method for investigating these variables, the manipulation of task complexity demonstrated utility for the purpose of investigating this contextual factor. The greater complexity associated with this manipulated condition, in comparison to the control condition, indicated that the manipulation created a task-based method for assessing this work characteristic. This demonstrates a method that could be replicated in future studies to explore its impact on other work-related variables, such as task performance, and deepen the understanding of the causal influence of this context. It also provides a valuable tool for exploring this contextual factor whilst

controlling other work-related contextual factors that could be potentially confounding. The use of a work-simulation based method also assists in the demonstration of a method that can replicate realistic work settings to enhance the generalisation to an organisational setting. However, the method was not as successful in eliciting the discretionary behaviours, particularly feedback seeking as illustrative of proactivity. Future research may be valuable in investigation alterations or alternatives to the present methodology for eliciting such constructs in an experimental setting, as discussed in the forthcoming limitations.

In addition to presenting and testing a novel experimental approach, the present research also aimed to advance the understanding of the performance of discretionary behaviours in the context of complexity, a contextual factor that is increasingly prevalent in the contemporary organisational setting. Specifically, it was expected that feedback seeking, as proactive action directed towards future impact, would increase with greater complexity (Hypothesis 1). In contrast to this proposition, based on self-determination theory (Deci & Ryan, 1985) and Grant and Ashford's (2008) proposition for the proactive process model, this hypothesis was not supported in the present study. It was also expected that citizenship behaviour, represented by helping behaviour, would be enhanced in the complexity condition (Hypothesis 2) as underpinned by Rodell and Judge's (2009) assertion; this was supported by the results, which revealed that greater citizenship behaviours occurred when task complexity was high.

The Relationship between Proactive Action and Complexity

It is difficult to draw assertions about the relationship between proactivity and complexity in the present study, largely due to the limited uptake of the feedback-seeking action by participants. This may reflect an issue of impression management, as Ashford and Northcraft (1992) demonstrated that individuals are less likely to seek feedback when they believe that seeking the feedback would convey a negative view of them or that there would

be greater negative consequences for others' impression of them than if they were to not seek feedback. Likewise, Ashford and Cummings (1983) found that individuals are less likely to seek feedback when others can observe them doing so because seeking feedback exposes their need for this information and may be interpreted as a sign of insecurity or incompetence. In the present research, given the presence of the experimenter in the experimental process, participants may have mentally weighed up the advantages and disadvantages of requesting feedback, and the decision to not seek feedback was based on one of protecting self-image rather than enhancing autonomy or gaining any advantage in succeeding in the experimental task.

Parker, Bindl and Strauss (2010) suggested that proactivity is a motivated process whereby individuals are driven by autonomous motivations to perform a task proactively. Whilst it was anticipated that the greater autonomy associated with complexity would afford individuals to enhance their self-determination and therefore increase proactivity, it may have been that the participants were not intrinsically engaged in the rail control task to value seeking feedback on the task. Alternatively, participants may not have perceived any gain in improving their performance on this task, and therefore assessed that there was little value in seeking feedback. Identified regulation, another form of autonomous motivation included in Parker et al.'s (2010) model of proactivity, drives an individual to identify the completion of a task or achieving a particular goal as personally important or valuable, which may have been deficient in the rail control task. The use of an external motivator (i.e. alleged financial reward for top performance) may also have detracted from individuals' desire to perform proactively, given that it is a process that is argued to rely on individuals being autonomously motivated in order to engage in proactivity (Parker et al. 2010).

Any of these explanations has important connotations for the interpretation of complexity and proactivity, as it suggests that additional factors may need to be considered

around the contextual influence. From a practical perspective, these results may also suggest that individuals are potentially unlikely to engage in proactive behaviours like feedback-seeking in the workplace if they do not feel confident in the impact and purpose of their behaviour, or if they do not see a particular task or work goal as personally valuable or important.

The Relationship between Citizenship Behaviour and Complexity

A positive association between citizenship behaviour and task complexity was found, whereby participants in the complexity condition were more likely to perform helping behaviours than in the ambiguity and control conditions. This finding is consistent with the expected result and suggests that complex situational environments enhance the presence of helping behaviours. An explanation for this finding may be that participants were left feeling that their performance had been relatively poor due to the difficulty of the task, and thus would be "making up" for this poor performance by undertaking the citizenship opportunity. Rodell and Judge (2009) suggested that because individuals who experience a challenge stressor (such as a complex task) see this as an opportunity to gain resources such as knowledge and abilities, they are more likely to strive to increase their potential for gaining additional or future resources through undertaking citizenship behaviours. In the present case, individuals may have seen the citizenship task as an opportunity to gain more resources and make up for perceived poor performance. Individuals may have also internalised the poor performance as a failure to overcome the challenge provided by the complexity and therefore may have been more willing to engage in the voluntary citizenship behaviour.

Limitations and Suggestions for Future Research

One of the critical limitations of the present study was the lack of feedback-seeking behaviour amongst the participants. A number of reasons have been identified as potentially impacting this outcome, including impression management. Although the experimenter in the

present research advised the participant clearly that he/she would not be observing the participant, due to the physical size of the room, proximity to the experimenter, and the participants' understanding that their performance was going to be assessed as part of the procedure, the participant may have been less willing to request feedback to avoid conveying a negative impression. Although laboratory size is difficult to manipulate, experimental methodology that does not require the experimenter to be present is recommended, in order to assist participants' confidence in requesting feedback, such as in the computer-generated feedback methodology employed by Ashford and Northcraft (1992). Moreover, the small sample size restricted the opportunity to determine significant results, even if a greater proportion of participants had engaged in feedback-seeking. Given the present methodology was unsuccessful in eliciting feedback-seeking, altering and improving the methodological approach to encourage participants to elicit feedback-seeking and increasing participant sample size is warranted to expand and further test the relationship between proactivity and the contextual influence of complexity.

Another variable that could be useful for inclusion in future research, to further understand *why* individuals perform the behaviours in some contexts and not others, is individual motivation. Parker, Bindl and Strauss (2010) proposed that motivational states drive an individual to engage in proactive goal striving which determines whether the individual performs proactively in various situational contexts. Intrinsic and other autonomous forms of motivation are highlighted as key to this process, which in applying these motivations to the present study would have related to the goal of improving performance on the rail control task and participants may not have engaged with this task. Future research may therefore extend the investigation of proactivity to the anticipation and planning phases of the proactive process (Grant & Ashford, 2008), rather than simply the action directed towards future impact as was investigated presently. These stages may be

more relevant to examine when considering action that is directed towards performance improvement, as was the case in the present study. Furthermore, Parker et al. (2010) suggest that cognitive motivational processes which determine whether an individual engages in proactive behaviour also rely on whether the individual perceives that they are capable of being proactive. As the experimental task involved in the present study was a novel one for all participants, it may have been difficult for participants to assess whether they felt they were capable of successfully performing proactive behaviours. Van Scotter and Motowidlo, (1996) also presented evidence for the importance of job dedication as a motivational foundation for extra-role citizenship behaviour, whereas Rodell and Judge (2009) propose that the experience of certain emotions drives an individual to engage in OCB.

Future research investigating the influence of different kinds of motivations on discretionary behaviour, and proactivity specifically, would be valuable for gaining an understanding of the most effective motivating factors for producing positive discretionary behaviours. Moreover, understanding the specific motivators that enhance or reduce discretionary behaviours is likely to have significant implications for organising and managing workplaces, especially with respect to reward and recognition structures. Given the present experimental design did not elicit feedback-seeking, which is surmised to relate to the nature of the experimental task, it may suggest that this kind of task may not be beneficial for exploring proactivity. Building on the present outcomes, future research would need to consider the nature of the experimental task carefully to ensure there is sufficient reasons for participants to wish to improve their performance or engage in some other proactive action directed at future impact.

Whilst the present experimental approach was not an effective method for eliciting proactive feedback-seeking, it was successful in manipulating conditions of complexity. Building on the approach utilised in the present study, future research may adopt a similar

method for experimentally investigating the impact of features of situational complexity on different discretionary behaviours. In particular, future research may investigate the impact of complexity on work behaviours significant to the rail control or other human factors environments, given the nature of the simulated task used presently.

Future research may also use similar experimental methods to further explore the relationship between complexity and citizenship behaviours, such as the personality and psychological components asserted by Rodell and Judge (2009). Including measures in the methodology that assess whether an individual has interpreted the stress of complexity as a challenge (as surmised presently) or as a hindrance would assist in empirically demonstrating the mechanisms through which complexity influences citizenship behaviour. The voluntary proofing task is also a method that could be used in future research to further explore OCB in a laboratory setting, as it demonstrated some efficacy in the present research. The ability to use such a method aids in removing organisational confounding factors which may play a significant role in citizenship behaviours being performed, particularly from a stressor-strain view, as individuals in organisations are likely to experience a number of simultaneous stressors which could impact on their willingness to engage in citizenship behaviours, particularly helping behaviours (e.g. Spector & Fox, 2002).

The differential effectiveness in the present experimental methodology in manipulating complexity versus elicitingAlternatively, further research into the impacts of other common workplace situational contexts on proactivity and citizenship behaviours may provide a more detailed framework for the conditions under which discretionary behaviours are likely to occur.

Conclusion

The present study has contributed to the existing literature examining discretionary behaviour through testing the relationship between discretionary action and the situational

factor of complexity in an experimental setting. The methodology demonstrated a successful approach for manipulating the contextual factor of complexity, however alternative methods may be required to test and elicit discretionary behaviour, particularly proactivity. The methodology also provided initial testing for the relationship between this contextual factor and proactive action directed towards future impact, which are factors represented in the recent concept of proactivity as a process (Grant & Ashford, 2008). Future research would assist in further exploring the relationship between proactive behaviour and situational antecedents highlighted in existing models of proactivity, such as autonomy, to clarify the direction of the relationship. Future research may also continue to develop suitable experimental methods in order to test other relationships identified by modern conceptualisations of proactivity (e.g. Parker, Bindl, & Strauss, 2010) and extend the understanding of when and why discretionary behaviour is likely to occur.

A third classification of behaviour, counterproductive work behaviour (CWB), was originally included in the research investigating the impact of uncertainty on discretionary behaviour. This behaviour was of interest due to the similarities in definition of this kind of negative behaviour with proactive behaviours, as well as similar research assertions with respect to antecedent influences. However, no participants performed this behaviour in the experimental manipulation and therefore this aspect of the research was removed from the paper and included instead in the following section.

2a. The Exploration of Counterproductive Work Behaviour in an Experimental Simulation Study

A number of parallels exist between counterproductive work behaviours (CWB) and proactive and citizenship behaviours. Like citizenship behaviours, counterproductive behaviours are voluntary and go beyond the specified job requirements (Spector & Fox, 2002). Like proactive behaviours, CWB is characterised as an intention to impact on the surrounding organisation (Searle, 2010). However, in contrast to the positive intent of proactive and citizenship behaviours to impact others and the surrounding environment, counterproductive behaviours specifically aim to hurt the organisation and/or its stakeholders, especially other employees (Spector & Fox, 2002). Like the other forms of discretionary behaviour, there is a proliferation of behaviours investigated under the concept of CWB, although a number of studies have attempted to provide a classification for the behaviours. For example, Gruys and Sackett (2003) found support for an 11 factor model, derived from a keyword search of related literature and categorising the results according to the similarity of content. The resulting 11 categories of behaviour were: theft and related behaviour; destruction of property; misuse of information; misuse of time and resources; unsafe behaviour; poor attendance; poor quality work; alcohol use; drug use; inappropriate verbal actions; and inappropriate physical actions. Behaviours have also been differentiated

according to whether they are directed at the organisation or whether they are interpersonal behaviours, with other common examples including work sabotage or sabotage of others, and impression management (Bennett & Robinson, 2000; Searle, 2010).

Spector and Fox (2002) suggested that the motivation behind the distinct harmful intention is related to underlying emotion. They proposed that negative emotion increases the likelihood of counterproductive behaviours being performed, whereas positive emotion increases the likelihood of more positive, citizenship-type behaviours. In response to ambiguity in uncertain situations, some individuals may experience feelings of frustration and even anger, which is suggested to motivate individuals to perform these counterproductive behaviours in order to help manage their negative reactions by retaliating or 'evening the score' (Spector & Fox, 2002). In such situations, sabotage is one of the typical counterproductive behaviours demonstrated by individuals, which can be directed at either the individual (sabotage of another person) or organisational level (doing work incorrectly to sabotage the organisation (Storms & Spector, 1987). For example, Fox and Spector (1999) found that when individuals experienced low locus of control, as is the case in highly ambiguous or uncertain situations, they were more likely to engage in sabotage behaviours directed at both the person and organisation level. This is important for the present research, as sabotage is the key counterproductive behaviour examined.

Similar to the research methods employed to examine proactive behaviours and OCB, CWB is commonly measured via a combination of subjective measures such as self-reports, peer reports, and supervisor reports (Fox, Spector, Goh, & Bruursema, 2007). More objective methods for assessing CWBs have also been utilised, including disciplinary records, absentee records, and job performance statistics (Fox et al., 2007). Whilst using a combination of these measures has an advantage over using a single source, each of these individual methods present potential limitations in the measurement of CWBs. For example, counterproductive

behaviours, which are perceived to be negative, are likely to be impacted by social desirability due to individuals wishing to cast themselves in a positive light. Measures relying on other-reports might also be limited by the fact that peers and supervisors may be unaware of whether an individual performs detrimental behaviours, particularly for CWB, as individuals are likely to try to conceal such behaviours (Sackett, Berry, Wiemann, & Laczo, 2006). The more objective archival records are also problematic for measuring CWB, in that they do not necessarily reflect the performance of CWB directly and are likely to be affected by confounding contextual factors, such as illness in the case of absentee and performance reports.

Investigations of CWB have typically focused on subsets of behaviours within this domain and specific explanatory approaches for individual antecedents and counterproductive behaviour (Marcus & Schuler, 2004). Although factors such as job autonomy (Robinson & O'Leary-Kelly, 1998) and organisational climate (Hollinger & Clark, 1983) have been explored, there is limited evidence for situational variables proposed to generally precede or predict CWB. Rodell and Judge (2009) argued that counterproductive behaviours are more likely to occur in situations that provoke anxiety, which is a response to the experience of uncertainty. As this is an area considered to be a relative gap in the CWB domain, the present research attempts to extend the understanding of this work-based phenomenon within a laboratory setting and in the context of situational uncertainty.

Context of Uncertainty

As a consequence of the modern workplace climate of political and economical insecurity within a global economy, uncertainty, unpredictability and personal risk are now widely diffused across organisations and occupations (Smith, 2001; Beck 2000). Accordingly, understanding 'uncertainty' as a contextual factor is important, particularly in considering the impact of an uncertain environment on individuals' behaviour and performance and the

overall functioning of an organisation (Milliken, 1987). Situational uncertainty has primarily been conceptualised as "environmental uncertainty" or "perceived environmental uncertainty" (Milliken, 1987). It is defined as a situation in which an individual is unable to predict the future due to a lack of sufficient information to predict accurately, or because an individual feels unable to discriminate between relevant data and irrelevant data (Milliken, 1987). A related definition explains that uncertainty in an organisational context occurs when the inputs, processes, or outputs of work systems lack predictability (Wall, Cordery, & Clegg, 2001). According to these characteristics, uncertainty encompasses both ambiguous situations that lack sufficient relevant information, as well as novel or complex situations where it is difficult for an individual to distinguish the relative importance of competing sources of information. Uncertainty was thereby manifested in two ways in the present study: firstly in the ambiguity associated with the experimental task (i.e. an ambiguity condition); and secondly, in the complexity associated with the task (i.e. a complexity condition).

In this context of uncertainty and change, voluntary behaviour is a vital element in organisational functioning, as formal task performance and assigned duties do not typically comprise importance behaviours for successful organisational functioning, such as initiative, cooperation, flexibility, forward-thinking, and innovativeness (Spector & Fox, 2002). As the modern workforce becomes more dynamic and decentralised, an increasing importance is placed on employee behaviours that see individuals take control of their own environments and seek ways to impact and improve them (Crant, 2000). An uncertain climate also results in greater risks and challenges, and demands that individuals adapt to these conditions (Gephart, 2010). It is also argued that employees' behaviours, in response to this environment, have a direct and critical impact on organisational success (Crant, 2000), with substantive evidence in support of this for the discretionary behaviour investigated in this study.

Counterproductive Work Behaviour and Uncertainty

According to Rodell and Judge (2009), anxiety is provoked in response to the feeling of uncertainty, which is an inherent feature of challenge stressors. They asserted that the threat of challenge stressors often relates to the individual feeling uncertain as to whether he/she will succeed in overcoming the challenge at hand. The resultant negative emotional experience is proposed to increase the performance of CWB, consistent with Spector and Fox's (2002) proposition that counterproductive behaviours are directed by negative emotion. Opportunity for sabotage and self-promotion, as used in the present study, may be viewed by the participant as an opportunity to reduce negative feelings potentially experienced in the uncertain context (Weiss & Cropanzano, 1996) or to take advantage of the situation, as per the view of counterproductive behaviours as opportunistic (Marcus & Schuler, 2004). As both the ambiguity and complexity conditions (representing uncertainty) may challenge participants' belief that they will successfully perform the experimental task, it was expected that either of these uncertainty conditions would enhance the likelihood of counterproductive behaviours occurring, according to the following hypothesis:

Hypothesis: Participants in the ambiguity and complexity conditions will demonstrate higher rates of counterproductive work behaviour (sabotage) than participants in the control condition.

Method

Participants and Design

CWB was included as an additional behaviour task in the original study, thus the participants and design of the experiment are otherwise identical to that explained in the previous paper. CWB, as represented by sabotage behaviour, was included as a dependent variable. All participants were provided the opportunity to engage in the counterproductive behaviour task.

Procedure

As a result of the 'error' caused by the second rail task trial, participants were informed that

their performance scores, which were to be used for determining prize winners, would have to be manually recorded in a confidential spreadsheet. However, in order for the experimenter to remain impartial the participant was asked to record his/her score in the spreadsheet. Participants were also advised that the same error had occurred for the last participant but due to time constraints that participant was unable to record his/her score, hence participants were asked to also record the previous unidentified participants' score. The experimenter 'looked up' both scores for the participant to record in a spreadsheet, where the participant was also able to see the 'current average performance score' of all participants. This was done to provide some reference of how close the participant may be to receiving a prize. The researchers specifically set the spreadsheet so that the participants always got false feedback which indicated that the participant's score was higher than the average for the group, but the score for the 'previous participant' was higher still. Participants' exaggeration of their own score and/or deflation of the other person's score were recorded as a measure of sabotage and self-promotion to determine the prevalence of counterproductive behaviour.

Results

No participants engaged in the counterproductive work behaviour of sabotage in the experiment, thus this variable was unable to be assessed in the present study. The potential explanations for this result are explored below.

Discussion

Much of the previous research on counterproductive work behaviours is based on self-report and anecdotal evidence, and given that this behaviour is generally considered to be undesirable the actual occurrence of counterproductive workplace behaviours is difficult to assess or predict. The present study attempted to develop an experimental investigation of the performance and prevalence of these behaviours; however, the behavioural manipulation did not succeed in eliciting these behaviours from participants. The absence of any sabotage

counterproductive behaviours performed by participants in the present experiment may be explained by a number of factors. Firstly, like proactive behaviours, the issue of impression management may have prevented the occurrence of the counterproductive behaviour. The form of counterproductive behaviour investigated presently reflected a self-serving behaviour (Searle, 2010), whereby participants were provided opportunity to better their score on the rail task and/or worsen the score of the previous participant. This becomes problematic when the issue of impression management is considered, as self-serving counterproductive behaviours have been shown to drive impression management (Schlenker & Weigold, 1989). An additional measure of impression management or concern with image may be included in related future research in order to investigate this further. Secondly, physical proximity to the experimenter in the laboratory may have prevented the performance of sabotage behaviour as participants who otherwise may engage in sabotage behaviours may have assessed the opportunity as too risky.

A further potential explanation for participants not engaging in this behaviour is the relationship between motivation and counterproductive behaviour. Like recent conceptualisations of proactivity, research supporting the relationship between certain forms of motivation and the performance of discretionary behaviour has emerged in the counterproductive behaviour literature. For example, Diefendorff & Mehta (2007) demonstrated that personal mastery, a form of motivation defined as the desire to achieve, is negatively related to interpersonal and organisational deviance. In the present study, the aim of the sabotage behaviour was to personally advance in order to receive a prize, however the end goal of this aim may have conflicted with individuals' desire to achieve, resulting in the counterproductive behaviours not being performed. Alternatively, participants may not have been motivated to strive to receive the prize, in which case the costs of performing the risky sabotage behaviour might have outweighed the potential pay-off. Further research

investigating the application of motivation in the context of counterproductive would be beneficial for understanding the intrapersonal contexts in which these behaviours are performed.

Conclusion

Although the present study was unable to elicit the performance of CWB, further experimental research investigating this kind of discretionary behaviour, as well as the antecedent factors which inhibit or encourage the performance of these behaviours, would be highly beneficial. Counterproductive behaviours are not looked upon favourably within organisations, thus the likelihood of individuals confessing to these behaviours in a self-report survey is greatly diminished. Use of organisational records can also be problematic, however the use of multiple measures of CWB has been found to be a useful approach for accurately measuring CWB (Fox, et al. 2007). The use of experimental findings to supplement this research would assist in clarifying in particular the antecedent and situational factors likely to impact on the performance of counterproductive behaviours. Over and above these other measures, experimental research would be valuable for capturing CWBs as they occur, as opposed to the retrospective accounts provided by self and other-reports and records, and may help to provide a more accurate picture of when and in what form these behaviours occur. Future research is therefore recommended to test and identify methods for successfully eliciting these behaviours experimentally.

3. Introduction to Paper: Proactivity and Motivation in Solving Work Problems: A Test of Methodology

The following study aimed to continue the application of experimental-based research to the investigation of proactivity, although the research questions posed by this study varied in terms of methodology and focus from the previous study. The present methodology adopted an in-basket problem-solving task (Shalley, 1991) as the laboratory task, replacing the rail control simulation. A primary reason for doing this was the demonstrated difficulty in eliciting proactivity in a novel, short-term routine task with which a participant is unlikely to become engaged. As motivation was a key variable of interest, engagement was a central issue to the present study, and therefore we required participants to have the opportunity to be engaged in the experimental task. Parker, Jimmieson and Amiot (2013) had also demonstrated the efficacy of exploring motivation via the same in-basket task, providing further incentive for adopting this methodology to explore different variables – in the present research being cognitive components of the proactivity process. A key contribution of the present study, however, was the use of this task to examine the proactive planning and anticipation components of the proactivity process.

The studies in the following paper were designed to further explore the proactivity phenomenon, as well as to investigate additional factors suggested by existing literature as contributing to the proactivity process. Situational motivation was one key factor explored, following a number of questions in relation to the impact of motivation being posed as a result of the findings from the previous paper. Although Parker, Bindl and Strauss (2010) postulated the different forms of motivation and how they are expected to play a role in promoting (or inhibiting) proactivity, this is a relatively untested factor in the proactivity domain.

A further change to the present research approach was to replace the situational factor of complexity with task accountability, for a number of reasons. Although complexity was

successfully manipulated in the rail control setting, due to the ability to manipulate the number of simultaneous components to the task, this did not easily lend to the nature of the in-basket item task. Furthermore, task accountability is more clearly supported by Grant and Ashford's (2008) concept of the proactivity process, in which accountability is a key situational factor that promotes the proactivity process. Task accountability has also been successfully manipulated in previous studies that have adopted a similar methodological approach to that used presently (e.g. Tetlock, 1985), which provided guidance for the manipulation of this variable in the present study. Despite empirical studies exploring accountability as an antecedent factor in other domains and its relevance to the proactivity process, it has not been widely examined via experimental methods to test the relationship between this situational factor and proactivity. This gap in the existing literature guided the other key aim of the present studies, which was to test key relationships in the proactivity process, as well as demonstrate the efficacy of using an experimental approach to investigate this phenomenon.

In exploring these research questions, two studies were conducted; the first with a student population and the second with a working industry population. The purpose of engaging two studies was to allow the opportunity to refine the methodology, as well as to deploy the methodology in the second study with a population that is more generalisable and relevant to the often work-based variable of proactivity. The key variables and research questions explored otherwise remained consistent across the two studies.

The definition of motivation employed across the two studies was based on Deci and Ryan's (1985) self-determination theory, due to Parker et al. (2010) including motivations from this theory in their explanation of proactive motivational states. Parker and colleagues (2010) proposed that intrinsic, integrated and identified (autonomous) forms of motivation positively predict proactivity, although in looking at the full spectrum of motivation according

to self-determination theory (Deci & Ryan, 1985), there is reason to propose that other forms of motivation may influence an individual to act proactively. The interpretation of this spectrum of motivation in terms of impact on proactivity is explored in the study papers, however to provide a background of the different types of motivation, definitions of each are provided herein.

Intrinsic motivation is an internal, innate regulation to perform in a certain way as a result of inherently experiencing pleasure from that activity (Deci & Ryan, 1985). All other forms of motivation are regarded as extrinsic forms of motivation, although they vary in terms of autonomy. Integrated regulation is the most autonomous form of extrinsic motivation, which occurs when regulation is fully assimilated with an individual's sense of self and so it reflects a person's self-evaluation and belief (Deci & Ryan, 1985). Identified regulation is the next most autonomous form of motivation, defined by consciously valuing a goal or regulation such that performing an action is considered by the individual to be personally important (Deci & Ryan, 1985). Introjected regulation is a more external form of extrinsic motivation which reflects the drive to perform in a certain way to maintain self-worth and avoid negative judgment from others. Finally, external regulation is the least autonomous form of extrinsic motivation due to this form being driven entirely by an external perceived locus of control, such as external demand or reward-based mechanisms (Deci & Ryan, 1985). Amotivation is also a form of motivation which represents a lack of intention to perform an activity. All forms of motivation were included in the present studies to explore the relationship between each finite type and individuals' engagement in the proactivity process.

The present research aimed to develop novel methods for exploring the key variables by adapting Shalley's (1991) creativity experimental approach and combining this with manipulations from other literature. A key purpose for this was to empirically test cognitive components of the proactivity process given limited empirical exploration of this model to

date, particularly the cognitive components as the proactive literature has typically focused on forms of proactive behaviour. The method tested in the present research adapted previous approaches in order to explore proactive anticipation and planning in the context of proactive problem solving, and in doing so provided a novel and successful method for assessing these aspects of the proactivity process.

In the original study, the impact of a situational antecedent of accountability was also explored, replacing complexity. One of the reasons for this change in the situational antecedent explored was to expand the research exploration to other situational variables. The alteration to the methodology also posed difficulty for manipulating the complexity of the task, as it did not require multiple competing elements, and rather was more beneficial for assessing the situational variable of accountability. The altered experimental method allowed the opportunity to adapt and expand this methodology for manipulating accountability, extending previous work in this area (e.g. Tetlock, 1985). A further reason for replacing the situational factor was the limited research connecting uncertainty to proactivity, outside of the effects observed linking uncertainty to the specific behaviour of feedback-seeking. Task accountability was explored in the present studies as a situational antecedent to the proactivity process and was represented by the extent to which individuals felt that they had to justify and explain their responses to a task. Grant and Ashford (2008) included accountability as a core antecedent factor in their Proactivity Dynamics framework. They argued that in situations of low accountability individuals are more likely to associate potential image costs with proactivity because the self-starting nature of proactivity places the blame on the individual if his/her proactive action fails or it causes the individual to make an error. In contrast, in situations of high accountability individuals are already held personally responsible and therefore the additional risk of acting proactively is minimal (Grant & Ashford, 2008). Therefore accountability was proposed to increase the likelihood of an individual being

proactive. However, as accountability is determined by the extent to which individuals feel they have to justify or explain their actions to *others*, it may be considered as stimulating external regulation, which is associated with reduced proactivity (Parker et al., 2010). This paradox formed one of the research questions posed by the present research, which aimed to establish the influence and impact of accountability on proactivity. With that said, both Study 1 and Study 2 utilised a method for manipulating individual accountability for the experimental task, however limited success was found for the experimental manipulation of this variable in either study. This factor was consequently removed from the paper being submitted for publication in an academic journal and is no longer included in the final thesis.

The following paper presents the research conducted in Study 1 and Study 2, empirically investigating components of the proactivity process and the influence of motivation in this process. In full, this Chapter provides an extension to previous work in exploring the efficacy and opportunity for utilising laboratory-based methods for examining proactivity, as well as a deeper exploration of key factors related to the proactivity process in an attempt to provide further establishment for this modern conceptualisation of proactivity. The research aims to explore research questions surrounding the role of motivation in the proactivity process, through examining anticipation and planning (Grant & Ashford, 2008) components of proactivity, and develop methods for empirically validating the research asserting the relationship between proactive motivation and situational factors (e.g. Parker, et al. 2010).

The paper presented in this chapter has been submitted for publication to the Applied Psychology: An International Review journal. I also acknowledge the contribution of Dr Ben Searle to this paper, as Ben contributed 30% of the effort in completing this paper for submission. In addition, a paper based on the research reported in the following paper was successfully submitted to the Australia New Zealand Academy of Management Conference

held in December 2012, and was formally published as part of the conference proceedings.

This paper is provided in Appendix F.

Proactivity and Motivation in Solving Work Problems: A Test of Methodology

Laura C. Kirby and Ben J. Searle

Macquarie University

Abstract

This paper presents two studies that explore proactive problem-solving and its antecedents using novel laboratory-based methods. In Study 1, 53 psychology students completed an in-basket task requiring proactive problem-solving, with solution proactivity evaluated by judges. Study 2 replicated and extended the study with 167 employees. Both studies explored the role of different forms of motivation, as it has been speculated that only autonomous motivations should contribute to proactive behaviour (Parker, Bindl, & Strauss, 2010). Study 1 showed that those participants higher in intrinsic motivation were more proactive, while Study 2 showed that those participants higher in controlled motivations were less proactive. Studies showed a consistent difference between autonomous and controlled motivations in their relations with proactivity. Experimental methods appear to be a useful approach to examining factors influencing cognitive aspects of the proactivity process.

Proactivity and Motivation in Solving Work Problems: A Test of Methodology

Modern organisations are increasingly characterised by ongoing change, fast pace, and more flexible working arrangements with reduced supervision (Sonnentag, 2008). To succeed in such an environment, organisations increasingly require employees to be proactive (Griffin, Neal, & Parker, 2007), which means to display self-initiated, future-oriented behaviour with the aim of achieving change (Grant & Ashford, 2008; Parker, Bindl & Strauss, 2010). Proactivity has been associated with such organisational benefits as goal achievement (Frese & Fay, 2001), problem-solving (Parker, Williams, & Turner, 2006), and job performance (Crant, 1995). Much research has demonstrated that proactivity is different to citizenship or adaptive behaviours (e.g., Griffin et al., 2007; Kalshoven, Den Hartog, & De Hoogh, 2013). A key factor differentiating proactivity from these and other contextual work behaviours is the cognitive element, where individuals set or redefine goals and plan a series of steps towards achieving those goals. This paper describes an experimental protocol for investigating that cognitive element.

Grant and Ashford (2008) described three phases of the proactivity process: anticipation, planning, and action directed toward future impact. Anticipation refers to thinking ahead to envisage potential futures and outcomes, and weighing up the potential benefits and costs of pursuing them (or not). Planning encompasses the development of a course of action for how an individual will progress towards the envisaged future. The final phase of action represents the physical implementation of steps toward one's goals. A similar model was proposed by Parker and colleagues (2010), who distinguished proactive goal generation (envisaging and planning) from proactive goal striving (acting and self-regulating). In both models, the cognitive aspects of proactivity (anticipation/envisaging and planning) are identified as critical to the process, yet the majority of empirical research has focused on the action phase (Parker et al., 2010). The present research therefore aimed to examine the

cognitive (anticipation and planning) elements of proactivity, by engaging participants in a task that required them to anticipate and plan around problems posed in the form of work-related memo scenarios. By doing so, the study provided an empirical exploration of the anticipation and planning phases suggested by Grant and Ashford (2008) to further test and validate this component of the proactivity process.

In their model, Parker and colleagues (2010) went on to identify motivational ("reason to") states as important drivers of the proactivity process, along with efficacy ("can do") beliefs and affective ("energised to") states. Whilst proactivity literature has examined "can do" states, such as self-efficacy (e.g., Parker et al., 2006), and "energised to" states, such as pleasant activated affect (Bindl, Parker, Totterdell, & Hagger-Johnson, 2012), the reasons for being proactive have received relatively little attention. Yet the nature of proactivity as self-initiated goal pursuit suggests that motivation should play a pivotal role. A challenge to investigating this phenomenon is that people might engage in a wide variety of different proactive behaviours in the workplace, each of which might be influenced not only by different motivations but also by different social expectations, situational opportunities and constraints. We sought a methodology for controlling some of the external factors in order to investigate relations between motivational states and proactivity, with a focus on cognitive stages of the proactivity process.

Motivational States and Proactivity

According to self-determination theory (Deci & Ryan, 1985), when behaviours are self-determined or autonomous a person's regulatory process occurs internally (self-determination), but when behaviours are controlled by others, the regulatory process is more about compliance. Motivational states vary on a continuum of autonomy, with intrinsic motivation representing the highest level of self-determination (most autonomous), and extrinsic motivations being less autonomous (Deci & Ryan, 1985). However, within extrinsic

motivation there are a number of forms of regulation that vary in self-determination, some being more autonomous and some being more controlled. Self-determination theory (Deci & Ryan, 1985) is concerned with motivation behind the choices that people make without any external influence and interference, which is particularly important for the proactivity process based on the premise that it is a self-initiated process that engages cognitive consideration and choices related to the pursuit of goal-directed behaviours. From this perspective, motivational states associated with greater autonomy should directly influence greater proactivity, consistent with Parker and colleagues' (2010) identification of autonomous motivational states as key antecedents of proactivity.

Intrinsic motivation and proactivity. Behaviour that is motivated intrinsically is engaged in for the pleasure and satisfaction derived from performing it (Deci, 1971). Parker et al. (2010) proposed that individuals will be more likely to set and strive for proactive goals when they find anticipation, planning and action phases enjoyable or interesting. For example, they suggested that proactivity can be motivated by the experience of flow, when an individual feels immersed in an activity and focuses his/her entire attention and awareness on it (Csikszentmihalyi, 1988). As challenge needs to be relatively high before flow is possible (Massimini & Carli, 1988), the desire for achieving flow may therefore prompt proactive behaviour aimed at increasing personal challenge, such as job crafting or negotiating with a manager to gain involvement in rewarding new activities (Rousseau, Pushkar, & Reis, 2005). When an opportunity exists to develop long-term solutions to problems, intrinsic motivation should therefore facilitate greater anticipation and planning of those solutions.

Extrinsic motivation and proactivity. When an activity is not intrinsically motivating, it must be extrinsically motivated, but some extrinsic motivations can still be regulated relatively autonomously (Deci & Ryan, 1985). Parker et al. (2010) proposed that autonomous forms of extrinsic motivation should have greater impact on proactivity than

controlled forms, because initiating proactive goal generation independently is more consistent with autonomous, self-determined regulation than with behavioural controls outside of the self.

Integrated regulation is an autonomous form of motivation expressed by people who "have a full sense that the behaviour is an integral part of who they are, that it emanates from their sense of self and is thus self-determined" (Gagné & Deci, 2005, p. 335). In the context of proactivity, integrated regulation would encourage generation and striving for proactive goals in order to represent values central to the self or to fulfil self-imposed life goals. For example, Wrzesniewski and Dutton (2001) demonstrated that individuals who indicate work as a 'calling' engage in active job crafting (a form of proactive behaviour aimed at adjusting one's work role) because of their high personal investment in the work. Hence, the more the envisioned outcome of the proactive goal is central to one's identify or values, the more one should be motivated to actively bring about that outcome, and thus engage in proactivity.

Identified regulation is another form of autonomous motivation, which occurs when an individual consciously values the goal of a course of action to the extent that the action is accepted or owned as personally important (Gagné & Deci, 2005). This suggests that individuals are more likely to pursue proactive goals if they see these goals as personally important. For example, people who perceive feedback as valuable to achieving their goals are more likely to engage in feedback-seeking (Ashford, Blatt, & VandeWalle, 2003).

Koestner and Losier (2002) found intrinsic motivation resulted in better performance on interesting tasks, but integrated and identified regulation led to better performance on important tasks that required discipline or determination. In applying these results to the concept of proactivity, a person may feel intrinsically motivated to identify and plan solutions to problems if doing so seems interesting. On the other hand, identifying and planning solutions to multiple problems may require discipline and determination, so the autonomous

forms of extrinsic motivation may facilitate proactivity even if the task is not interesting.

Extrinsic motivation can also be regulated by more external factors. *Introjected regulation* is a controlled form of extrinsic motivation that occurs when an individual performs an activity out of a sense of obligation arising from an internalised form of social pressure (e.g. guilt or desire for self-approval; Gagné & Deci, 2005). *External regulation* is also a controlled form of extrinsic motivation, which occurs when behaviour is regulated by the desire to avoid negative consequences or to obtain rewards (Gagné & Deci, 2005). Koestner, Otis, Powers, Pelletier, and Gagnon (2008) investigated the role of autonomous versus controlled motivation in students striving for personal goals (study, leisure, and weight loss). Although autonomous motivation predicted goal progress, controlled motivation did not. Again, since self-initiated proactive goals are central to proactivity, the findings of Koestner and colleagues suggest that if attempts are made to externally regulate proactive behaviour, this may not affect proactivity.

Mixed support for this prediction can be found in a study by Grant, Nurmohamed, Ashford, and Dekas (2011), who in two studies examined autonomous and controlled motivations as well as proactivity. In a sample of students, they found career initiative (measured using the personal initiative scale of Frese, Fay, Hilburger, Leng, & Tag, 1997, adapted to focus on job searching) was associated with autonomous motivations, but unrelated to controlled motivations, consistent with Koestner et al. (2008). Yet in a sample of call-centre staff, an independent initiative score (number of calls made to new prospects) was related to neither motivation type. As the call-centre initiative score was arguably limited in terms of proactive goal generation, we would conclude that the evidence is suggestive of Parker et al.'s (2010) predicted link between proactivity and autonomous rather than controlled motivations.

Experimental Approaches and the Present Study

Experimental methods are rarely used in proactivity research. Much of the existing research utilises self-report measures of behaviour, which are susceptible to self-report biases given the social desirability of proactivity in the workplace, and the general issue of social desirability with any self-report measure (Parker et al., 2006). Furthermore, if situational characteristics are similarly measured via self-reported perceptions, study data are compromised by common-method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), which includes the risk that unmeasured variables influence both independent and dependent variables. By contrast, experimental methods allow situational factors to be manipulated or measured objectively, while dependent variables can be assessed using more independent methods than self-report. To address some of these biases, some researchers have assessed proactivity via third party reports (usually by supervisors; e.g. Grant, Parker, & Collins, 2009; Fuller, Marler, & Hester, 2006; Kalshoven et al., 2013). While such research is of great value, it nevertheless has limitations, since third-party reports may be compromised by impression management, halo bias or other judgement biases (Lance, LaPointe, & Fisicaro, 1994; Frese & Fay, 2001; Parker & Collins, 2010). Even if we overlook such biases, third parties can usually only assess observations of proactive behaviours, and not the more cognitive aspects of the proactivity process.

In addition, experimental methods are valuable for investigating underlying mechanisms and causal relationships that are difficult to establish in field settings. For example, motivation, affective states and cognitive appraisals have all been identified as mechanisms that may drive situational impacts on proactivity (e.g., Bindl et al., 2012; Ohly & Fritz, 2010; Parker et al., 2010). These phenomena can all be relatively brief, and the restricted measurement opportunities in field research may not be sufficient to identify causality.

To our knowledge, the only experimental methodology published in the proactivity

domain is that described by Bledow and Frese (2009), whereby participants made judgements about how to respond to specific hypothetical situations. In each case, four or five response options were provided, designed to be similar in social desirability but different in personal initiative (a broad proactive behaviour construct). While efficient for evaluating preferences for situation-specific behaviours, this technique forced participants to choose from a restricted range of options, and did not provide opportunities to initiate their own goal generation.

The domain of proactivity includes innovation and creative problem-solving (Parker et al., 2010), and in the creativity literature, experimental studies are more common. For example, an in-basket methodology was developed by Shalley (1991) to assess creative solutions to work-related personnel problems. For this in-basket activity, participants play the role of the human resource director of a steel company, and they are presented with a series of memos or emails, each of which describes a realistic workplace problem. As an example, one email is purportedly from an employee reporting a complaint regarding the cleanliness of the work area after the weekend requesting action to be taken to address the situation. Participants are asked provide solutions to each problem from the perspective of the HR manager. This methodology has been used to examine the effects on creativity of factors such as goals, feedback, evaluation, personal autonomy and independence (e.g., Shalley, 1991, 1995; Zhou, 1988; Zhou & Oldham, 2001).

This paper describes the adaptation of Shalley's (1991) in-basket paradigm to provide a proof-of-concept test of a method for investigating cognitive aspects of proactivity in relation to such phenomena as motivational states. Participants responded to the in-basket items indicating the proactive action they would take; that is, illustrate their plan for action and the considerations they were taking in the process. Utilising a laboratory-style method thus allowed the researchers to test the anticipation and planning aspects of the proactivity process (Grant & Ashford, 2008) through examining individuals' response to simulated work

scenarios. Two similar studies were conducted and our hypotheses applied to both. The first study was conducted with student participants, whilst the second study was conducted with a working population in order to provide a more generalisable sample given that proactivity is typically a work-based construct. The second study was in effect designed to be a replication with this population; however, it also provided the opportunity to make minor adjustments to the method based on the outcomes achieved in the first study. Consistent with broader evidence for the role of autonomous versus controlled forms of motivation, we predicted higher levels of autonomous motivations (intrinsic, integrated, and identified) would be associated with more proactivity (Hypothesis 1), and furthermore that autonomous motivations would be more strongly associated with proactivity than controlled motivations (introjected and external; Hypothesis 2).

Study 1

Method

Participants

Fifty-three first year psychology students completed a simulated in-basket memo task via an online questionnaire. The mean age was 22.02 years (SD = 8.05). Participants were recruited via an online platform inviting participants to complete an online study. The invitation to participate requested that willing participants have "some work experience", although a minimum experience was not specified. Participation in the study was voluntary and participants received course credit for their participation.

Design, Materials, and Measures

The study used a within-subjects design to explore relations between individual situational motivation and proactivity. Motivation and proactive personality formed the independent variables, and proactivity performance was the dependent variable.

In-basket task. Participants completed eight problems from the in-basket task

developed by Shalley (1991). They were further prompted to strive for proactive solutions; "write down the most proactive solution that you can think of". The response format was open-ended text entry, with no time or word limit to constrain responses.

Proactive performance. Two judges familiar with proactivity research assessed each response to each problem according to proactivity criteria developed from published definitions (Crant, 2000; Frese et al., 1997; Grant & Ashford, 2008; Morrison & Phelps, 1999; Parker et al., 2010; Sonnentag, 2008) and adapted from a published set of interview criteria that have previously been used for measuring proactivity (Parker, Williams & Turner, 2006; see Appendix D). For each response to each problem, judges allocated a score of either 0 (absent) or 1 (present) for each of the following proactive characteristics: articulates a goal or desired end state; broadens the scope or goal beyond the problem presented; anticipates problems and/or risks; anticipates opportunities; plans an action sequence (e.g. first… then…); plans for contingencies (e.g. if X doesn't work, try Y); has a long-term focus and/or is likely to have a long-lasting impact; and is likely to effectively change the situation and/or make a difference. As participants were instructed to anticipate the problem outcomes and plan an appropriate proactive response the method aimed to specifically test the anticipation and planning phases of proactivity, consistent with Grant and Ashford's (2008) process model of proactivity. To reflect these cognitive aspects, participants were required to articulate their thoughts in terms of anticipating problems and outcomes in the scenarios and their plan for future action, rather than engaging in the behaviours themselves. Judges worked independently to assess each response blind to the participant identity (re-coded responses were arranged randomly) to minimise response biases (e.g. halo). Scores were summed across all criteria for each problem, a mean score across all problems was obtained for each participant, and the final score was the mean of the two judges' mean scores.

Situational motivation. We used a measure that Parker, Jimmieson and Amiot (2013)

adapted from the Situational Motivation Scale (Guay et al., 2001) to make it suitable for experimental in-basket studies. The measure was administered immediately after completing the in-basket activity. Subscales measured were intrinsic (4 items e.g. "*I will feel [I felt] good while doing it*"; α = .93), integrated (3 items; e.g. "*Because this makes sense to me*"; α = .87), identified (3 items; e.g. "*Because I will be doing it for my own good*"; α = .79), introjected (4 items; e.g. "*Because I am supposed to do it*"; α = .82) and external (4 items; e.g. "*For the credits*"; α = .83). Responses were made from 1 (*does not correspond at all*) to 7 (*corresponds exactly*) to show how well each item reflected one's reason for striving to achieve task goals.

Results and Discussion

Consistent with hypothesis 1, better proactive performance was associated with higher levels of intrinsic motivation, as shown in Table 1. Similar positive correlations with autonomous forms of extrinsic motivation were not significant. Higher levels of introjected regulation appeared to be associated with worse proactive performance, although this association did not meet significance criteria (p = .051). External regulation was unrelated to proactive performance.

Fisher *r*-to-*z* transformations were used to determine if autonomous and controlled forms of motivation had different associations with proactive performance. Intrinsic motivation (z = 3.10, p = .002), integrated regulation (z = 2.25, p = .024) and identified regulation (z = 2.05, p = .040) were all associated with proactive performance more positively than was introjected regulation, consistent with hypothesis 2. However, only intrinsic motivation (z = 2.00, p = .046) was associated with proactive performance more positively than was external regulation.

A limitation of the present study was the use of a college student sample. The student participants, although chosen for having work experience, may have had limited opportunities

Table 1

*Means, Standard Deviations, Comparison of Means Between Studies (*t*), and Correlations, Studies 1 and 2.*

Variable	M	SD	*t*	1	2	3	4	5	6	7
Mean (M)				3.86	3.76	4.20	4.01	5.27	3.14	
Standard deviation (SD)				1.63	1.59	1.50	1.51	1.33	1.10	
1. Intrinsic motivation	4.29	1.67	1.60		.82**	.78**	-.19	-.09	.31*	
2. Integrated regulation	4.27	1.61	1.96†	.85**		.89**	.05	.03	.15	
3. Identified regulation	4.43	1.55	0.91	.85**	.87**		-.02	.13	.11	
4. Introjected regulation	2.87	1.59	-4.43**	.03	.10	-.01		.55**	-.29†	
5. External regulation	3.26	1.57	-8.13**	.39**	.32**	.31**	.34**		-.05	
6. Proactive performance (judge rating)	2.96	1.02	-1.08	.00	.03	.08	-.31**	-.28**		
7. Proactive performance (self-rating)	1.76	0.23		.34**	.32**	.34**	-.07	.11	.16*	
8. Proactive personality	3.62	0.63		.34**	.34**	.28**	-.18*	.00	.01	.23**

Notes: Study 1 ($n = 53$) results are shown above the diagonal, Study 2 ($n = 167$) results are shown below the diagonal.

† $p = .05$, * $p < .05$; ** $p < .01$

to solve work problems proactively. Also, given Grant and colleagues' (2011) differential finding for student and employee samples, it was important to verify the findings in a work population. This was one of the aims of Study 2.

Study 2

A larger, more appropriate sample allowed further validation of procedures. We used generalisability theory to identify sources of error within proactive performance ratings, allowing us to assess reliability of those ratings (Brennan, 2001). To further determine the extent to which those ratings reflected proactivity, we used two self-report scales. Bateman and Crant (1993) developed the proactive personality scale to measure the tendency to be relatively unconstrained by situational forces and to show initiative and perseverance until one experiences closure by bringing about situational change that one considers important. However, the focus of items in this scale is weighted more towards action than proactive cognition, which we were concerned could limit its association with proactive performance, particularly as personality does not dictate performance in every situation (Tett & Burnett, 2003) and self-report personality scales can tap self-concepts rather than reflecting actual behaviour patterns (McClelland, 1987). Therefore we also asked participants to evaluate their own proactive performance, at the end of the task, using the evaluation criteria provided to the judges. We expected these self-report proactivity measures to correlate with judges' independent evaluations of proactive performance (Hypothesis 3).

Method

Participants

The target population were required to be currently working more than two days (14 hours) a week in any role or industry, in order to ensure that participants had some work industry experience. This also meant that the in-basket exercises would be more meaningful and the study results were more likely to be generalisable to the workplace. Sixty-seven

participants were recruited via numerous online sources, including email, social media sites, and industry newsletters. One hundred were sourced through a paid research survey panel and received tangible rewards for survey completion. Analyses of proactive performance and motivation results identified no significant differences between the two source groups, so these were pooled. The full sample of 167 contained 53 males and 114 females. The mean age was 35.4 years ($SD = 11.9$).

Design, Materials, and Measures

We used the same design as in Study 1, with the same in-basket exercise. A small change was that in Study 2, participants also received written instructions that a proactive solution is one that: effectively changes the situation; makes a real difference to the problem at hand – so as to have a long-lasting impact; is a solution that articulates a desired goal; and involves a degree of anticipation and consideration of the potential pros and cons of a particular action. This explanation, consistent with the proactivity criteria used to determine whether a solution demonstrated proactivity, was used to clarify expectations placed on participants. This is consistent with Shalley and Perry-Smith's (2001) administration of the same memo task, wherein they informed participants they were interested in creative solutions, rather than simply responding with what the typical manager would do.

Proactive performance. The same evaluation procedure was used as in Study 1. This time, GENOVA (Crick & Brennan, 1983) was used to analyse reliability and convergent validity across the two raters and the eight in-basket problems, to further establish the use of this method following the first study. This analysis was used due to its ability to concurrently determine consistency of responses across multiple items (i.e. the number of problems in the memo task) and multiple raters, as it is a method used to determine the effects on reliability of changes to a measure's number of raters or test length (Brennan, 2001). The G coefficient for eight problems and two raters was .89, indicating high consistency. While reliability increased

incrementally with more problems and/or raters, GENOVA results showed that good reliability would be achieved with two raters using as few as four problems ($g = .82$) or even with one rater using at least five problems ($g = .80$).

Self-rated proactive performance. We created eight self-rating items ($\alpha = .69$), one from each criterion that judges used to evaluate proactive performance, although here the items related to overall solutions rather than solutions to specific problems. Participants simply responded *Yes* or *No* to each item (e.g., "*My solutions anticipated problems and/or risks*"). Whilst this is a self-report measure, it engages participants in reflection about specific activities immediately after completing them, which should reduce recall errors. The specificity of criteria and the Yes/No response format should also reduce the level of social desirability bias. Exploratory factor analysis with varimax rotation showed that variation in responses reflected a single underlying factor. All items had primary loadings over .5, with 66.29% of the variance explained by the single factor.

Proactive personality. We used the 10 items ($\alpha = .91$) from Bateman and Crant's (1993) 17-item proactive personality scale, as abbreviated by Siebert, Kramer and Crant (1999). Responses were made from 1 (*strongly disagree*) to 5 (*strongly agree*) to such items as "*I excel at identifying opportunities*".

Situational motivation. This was measured as in Study 1. Subscale reliabilities were .93 (intrinsic), .83 (integrated), .81 (identified), .90 (introjected), and .80 (external). Factor analysis has confirmed the five dimensions of the original scale for measuring situational motivation (Guay, Vallerand & Blanchard, 2001). However, as the scale was adapted, an exploratory factor analysis was conducted presently to confirm the items factor analysed with the expected dimensions.

Results and Discussion

Situational Motivation Measure Factor Analysis. The factorial validity of the

Table 2. Factor Loadings for 5-Factor Confirmatory Model of Situational Motivation

Items	Factors				
	1	2	3	4	5
Intrinsic motivation					
Because I thought that this task was interesting	0.79				
Because I thought that this task was pleasant	0.89				
Because this task was fun	0.87				
Because I felt good when doing this task	0.92				
Integrated regulation					
Because this made sense to me		0.68			
Because I believe that this task was important for me		0.93			
Because this task was meaningful to me		0.83			
Identified regulation					
Because I was doing it for my own good			0.87		
Because I thought that this task was good for me			0.95		
By personal decision			0.64		
Introjected regulation					
Because I was supposed to do it				0.84	
Because it was something that I had to do				0.94	
Because I didn't have any choice				0.77	
Because I feel that I had to do it				0.79	
External regulation					
For the prize					0.96
To be eligible to win a gift voucher					0.98
Because organisational professionals need to take part in research activities					0.62
Because if I didn't do it, I would not be eligible for the prize					0.88

Situational Motivation measure items was tested using CFA with a maximum likelihood estimation in AMOS 18 (Amos Development Corporation). A 5-factor model was specified based on previous use of a similar measure asserting this factor structure (Guay, Vallerand & Blanchard, 2001). We used Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) to evaluate the fit of the model. The 5-factor model represented an acceptable fit to the measure's items (RMSEA = 0.041 [90% confidence interval = 0.036–0.045], CFI = 0.912). The RMSEA value did not exceed the acceptable threshold value of 0.06, and the 90% confidence interval around the RMSEA also did not exceed 0.06 (Browne & Cudek, 2002). The CFI value was above the minimally accepted threshold value of 0.9042

(Bentler & Bonett, 1980). The standardized factor loadings ranged from 0.623 to 0.977 reflecting a moderate to high fit for the items within each factor (see Table 2).

Proactive Performance Measures. As shown in Table 1, higher self-rated proactive performance was associated with higher proactive personality scores ($p = .002$). Consistent with hypothesis 3, higher self-rated proactive performance was also associated with better proactive performance ($p = .042$),. However, proactive personality was unrelated to proactive performance ($p = .904$), inconsistent with previous research that suggests that proactive personality should predict proactive performance (e.g. Crant, 2000).

Proactive Performance and Motivation. As shown in Table 1, proactive performance in Study 2 was unrelated to autonomous motivation, which was inconsistent with hypothesis 1 as well as the findings of Study 1. It should be noted that compared to Study 1, mean levels of identified regulation were higher in Study 2 ($p = .050$), and mean levels of both controlled forms of motivation were lower ($ps < .001$). This may reflect the differences in recruitment procedures for the two samples, with student participants in Study 1 expected to participate in several hours of research activity, while participants in Study 2 had more freedom to choose whether or not to participate. Even so, in Study 2 higher levels of both controlled motivations were associated with worse proactive performance ($ps < .001$).

Fisher r-to-z transformations were used to determine if autonomous and controlled forms of motivation had different associations with proactive performance. Broadly supporting hypothesis 2, both of the controlled motivations were associated more negatively with proactive performance than were any of the autonomous motivations (zs ranged from 2.63 to 3.55, $p < .005$). Multiple regression analysis results revealed that both introjected ($\beta = -.33$, $p < .05$), and extrinsic ($\beta = -.421$, $p < .05$) forms of motivation significantly predicted less proactivity. This finding replicates and extends the negative association between introjected motivation and proactivity observed in Study 1.

General Discussion

The present research explored the proactivity process, particularly its under-researched cognitive stages, through the use of quasi-experimental methods. In two studies, participants performed an in-basket activity that involved directions and opportunities for anticipating and planning proactive solutions to realistic workplace problems. Following Parker et al.'s (2010) assertion that autonomous motivations should promote proactivity to a greater degree than controlled motivations, the two studies examined motivations and used independent judgements of in-basket solutions to assess proactive performance. Results were mixed, but generally supported the proposition that the early phases of the proactivity process would be enhanced more by autonomous motivations than controlled motivations.

Following speculations by Parker and colleagues (2010), we expected all autonomous forms of motivation would be associated with proactive performance. In Study 1, consistent with other student-based research on goal pursuit (Koestner et al., 2008) and career initiative (Grant et al., 2011), autonomous forms of motivation, especially intrinsic motivation, were generally associated with proactive problem-solving performance to a greater extent than controlled motivations. However, only intrinsic motivation was significantly linked with proactive performance, which suggests a practical challenge about motivating employee proactivity. If people are only motivated to generate proactive solutions when doing so is enjoyable, interesting, or a source of flow (Parker et al., 2010), cognitive aspects of proactivity could be easily stalled by obstructions or changes in the task or situation that reduce the level of interest and enjoyment. Similar findings have been reported by Koestner and Losier (2002), who found that greater intrinsic interest and pleasure in a task resulted in greater task performance.

This finding was not repeated in Study 2, where none of the autonomous motivations were associated with proactive performance. This result is similar to the non-significant

correlation between initiative and autonomous motivation that Grant and colleagues' (2011) observed in their call-centre study. While in our Study 2 autonomous motivations were generally higher than in Study 1, the difference was not significant for intrinsic motivation, so it seems unlikely that we encountered a ceiling effect. It may be that for people with work experience, autonomous motivation for problem-solving is insufficient to stimulate highly proactive solutions to hypothetical problems, compared with individuals for whom proactive problem solving may be more novel. Rather, proactive goal generation for individuals in a work setting may require intrinsic motivation to be combined with other related phenomena, such as activated affective states (Bindl et al., 2012), which could be measured or even manipulated within this study paradigm.

There were some consistent findings across both studies. First, consistent with hypothesis 2, autonomous motivations were more positively (or less negatively) associated with proactivity than were controlled motivations. A second, related finding was that those who reported high levels of controlled motivations received lower proactive performance scores, a finding that was marginal in Study 1 but significant for both introjected and external regulation in Study 2. While several previous studies have indicated that controlled motivations are unrelated to proactivity (e.g., Grant et al., 2011; Koestner et al., 2008), a study Parker and Collins (2010) found that people high in performance goal orientation (which could be generated or maintained by controlled motivations) tend to report fewer proactive strategic behaviours. Parker and colleagues (2010) proposed that since controlled motivations are not perceived as freely chosen, the self-initiated aspects of proactivity could be inhibited. However, they suggested that a major benefit of autonomous over controlled motivations could be their impact on persistence with proactivity in the face of obstacles, whereas our studies – where participants only had to propose solutions to problems – suggest that the negative effects of feeling controlled may be more immediate. Our finding is

consistent with experimental studies where people who felt controlled by others showed less creativity (e.g., Amabile, 1979, 1982), even though response novelty, central to experimental studies of creativity, did not feature in the evaluation criteria used in the present study. The finding suggests that controlled motivations may narrow cognitive focus at a time when it should be broadened (akin to effects observed for negative affect within the broaden-and-build theory; Fredrikson, 2001). Future research is needed to replicate this effect and determine whether it is distinct or mediated via negative affect.

A strength of the present study was the measurement of anticipation and planning phases of proactivity via criterion-based assessments by independent judges. The consistency between judges' assessments suggests that this method is reliable, particularly with multiple in-basket problems. While the significant correlation between judges' ratings and participants' self-ratings helps validate the procedure, the lack of association between judges' proactivity scores and proactive personality requires explanation. Both judges' scores and participant self-reports were focused on performance in the in-basket activity. By contrast, Bateman and Crant's (2001) proactive personality scale was designed to measure the tendency to enact change, with items reflecting typical behaviours (e.g. "if I see something I don't like, I fix it") and attitudes (e.g. "nothing is more exciting than seeing my ideas turn into reality"). Such a tendency may not determine the level of effort or competence at proactive goal generation in a particular situation, especially when presented with another person's problems. In which case, the present results support the view that proactive personality provides an indication of whether someone may be more likely to engage in proactivity, rather than providing a true reflection of whether someone has acted proactively. Our findings are consistent with those of Morrison (2006), who found that proactive personality did not affect endorsement of proactive rule-breaking in a hypothetical scenario study. This may suggest that proactive personality is less important in situations that do not stimulate a

personal need for change. If so, this is consistent with the argument that situational factors play a significant role in determining an individuals' proactivity, in contrast with the conceptualisation of proactivity as personality-based which suggests that it proactivity is resistant to situational forces (Bateman & Crant, 1993).

Most research into the process of proactivity has focused only on the action phase of proactivity, and much of this has relied on self-reports of behaviour. Another strength of our studies is that we have refined an laboratory-based method for investigating the preceding cognitive aspects of proactivity. While the in-basket exercise involves a speculative/hypothetical component, the outcome variable is not a multiple-choice endorsement of opinions or behaviours that the participant might not display in real life (a common criticism of vignette studies; Ludwick & Zeller, 2001), but rather the details of solutions, goals and action plans in response to realistic problems. In doing so, participants are articulating their cognitively-formed plans, expectations and anticipatory factors around solving the problems, rather than actually performing those behaviours to complete the plans. As such, they provide a representation of the anticipation and planning phases of proactivity described by Grant and Ashford (2008) and in Parker and colleagues' (2010) explanation of proactive goal generation. The study design can be administered online, so that experimenter appearance and behaviour do not influence results, and so that there are fewer norms governing effort and behaviour than when participants undertake similar activities in the presence of an experimenter. Consequently, our methods create the sort of "weak" situation (Mischel, 1973) in which proactivity is likely to be most important (Griffin et al., 2007).

Several limitations in Study 1, such as the sample size and the use of a student sample, were addressed Study 2. However, participants in Study 2 were sourced via a variety of methods and therefore their background was relatively diverse. Future research could investigate a work sample from a specific organisation or employees performing similar roles

in order to reduce variation associated with unmeasured variables. Additionally, participants' experience with in-basket tasks was not measured so depending on selection procedures they had encountered and their typical work duties, some participants may have been more familiar with this task. Future research may control for this potential source of error. A limitation in the design of both studies was inability to distinguish causal relations between motivations and proactivity. While we have interpreted the findings to indicate that motivational experiences influenced proactive performance, it is possible that the reverse is true – performing well at a problem-solving task may makes it more enjoyable, whereas in one finds such a task difficult, one may attend more to controlled motivations for the task. Fortunately, this is precisely the sort of empirical question that can be answered in future research using experimental approaches of the type reported here.

The present research shows that the novel methodological approach can be used to examine proactivity in problem-solving, allowing exploration of research questions that are difficult to examine effectively using more conventional survey techniques. Using these methods, we provide some verification Parker and colleagues' (2010) predictions that autonomous motivations, particularly intrinsic motivation, are associated with proactivity more positively (or less negatively) than controlled motivations. Our findings suggest that if proactivity is to be reinforced within the workplace, extrinsic controlled motivators are unlikely to encourage proactivity, and may in fact detract or reduce individuals' performance of proactivity, particularly those who are inherently intrinsically motivated to do so. Ours are only preliminary findings, but we hope they stimulate more experimental work in the proactivity research domain. Further research using a similar approach could investigate other antecedent factors suggested by the models of proactivity as a process, such as situational factors, individual differences and dispositional moderators (Grant & Ashford, 2008), or further the exploration of the proactive motivation through the inclusion of proactive goal

regulation (Parker, et al. 2010). The benefit of the current method to provide an independent assessment of proactivity, something that has been a challenge in previous self-assessment based research (Parker, et al. 2010), helps to overcome this issue in testing the influence of other aspects of the proactivity process. Future exploration in this vein could help to specify and validate the conditions under which proactivity is likely to be elicited and encouraged, given its important function in modern workplaces.

4. Final Conclusion

Proactivity is an important process in the workplace, as modern work environments require individuals to display these behaviours in order to support organisational progression and success. Collectively the research presented in this dissertation aimed to extend existing proactivity literature, particularly in response to an identified deficit in the literature exploring proactivity using experimental methods. The studies developed novel methods for examining proactivity within an empirical paradigm, and in doing so enabled more independent assessments of proactivity that overcome the challenges of self-report in determining whether an individual has acted proactively. The laboratory setting of the novel rail control simulator method allowed researchers to manipulate a key contextual factor, task complexity, in a work-related environment that was not impacted by other confounding contextual factors to explore the influence of this factor on proactivity. In contrast, the complex-heuristic inbox memo task, provided a proof-of-concept test of a methodology for examining problem-solving aspects of proactivity. In doing so, this method also tested an approach to independently measuring and assessing an individuals' proactivity that indicated promise as a method for future research utilising an independent assessor design. Drawing on self-determination theory (Deci & Ryan, 1985), the methodological approaches were also designed to observe and elicit specific aspects of proactivity including an example of the action implementation phase (Grant & Ashford, 2008) and anticipation and planning phases of goal generation (Parker, Bindl & Strauss, 2010). This exploration of specific aspects of proactivity relates to the recent conceptualisation of proactivity as a goal-oriented process (Grant & Ashford, 2008; Parker, et al., 2010) which has yet to receive much empirical attention in the literature. In particular, the present research aimed to test and establish the relationships asserted by Grant and Ashford (2008) and Parker et al. (2010) as contributing to the proactivity process, including autonomy through task complexity and motivation. This guided the design and aims of the present

collection of research, which attempted to answer questions regarding the nature and impact of the relationship between proactivity and key situational and antecedent factors.

In particular, the present research contributed a deepened understanding of the proactivity process through demonstrating a negative relationship between controlled forms of motivation and proactive anticipation and planning, empirically supporting the model proposed by Parker et al. (2010). This study also enhanced the measure of proactivity through developing an independent rater assessment of proactivity that allows researchers to surmount issues with self-rater assessments of proactivity often used in previous proactivity research (e.g. Crant, 2000). Task complexity as an important situational antecedent of proactive action was also manipulated using a novel method that created a laboratory setting in which to test the relationship between these variables. This approach contributed a method for testing and manipulating this contextual factor in a way that avoided typical organisational confounding factors to better isolate the influence of this variable.

The methodological approaches adapted for the present studies have not been used in previous research investigating proactivity and contribute methodologies that can be utilised in future research to investigate the impact of other contextual factors and influences in the proactivity process, not measured presently. The specific anticipation and planning forms of proactivity have also received little attention in previous research, hence the present empirical investigation of this form of proactivity contributed an approach for tapping into this aspect of the proactivity process. Again, future research may use this approach to further investigate the broader process through exploring and testing the relationship between contextual factors and the different phases of the proactivity process. A number of suggestions for extending the present studies in future research are suggested below.

Research Contributions

Chapter 1. The review of existing proactivity literature provided an overview of the key concepts to have arisen over the years of research investigating this phenomenon. A key limitation identified in the array of definitions and measures involved in examining proactivity, is the limited use of empirical methods, given the tendency to measure proactivity via self-report assessments. An inherent issue in the approach to measuring proactivity in this way is that it is reflective of an individual's perceptions that he/she performs certain behaviours or that he/she has a tendency to perform in a certain way, which is inherently affected by social-desirability and memory biases. Furthermore, it was reasoned that the use of a proactivity trait measure (Proactive Personality Scale; Bateman & Crant, 1993) or self-assessments of engaging in a specific behaviour (e.g. Taking Charge scale, Morrison & Phelps, 1999) to determine whether someone has been proactive limits that manifestation of proactivity to simply personality or a kind of behaviour. By identifying inconsistencies between the definition of proactivity used and the method of assessment, this review highlighted the need for the development of methodologies involving greater impartiality and objectivity for determining whether an individual had engaged in proactivity. The development of a measure which reflects the view that proactivity is more than simply dispositional or behavioural, and rather it is a more encompassing concept of a way of performing actions was also considered.

Consistent with the development of such a measure for examining proactivity, a further notion arising from this review was the need for further establishment and examination of the concept of proactivity as a process. Two key models were reviewed in respect to this concept: Grant and Ashford's (2008) proactivity dynamics framework, and Parker, Bindl and Strauss' (2010) proactive motivation model. The contributions of these models were discussed in order to highlight the need to reinvestigate proactivity through the view of proactivity as an adverb, a way of behaving, and involving phases of activity that

determine whether an individual takes action toward a change-oriented goal. This review guided the direction of the research contained within this thesis, primarily exploring relationships asserted by the concept of proactivity as a process and examining such relationships and concepts via experimental method for a more objective and independent understanding of proactivity.

Chapter 2. The use of a novel experimental method in exploring the relationship between task complexity and discretionary behaviour was of central importance to the research explicated in this chapter. An experimental approach was considered important due to the opportunity to manipulate the situational factor of task complexity, using a novel task not affected by other organisational factors. Task complexity is also a key situational antecedent supported by extensive literature for both proactivity (e.g. through enhanced autonomy; Grant & Ashford, 2008) and citizenship behaviours (e.g. Rodell & Judge, 2009), but there is a relative dearth of similar empirical approaches to exploring the impact of this factor. The novel approach of utilising a rail control simulator within a laboratory to test and explore relationships between variables, whilst controlling typical confounding factors present in an organisational setting, was a key contribution of this research. The rail control simulator provided a task that mimicked real work demands as well as affording the opportunity to manipulate key characteristics of the environment in order to vary the level of complexity. Results suggested that the methodology successfully manipulated task complexity, and consequently differential impacts on the discretionary behaviours investigated were able to be determined. Drawing on a stressor-strain perspective (Lazarus & Folkman, 1984), it was expected that complexity, through the enhancement of experienced challenge, would enhance the prevalence of citizenship behaviours. Building on self-determination theory (Deci & Ryan, 1985), it was also expected that task complexity would elicit feedback seeking behaviour as a component of the action implementation phase of proactivity, through

individuals experiencing autonomy and control via increased decision making through greater complexity, thereby leading to greater autonomous motivation to improve performance. However, the discretionary behaviour manipulations were less successful in eliciting the desired behaviours from participants, particularly for the proactivity behaviour of feedback seeking. This result highlighted the issue of task engagement in utilising the rail control approach, suggesting the importance of selecting tasks with which participants can identify directly and therefore engage the autonomous motivation component of proactive motivation.

Despite the limitations of the experimental approach to eliciting the discretionary behaviours of interest, this study successfully trialled a novel approach to exploring discretionary behaviour and manipulating relevant situational contexts. By trialling this method, the research provides direction for future research extending the experimental approach to exploring discretionary behaviours and testing relationships with important antecedent factors.

Chapter 2a. As no participants engaged in the sabotage behaviour task, the aspects related to counterproductive work behaviours were removed from the primary research paper. A potential reason for the lack of sabotage behaviour performed by participants was due to the issue of impression management, as participants may have felt 'watched' by the researcher or may have wished to maintain their image in the context of the study. A further issue considered was that the consequence of the behaviour (i.e. potentially winning a prize) was insufficient incentive to perform the sabotage behaviour. These issues contributed the consideration that future research investigating counterproductive behaviours may need to provide more covert opportunities to display such behaviours, as well as creating greater incentive to perform a sabotage act or ensure that the experimental task is more identifiable to the participant. A single opportunity task, as in the case of the rail control task, may be insufficient opportunity for an individual to engage in behaviours like sabotage, as these may

require more long-term investment and planning to occur. The need for future research was identified, to investigate different kinds of task with multiple opportunities for behaviour to assist in overcoming this limitation faced in the present study.

Chapter 3. A focus on empirical methods was continued in the second research, although an alternative method for examination was utilised, based on limitations identified in the previous research. In this set of two studies, the relationship between proactivity and motivation was explored via a memo-based problem solving task conducted online. Exploring the relationship between these variables through a self-determination lens (Deci & Ryan, 1985), it was predicted that autonomous motivations should enhance proactive problem solving relevant to the anticipation and planning stages of proactivity. Of particular contribution for this experimental approach was the inclusion of a method for independently assessing proactivity in an attempt to overcome the traditional approach of self-assessment measures. In terms of the general efficacy of the experimental method for investigating cognitive aspects of the proactivity process, this research demonstrated evidence for the utility and efficacy of this kind of approach. In particular, the process of assessing proactivity using independent raters to score proactive problem solving, according to a set of criteria was shown to have a high level of reliability and effectiveness for measuring this process. Whilst previous research has developed and investigated other-rater assessments of proactivity (Grant, Parker, & Collins, 2009), it has focused on the expression of prosocial values, voice, taking charge, and anticipatory helping. In contrast, the present studies examined proactive anticipation and planning in the context of proactive problem-solving with a view to proactive goal regulation, as a reflection of Parker and colleagues' (2010) model of proactivity. Furthermore, Grant et al.'s (2009) research engaged supervisors as the other-raters, which may have been influenced by other confounding organisational factors, which are not

confounding factors in the present research due to the laboratory-based setting and the use of independent raters to undertake the assessment using the developed criteria.

The inbox-item task also beneficial as a research instrument for this paradigm as it requires relatively few resources and is easily accessible due to the online-based nature of the task, which is able to be readily replicated in future research. Furthermore, based on the results finding reasonable reliability with fewer items, future research may adopt the same approach but with less required effort from both participants and researchers. Demonstrating the efficacy of the experimental approach to investigating proactivity therefore establishes future potential for application within this research domain. Of particular interest may be the use of this same methodological approach to explore proactive problem-solving whilst manipulating relevant situational factors. For example, Parker, Jimmieson and Johnson (2013) demonstrated the manipulation of workload and control via varying instructions to participants about how they completed a similar inbox-item task and the number of items they had to complete. Manipulating key contextual antecedents to the proactivity process would help further the understanding of how these factors influence proactive motivation and the resulting proactive goal striving and generation.

A further contribution of the approach utilised was the investigation of proactivity through anticipation and planning, in contrast with much of the previous literature which has tended to focus on specific behaviours or an individual's personal disposition. By engaging participants in a task that required them to articulate their intended actions as well as considerations or anticipation around the impact of their intended actions, researchers are able to capture the independent cognitive processes that individuals engage with respect to the anticipation and planning phases of proactivity. The use of a problem-solving context that was novel to all participants also allowed the opportunity to control confounding factors that otherwise might impact on an individual's response to such problems in an organisational

setting. The development of a method for assessing these anticipation and planning activities allows it to be explored by future researchers across numerous experimental tasks and contexts, consistent with the view that proactivity is a process or way of behaving (Grant & Ashford, 2008). Future research may continue with this approach to examine the nature of anticipation and planning using different work-related tasks or contexts and further establish the use of these phases in determining whether an individual is being proactive.

This research also contributed an extension of existing investigations of proactivity conceived as a process, through the examination of the relationship between proactivity and self-determined motivational states. Parker, Bindl and Strauss (2010) highlighted self-determined and autonomous forms of motivation as driving the goal-driven process of proactivity, however the influence of motivation on proactivity is relatively unexamined thus far. Hence, the study aimed to examine which forms of motivation are likely to promote and demote proactivity. Study 1 found support for Parker et al.'s (2010) assertion that proactivity is more likely to occur as a result of intrinsic motivation, whereas Study 2 provided evidence for external regulation reducing proactivity. These findings help to further the understanding the influence of situational motivations on proactivity, as well as to provide direction for future investigation of this relationship. Moreover, the observed change in participants' intrinsic motivation levels and proactivity over the course of the experimental task highlighted a research question that warrants additional investigation. That is, the present study was unable to identify the direction of the effect between motivation and the proactivity phases of anticipation and planning, and the potential role that the task itself plays in influencing individual motivation. The application of this research question to future studies is discussed in greater detail in sections to follow.

Although two distinct methods and combination of variables were explored between Chapters 2 and 3, a number of combined insights can be provided based on the

experiences and outcomes of these empirical studies. The two studies separately investigated different components of the proactivity process; Study 2 explored action directed towards future impact (Grant & Ashford, 2008) in the form of feedback seeking, whilst Study 3 explored the anticipation and planning stages (Grant & Ashford, 2008) through proactive problem solving and through a lens of individual motivation (Parker et al., 2010). Study 2 therefore explored a more behaviourally based view of proactivity, more closely aligned with previous research examining proactivity, while Study 3 tested a more process-oriented view of proactivity. Based on methodologies developed, the problem solving task in the latter study allowed more cognitive, process-oriented activities to be captured, in contrast with the external behaviour-based task in the former study. We propose that different methodologies may therefore be required to investigate different aspects of the proactivity process. Likewise, the manipulation of task complexity in Study 2 was easier to control in a laboratory-based novel task that could allow for multiple components and tasks, whereas this is more difficult to manipulate in the problem-solving task of Study 3. This also suggests that the nature of the task is important to consider depending on the situational context that is being examined. Based on the outcome of the research conducted presently, we would suggest that different methods may be required to manipulate different situational antecedent factors, which is particularly important for the future investigation of psychological and dispositional moderators of the proactivity process (discussed further below).

Each of the discrete studies utilised a consistent underlying theory in which to explore the process model of proactivity, being self-determination theory (Deci & Ryan, 1985). With the supporting evidence for controlled forms of motivation reducing proactive anticipation and planning, we would suggest that future research would benefit from further exploring proactivity through this lens. It seems this theory provides reasonable argument for each of the stages of proactivity, including the anticipation and planning stages, as well as the action

implementation phase (Grant & Ashford, 2010), and underpins the argument made by Parker and colleagues (2010) with respect to proactive motivation. Extending this theory to further explore the broader process, combining each of the phases of the proactivity process, and within different contextual environments, would help to support and identify the antecedent factors that augment individual proactive behaviour.

Future Research Directions and Research Applications

Limitations and questions unanswered by the present research suggest reasonable avenues for the direction of future research. Whilst the approach presented in the research in Chapter 2 was unsuccessful in eliciting many demonstrations of proactivity, the approach taken in Chapter 3 captured a broad range of proactivity. The differing result perhaps reflects that the focus on anticipation and planning, rather than specific behaviour, has greater opportunity for demonstration in experimental designs, and which is otherwise quite difficult to manipulate or discern in real work environments. It may be advantageous for future experimental research to utilise this method for examining proactivity to further explore the concept of proactivity as a process, and the antecedent factors argued to predict proactivity as a process. Future experiments could also apply this manifestation of proactivity to different experimental tasks and contexts, given that anticipation and planning toward a change-oriented goal can be applied across numerous actions and tasks.

Further direction for future experimental research is also highlighted in some of the limitations observed in the methods undertaken across the present research studies. The improvement in eliciting proactivity via the latter research study method (Chapter 3) to the method engaged in the earlier study (Chapter 2) highlighted the importance of the extent to which participants can identify with the sort of task that they are performing. Whilst motivation was not measured in the earlier study, the lack of uptake of discretionary behaviours explored suggested that engagement with the experimental task was an issue.

Proactive feedback-seeking behaviour relied on participants wishing to improve their performance on the rail control task, whilst the counterproductive sabotage behaviour required individuals to want to perform better than another individual to win a prize. The nature of the task examined in the experimental setting was therefore suggested to require careful consideration in future experimental research, so that it successfully generates individual engagement and identification with the task.

A limitation of the second research (Chapter 3) in being unable to identify the direction of the effect between intrinsic motivation and proactivity also provides direction for future research investigation. The effect of the experimental task in generating or facilitating intrinsic motivation was unclear in the present research, as the positive relationship between intrinsic motivation and proactivity may have been a result of the task being intrinsically motivating, or a result of the individual intrinsically engaged in the process of anticipation and planning. The nature of the experimental task would be critical in future investigations into these effects, to be able to identify what is generating an individual's intrinsic motivation.

Importantly, this research focused on the 'reason to' motivations suggested by Parker and colleagues (2010), rather than the 'can do' motivations, which may suggest that these two kinds of motivations may impact differently depending on the nature of the task and its relevance to the individual. For example, if 'can do' motivation is more impactful for an individual, it is more aligned with the view of intrinsic work motivation (e.g. Ohly & Fritz, 2007), rather than an individuals' motivation to perform a task in a proactive manner, as was assumed in the present research. Whilst the present research investigated the impact of motivational states through self-determination theory, future research investigating 'can do' motivations may focus on social cognitive theory (Bandura, 1977) or attribution theory (Heider, 1958) which may provide alternative theoretical predictions for the impact of these kinds of motivations on proactivity. Future research would therefore benefit from engaging

multiple experimental tasks and include assessments designed to capture motivation arising from a task versus from (proactive) anticipation and planning activities, as well as from the different concepts of motivation, to further explore and answer these research questions.

Future research may also continue to develop and utilise empirical methods for examining proactivity and factors within the proactivity process, given the evidence from the present research that this is a constructive approach for exploring this phenomenon. As the conceptualisation of the proactivity process is relatively recent, experimental studies may assist in clarifying and establishing relationships argued to contribute to the proactivity process. A number of phases unique to the concept of proactivity as a process (Grant & Ashford, 2008), as well as 'can do' motivational factors were not examined in the current research (Parker, Bindl & Strauss, 2010), and may benefit from further exploration. Experimental research would be beneficial to exploring Grant and Ashford's (2008) view of proactivity as a 'way of behaving', as it can be designed to manipulate contextual factors whilst also controlling for potential confounding factors that commonly arise in organisational field settings, and allowing the opportunity to determine direct and causal effects.

For example, the behavioural task (in the rail control simulator) may be useful for exploring manipulations of other behaviours supported in the action implementation phase of the proactivity process, as a representation of physical manifestation of anticipation and planning in concrete behaviours, such as pro-social rule breaking (Morrison, 2006), and role expansion (Parker et al., 1997) that may better lend to this kind of task. Alternatively, the rail control method may investigate the dimensions of proactive behaviour asserted by Grant and Ashford (2008), including the form, frequency and timing of such behaviours given the ability to manipulate the nature of the task to capture behaviours as they occur. The inbox memo task could also be further adapted to manipulate and examine the impact of other contextual factors, such as job stressors, leadership, and interpersonal climate and social processes

(Parker et al., 2010). This would help to extend the current models of proactivity as a process and investigate different factors asserted to influence this process.

Future research may also consider combining the two aspects of the proactivity process explored separately in the present studies. That is, future research may adapt the present approach to examining proactivity to explore both the anticipation and planning phases of proactivity with the action phase of proactivity in a consecutive manner. It may be appropriate to extend this research application to feedback seeking as a specific example, given research has suggested that in addition to the actual behaviour of seeking feedback, proactive individuals tend to also engage in inquiry and monitoring activities (Ashford, Blatt, & VandeWalle, 2003) which may represent forms of anticipation and planning in the proactivity process.

The potential application for this in future research is important for understanding, in particular, the reasons why an individual might engage in proactivity, as motivation and mood are increasingly recognised as central to understanding this aspect of proactivity. Future research might also therefore consider the dispositional and psychological mechanisms driving the proactivity process, as the present research focused on motivation specifically. Grant and Ashford (2008) suggest a number of dispositional moderators that are likely to impact on an individual engaging in proactivity, depending on the primary situational context, such as core self-evaluations and individual experiences of efficacy in the context of autonomy. This would be a beneficial addition to and adaptation of the rail control method, given the novel and complex nature of the task individuals were required to perform. Parker and colleagues (2010) also suggest similar psychological mechanisms as influencing motivational states, including self-efficacy and control appraisals. Either of the methodologies employed presently could be adapted to include measures of these variables to determine the influence on individuals' proactivity and their motivational state.

There are also potential applications of the present research to real work settings. Understanding the factors likely to encourage and promote proactivity may allow workplaces to implement systems that use these factors to reinforce proactive behaviour. Likewise, exploring methods for assessing proactivity more objectively may be used in a workplace setting to improve the assessment of proactivity and overcome the limitations of self-assessment measures that are typically used to determine whether an individual has engaged in proactive behaviour. In contrast with the benefits of experimental research, in workplace settings it is often difficult to control external variables, and individuals within a workplace are generally impacted by a range of contextual factors. Due to the inherent complexities of real work settings, experimental research can answer some simple but important questions about proactivity in general, which, over time, may help to better the understanding of proactivity performed in the workplace. For example, applying the proactivity criteria-based approach for assessing proactivity, as per the present research, within a workplace may help to establish the effectiveness of this as a kind of tool to use in assessing proactivity in this setting. Potentially expanding the criteria-based assessment to develop a 360 degree assessment type approach, such as in using self- and rater-assessed criteria, would assist in overcoming limitations associated with using only self-report measures. The present use of an online, problem-based task may allow this method to be more easily replicated in a workplace environment than other experimental approaches, and would also provide the opportunity to examine proactivity within different participant populations.

Understanding proactivity within the context of work is important, given the need for individuals to display proactive behaviours to support organisational flexibility and success. However, experimental research is essential to enhancing the fundamental understanding of proactivity and its relationship to other key factors likely to influence an individual's performance of proactivity. Developing methods for examining components of the proactivity

process can facilitate this understanding, which is particularly important as greater attention is paid to identifying the reasons why an individual engages in proactivity. The present research has contributed novel methods for examining proactivity through an empirical approach, which provides direction for future research methods and investigations.

References

Amabile, T. M. (1979). Effects of external evaluations on artistic creativity. *Journal of Personality and Social Psychology, 37*, 221 -233.

Amabile, T. M. (1982). Children's artistic creativity: Detrimental effects of competition in a field setting. *Personality and Social Psychology Bulletin, 8,* 573-578.

Amabile, T. M. (1998). How to kill creativity. *Harvard Business Review, 76*, 76-87.

Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of management Journal, 39*, 1154-1184.

Andrews, F. M., & Gordon, G. (1970). Social and organizational factors affecting innovation in research. *Proceedings of the Annual Convention of the American Psychological Association, 5,* 89-90.

Ashford, S.J. (1986). Feedback-seeking in individual adaptation: A resource perspective. *Academy of Management Journal, 29*, 465-487.

Ashford, S. J. (1988). Individual strategies for coping with stress during organizational transitions. *Journal of Applied Behavioral Science, 24*, 19–36.

Ashford, S. J., & Black, J. S. (1996). Proactivity during organizational entry: The role of desire for control. *Journal of Applied Psychology, 81,* 199-214.

Ashford, S. J., Blatt, R., & VandeWalle, D. (2003). Reflections on the looking glass: A review of research on feedback-seeking behavior in organizations. *Journal of Management, 29,* 773-799.

Ashford, S. J., & Cummings, L. L. (1983). Feedback as an individual resource: Personal strategies of creating information. *Organizational Behavior and Human Performance, 32,* 370-398.

Ashford, S. J., & Cummings, L. L. (1985). Proactive feedback seeking: The instrumental use of the information environment. *Journal of Occupational and Organizational*

Psychology, 58, 1-96.

Ashford, S.J., & Northcraft, B.B. (1992). Conveying more (or less) than we realize: The role of impression-management in feedback-seeking. *Organizational Behavior and Human Decision Processes, 53*, 310-334.

Ashford, S. J., & Tsui, A. S. (1991). Self-regulation for managerial effectiveness: The role of active feedback seeking. *The Academy of Management Journal, 34*, 251-280.

Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes, 50*, 248-287.

Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 41*, 586-598.

Barling, J. (1999) Changing employment relations: Empirical data, social perspectives and policy options. In D.B. Knight and A. Joseph (eds.) Restructuring Societies: Insights from the Social Sciences. Ottawa, Ontario: Carlton University Press.

Bateman, T.S., & Crant, J.M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior, 14*, 103-118.

Battman, W. (1988). Feedback seeking as a means of self-assessment and affect optimization. Motivation and Emotion, 12, 57–74.

Beck, U. (2000). *The Brave New World of Work.* Cambridge, UK: Polity Press.

Bennett, R.J., & Robinson, S.L. (2000). Development of a measure of workplace deviance. Journal of Applied Psychology, 85, 349-360.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychology Bulletin, 88,* 588–606.

Bindl, U. K., & Parker, S. K. (2010). Proactive work behavior: Forward-thinking and change-

oriented action in organizations. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology.* Washington, DC: American Psychological Association.

Bindl, U. K., Parker, S. K., Totterdell, P., & Hagger-Johnson, G. (2012). Fuel of the self-starter: How mood relates to proactive goal regulation. *Journal of Applied Psychology, 97*, 134-150.

Bledow, R. & Frese, M. (2009). A situational judgment test of personal initiative and its relationship to performance. *Personnel Psychology, 62*, 229-258.

Boies, K., & Howell, J.M. (2009). Leading military teams to think and feel: Exploring the relations between leadership, soldiers' cognitive and affective processes, team trust, and performance. *Military Psychology, 21*, 216-232.

Breaugh, J. A., & Colihan, J. P. (1994). Measuring Factors of Job Ambiguity: Construct Validity Evidence. *Journal of Applied Psychology, 79,* 191-202.

Brennan, R. L. (2001). An essay on the history and future of reliability from the perspective of replications. *Journal of Educational Measurement, 38*, 295-317.

Browne, M. W., & Cudeck, R. (2002). Alternate ways of assessing model fit. In: K. A. Bollen & J. S. Long (Eds), *Testing Structural Equation Models,* pp. 136–162. Newbury Park, CA: Sage.

Campbell, D. J. (1988). Task complexity: A review and analysis. *Academy of Management Review, 13*, 40-52.

Claes, R., Beheydt, C., & Lemmens, B. (2005). Unidimensionality of abbreviated proactive personality scales across cultures. *Applied Psychology: An International Journal, 54*, 476–489.

Crant, J. M. (1995). The Proactive Personality Scale and objective job performance among real estate agents. *Journal of Applied Psychology, 80*, 532-537.

Crant, J.M. (2000). Proactive behavior in organizations. *Journal of Management, 26*, 435-

462.

Crick, J. E., & Brennan, R. L. (1983). *Manual for GENOVA: A GENeralized ANalysis of VAriance system.* Iowa City, IA: The American College Testing Program.

Csikszentmihalyi, M. (1988). The flow experience and its significance for human psychology. In M. Csikszentmihalyi & I. S. Csikszentmihalyi (Eds), *Optimal Experience: Psychological Studies of Flow in Consciousness*, pp. 15-35. New York, NY: Cambridge University Press.

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 18*, 105–115.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (1995). Human autonomy: The basis for true self-esteem. In M. Kemis (Ed.), *Efficacy, agency, and self-esteem* (pp. 31–49). New York: Plenum.

Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist, 26*, 325-346.

Deci, E., & Ryan, R. (Eds.), (2002). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.

Diefendorff, J. M., & Mehta K. (2007). The relations of motivational traits with workplace deviance. *Journal of Applied Psychology, 92,* 967-977.

Dodd, N. G., & Ganster, D. C. (1996). The interactive effects of variety, autonomy, and feedback on attitudes and performance. *Journal of Organizational Behaviour, 17,* 329-347.

Fay, D., & Frese, M. (2000). Conservative's approach to work: Less prepared for future work demands? *Journal of Applied Social Psychology, 30*, 1, 171-195.

Fay, D., & Frese, M., (2001). The concept of personal initiative: An overview of validity

studies. *Human Performance, 14*, 97-124.

Fox, S., & Spector, P. E. (1999). A model of work frustration-aggression. *Journal of Organizational Behavior, 20*, 915–931.

Fox, S., Spector, P. E., Goh, A., & Bruursema, K. (2007). Does your coworker know what you're doing? Convergence of self- and peer-reports of counterproductive work behavior. *International Journal of Stress Management 14*, 41–60

Fuller, J. B., Hester, K., & Cox, S. (2010). Proactive personality and job performance: Exploring job autonomy as a moderator. *Journal of Managerial Issues, 22*, 35-51.

Fuller, J. B., Marler, L. E., & Hester, K. (2006). Promoting felt responsibility for constructive change and proactive behaviour: Exploring aspects of an elaborated model of work design. *Journal of Organizational Behaviour, 27*, 1089 – 1120.

Frankl, V. (1959). *Man's search for meaning.* Boston, MA: Beacon Press.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56,* 218-226.

Frese, M. (1989). Theoretical models of control and health. In S.L. Sauter, J.J. Hurrel (jr.), & C.L. Cooper (Eds.), *Job control and worker health* (pp. 107-128). Chichester: Wiley.

Frese, M., & Fay, D. (2001). Personal initiative: An active performance concept for work in the 21st century. In B. M. Staw, & R. I. Sutton (Eds), *Research in organizational behavior.* Vol. 23 (pp.133–187). Amsterdam: Elsevier Science.

Frese, M., Fay, D., Hilburger. T., Leng, K., & Tag, A. (1997). The concept of personal initiative: Operationalization, reliability and validity in two German samples. *Journal of Occupational and Organizational Psychology, 70*, 139-161.

Frese, M., Garst, H., & Fay, D. (2007). Making Things Happen: Reciprocal Relationships between Work Characteristics and Personal Initiative (PI) in a Four-Wave Longitudinal Structural Equation Model. *Journal of Applied Psychology, 92*, 1084- 1102.

Frese, M., Kring, W., Soose, A., & Zempel, J. (1996). Personal initiative at work: Differences between East and West Germany. *Academy of Management Journal, 39*, 37–63.

Fritz, C. & Sonnentag, S. (2009). Antecedents of day-level proactive behavior: A look at job stressors and positive affect experienced during the workday. *Journal of Management, 35,* 94-111.

Fuller, J. B. Jr., Hester, K., & Cox, S. S. (2010). Proactive personality and job performance: Exploring job autonomy as a moderator. *Journal of Managerial Issues, 22*, 35-51.

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26,* 331-362.

Gephart, Jr., R.P. (2002). Introduction to the brave new workplace: Organizational behavior in the electronic age. *Journal of Organizational Behavior, 23*, 327–344.

Graham, J. W. (1991). An essay on organizational citizenship behaviour. *Employee Responsibilities and Rights Journal, 4,* 249-270.

Grant, A.M., & Ashford, S.J. (2008). The dynamics of proactivity at work. *Research in Organizational Behavior, 28*, 3-34.

Grant, A. M., Parker, S., & Collins, C. (2009). Getting credit for proactive behaviour: Supervisor reactions depend on what you value and how you feel. *Personnel Psychology, 62,* 31-55.

Grant, A. M., Nurmohamed, S., Ashford, S. J., & Dekas, K. (2011). The performance implications of ambivalent initiative: The interplay of autonomous and controlled motivations. *Organizational Behaviour and Human Decision Processes, 116*, 241-251.

Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal, 50*, 327 - 347.

Gruys, M. L., & Sackett, P. R. (2003). Investigating the dimensionality of counterproductive

work behaviour. *International Journal of Selection and Assessment, 11*, 30-42.

Guay, F., Vallerand, R.J., & Blanchard, C. (2000). On the assessment of situational intrinsic and extrinsic motivation: The situational motivation scale (SIMS). *Motivation and Emotion, 24*, 175-213.

Heider, F. (1958). *The Psychology of Interpersonal Relations*. New York: Wiley.

Hollinger, R. D., & Clark, J. P. (1983). *Theft by employees*. Lexington, MA: Lexington Books.

Joo, BK. B. (2009). The effects of organizational learning culture, perceived job complexity, and proactive personality on organizational commitment and intrinsic motivation. *Journal of Leadership & Organizational Studies, 16*, 48-60.

Kalshoven, K., Den Hartog, D. N. & De Hoogh, A. H. B. (2013). Ethical leadership and followers' helping and initiative: The role of demonstrated responsibility and job autonomy. *European Journal of Work and Organizational Psychology, 22*, 165-181.

Katz, D. (1964). The motivational basis of organizational behaviour. *Behavioral Science, 9*, 131-133.

Kelloway, E. K., Loughlin, C., Barling, J., & Nault, A. (2002). Self-Reported Counterproductive Behaviors and Organizational Citizenship Behaviors: Separate but Related Constructs. *International Journal of Selection and Assessment, 10,* 143-151.

Kim, TH. & White, H. (2004). On more robust estimation of skewness and kurtosis. *Finance Research Letters, 1*, 56-73.

Koestner, R., & Losier, G. F. (2002). Distinguishing three ways of being highly motivated: A closer look at introjection, identification, and intrinsic motivation. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of Self-Determination Research* (pp. 101-121). Rochester, NY: University of Rochester Press.

Koestner, R., Otis, N., Powers, T. A., Pelletier, L., & Gagnon, H. (2008). Autonomous

motivation, controlled motivation, and goal progress. *Journal of Personality, 76*, 1201-1230.

Lance, C. E., LaPointe, J. A., & Fisicaro, S. A. (1994). Test of three causal models of halo rater error. *Organizational Behavior and Human Decision Processes, 57*, 83-96.

Latham, G. P., & Saari, L. M. (1984). Do people do what they say? Further studies on the situational interview. *Journal of Applied Psychology, 69*, 569-573.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

Lee, U.H., Kim, H.K., & Kim, Y.H. (2013). Determinants of Organizational Citizenship Behavior and Its Outcomes. *Global Business and Management Research: An International Journal, 5*, 54-65.

LePine, J. A., & Van Dyne, L. (1998). Predicting voice behavior in work groups. *Journal of Applied Psychology, 83*, 853-868.

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance.* Englewood Cliffs, NJ: Prentice-Hall.

Ludwick, R., & Zeller, R. A. (2001). The factorial survey: An experimental method to replicate real world problems. *Nursing Research, 50*, 129-133.

Marcus, B., & Schuler, H. (2004). Antecedents of counterproductive behaviour at work: A general perspective. *Journal of Applied Psychology, 89,* 647-660.

Massimini, F., & Carli, M. (1988). The systematic assessment of flow in daily experience. In M. Csikszentmihalyi & I. Csikszentmihalyi (Eds.). *Optimal Experience: Psychological Studies of Flow in Consciousness* (pp. 266-287). Cambridge: Cambridge University Press.

Maynard, D.C., & Hakel, M.D. (1997). Effects of objective and subjective task complexity on performance. *Human Performance, 10,* 303-330.

McClelland DC. (1987). *Human Motivation*. Cambridge: Cambridge University Press.

Miao, R. (2009). The impact of organisational citizenship behaviour on team effectiveness in China: The moderating role of task complexity. *Computer Sciences and Convergence Information Technology, 4,* 641-646.

Milliken, F.J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Academy of Management Review, 12*, 133-143.

Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review, 80,* 252 - 283.

Morrison, E. W. (2002). Newcomers' relationships: The role of social networks during socialization. *Academy of Management Journal, 45,* 1149-1160.

Morrison, E. W. (2006). Doing the job well: An investigation of pro-social rule breaking. *Journal of Management, 32*, 5-28.

Morrison, E. W., & Cummings, L. L. (1992). The impact of feedback diagnosticity and performance expectations on feedback seeking behavior. *Human Performance, 5*, 251–264.

Morrison, E. W., & Phelps, C. C. (1999). Taking charge at work: Extra role efforts to initiate workplace change. Academy of Management Journal, 42: 403-419.

Morrison, E.W. (1993). Newcomer information seeking: Exploring types, modes, sources, and outcomes. *Academy of Management Journal, 36,* 557–589.

Ohly, S. & Fritz, C. (2007). Challenging the status quo: What motivates proactive behavior? *Journal of Occupational and Organizational Psychology, 80*, 623-629.

Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome.* Lexington, MA: Lexington Books.

Organ, D. W. (1994). Personality and organizational citizenship behavior. *Journal of Management, 20,* 465–478.

Parker, S. K. (1998) Role breadth self-efficacy: Relationship with work enrichment and other

organizational practices. *Journal of Applied Psychology, 83*, 835852.

Parker, S. K. (2000). From passive to proactive motivation: The importance of flexible role orientations and role breadth self-efficacy. *Applied Psychology An International Review, 49*, 447–469.

Parker, S.K., Bindl, U.K., & Strauss, K. (2010). Making things happen: A model of proactive motivation. *Journal of Management, 36*, 827-856.

Parker, S. K., & Collins, C. G. (2010). Taking stock: Integrating and differentiating multiple proactive behaviors. *Journal of Management, 36,* 633-662.

Parker, S. K., Williams, H., & Turner, N. (2006). Modelling the antecedents of proactive behavior at work. *Journal of Applied Psychology, 91,* 636-652.

Parker, S. L., Jimmieson, N. L., & Amiot, C. E. (2009). The stress-buffering effects of control on task satisfaction and perceived goal attainment: An experimental study of the moderating influence of desire for control. *Applied Psychology, 58*, 622-652.

Parker, S.L., Jimmieson, N.L., & Amiot, C.E. (2013). Self-Determination, Control, and Reactions to Changes in Workload: A Work Simulation. *Journal of Occupational Health Psychology, 18,* 173-190.

Parker, S.L., Jimmieson, N.L., & Johnson, K.M. (2013). General self-efficacy influences affective task reactions during a work simulation: the temporal effects of changes in workload at different levels of control. *Journal of Occupational Health Psychology, 18,* 173-190.

Parker, S. K., Wall, T. D., & Jackson, P. R. (1997). 'That's not my job': Developing flexible employee work orientations. *Academy of Management Journal, 40*, 899–929.

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioural research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*, 879-903.

Podsakoff, P.M., Mackenzie, S.B., Paine, J.B., & Bachrach, D.G. (2000). Organisational citizenship behaviours: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management, 26*, 513-563.

Robinson, S. L., & O'Leary-Kelly, A. M. 1998. Monkey see, monkey do: The influence of work groups on the antisocial behavior of employees. *Academy of Management Journal, 41*, 658-672.

Rodell, J.B. & Judge, T.A. (2009). Can "good" stressors spark "bad" behaviors? The mediating role of emotions in links of challenge and hindrance stressors with citizenship and counterproductive behaviors. *Journal of Applied Psychology, 94,* 1438-1451.

Rousseau, F. L., Pushkar, D., & Reis, M. (2005). Dimensions and predictors of activity engagement: A short-term longitudinal study. *Activities, Adaptation, and Aging, 29,* 11–33.

Sackett, P., Berry, C., Wiemann, S., Laczo, R. (2006). Citizenship and counterproductive behavior: clarifying relations between the two domains. *Human Performance 19*, 441–64.

Schacter, D. L. (1999). The seven sins of memory: Insights from psychology and cognitive neuroscience. *American Psychology, 54,* 182-203.

Schlenker, B. R., & Weigold, M. F. (1989). Self-identification and accountability. In R. A. Giacalone & P. Rosenfeld (Eds.), *Impression management in the organization* (pp. 21-43). Hillsdale, NJ: Lawrence Erlbaum.

Schnake, M. E. & Dumler, M. P. (2003). Levels of measurement and analysis issues in organizational citizenship behaviour research. *Journal of Occupational and Organizational Psychology, 76*, 283-301.

Searle, B.J. (2010). *Proactivity can be counterproductive too!* Unpublished research, Macquarie University, Aus.

Seibert, S.E., Crant, J.M., & Kraimer, M.L. (1999). Proactive personality and career success. *Journal of Applied Psychology, 84,* 416-427.

Shalley, C. E. (1991). Effects of productivity goals, creativity goals, and personal discretion on individual creativity. *Journal of Applied Psychology, 76*, 179–185.

Shalley, C. E. (1995). Effects of coaction, expected evaluation, and goal setting on creativity and productivity. *Academy of Management Journal, 38*, 483-503.

Shalley, C. E., & Perry-Smith, J. E. 2001. Effects of social-psychological factors on creative performance: The role of informational and controlling expected evaluation and modeling experience. *Organizational Behavior and Human Decision Processes, 84*, 1-22.

Smith, V. (2001). *Crossing the Great Divide: Worker Risk and Opportunity in the New Economy*. Ithaca, NY: ILR Press.

Sonnentag, S. (2008). Recovery, work engagement, and proactive behaviour: A new look at the interface between nonwork and work. *Journal of Applied Psychology, 88*, 518-528.

Spector, P. E., & Fox, S. (2002). An emotion-centered model of voluntary work behavior: Some parallels between counterproductive work behaviour and organizational citizenship behavior. *Human Resource Management Review, 12*, 269–292.

Stapel, D. A., & Tesser, A. (2001). Self-activation increases social comparison. *Journal of Personality and Social Psychology, 81*, 742-750.

Storms, P. L., & Spector, P. E. (1987). Relationships of organizational frustration with reported behavioral reactions: the moderating effect of perceived control. *Journal of Occupational Psychology, 60,* 227–234.

Tetlock, P.E. (1985). Accountability: A Social Check on the Fundamental Attribution Error. *Social Psychology Quarterly, 48*, 227-236.

Tett, R. P. & Burnett, D. (2003). A personality trait-based interactionist model of job

performance. *Journal of Applied Psychology, 88*, 500-517.

Todd, S. Y., & Kent, A. (2006). Direct and indirect effects of task characteristics on organizational citizenship behaviour. *North American Journal of Psychology, 8*, 253-268.

Tremblay, M. A., Blanchard, C. M., Taylor, S., Pelletier, L. G., & Villeneuve, M. (2009). Work extrinsic and intrinsic motivation scale: Its value for organizational research. *Canadian Journal of Behavioural Science*, *41*, 213-226.

Van den Broeck, A., Schreurs, B., De Witte, H., Vansteenkiste, M., Germeys, F., Schaufeli, W. (2011). Understanding workaholics' motivations: A self-determination perspective. Applied Psychology: *An International Review, 60,* 600-621.

Van Scotter, J. R., & Motowidlo, S. J. (1996). Interpersonal facilitation and job dedication as separate facets of contextual performance. *Journal of Applied Psychology, 81,* 525–531.

Vansteenkiste, M., Lens, W., De Witte, S., De Witte, H., & Deci, E. L. (2004). The "why" and "why not" of job search behavior: Their relation to searching, unemployment experience, and well-being. *European Journal of Social Psychology, 34,* 345-363.

Wall, T. D., Cordery, J. L., & Clegg, C. W. 2002. Empowerment, performance, and operational uncertainty. *Applied Psychology: An International Review, 51*, 146–169.

Weiss, H. M. & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.) Research in organizational behavior: An annual series of analytical essays and critical reviews, Vol. 18., (pp. 1-74). US: Elsevier Science/JAI Press. .

Wright, C. W., & Sablynski, C. J. (2008). Procedural Justice, Mood, and prosocial personality influence on organizational citizenship behavior. North American Journal of Psychology, 10, 397-412.

Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active

    crafters of their work. Academy of Management Review, 26, 179-201.

Zhou, J. (1998). Feedback valence, feedback style, task autonomy, and achievement

    orientation: Interactive effects on creative performance. *Journal of Applied Psychology,*

    83, 261-276.

Zhou, J., & Oldham, G. R. (2001). Enhancing creative performance: Effects of expected

    developmental assessment strategies and creative personality. *Journal of Creative*

    Behavior, 35, 151-167.

Appendix A

Example Screen Shot of Rail Control Simulator Screen
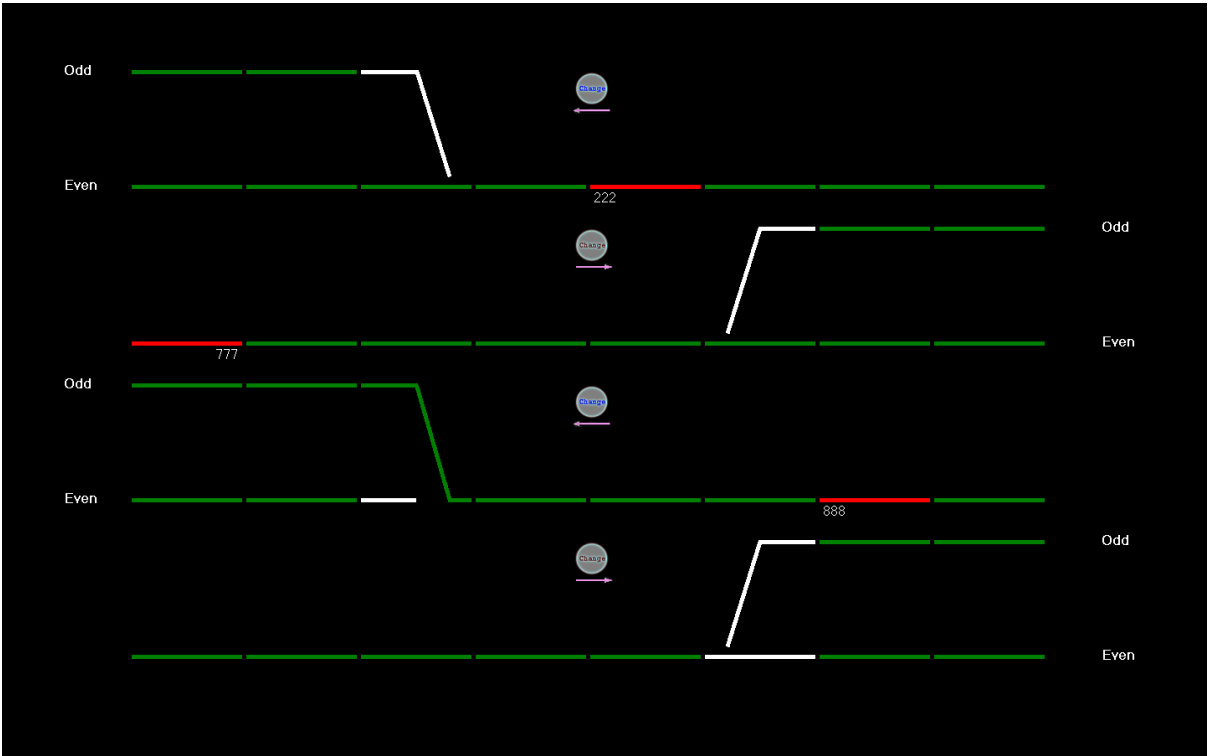
Appendix B

Simple Docking Sheet

Order	Train No.	Track No.	Did the train arrive?	
1	555	1	Yes	No
2	888	3	Yes	No
3	444	2	Yes	No
4	222	1	Yes	No
5	888	3	Yes	No
6	222	1	Yes	No
7	888	3	Yes	No
8	555	1	Yes	No
9	777	2	Yes	No
10	222	1	Yes	No
11	333	3	Yes	No
12	555	1	Yes	No
13	444	2	Yes	No
14	222	1	Yes	No
15	444	2	Yes	No
16	888	3	Yes	No
17	555	1	Yes	No
18	444	2	Yes	No
19	555	1	Yes	No
20	444	2	Yes	No
21	333	3	Yes	No
22	222	1	Yes	No
23	444	2	Yes	No
24	888	3	Yes	No
25	555	1	Yes	No
26	444	2	Yes	No

Appendix C

Complex Docking Sheet

Instructions: You must follow this docking sheet closely while redirecting the trains on the simulator. You are required to fill out three pieces of information on this sheet:

1. You must indicate by circling either Yes or No whether each train arrives

2. You must indicate by circling either Yes or No whether you needed to click the 'Change' button for each train.

3. You must indicate the speed of each train by circling either Fast or Slow

Order	Train No.	Track No.	Did the train arrive?		Did you click 'Change'		Train Speed	
1	555	1	Yes	No	Yes	No	Fast	Slow
2	888	3	Yes	No	Yes	No	Fast	Slow
3	444	2	Yes	No	Yes	No	Fast	Slow
4	222	1	Yes	No	Yes	No	Fast	Slow
5	888	3	Yes	No	Yes	No	Fast	Slow
6	222	1	Yes	No	Yes	No	Fast	Slow
7	888	3	Yes	No	Yes	No	Fast	Slow
8	555	1	Yes	No	Yes	No	Fast	Slow
9	777	2	Yes	No	Yes	No	Fast	Slow
10	222	1	Yes	No	Yes	No	Fast	Slow
11	333	3	Yes	No	Yes	No	Fast	Slow
12	555	1	Yes	No	Yes	No	Fast	Slow
13	444	2	Yes	No	Yes	No	Fast	Slow
14	111	4	Yes	No	Yes	No	Fast	Slow
15	222	1	Yes	No	Yes	No	Fast	Slow
16	444	2	Yes	No	Yes	No	Fast	Slow
17	888	3	Yes	No	Yes	No	Fast	Slow
18	555	1	Yes	No	Yes	No	Fast	Slow
19	444	2	Yes	No	Yes	No	Fast	Slow
20	100	4	Yes	No	Yes	No	Fast	Slow
21	555	1	Yes	No	Yes	No	Fast	Slow
22	444	2	Yes	No	Yes	No	Fast	Slow
23	333	3	Yes	No	Yes	No	Fast	Slow

Appendix D

Proactivity Criteria for Responses to Inbox Problem-Solving Task

To be considered proactive, the suggested solution must:

1. Anticipate problems and/or risks.

2. Anticipate opportunities.

3. Articulate a goal or desired end state.

4. Plan a sequence of actions (e.g. first… then…).

5. Prepare a contingency plan (e.g. if X doesn't work, try Y).

6. Plan an approach that is likely to effectively change the situation and/or make a real difference to the problem at hand.

7. Plan an approach that is likely to have a long-lasting impact (has a long-term focus).

8. Choose to broaden the scope beyond the problem presented.

Appendix E

Research Paper Submitted for the Industrial and Organisational Psychology Conference 2011,

Brisbane QLD Australia

The Impact of Uncertainty on Discretionary Behaviour: A Novel Experimental Method

Laura C. Kirby & Ben J. Searle

Macquarie University

The present study used a novel laboratory approach to examining the impact of situational uncertainty on two types of discretionary behaviours: proactive behaviour and organisational citizenship behaviour. Previous research has suggested that situational uncertainty increases performance of these behaviours. Despite the limitations of survey methodologies for investigating socially desirable behaviours, comparatively little experimental research exists for these behaviours. The present study devised a novel methodology for examining experimentally the impact of uncertainty, as defined by a condition involving ambiguity or complexity, on proactive and citizenship behaviours. Based on prior research evidence it was predicted that a context involving high ambiguity would show an increase in proactive (feedback seeking) behaviour whilst a high complexity context would show an increase in citizenship (helping) behaviour. Hypotheses were tested on a sample of 56 psychology students who participated in a computer-simulated rail control task. Although the results did not support an increase in any of the specified behaviours in the manipulated conditions over the control condition, some unexpected trends were noted. A number of implications are drawn from the results and future research directions and improvements to build on the present findings are discussed. Continued research in this area is ongoing and new findings will also be presented.

1. The Impact of Uncertainty on Discretionary Behaviour: A Novel Experimental Method

The globalised workforce highlights the importance of work behaviours that go beyond call of duty and contribute to organisational success through organisational initiative, innovation, flexibility and resourcefulness. This is particularly the case for discretionary behaviours that are related to self-management, adaptivity, forward-thinking, and a willingness to go beyond minimal requirements. The increased quantitative and qualitative demands upon employees have resulted in a greater emphasis on the need for individuals to display these kinds of behaviours for organisational success (Barling, 1999). Two classifications of behaviours relate directly to these needs, and have been studied vastly in recent organisational literature: proactive behaviour, and; organisational citizenship behaviour. These behaviours have been studied separately in a number of situational contexts, though the aim of the present study is to examine the impact of uncertainty. The impact of situational uncertainty on the prevalence of each of these behaviours has rarely, if ever, been explored in a simulated setting that reflects both a relevant organisational context as well as an experimental context. Thus, the aim of the present research was to explore the relationship between uncertainty and discretionary behaviours in an experimental, manipulated setting.

1.1. Proactive Behaviour

Proactive behaviour is a particular form of motivated work behaviour typically performed by individuals acting proactively (Bateman & Crant, 1993). In order to be considered 'proactive' the behaviours are typically self-starting in nature, are adaptive to situations, require initiative, anticipation and forward-planning, and aim to impart some positive change or improve current circumstances (Crant, 2000; Frese & Fay, 2001; Parker, Williams, & Turner, 2006). Although a wide range of proactive behaviours have been studied, very few have been examined through experimental research, and thus our knowledge largely based on self-report measures, such as the Proactive Personality Scale (Bateman & Crant,

1993), due to evidence suggesting that proactive behaviours arise as a result of a dispositional tendency to perform these behaviours.

It can be seen that proactive behaviour adopts a range of characteristics and forms, though the current study took the view of proactive behaviour as a self-starting, change-oriented behaviour and utilised feedback seeking as the example behaviour. The primary reason for selecting feedback as the illustrative proactive behaviour was that it is one of the behaviours likely to be more realistically created and subjectively rated under experimental conditions, in contrast with behaviours like taking charge. Furthermore, in the limited experimental research to date, feedback seeking has been demonstrated in a manipulated setting.

Feedback seeking is typically anticipatory and individuals have consistently been shown to make a conscious decision to ask others for feedback (Grant & Ashford, 2008). This implies that it would easily be distinguishable in an experimental setting. Feedback seeking is also intended to have an impact, such as improving one's performance on a given task. This has positive implications for an experimental setting that provides a task in which an individuals' performance could be improved through the action of seeking feedback. Therefore, based on this evidence, the goal of the present study was to create a methodology that involved a set task on which participants could consciously act on their desire to improve their performance via the means of in feedback seeking.

1.2. Organisational Citizenship Behaviour

The diversity and array of research on discretionary behaviours is also seen in the organisational citizenship behaviour literature. A number of types of behaviours have been categorised under the umbrella of 'organisational citizenship behaviour', including helping behaviours, sportsmanship, organisational loyalty, organisational compliance, individual initiative, civic virtue, and self-development (Podsakoff, Mackenzie, Paine, & Bachrach,

2000). Of these, one of the more common representations of citizenship is helping behaviours, which is generally manifested in an individual performing voluntary actions directly aimed at helping another person with a work-related task (e.g. Organ, 1988). Like proactive behaviour, this discretionary behaviour is also, as the name suggests, a behaviour-based construct, but is typically measured via self-report or third-person report surveys.

Investigating situational factors that predict citizenship behaviours is an important focus in this area of literature as evidence suggests that contextual factors may be more effective for predicting citizenship behaviours than personality or affective variables (Podsakoff, Mackenzie, Paine, & Bachrach, 2000). Specifically, workplace incentives and rewards, such as the aspects of leader advocacy reward behaviour, the value of the reward, and distance from the control of the reward, have shown a relatively strong relationship with citizenship behaviours in contrast to the negligible relationship between these behaviours and dispositional variables (Organ, 1994). This suggests that, although a laboratory setting is not frequently used to investigate situational antecedents of organisational citizenship behaviour, it is a promising area of investigation and a greater understanding of situational factors that contribute to the prevalence of citizenship behaviours would be valuable.

1.3. Context of Uncertainty

As recognised earlier, the modern workplace is a reflection of the current political economy of insecurity, uncertainty, and loss of boundaries in a world that is increasingly dispersed due to the transition to an interconnected global economy (Beck, 2000). Research suggests that uncertainty, unpredictability and personal risk are now widely diffused across organizations and occupations (Smith, 2001). Consequently, understanding 'uncertainty' as a contextual factor, particularly in the impact of this environment on individuals and the overall functioning of an organisation, is of particular importance (Milliken, 1987).

Research has primarily conceptualised uncertainty as environmental uncertainty (Milliken, 1987), defined as a situation in which an individual is unable to predict the future due to lacking sufficient information to predict accurately or because they feel unable to discriminate between relevant data and irrelevant data. A related definition explains that uncertainty in an organisational context occurs when the inputs, processes, or outputs of work systems lack predictability (Wall, Cordery, & Clegg, 2001). According to these characteristics, therefore, uncertainty encompasses ambiguous situations that lack sufficient relevant information, as well as novel or complex situations where it is difficult for the incumbent to utilise available information to predict the. These two aspects of uncertainty, ambiguity and complexity, form the basis of investigation of uncertainty in the present study.

1.4. Uncertainty and Discretionary Behaviour

In the context of uncertainty and change, voluntary behaviour is a vital element in organizational functioning, as formal task performance and assigned duties do not comprise everything required for successful organisational functioning, such as initiative, cooperation, flexibility, forward-thinking, and innovativeness (Spector & Fox, 2002). As the modern workforce becomes more dynamic and decentralised, an increasing importance is being placed on employee behaviours that see individuals take control of their own environments and seek ways to impact and improve them (Crant, 2000). An uncertain climate also results in greater risks and challenges, and demands individuals adapt to these conditions (Gephart, Jr, 2002). It is also argued that employees' behaviours in response to this environment have a direct and critical impact on organisational success, with substantive research supporting this evidence in the case of the two discretionary behaviour types discussed presently (Crant, 2000).

1.4.1. Proactive Behaviour and Uncertainty. Proactive behaviour is a highly regarded response to contexts of uncertainty due to its characteristic feature of identifying opportunity

for change and taking initiative to constructively impact on the external environment and organisation in general (Crant, 2000). Unsurprisingly, the necessity for individuals to undertake such behaviours is increasing, given that pressures for continual improvement and innovation coexist with increasing decentralization (Campbell, 2000; Parker, 2000). Existing research indicates that individuals are more likely to display proactive behaviour when encountering uncertain situations and ambiguous workplace contexts, including role ambiguity, environmental uncertainty, career transition, and organisational change, have been linked to a range of proactive behaviours (e.g. Ashford, 1988; Ashford & Black, 1996; Battman, 1988).

According to research by Grant and Ashford (2008), the psychological mechanism underlying this pattern of behaviour is motivated by employees' desire to reduce uncertainty. Seeking information to clarify meaning, purpose and objectives, and predict, understand, and influence surrounding environments in advance, that is, seeking feedback, is a means by which employees typically attempt to reduce the ambiguity associated with uncertain contexts (Grant & Ashford, 2008). For this reason, feedback has particularly high instrumental value in the context of uncertainty, and research suggests that in situations of uncertainty individuals tend to seek feedback more frequently. For example, when individuals commence a new job they need to learn the 'ins and outs' and information gained through feedback is especially valuable for fostering their acclimatization (Ashford, 1986; Ashford & Cummings, 1985; Morrison, 1993). Feedback can reduce uncertainty surrounding both an individual's roles and the performance contingencies in the environment. Accordingly, research has found that both role ambiguity and contingency uncertainty are associated with more frequent feedback seeking (Ashford & Cummings, 1985).

With this in mind, the present study aimed to empirically investigate the impact of uncertainty on proactive behaviours. Based on the above evidence, it was expected that a

manipulated situational context of uncertainty (via the manipulation of ambiguity) is likely to enhance individuals' feedback seeking behaviour, in comparison with a low uncertainty (control) condition. Therefore, it was proposed that uncertainty would increase the occurrence of feedback seeking, according to the following hypothesis:

H1: Participants in the high ambiguity condition will demonstrate higher rates of proactive behaviour (feedback seeking) than participants in the control condition.

1.4.2. Organisational Citizenship Behaviour and Uncertainty. Research evidence suggests that in situations of challenge, organisational citizenship behaviours are more likely to occur, as a result of the enhanced emotional state via positive activated affect found in such situations (Rodell & Judge, 2009). As enhanced challenge is one of the features of uncertainty, individuals are thus proposed to be more likely to perform citizenship behaviours in situations of uncertainty, particularly those manifested as difficult or complex. Thus it was anticipated in the present study that uncertainty (via the manipulated context of complexity) would increase the occurrence of citizenship behaviour, according to the hypothesis:

H2: Participants in the high complexity condition will demonstrate higher rates of organisational citizenship behaviour than participants in the control condition.

1.4. Novel Methodology

A secondary aim was to evaluate a novel methodology for examining the three types of discretionary workplace behaviours in a context of uncertainty. As indicated earlier, much of the research conducted in the discretionary behaviour domain utilises self-report measures. One inherent issue in this methodology is the inability to avoid self-report and social desirability biases. Proactive and citizenship behaviours are widely framed as positive attributes for individuals to demonstrate in the workplace, and as such it is likely that respondents will experience social desirability motivations when reporting these behaviours. Moreover, a further issue with self-report and survey methodology of these behavioural

constructs is the fact that they are not measuring the behaviour itself, but rather individuals' belief or perception that they perform these behaviours. Memory limitations and biases also exist when participants are asked to recall their performance of behaviours over a protracted period. The extent to which current research accurately reflects the prevalence and occurrence of each of these behaviours must therefore be treated with some caution.

Despite these limitations, apart from a few quasi-experiments (e.g., Greenberg, 1990), very few studies have used experimental methodology for investigating the contexts and antecedent factors related to these discretionary behaviours. The present study therefore aimed to develop and trial a novel experimental methodology in order to overcome these prior research methodology issues.

2. Method

2.1. Participants

Participants were 56 first year psychology students who participated in the study for course credit. There were 33 females and 23 males. The mean age of participants was 21.32 years ($SD =5.82$). All participants indicated that they had not previously participated in a study that involved a rail control simulator and were not familiar with rail control.

2.2 Design

The present study used a single independent variable with three levels (high ambiguity, high complexity, and control conditions).The two discretionary behaviours, proactive and organisational citizenship behaviours, formed the dependent variables. The study employed a between-subjects design, and required that participants were each randomly allocated to one of the task characteristic conditions, in order to counterbalance the allocation to different conditions. This random allocation was conducted according to gender, to ensure a balanced distribution of males and females across conditions.

2.3. Procedure

For the purpose of investigating discretionary behaviours, the rail control (experimental) task was utilised primarily as a 'filler task' that was the core task behaviour with the aim of measuring subsequent discretionary behaviours. At commencement of the experimental session, participants received an information and consent sheet that described what would be involved in participating in the study, yet concealed the true aims of the research (i.e. the study ostensibly investigated individual reactions to novel work tasks). Participants consented to continue their involvement by signing the information consent sheet and were then provided the first questionnaire to complete. This questionnaire required participants to indicate their demographic details and complete self-reported measures including a measure of perceptions of ambiguity and complexity.

Participants were then assigned to one of three experimental conditions and received written instructions on how to complete the experimental task. Before commencing the experimental trial, all participants were given the second questionnaire to complete. The second questionnaire re-assessed participants' perceptions of uncertainty. For the duration of the experimental task the experimenter remained seated behind a partition in order to minimise potential social desirability biases (Ashford, 1986). Following the experimental task the participants completed a third questionnaire, identical to the second questionnaire. The participants were then advised that the 'second' experimental trial would commence. Participants were advised that there would be two trials in order to encourage the benefit of requesting feedback in order to improve their performance on the second trial; however, this second trial was deliberately designed to experience a computer error and thus providing opportunity for the participant to engage in the citizenship behaviour task, as outlined in detail below.

Once the allocated behavioural tasks had been completed, participants completed a final questionnaire which again assessed whether the participant had guessed or suspected any

aspects of the study which had not been disclosed to them. Participants were then given a comprehensive debrief sheet which outlined the true research aims and the deception involved, and participants were thanked for their time.

2.4. Experimental Task

Irrespective of conditions, all participants completed the same rail control task. In this task participants were required to monitor five train lines and change the platform to which the train was arriving according to whether the line is even or odd. Depending on the allocated condition, participants received varied instructions and secondary task requirement.

2.4.1. Control condition.
Participants were provided with an information sheet that explained in sufficient detail the task requirements for the rail control experimental task. Participants in this condition were also provided with a practice trial to become familiar with the rail control system and the task itself. The secondary task required participants to record whether the specified train arrived on the specified platform by circling Yes or No.

2.4.2. Ambiguity condition.
Participants were provided with an information sheet that explained in sparse detail the task requirements for the rail control experimental task; these instructions were significantly more vague than in the other conditions. Participants in this condition were not provided with a practice trial, though were given the same secondary task as participants in the control condition.

2.4.3. Complexity condition.
Participants were provided with an information sheet that explained in sufficient detail the task requirements for the rail control experimental task (as per control condition). Participants in this condition were also provided with a practice trial to become familiar with the rail control system and the task itself. The secondary task was more complex than in the other conditions as it required participants to record additional details about the action taking with each train.

2.5. Behaviour Tasks

These tasks were provided to all participants, regardless of uncertainty condition.

2.5.1 Proactive behaviour. Participants were given the opportunity to request feedback about their performance following completion of the experimental rail trial. All participants were advised in the experimental task information sheet to ask the experimenter following the first trial if they wished to obtain feedback about their performance on the first trial.

2.5.2. Citizenship behaviour. As there was extra time left in the study, participants were offered the opportunity to assist the experimenter by proof-reading items for a 'new personality test'. Participants were advised that this task was unrelated to the current study and did not earn additional course credit. Participants were also encouraged to record any suggestions for improvement. In order to determine level of citizenship, four aspects were assessed in line with previous research aspects (Schnake & Dumler, 2003): The number of pages read, the number of proofing errors detected, the number of suggestions for improvement, and a count of the actual marks and letters recorded. This behaviour measure was assessed by two raters and compared for consistency.

2.6. Measures

Manipulation check measures of perceived uncertainty (ambiguity and complexity) were assessed in the first, second, and third questionnaires. Breaugh and Colihan's (1994) Job Ambiguity Items measured perceived ambiguity. Perceived complexity was assessed via Maynard and Makel's (1997) measure of subjective task complexity. These measures allowed for manipulation checks of the manipulated experimental conditions.

3. Results

3.1. Preliminary Analyses

Results from an initial exploratory analysis indicated that observed Organisational Citizenship Behaviour was skewed, and consequently a square root transformation was performed. Skew and kurtosis were successfully adjusted to a reasonable level.

3.1.1. Manipulation check. A one-way analysis of variance with contrasts comparing the experimental conditions was conducted in order to check that the experimental manipulations of ambiguity and complexity had been successful. The high complexity condition elicited significantly higher ratings of complexity $F(1, 51) = 2.29$, $p = .03$, than the control condition, as shown in Table 1. In comparison to the ambiguous condition the complex condition did not significantly differ in its ratings of complexity $F(1, 51) = 1.75$, $p = .09$. In analysing the manipulation of ambiguity, Table 1 shows that the ambiguous condition elicited significantly higher ratings of ambiguity $F(1, 51) = 8.82$, $p = .005$ than the control condition, as was expected. However, the ambiguous and complexity conditions did not significantly differ in their ratings, although the relationship approached significance $F(1,51) = 3.38$, $p = .07$.

3.2. The Relationship Between Uncertainty and Discretionary Behaviour

Chi-square analysis revealed that participants were marginally more likely to seek feedback in the low ambiguity condition, $\chi^2(1,N=37) = 2.84$, $p = .09$, which is inconsistent with the original hypothesis proposed in this study.

The relationship between citizenship behaviours and complexity also approached significance ($r = .333$, $p = .07$). Chi-square analyses of citizenship behaviour and task complexity indicated that participants were more likely to perform the citizenship task in the high complexity condition, $\chi^2(1,N=29) = 6.49$, $p = .039$. The direction of this relationship is consistent with Hypothesis 2, as it was anticipated that citizenship behaviours would occur more in the uncertainty conditions, whereby complexity was one manifestation of this condition.

Further Regression analyses revealed that, although both the ambiguity and complexity conditions resulted in a significant difference in the perceived ambiguity and

perceived complexity, no significant relationships were found for the perceptions of ambiguity and complexity and the corresponding behaviours.

4. Discussion

The present study aimed to further existing research on the performance of relevant discretionary behaviours in the context of uncertainty, a situational context that is increasingly prevalent in the contemporary organisational setting. Specifically, it was expected that proactive and citizenship behaviours would both increase in the uncertain contexts of ambiguity and complexity, respectively (Hypotheses 1 and 2). In contrast to prior research, overall these hypotheses were not supported in the present study. However, two interesting findings are worth noting, given their potential impact on the current research. Firstly, the results indicated that there was an approaching trend between feedback seeking and ambiguity, such that there was a slight inclination from participants to perform more feedback behaviours in situations of low ambiguity. Secondly, the results indicated a non-significant trend between citizenship behaviours and task condition of complexity, which revealed a slight tendency for participants in the high complexity task to perform more citizenship behaviours. This is somewhat consistent with the original expectations, although it was also expected that these results would also be mirrored in the ambiguity and overall uncertainty conditions. Finally, the experimental methodology trialled in this experiment elicited successful manipulations of ambiguity and complexity as representations of uncertainty; however, the behavioural tasks were not successful in obtaining sufficient discretionary behaviour response in order to produce significant results in the analysis of the impact of the uncertainty contexts on the representative behaviours.

4.1. The Relationship between Proactive Behaviour and Ambiguity

Although non-significant, the results indicated a trend between proactivity and ambiguity, such that participants in the high ambiguity condition were less likely to request

feedback. Although this finding contrasts with the original hypothesis that these behaviours would in fact increase in situations of high ambiguity, it may suggest that the participants were impacted by impression management. As demonstrated by Ashford and Northcraft (1992), individuals are shown to seek less feedback when they believe that seeking that feedback would be a bigger cost in terms of impression management than it would be to not seek feedback. Likewise, Ashford and Cummings (1983) found that individuals are less likely to seek feedback when others can observe them doing so because seeking feedback exposes their need for this information and may be interpreted as a sign of uncertainty. In the present research, participants may have mentally weighed up the advantages and disadvantages of requesting feedback, and the decision to not seek feedback was based on one of protecting self-image rather than gaining any advantage in succeeding in the experimental task.

The finding that proactive behaviour was less likely to occur in the context of ambiguity may also suggest that the task itself was not motivating in itself. ~~For example, research by Ohly and Fritz (2007) found that individuals' intrinsic motivation did not influence proactive behaviour, whereas role breadth self-efficacy showed a significant positive relationship with the performance of proactive behaviour. It is possible participants in the present study were limited in their opportunity to experience role breadth self-efficacy due to the novel nature of the task, and the timeframe and context of the core task as experimental. It is also possible that participants did not see any gain in improving their performance on this task, and therefore assessed that there was little value in seeking feedback. Either of these explanations has important implications for the workplace setting, as it suggests that individuals are potentially unlikely to engage in proactive behaviours like feedback seeking if they do not feel confident in the impact and purpose of their behaviour, or if they lack motivation for improving their performance.~~

4.2. The Relationship between Citizenship Behaviour and Complexity

The present study found a non-significant relationship between citizenship behaviour and the context of complexity, whereby in the high complexity condition participants were more likely to perform helping behaviours. Many of the participants declined to perform the citizenship behaviour, however this approaching trend is consistent with the original hypothesis, suggesting that complex situational environments potentially enhance the presence of helping behaviours. This relationship between citizenship behaviour and conditions of perceived complexity may relate to prior research which suggests that individuals are more likely to 'lend a hand' in situations where there has been significant difficulty. In the present study, the rationale for this result may be attributed to the researcher having allowed the participant to believe that the computer had experienced an error and they were unable to collect data for the second experimental task. The complex condition combined with the unfortunate scenario may have led to the participant feeling more inclined to perform helping behaviours. Similarly, due to the complexity of the task participants may have been left feeling that their performance on the task had been relatively poor and thus would be 'making up' for this poor performance by completing the citizenship opportunity. Regardless, although the relationship was non-significant, this potential relationship has significant implications for the workplace environment. Specifically, complex environments may be beneficial to and enhance the occurrence of helping behaviours and may relate to the argument that work that is challenging is the most advantageous to the organisation and its employees' wellbeing.

4.4. Limitations and Suggestions for Future Research

One limitation of the present study was the lack of uptake by participants of the desired discretionary behaviours, particularly in the case of feedback seeking. This impacted on the ability to draw conclusions from the results gained. The lack of demonstrated feedback behaviour may be attributable to the methodology time constraints in the experimental

procedure, as participants were given only a single opportunity to request feedback, based on only one experimental trial. This limited the opportunity for participants to request feedback. The revision of the experimental methodology to include multiple trials, thus allowing greater opportunity for participants to request feedback, would be a notable inclusion for future research.

A further constraint that may also relate to the lack of feedback is the issue of observation and impression management. Although the experimenter in the present research advised the participant clearly that they would not be observing the participant, the issue of impression management may have impacted on participants' willingness to request feedback due to the physical size of the room, proximity to the experimenter, and the participants' understanding that their performance was going to be assessed as part of the procedure. This may equally apply to the helping behaviour task as participants may have felt obliged to assist the experimenter in order to preserve a positive image.

A variable that may be useful in identifying the reason for whether behaviours occur is that of motivation. Consistent with newer models of proactive behaviour (e.g. Parker, Bindl, & Strauss, 2010; Grant & Ashford, 2008), motivational states are proposed to influence whether an individual undertakes the behaviour in various situational contexts. Identifying the specific motivators that enhance or reduce discretionary behaviours would have significant implication for organising and managing workplaces. Future research may benefit from investigating motivations for engaging or not engaging in these discretionary behaviours, as this was not captured in the present research and may explain the unexpected trend for proactive behaviour and ambiguity in the present study.

Building on the trends noted in the present study, future research may also experimentally investigate the impact of features of situational environments on different discretionary behaviours. The present study found that ambiguity and complexity, as features

of an uncertain context, had differing impacts on proactive and citizenship behaviours. Further research into the impacts of features of common workplace situational contexts may assist in providing a more detailed framework for the conditions under which discretionary behaviours are likely to occur.

4.5. Conclusion

Overall, although the present study did not find significant relationships between proactive and citizenship behaviours and manipulated conditions of uncertainty, the interesting non-significant trends provide potential implications and direction for future research. Importantly, the methodology utilised in the present study builds on the body of literature experimentally examining discretionary behaviours (e.g. Ashford & Northcraft, 1992). The results also hint at the potential impact of individual motivation or motivational forces that impact on whether an individual engages in a discretionary behaviour in a particular context. Consistent with modern models of proactivity (e.g. Parker, Bindl, & Strauss, 2010) future research may develop experimental methods for exploring this relationship to differentiate the impact of context and motivation on the prevalence of relevant workplace behaviours. Further studies in this research program may also be presented.

References

Ashford, S. J. (1988). Individual strategies for coping with stress during organizational transitions. *Journal of Applied Behavioral Science, 24*, 19–36.

Ashford, S. J., & Black, J. S. (1996). Proactivity during organizational entry: The role of desire for control. *Journal of Applied Psychology, 81,* 199-214.

Ashford, S. J., & Cummings, L. L. (1983). Feedback as an individual resource: Personal strategies of creating information. *Organizational Behavior and Human Performance, 32,* 370-398.

Ashford, S.J. (1986). Feedback-seeking in individual adaptation: A resource perspective. *Academy of Management Journal, 29*, 465-487.

Ashford, S.J., & Northcraft, B.B. (1992). Conveying more (or less) than we realize: The role of impression-management in feedback-seeking. *Organizational Behavior and Human Decision Processes, 53*, 310-334.

Barling, J. (1999) Changing employment relations: Empirical data, social perspectives and policy options. In D.B. Knight and A. Joseph (eds.) Restructuring Societies: Insights from the Social Sciences. Ottawa, Ontario: Carlton University Press.

Bateman, T.S., & Crant, J.M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior, 14,* 103-118.

Battman, W. (1988). Feedback seeking as a means of self-assessment and affect optimization. Motivation and Emotion, 12, 57–74.

Beck, U. (2000). *The Brave New World of Work.* Cambridge, UK: Polity Press.

Breaugh, J. A., & Colihan, J. P. (1994). Measuring Factors of Job Ambiguity: Construct Validity Evidence. *Journal of Applied Psychology, 79,* 191-202.

Campbell, D. J. (2000). The proactive employee: Managing workplace initiative. *Academy of Management Executive, 14*, 52–66.

Crant, J.M. (2000). Proactive behavior in organizations. *Journal of Management, 26,* 435-462.

Frese, M. & Fay, D. (2001). Personal initiative: An active performance concept for work in the 21st century. In B. M. Staw & R. I. Sutton (Eds.), *Research in organizational behavior* (Vol. 23, pp. 133-187). San Diego, CA, US: Elsevier Academic Press.

Gephart, Jr., R.P. (2002). Introduction to the brave new workplace: Organizational behavior in the electronic age. *Journal of Organizational Behavior, 23*, 327–344.

Grant, A.M., & Ashford, S.J. (2008). The dynamics of proactivity at work. *Research in Organizational Behavior, 28*, 3-34.

Gray, J. A. (1981). *A critique of Eysenck's theory of personality*. In H. J. Eysenck (Ed.), A model for personality (pp. 246–276). New York: Springer.

Maynard, D.C., & Makel, M.D. (1997). Effects of objective and subjective task complexity on performance. *Human Performance, 10,* 303-330.

Milliken, F.J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Academy of Management Review, 12*, 133-143.

Morrison, E.W. (1993). Newcomer information seeking: Exploring types, modes, sources, and outcomes. *Academy of Management Journal, 36,* 557–589.

Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome.* Lexington, MA: Lexington Books.

Organ, D. W. (1994). Personality and organizational citizenship behavior. *Journal of Management, 20,* 465–478.

Parker, S. K., Williams, H., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology, 91,* 636-652.

Parker, S.K., Bindl, U.K., & Strauss, K. (2010). Making things happen: A model of proactive motivation. *Journal of Management, 36*, 827-856.

Podsakoff, P.M., Mackenzie, S.B., Paine, J.B., & Bachrach, D.G. (2000). Organisational

citizenship behaviours: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management, 26*, 513-563.

Rodell, J.B. & Judge, T.A. (2009). Can "good" stressors spark "bad" behaviors? The mediating role of emotions in links of challenge and hindrance stressors with citizenship and counterproductive behaviors. *Journal of Applied Psychology, 94*, 1438-1451.

Schnake, M.E., & Dumler, M.P. (2003). Levels of measurement and analysis issues in organizational citizenship behavior research. *Journal of Occupational and Organizational Psychology, 76,* 283-301.

Smith, V. (2001). *Crossing the Great Divide: Worker Risk and Opportunity in the New Economy*. Ithaca, NY: ILR Press.

Spector, P. E., & Fox, S. (2002). An emotion-centered model of voluntary work behavior: Some parallels between counterproductive work behaviour and organizational citizenship behavior. *Human Resource Management Review, 12*, 269–292.

Wall, T. D., Cordery, J. L., & Clegg, C. W. 2002. Empowerment, performance, and operational uncertainty. *Applied Psychology: An International Review, 51*, 146–169.

Table 1

Differences in Perceived Complexity and Perceived Ambiguity across Uncertainty Conditions

Condition	Perceived Complexity		Perceived Ambiguity	
	M	SD	M	SD
1. Control	3.75*	1.38	4.61**	1.31
2. Ambiguity	3.97	1.56	3.39	1.05
3. Complexity	4.80	1.37	4.12	1.25

*p <.05 2-tailed. **p <.01 level 2-tailed.

Appendix F

Paper Submitted for Presentation and Inclusion in Published Conference Proceedings,

Australia and New Zealand Academy of Management 2012

Motivation and Proactivity in Solving Work Problems

Laura C. Kirby & Ben J. Searle

Macquarie University

ABSTRACT   *This study aimed to extend research exploring proactivity and its antecedents using novel experimental methods to address notable limitations in self-report designs. Fifty-three psychology students performed a simulated in-basket memo task requiring proactive problem-solving, and the proactivity of participants' solutions were evaluated by judges following pre-determined criteria. The relationship between motivation and proactivity was also explored, as it has been speculated that only autonomous motivations should affect proactivity (Parker, Bindl, & Strauss, 2010). Manipulation of task accountability was also investigated. Interesting trends were found with respect to intrinsic motivation and proactivity in particular. Implications for workplace proactivity are discussed. Additional research is currently extending this study with a broader population group, the results of which may be available for presentation.*

Keywords: motivation (Organisational Behaviour), creativity (Organisational Behaviour), work performance (Organisational Behaviour)

PAPER TEXT -

Proactivity by individuals refers to anticipatory, change-oriented and self-initiated behaviour, specifically engaged in the work place, with the aim of improving current circumstances or creating new ones that will benefit future demands (Crant, 2000; Sonnentag, 2008). It means taking control, challenging the status quo and making things happen rather than just adjusting to a situation or waiting for something to happen (Frese, Kring, Soose & Zempel, 1996; Parker, 2000). A more recent conceptualisation conceives proactivity as a broader variable that includes an orientation to a particular action, and a set of behaviours that are likely to occur in the context of this trait and other antecedent factors. This development recognises that there are likely common motivational processes across different types of proactive behaviour, beyond simply proactive personality as a driver (Parker, Bindl, & Strauss, 2010). The Proactive Motivation Model (Parker et al., 2010) provides a theoretical conceptualisation of this view of 'proactivity as a process', which suggests that individual differences impact on proactive motivation, which encompasses motivational states and goal regulation, which then results in observable outcomes or behaviours. A key difference in this model, as compared with earlier theories, is the addition of motivation as a primary influence in why proactivity might occur or not occur in individual behaviour. The very nature of proactivity, as goal-directed and self-initiated suggests that motivation plays a pivotal role in the process of proactivity being undertaken. However, this is a factor that has largely been overlooked in the earlier proactivity literature.

Motivation and Proactivity

Parker et al. (2010) recognise two general forms of motivation as antecedents of proactive goal generation and striving in their model of proactive motivation: 'can do' and 'reason to' motivation states. The latter refers to whether the individual desires the proactive goal, either by wanting to be proactive, or recognising some value in acting proactively. This 'reason to' state of motivation is often broken down into more finite types of motivation, which vary in their autonomy (e.g. Deci, 1971). The types of motivation vary on a continuum of high to low levels of self-determination, with intrinsic motivation representing the highest level of self-determination and self-willing, followed by extrinsic motivation, followed by amotivation (Guay, Vallerand, & Blanchard, 2000). Within the category of extrinsic motivation, there are also different forms of this motivation that are purported to differ in their level of self-determination and autonomy: integrated regulation, introjected regulation, identified regulation, and external regulation (from highest levels to lowest). Overall, there is little empirical research that has specifically investigated the relationship between motivation and proactivity. Thus, the finite forms of motivation form the focus for the present research, in order to better understand the role of motivation in the proactivity process and understand which finite type of motivation is more central to explaining the occurrence of proactivity.

Some researchers have suggested that proactive behaviour is most likely to occur in "weak" situations (Mischel, 1973) where individuals have high levels of discretion and autonomy, goals are very broadly defined, and the means and methods for achieving the goals are not prescribed (Griffin, Neal, & Parker, 2007). Under these circumstances a strong intrinsic force is required to drive the initiated proactive behaviour. Similarly, Parker et al. (2010) proposed that individuals will be more likely to set and strive for proactive goals when they find their tasks enjoyable, intrinsically interesting, or a source of flow. According to these views, it would seem that intrinsic motivation is likely to be most associated with proactivity. However, temporal construal theory suggests that when goals are longer term focused than shorter term focused, the desirability of the goal is a stronger determinant than its feasibility (Liberman & Trope, 1998); thus 'reason to' states, particularly autonomous extrinsic forms

of motivation, may be more important in generating proactivity, particularly for long-term oriented proactive action. For example, integrated (autonomous extrinsic) motivation is illustrated in the research that has shown that individuals who indicate work as a calling engage in active job crafting (a form of proactive behaviour) because of their high personal investment in the work (Wrzesniewski & Dutton, 2001). Likewise, identified (autonomous extrinsic) is illustrated in the example of an individual who perceives feedback as valuable to achieving his or her goals consequently engaging more in feedback seeking behaviour, another form of proactivity (Ashford, Blatte, & VandeWalle, 2003). In contrast, introjected and external motivation, both controlled forms of extrinsic motivation, have little evidence to support their role in *promoting* proactivity. For example, in the context of goal progress and the pursuit of personal goals via implementation planning, autonomous motivation was shown to be substantially related to goal progress, but controlled motivation was not (Koestner, Otis, Powers, Pelletier, & Gagnon, 2008).

Despite the limited empirical research explicitly exploring the impact on or relationship of the different motivational forms to proactive behaviour, evidence in the wider literature, outlined above, suggest that autonomous motivation (intrinsic, integrated, and identified) predicts may be more likely to predict proactivity than controlled motivation.

Hypothesis 1: Autonomous forms of motivation (intrinsic, integrated, identified) will positively predict proactivity. Although all three forms of motivation are expected to positively correlate with proactivity, each form represents a different motivation for an individual to act proactively. For example, an association with intrinsic motivation would mean that proactivity is driven by personal interest and enjoyment in the proactive task, whereas an association with identified motivation would mean that individuals see a value in engaging in proactivity.

Hypothesis 2: Controlled forms of motivation (introjected, external) will be negatively related to proactivity.

Experimental Method Approach

Whilst empirical research investigating the impact of motivation on proactivity is relatively sparse, the broader proactivity literature is also limited in its experimental research. Utilising experimental method is critical for resolving limitations and uncertainties in existing literature by investigating underlying mechanisms, which are difficult to establish in field settings. Much of the existing research evidence is based on self report measures, which is problematic given the general acceptance that proactivity is a beneficial behaviour to display in a workplace setting, and therefore susceptible to self-report biases. Laboratory-based research would assist in testing the queries and causal relations posed by existing proactivity literature, including the recent inclusion of motivation as an antecedent of proactivity which has little experimental evidence to support the proposed relationships between different forms of motivation and proactivity.

The present research endeavours to narrow the existing gap by investigating the relationship between individual motivation and proactivity in a laboratory setting. Additionally, the research engages a laboratory setting via utilising an online survey method. As this approach is comparatively novel, the present study acts as somewhat of a pilot using psychology students in order to establish support for the laboratory methodology. The study will also provide support for the use of an inbox simulation task via the online survey method, as well as developing a method for assessing proactivity objectively. Validating the laboratory method as a reasonable approach would provide direction for future research to use this method as a way of substantiating the associations, questions and causal relations currently theorised in the proactivity literature. This is particularly the case for measuring and supporting motivation as an important feature of the proactivity process.

Situational Antecedents and Proactivity

The experimental method attempts to provide consistency in the contextual factors across participants, although the impact of situational antecedents has been widely recognised in the proactivity literature. Capitalising on the benefits of engaging a laboratory approach, the present study also attempts to gain support for existing research claims regarding situational antecedents. In particular, Grant and Ashford's (2008) model proposes that ambiguity, autonomy, and accountability are key situational

antecedents likely to influence the performance of proactivity. Although there is substantial evidence for the impact of autonomy, and to a lesser extent, ambiguity, there is very little evidence supporting the theoretical impact of accountability on proactivity. Consequently, and due to the belief that it should be able to be manipulated in a laboratory setting, accountability was included as a variable in the present study. The inclusion of this variable within the experimental method creates an additional context for participants, according to the different manipulation levels, but the experimental approach provides control over other contextual factors that often exist in workplace settings.

Based on evidence in the feedback seeking research, Grant and Ashford (2008) propose that in situations of low accountability, individuals are less likely to perform proactive behaviour because they risk image costs and cannot blame external circumstances if they perform proactively and fail (Grant & Ashford, 2008). In contrast, in situations of high accountability individuals are more likely to engage in proactive behaviour as the individuals are held personally responsible for their actions, so that any proactive activity is likely to increase changes of success and demonstrate initiative if anything, rather than pose additional risk (Grant & Ashford, 2008). Thus, in the present study it was anticipated that situational accountability would increase proactivity, such that:

Hypothesis 3: High accountability will enhance the positive relationship between autonomous forms of motivation and proactivity, whereas low accountability will not augment this relationship.

METHOD

Sample and Procedure

Fifty three first year psychology students completed a simulated in-basket memo task via an online questionnaire. The mean age was 22.02 years (SD = 8.05). The study employed a between-subjects design to explore the effects of accountability, and a within-subjects design to explore the effects of motivation. The questionnaire randomly allocated participants to one of three situational conditions. To examine the relationship between accountability, motivation, and proactivity, the present study manipulated situational condition with three levels: low accountability, high accountability, and a control condition. Accountability was manipulated via the instructions participants received prior to

engaging in the proactivity task, whereby the level of accountability for participants' responses varied across condition.

High Accountability: Participants received instructions that their responses were to be reviewed individually by experts and specific suggestions would be recorded for future organisational use by a specific organisation.

Low Accountability: Participants received instructions that their responses were to be combined with others and reviewed as a group for general comments to be used in related organisational settings.

Control: Participants received instructions that their responses were to be reviewed following the experiment.

There was some deception involved in the manipulation of accountability, as participants' responses in each condition were not actually reviewed any differently across the conditions. The use of deception was approved via the Macquarie University Ethics Review Committee.

Participants' responses were to an in-basket task (Shalley, 1991) that involved responding to problems recorded in memo form that would be presented to the 'human resource director of a steel company', hence responding from a human resource perspective. As an example, one of the memos is from an employee asking for advice on how to deal with his 'incompetent' manager, from whom he requires a recommendation for a promotion available in coming months. Participants were asked to review the memos in a simulated email inbox and respond with solutions to the problem outlined in the memos, on the behalf of the HR manager to whom the memos were directed: "You are asked to complete the goal of this task, which is to write down the most PROACTIVE solution that you can think of, for each problem (that Chris faces). Give enough details so that your solution could be implemented". Participants were also advised that the key goal was to ensure that these solutions were proactive. The format for responding to the in-basket items was open-ended text entry. Participants did not require any background experience or knowledge in order to respond to the items, and the practical quality of the responses provided was not evaluated.

The level of proactivity was evaluated and to assess and determine the level of proactivity demonstrated by each participant, the evaluation of two expert judges was utilised, with judgement conducted according to a strict guideline of criteria. This evaluation criteria was developed by synthesising accepted definitions or proactivity from the proactivity literature. Proactivity by individuals was therefore considered to be active (as opposed to reactive), anticipatory, change-oriented and self-initiated behaviour, specifically engaged in the work place (Crant, 2000; Sonnentag, 2008; Parker, 2000). It involved taking control, challenging the status quo and overcoming obstacles to make things happen, rather than just adjusting to a situation or waiting for something to happen (Frese, Kring, Soose & Zempel, 1996; Parker, 2000). Proactivity also involved acting in advance of a future situation, rather than just reacting and aims to improve current circumstances or create new ones that will assist in meeting future work demands (Grant & Ashford, 2008). Based on these definitions, evidence for proactivity in the suggested solution included: anticipation of problems and/or risks; anticipation of opportunities; articulation of a goal or desired end state; statement of a planned sequence of actions (e.g. first… then…); preparation of a contingency plan (e.g. if X doesn't work, try Y); adoption of an approach likely to effectively change the situation and/or make a real difference to the problem at hand; adoption of an approach likely to have a long-lasting impact (has a long-term focus), and/or; broadening the scope of the issue beyond the problem presented. For each memo, judges allocated a score of either 0 or 1 for each of the above criteria. This evaluation checklist is available upon application to the researchers. An overall proactivity score was determined by adding scores across all criteria for each memo, and then calculating the mean across all attempted memos.

Measures

Situational Motivation was measured via a Situational Motivation Questionnaire adapted from two motivation questionnaires utilised in prior studies (Parker & Jimiesson, unpublished; Tremblay, Blanchard, Taylor, Pelletier, & Villeneuve, 2009). Tremblay et al.'s (2009) measure underwent validation testing, with results pertaining to the validation of the measure being consistent with the findings obtained with similar Self Determination Theory-based instruments used in other life domains

(e.g., sports: Pelletier, Fortier, Vallerand, Tuson, & Brière, 1995; environment: Pelletier, Tuson, Green-Demers, Noels & Beaton, 1998). This enables a high degree of consistency in estimates of factor loadings, reliability, and intercorrelations as well as content and criterion validity for the measure of motivation in work-based context. The Parker and Jimiesson (unpublished) measure translates the items into a work-specific setting and is presently undergoing validation. Responses to the items were given on a scale ranging from 1 (Does not correspond at all) to 7 (Corresponds exactly) according to how well the motivation statement reflected the participant's motivation to complete the task. Although the Situational Motivation Questionnaire included integrated motivation in its measure (as in the Parker & Jimmieson and Tremblay et al. scales), in the present study this type of autonomous motivation was not found to be sufficiently independent from the identified form of motivation and so was not included in the analysis of results. While unexpected, this is somewhat consistent with research using other SDT-based motivation scales, which has found that because both identified and integrated forms of motivation are characterised by an internal perceived locus of causality the two forms are often difficult to differentiate (e.g. Gagne et al., 2012).

Situational motivation was measured at three time points in the study: at the beginning of the survey, prior to the manipulation (Time 1); immediately following the manipulation (Time 2), and; following completion of the proactivity in-basket task, at the end of the survey (Time 3). The time between each of these points varies according to the length of time the participant takes to complete each section of the survey. According to their order and position within the survey, the shortest time is between Time 1 and Time 2 (a matter of minutes), whereas the time between Time 2 and 3 should be far greater (at least more than 15 minutes). The three different time points were of interest because finding effects at the different points would have different implications. That is, Time 1 provides a baseline of participants' motivation and any effect between this motivation and proactivity indicates that motivation, as unrelated to the task, has some relationship with proactivity. Time 2 represents the motivation following the accountability manipulation, which determines whether the situational factor influences participants' motivation. Whereas, Time 3 is a retrospective reflection of participants'

manipulation, which may be a more accurate reflection of the motivation experienced once the task is known and has been conducted.

RESULTS

Manipulation check. A one-way analysis of variance with contrasts comparing the experimental conditions revealed that across the three conditions, perceptions of accountability were not significantly different, $F(2, 46) = 0.06$, $p = .95$. A univariate analysis of variance was also conducted for each of the motivation types; however we did not find support that these significantly differed across the accountability conditions. Based on these findings, it appears that the accountability manipulation was unsuccessful in creating different levels of accountability. Consequently, the measure of motivation at Time 1 are no longer valid because the accountability manipulation was the only intervening factor between the measure of motivation at Time 1 and Time 2.

Hypothesis tests. The means, standard deviations and correlations between proactivity and the different forms of motivation are displayed in Table 1. Motivation at both Time 2 and 3 were included in the analyses to determine whether proactivity related differently to the motivation type at the two time points. The correlation results indicated that intrinsic motivation was positively related to proactivity at Time 3 ($r = .31$, $p < .05$), although at Time 2, it was not significant. A paired samples t-test revealed that the change in motivation at Time 2 ($M = 3.48$, $SD = 1.47$) and Time 3 ($M = 3.86$, $SD = 1.63$) was in fact a significant increase, $t(48) = -2.36$, $p < .05$, $d = 0.68$. The correlation analysis also revealed a negative trend between introjected motivation and proactivity, which almost achieved significance ($r = -.29$, $p = 0.51$). Introjected motivation at Time 3 ($M = 3.65$, $SD = 1.50$) was also found to be significantly greater than at Time 2 ($M = 4.01$, $SD = 1.51$), $t(48) = -2.41$, $p < .05$, $d = 0.23$. The correlation results also indicated at Time 3 identified motivation trended towards a positive relationship with proactivity, whilst the other controlled form of motivation (external) trended towards a negative relationship with proactivity, although these results were non-significant.

A multiple regression analysis was conducted to further investigate and consolidate the relationships found at Time 3, with each motivation form forming the independent variables and the judges' proactivity scores as the dependent variable. Only intrinsic motivation significantly predicted proactivity, $\beta = .391$, $t(44) = 2.06$, $p < .05$; all other relationships were non-significant.

DISCUSSION

The present study provided some headway into the laboratory method approach to the investigation of proactivity and its relationship with other key variables. The experimental approach is one that is lacking in existing proactivity literature, particularly for the investigation of motivation as an antecedent of proactivity as it is a relatively recent inclusion with the emergence of the proactivity process model (Parker et al., 2010). Therefore, the current study provided foundation and guidance for the use of a laboratory method and objective measure for investigating proactivity, as well as the use of an online procedure for examining elements of the proactivity process.

Motivation is one such element of the proactivity process that was able to be investigated using the current experimental approach. Results from the current study provided support for existing literature which suggests that proactivity is most likely to occur as a result of intrinsic motivation, as opposed to the other forms of motivation, particularly controlled forms (Parker et al., 2010). Individuals high in intrinsic motivation were found to engage in greater proactivity, whilst the other autonomous forms of motivation did not yield the same result. The positive relationship between intrinsic motivation and proactivity reinforces the view that individuals will engage in proactivity when they find a task enjoyable, intrinsically interesting, or a source of flow (Parker et al., 2010). Under this view, it is assumed that the intrinsic motivation will drive the individual to engage and maintain the proactive behaviour. However, the present results found that intrinsic motivation was more strongly related to proactivity after the proactive task had been completed. It is difficult to ascertain the causal direction of the relationship between the two based on the current study, however there are a number of potential answers to this finding. Of particular note, is the potential that the proactive task itself generates intrinsic motivation which then perpetuates the engagement in proactivity. This is not

dissimilar to the assertion that proactive behaviour is most likely to occur in "weak" situations (Mischel, 1973) where individuals have high levels of discretion, goals are very broadly defined, and the means for achieving the goals are not prescribed (Griffin, Neal, & Parker, 2007), which is likely to require intrinsic force to drive the initiated proactive behaviour. The present results are unable to elucidate the nature of this relationship, however it does pose questions for future investigation.

The present finding that individuals high in introjected motivation were less likely to engage in proactive behaviour also supports the existing literature which asserts that individuals motivated by controlled sources are less likely to act proactivity (e.g. Koestner et al., 2008). As introjected motivation is characterised by feeling motivated to demonstrate ability to maintain self-worth (Deci & Ryan, 1995), behaviour motivated by introjected regulation is not perceived as freely chosen and is therefore predicted to not motivate proactivity and potentially even suppress it (Parker et al., 2010). The present finding is therefore consistent with this speculation and evidence that a strong performance goal orientation (which is generated by autonomous regulation) is negatively linked to proactive work behaviours (Parker & Collins, 2010).

Limitations and Suggestions for Future Research

One of the key limitations of the present study was the small sample size and the consequent difficulty in achieving significant results. Future research may amend this by conducting the same study with a similar group of participants to increase the statistical power of the sample; revisiting the results found above with a larger sample would be beneficial to determining the substance of the relationships found presently, particularly those found to be close to significance. Future research in this area is also warranted in order to explore the effects of motivation and accountability on proactivity within a broader sample group. In the present study the population was made up of first year psychology students, who presumably do not have as much work experience as what a broader sample group might possess. In fact, the researchers are presently conducting a very similar study as to the present research with a broader 'industry' group of participants, all of whom are required to be presently working and understand a workplace environment. This aspect is particularly important to this

research area as proactivity is fundamentally a work-based phenomenon. Research conducted with a work group is potentially more reliable for generalising results past the sample to the broader workplace.

A further limitation was the unsuccessful accountability manipulation as participants in the different conditions did not perceive their level of accountability differently. This variable is worth investigating further as it is a condition that can be manipulated in an experimental setting and has been suggested to impact on proactivity (Grant& Ashford, 2008). Future research may overcome this manipulation effect by not providing any accountability information to the control group and altering the information provided to the other conditions to increase the level of detail provided to participants. This is the amendment the current researchers have taken in the extension study in order to improve the manipulation effect.

Due to the existing limitations, the present study has provided a useful pilot for what is a relatively novel approach to exploring the impact of antecedent variables and proactivity and has provided direction for a larger study involving a professional sample population. The findings related to motivation and proactivity pose some interesting trends and implications for the kind of motivation that is likely to enhance proactivity, although future experimental research may assist in determining the direction of this relationship. Moreover, the results of the present study do indicate the utility of an experimental approach for exploring the relationship between motivation and proactivity and provides support for the laboratory technique as a valuable method. Advancing this literature using an experimental approach has important implications for isolating and confirming the factors that do impact on individuals engaging in proactivity, rather than relying on self-report information. This in turn has significant implications for encouraging and enhancing proactivity in an organisational environment.

REFERENCES

Ashford, S. J., Blatt, R., & VandeWalle, D. (2003). Reflections on the looking glass: A review of research on feedback-seeking behavior in organizations. Journal of Management, 29, 773-799.

Crant, J. M. (2000). Proactive behavior in organizations. *Journal of Management, 26*, 435–462.

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 18*, 105–115.

Deci, E. L., & Ryan, R. M. (1995). Human autonomy: The basis for true self-esteem. In M. Kemis (Ed.), *Efficacy, agency, and self-esteem* (pp. 31–49). New York: Plenum.

Frese, M., Kring, W., Soose, A., & Zempel, J. (1996). Personal initiative at work: Differences between East and West Germany. *Academy of Management Journal, 39*, 37–63.

Gagne, M., Forest, J., Vansteenkiste, M., Crevier-Braud, L., Van den Broeck, A., Aspeli, A. K., Battistelli, A., Bellerose, J., Benabou, C., Chemolli, E., Guentert, S., Halvari, H., Johnson, P., Indiyastuti, D. L., Ndao, A., Martin-Albo, J., Molstad, M., Naudin, M., Ntalianis, F., Nunez, J.L., Olafsen, A. H., Panagopoulou, P., Portoghese, I., Roussel, P., Westbye, C., Wang, Z. (2012). Validation evidence in ten languages for the revised Motivation at Work scale. *Institute of Work Psychology: Preliminary Scholarly Programme*, Sheffield City Centre, Sheffield (pp. 14-15). Retrieved from http://iwp.dept.shef.ac.uk/files/docs/IWP%202012%20Programme%20May.pdf

Grant, A. M. & Ashford, S. J. (2008). The dynamics of proactivity at work. *Research in Organizational Behavior, 28*, 3-34.

Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal, 50*, 327 - 347.

Guay, F., Vallerand, R.J., & Blanchard, C. (2000). On the assessment of situational intrinsic and extrinsic motivation: The situational motivation scale (SIMS). *Motivation and Emotion, 24*, 175-213.

Koestner, R., Otis, N., Powers, T. A., Pelletier, L., & Gagnon, H. (2008). Autonomous motivation, controlled motivation, and goal progress. *Journal of Personality, 76*, 1201-1230.

Liberman, N., & Trope, Y. (1998). The role of feasibility and desirability considerations in near and distant future decisions: A test of temporal construal theory. *Journal of Personality and Social Psychology, 75,* 5-18.

Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review, 80,* 252 - 283.

Parker, S., & Jimiesson, N. (2011). *Work stress and motivation: Implications for motivation when working under active and high-strain conditions.* Unpublished manuscript.

Parker, S. K. (2000). From passive to proactive motivation: The importance of flexible role orientations and role breadth self-efficacy. *Applied Psychology An International Review, 49*, 447–469.

Parker, S. K., Bindl, U. K., & Strauss, K. (2010). Making things happen: A model of proactive motivation. *Journal of Management, 36,* 827 - 856

Parker, S. K., & Collins, C. G. (2010). Taking stock: Integrating and differentiating multiple proactive behaviors. *Journal of Management, 36,* 633-662.

Pelletier, L. G., Fortier, M. S., Vallerand, R. J., Tuson, K. M., & Brière, N. M. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). *Journal of Sport and Exercise Psychology, 17*, 35-53.

Pelletier, L. G., Tuson, K., Green-Demers, I., Noels, K., & Beaton, A. (1998). Why are you doing things for the environment? The Motivation Toward the Environment Scale (MTES). *Journal of Applied Social Psychology*, *28*, 437-468.

Shalley, C. E. (1991). Effects of productivity goals, creativity goals, and personal discretion on individual creativity. *Journal of Applied Psychology, 76*, 179–185.

Sonnentag, S. (2008). Recovery, work engagement, and proactive behaviour: A new look at the interface between nonwork and work. *Journal of Applied Psychology, 88*, 518-528.

Tremblay, M. A., Blanchard, C. M., Taylor, S., Pelletier, L. G., & Villeneuve, M. (2009). Work extrinsic and intrinsic motivation scale: Its value for organizational research. *Canadian Journal of Behavioural Science*, *41*, 213-226.

Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of

their work. Academy of Management Review, 26, 179-201.

Table 1: Means, Standard Deviations and Correlations between Proactivity and Motivation Time 2 and Time 3

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Proactivity	3.14	1.10	-								
2. Intrinsic Motivation T2	3.51	1.50	.05	-							
3. Intrinsic Motivation T3	3.86	1.63	.31*	.74**	-						
4. Identified Motivation T2	3.95	1.28	-.08	.70**	.55**	-					
5. Identified Motivation T3	4.13	1.33	.06	.53**	.73**	.78**	-				
6. Introjected Motivation T2	3.67	1.48	-.03	-.22	-.11	.04	.06	-			
7. Introjected Motivation T3	4.01	1.51	-.29	-.25	-.19	.10	.08	.77**	-		
8. External Motivation T2	5.26	1.45	-.08	-.23	-.09	.06	.18	.58**	.51**	-	
9. External Motivation T3	5.27	1.33	-.05	-.12	-.09	.17	.25	.58**	.55**	.91**	-