Low Back Pain:
A Personal Projects Analysis

A thesis presented in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Psychology at Massey University, Palmerston North, New Zealand

Kerryellen Griffith Vroman

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Massey University
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF PSYCHOLOGY
Private Bag 102 904
North Shore MSC
Auckland
New Zealand
T 64 9 414 0800 extn 9180
F 64 9 441 8157
www.massey.ac.nz

Candidate's Declaration

This is to certify that the research carried out for my Doctoral Thesis entitled "Low Back Pain: A Personal Projects Analysis" in the School of Psychology Massey University, New Zealand is my own work. This thesis material has not been used in part or in whole for any other qualification.

Candidate: Kerryellen Griffith Vroman

Signature: KVroman

Date: 1/9/04

Massey University
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF PSYCHOLOGY
Private Bag 102 904
North Shore MSC
Auckland
New Zealand
T 64 9 414 0800 extn 9180
F 64 9 441 8157
www.massey.ac.nz

Supervisor's Declaration

This is to certify that the research carried out for the Doctoral Thesis entitled "Low Back Pain: A Personal Projects Analysis" was done by Kerryellen Vroman in the School of Psychology, Massey University, Palmerston North, New Zealand. The thesis material has not been used in part or in whole for any other qualification, and I confirm that the candidate has pursued the course of study in accordance with the requirements of the Massey University regulations.

Supervisor: Kerry Chamberlain

Signature: 

Date: 11/04/04

Massey University
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF PSYCHOLOGY
Private Bag 102 904
North Shore MSC
Auckland
New Zealand
T 64 9 414 0800 extn 9180
F 64 9 441 8157
www.massey.ac.nz

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Candidate: Kerryellen Vroman

Signature: KVroman

Date: 1/9/04

Supervisor: Kerry Chamberlain

Signature:

Date: 1/09/04

Abstract

Low back pain is characterised by loss of ability to carry out everyday tasks, the disruption of life plans, and psychological distress as well as pain. This study examined the adaptation of individuals with low back pain. In a departure from established models used to study and understand illness representation and adjustment, this study used a personal projects approach to examine the relationship between individuals' appraisals of projects and their functional adaptation to low back pain in the context of their day-to-day goal-directed activities.

A functional personal project system was proposed; specifically, those individuals whose project dispositions were highly concordant and socially oriented would have better function and health. For people dealing with low back pain, it was expected that these dispositions, and personal competency, would enhance adaptation. Conversely, poor adaptive abilities, such as difficulties with physical function, social function, and poorer health, would be associated condition-specific perceptions of pain and negative appraisals of project stress

The results showed there was a relationship between personal project dispositions and functional ability, well-being, and perceived general health of individuals with low back pain. The results did not confirm that a functional project system possessed adaptive benefits. However, the appraisal of pain as salient to the progress and success of projects and stressfulness of personal projects were predictive of limited function and poorer health. Notably, all aspects of function, both social and physical, were associated with pain-salience cognition. Furthermore, pain salience cognition was still predictive of

function after traditional predictors of low back pain disability, pain severity or pain-related fear, were included in the analysis. The significance of the relationship of pain and negative appraisals of the effect of pain on performance supports functional self-efficacy and pain-related fears models used to explain disability level in individuals with low back pain. Since this personal projects analysis was an integrated assessment of individuals' dispositions in the context of participants' everyday lives, it was concluded that pain salience and stressfulness of projects outweighed any advantages offered by their other dispositions in negotiating the participant's personal projects.

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I am incredibly fortunate that my life is full of people, who care and support my many endeavours, and I thank them all. For their role in this thesis, some earn special acknowledgement: first my dad, Neil Griffith, then, the group of friends collectively known as the "wine group". For the last 20 years, they have taught me the strength, joy, and privilege of friendship, and supported me in life's trials, as well as rescuing an overgrowing garden, while I was otherwise preoccupied. Lastly, for their support, encouragement, contributions to analysis, but especially for listening, laughing, and occasionally chiding, Bridget, Margo, Liz, and Antonia deserve a thank-you. I also thank the study's participants, who gladly and passionately shared their experiences, and the clinicians who recruited them.

Sadly, there are family and special friends who will not celebrate with me, but I know the pleasure they would have expressed at seeing this thesis finished, and to know there are new projects and experiences ahead of me: good wines, trips to new places, and ...

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Chapter 1: Introduction

"Pain in its expression, alleviation, and suffering is a performance that is as personal as cultural, as mental as bodily: Just as the making of love."
(Kugelmann, 1999, p. 1663)

The experience of low back pain is much more than a physical complaint of pain. Until we experience back pain, we are largely unaware of our backs. Low back pain causes suffering that reaches beyond any physical sensation of pain. It is a complex interaction of biological, psychological, and social factors.

Low back pain has been researched from different conceptual paradigms using a myriad of methodologies, yet all those involved, including people with low back pain, their family and friends, the many healthcare professionals who provide treatments and researchers, express frustration at the inadequacy of the current understanding of the low back pain condition. Individuals with low back pain report feeling isolated from other people because of their pain. They covet empathy (a sense that another understands and appreciates their experience), but the invisibility of low back pain makes this difficult for them to receive. There is a common, though erroneous belief, that the authenticity of low back pain is contingent on demonstrable biomedical evidence, namely objective signs of pathology or structural anatomical changes. Consequently, people whose low back pain is not verified by pathology frequently feel that other people do not see their pain as legitimate, particularly when it is attributed to "unknown" or psychosomatic causes. They feel their experience and their distress are negated (Jackson, 1992; Johansson, Hamberg, Lindgren, & Westman, 1996).

Low back pain can become pervasive, dominating the thoughts of those affected. It limits people's ability to engage in their usual activities, and alters how they view themselves, and their lives. As people interpret the meaning of their low back pain, they adapt by modifying their behaviour. Some people with low back pain continue to engage in their typical day-to-day activities while others revise their activities, and change the structure of their daily life. Some people will go as far as to change their goals and future plans, giving up many of the activities that previously defined how they viewed themselves. They will adopt pain behaviours, such as avoiding physical activity, and restrict their involvement in social and physical activities. Accordingly, the experience of low back pain redefines their sense of self. Yet, we know little about the adjustment to low back pain from a perspective that examines motivation and volitional processes.

These reports of alienation are not without foundation and not limited to those with low back pain. Healthcare professionals are equally frustrated and demoralised. Challenged by the difficulty of understanding and addressing the needs of people with low back pain, some physicians describe it as one of the most unrewarding problems to deal with in clinical medicine (McCombe, Fairbank, Cockersole, & Pynsent, 1989). Frustration arises from being unable to achieve a "legitimate" medical explanation and/or relief from suffering.

Historically, the biomedical view of low back pain as primarily a biological disorder in which pain is a sensory experience that indicates tissue trauma was predominant. It was not until the 1960s that the complex relationships between the biological and neurophysiological dimensions of pain and its psychological dimensions were appreciated (Crossley, 2000). Since the 1980s, both medical and psychological

research have shifted their perspective of low back pain to embrace in theory, if not always in practice, a biopsychosocial model of low back pain. This model maintains that biological, psychological, and social factors all are determinants of health and illness (Engel, 1977; Waddell, 1987, 1991). Engel (1977) argued for human health and illness to be viewed as reciprocal, interactive and dynamic systems of biopsychosocial dimensions, a stance which is particularly applicable to low back pain. Increasingly, psychologists have shared this view, especially cognitive-behavioural psychologists, who regard pain as a sensory experience imbued with meaning derived from it being embedded in the personal and social context of an individual (Chapman, Nakamura, & Flores, 1999).

Despite all the rhetoric about low back pain being a biopsychosocial condition, the biomedical view of low back pain as primarily a physical disorder remains pervasive among healthcare professionals and people who have low back pain. People continue to seek a diagnosis that assigns a physical causality to their low back pain. This disparity between conceptualisation and practice is also prevalent in psychology. Although health psychology does not rest comfortably with dualistic views, it has tended to use a biomedical rather than integrated biopsychosocial construct of low back pain. Hence, an ongoing challenge for health psychology is understanding and researching low back pain in a manner that is more true to its biopsychosocial experience.

There is a recognised need for research that addresses low back pain to step outside the confines of the existing research paradigms. To pursue an understanding of a person's experience of and response to low back pain requires quantitative measurement of psychological constructs as well as an appreciation of the experience of the individual for whom illness is integral to their day-to-day existence.

Many low back pain studies utilize nomothetic approaches that call for quantifiable, valid, and objective measurements of psychological constructs. These studies, with specific well-defined research questions, are best answered using standardized measures with demonstrated psychometric properties (Te'eni, 1998). For the most part, this research has been confined to psychological correlates of low back pain. For example, numerous studies have investigated the relationships between low back pain and psychological constructs such as satisfaction with life, cognitive coping patterns, depression, anxiety, or pain-related fear. These methodologies generate psychological data that is tidy in its congruency with biomedical signs and symptoms of low back pain.

Such positivistic methodologies in psychology have led to important developments in the identification of risk and prediction of illness, effective illness management, strategies of health promotion, and have facilitated the inclusion of psychological constructs in medical and health research. Unfortunately, with these methodologies, pain is objectified and the subjective experience of low back pain is likely to be overlooked. This omission cannot be entirely attributed to nomothetic methodologies. It is also an indication that in many situations the low back pain condition is still construed as a biomedical disorder. Furthermore, most low back pain research is undertaken with clinical populations within medical settings that are steeped in a biomedical culture.

Nomothetic methodologies are not structured to capture the subjective experience. Rather, idiographic methodologies are typically used in the study of the subjective experiences that underpin the embodiment of illness and suffering. These individualistic research methodologies examine people's vulnerabilities and suffering using personal

accounts of low back pain. Such methods are able to capture the uniqueness of a person and their experiences of illness (Grice, 2004). Accordingly, idiographic approaches offer insight into the individual's personal perspective and allow researchers to begin to develop a picture of how people construe their low back pain, how they justify their pain experience in the context of their idiosyncratic lives, and how their pain engenders their distress.

Idiographic and nomothetic approaches are regarded by many as mutually exclusive, although there have always been proponents of both methodologies who acknowledged the necessity and value of relating one type of research to the other. It is important to know how people understand and ascribe meaning to their illness from their personal frame of reference using an idiographic methodology. Equally necessary is being able to look at relationships between variables using nomothetic procedures to examine patterns of similarity and difference among people with the same or different health states or diagnoses, especially in relation to outcome.

In the 1990s personality psychology researchers began discussing the potential of combining nomothetic and idiographic approaches with renewed interest (Diener & Fujita, 1995; Pelham, 1993; Te'eni, 1998). It was argued that idiographic approaches to personality might offer advantages when combined with nomothetic procedures, such as aggregation over a representative sample of people (Hermans, 1988; Pelham, 1993). Pelham (1993) advocated the use of idiographically-derived indices in nomothetic analyses to examine individual differences in the structure or patterning of responses, and to use idiographic selection procedures to identify one or more traits for nomothetic comparison.

The merits of combining idiographic and nomothetic procedures were pertinent to the objectives of the current study. Specifically, this study sought to understand how people construe low back pain, and to expand our awareness of the subjective experience of the individual with acute as well as chronic low back pain. It also wanted to continue to examine of the differences and similarities in the physical and psychological presentation, experience and response among people with low back pain. To achieve this, we needed to build from the experience of low back pain, so that the constructs used in nomothetic procedures would accurately reflect the experience and characteristics of individuals with low back pain. An idiographic-nomothetic hybrid model, not constrained by tensions of an either-or-stance, would be able to contribute to the understanding of the low back pain condition and how people respond in their adjustment to their experience of illness.

Cognizant of the complexity of the low back pain condition, an aim of the current study was to use a methodology that could bridge the mind-body distinction. The study sought a methodology that would be inclusive of, but not dominated by the biological dimension of low back pain, and would encompass the individual perspective of research participants. Just as biopsychosocial dimensions might be considered without over-valuing any one dimension or excluding other dimensions, the methodological strategies desired for this study would not be exclusively idiographic. It was equally important to the goals of the study that the use of nomothetic strategies could examine differences between participants. The ideal methodology would be a combination of strategies, a methodological middle ground between idiographic and nomothetic approaches, which would be congruent with the conceptual assumptions that underpinned the study.

Specifically, the study was based on a premise that people construct symbolic models of the self, the world and the relationship between self and world. Another underlying assumption was that dynamic contextual knowledge of the self regulates behaviour and enables people to integrate their past, present and perceived future in relation to current volitional action (Karoly, 1991).

This combined methodological approach required flexible rather than fixed units of assessment that could represent participants at an individual level rather than the broader level of group norm (Little, 1987a). These units needed to be more specific than cognitive representations of personality characteristics and more integrated than single behaviours, traits, or attitudes. They also needed to be able to assess behavioural, cognitive, and affective domains (Karoly, 1991; Little, 2000b). Ideally, the units should be applicable to a single case or group.

Personal action constructs approaches possess many of these methodological qualities, and there is an increased interest in goals and goal-related action as theoretical constructs that characterize people's lives. However, in spite of their obvious theoretical and methodological merit, it is interesting that these approaches have seldom been used in the health-related studies. Austin and Vancouver (1996) enthusiastically advocated, "whether one is interested in the key theoretical questions or practical implications of psychology, the study of goal constructs promises to be a stimulating research area, particularly given their potential for integrating psychological domains" (p. 363). Also Karoly and Lecci (1993) suggest that the nature of personal projects and people's cognitive appraisal of their projects might have specificity to disorders or even subgroups within disorders in describing how people negotiate their personal projects.

Use of the personal projects analysis was a departure from existing approaches used in health psychology, and met this study's need to use an alternative methodology that would be more effective in exploring the complex processes of negotiating illness in the context of everyday lives. The use of personal projects analysis was appealing because of the potential to investigate an individual's adaptation to illness by using a combination of idiographic and nomothetic procedures. Personal projects would provide units to assess the experiences of and responses to illness. It had the capacity to assess people's motives to act in a specific manner, and to examine the volitional processes that influence and translate their intentions into action in the adaptive processes of dealing with low back pain.

This study's use of a personal projects analysis to investigate the process of navigating an episode of low back pain in everyday life represented an innovative way to look at the process of adaptation to an illness. Rotter urged psychologists to be less concerned with the beginning and ending and to include in their focus how people get there (Rotter, 1954). To that end, personal projects are units that could assess the volitional and motivational processes of human endeavour and the processes related to the physical and psychological outcomes of low back pain.

The following two chapters will look at, in detail, the personal projects methodology and multiple aspects of low back pain respectively. Chapter 2 will extensively describe the personal projects approach, including the relationship between the properties and appraisals of projects and people's well-being. Chapter 3 will elaborate on the complexities of low back pain, and present an argument for viewing it as a functional disorder rather than a biomedical condition. The chapter also focuses on the

psychological distress this condition engenders and the contradictions of the clinical presentation and personal experience that is a problem in the treatment and resolution of this disorder and that research seldom fully explains.

Chapter 2: Personal Projects and Personal Project Analysis

Goals encompass "... the romance of human possibilities - success, failure, frustration, disappointment, deferment, disallowance at the hands of others, and subversion by oneself." *(Karoly, 1993a, p. 274)*

As argued in Chapter 1, the choice of the personal projects methodology was critical in providing an opportunity to examine the complex and individualistic way people adapt to an illness and navigate its experience. The very prevalent illness chosen in this study, low back pain, was done so because of its direct and often disabling effect on the individual's typical day-to-day activities, resulting in significant challenges in adaptation. Personal projects, as self-directed actions reflect cognitive, affective, and behavioural aspects of human conduct (Little, 1983, 1989). They offer a conceptualisation of " the serious business of how people muddle through complex lives" (Little, 1989, p. 15). The methodology of personal projects, personal project analysis is based on the premise that human behaviour may be explained by the internalised reasons people have for their actions, especially when these intentional actions are viewed within the context of external factors (Emmons, 1999; Little, 1989). Here, the personal project analysis is used to examine the adaptive processes of how people manage and adapt in their everyday lives when they experience low back pain.

General Assumptions that Underpin Personal Projects

People constantly engage in conscious information processing and purposive acts and in the process of ascribing meaning to these actions, organise their thoughts, beliefs,

feelings, and perceptions into schemata about themselves, other people, and their world (Bruner, 1990; Little, 1993). In their day-to-day lives people translate and express their present and imagined future selves in self-directed action (Little, 1993; Sheldon & Elliot, 1999). Therefore, purposive actions are visible representations of who people are, what they are striving to achieve, and whom they desire to be in the future. As such, these actions can be viewed as outwardly visible expressions of a person's sense of self.

The intentions of personal projects provide people with a sense of continuity between their past, present, and future. They represent the flow of actions throughout peoples' lives as well as the dynamic, adaptive processes of day-to-day changes (Cantor & Zirkel, 1990; Little, 1999b; Sheldon & Elliot, 1999). Personal projects embrace the possibilities of striving and the struggles of self-appraisal in the context of the reality of performance. Personal projects not only reflect short-term changes that represent a person's goals and striving, they are also enduring goals that are developed, achieved, or abandoned in the course of living which reflect the fundamental self.

The concept of the self that is adopted in this study is similar to that proposed by McAdams (1996a, 1996b). Thus, the self is viewed as having two components: "I" the self, which is a process rather than a thing and "me", the self which is a product of the self as the subject. The "me" aspect of self is a composite of the knowledge that develops through experience, awareness, and the social connectedness of interpersonal relationships. It is developed through the volitional and motivational processes of choosing, deciding, initiating action, and exerting control over one's self and environment (Baumeister, 2000; Christiansen, 1999). Although the self is evolving, the self maintains some continuity over time and situations (McAdams, 1996a, 1996b). What is relevant

from a personal projects stance is this concept of the self as a product of the process of self "I". Hence, the product "me" is being actively constructed and negotiated through the conative processes of choosing, planning, implementing, and revising personally meaningful projects. Furthermore, this concept of self conceptually overlaps with the action-identification theory of identity, that views identity as a cumulative product of the meaning attached to everyday activities (Bruner, 1990; Little, 1993; Vallacher & Wegner, 1987). Both of these conceptualisations regard the self as distributed within a person's deliberate acts and their goal-directed personal projects (Little, 1993).

The view that the meaning and purpose of one's life is an ongoing, unfolding phenomenon, rather than an end state that is resolved once-and-for-all, fits with the dynamism of personal projects as a day-to-day recounting of the active self (Ryff & Singer, 1998). Personal projects presume people's lives are active ongoing stories, which are structured and developed by their pursuit of goal-directed activities (Little, 2001; Ryan, Sheldon, Kasser, & Deci, 1996). People direct their lives by setting and striving towards personal goals (Jokisaari, 2003) and these goals and goal-directed actions are meaningfully embedded in the subjective reality of their day-to-day life. These actions help shape and reinforce how people perceive themselves, and how others view them. They are the adaptive processes of negotiating the internal and external dimensions of self.

Through goal-directed action, people seek coherence between their external environment, its demands, expectations and opportunities, and their internalised schemata of themselves and their world. This process can be seen in their purposive projects (Little, 1989; Sheldon & Elliot, 1999). There are life occurrences that require more than the usual

ebb and flow of day-to-day adjustment. There are developmental transitions such as adolescence and retirement. There are traumatic life events such as deaths, divorce, and other negative happenings, and there are joyous events such as the birth of child, a new romance, or a job success. In the course of life events, there is also the inevitability of illness. Dealing with illness and responding to the pain, fatigue, and other sequelae is an intensely personal dynamic experience that requires adjustment and adaptation (Hellstrom, 2001; Kugelmann, 1999, 2003). Understanding illness experiences requires knowledge of the processes of adaptation that takes place when a person deals with illness. An assumption made here is that an individual and his or her adaptation can be investigated by an examination of purposive actions undertaken in the process of ordinary living and through a person's appraisals of these actions. Specifically, that purposive actions and people's appraisal of their goal-directed actions can be used to examine the process of negotiating an experience of illness.

Personal Projects as a Personal Action Construct: Tenets of Personal Action Constructs

Personal projects analysis belongs to a distinct group of goal-related constructs known as personal action constructs (PACs). The development of personal action constructs is part of a re-emergence of conative approaches and renewed interest in goal and goal-related constructs. They represent a move from a predominantly cognitive view of motivation to a perspective that explicitly includes volitional processes (Cantor & Zirkel, 1990; Little, 1999b). This means that content, structure, process, and intentions of people's actions are examined as well as their motives which are the internal states that arouse and direct their actions towards a goal (Larson & Buss, 2002). Therefore, as a

personal action construct approach, personal projects is a conceptual shift from emphasizing people's behaviour and the underlying motivation as defined by internalised states that focus on the end-point goal, to emphasizing what people report they are actually attempting to do, and the visible actions of that process (Cantor & Zirkel, 1990; Little, 1999a).

In PACs, motivation is conceptualised as the process associated with an individual's choice of goals and their desire to pursue a particular outcome. This definition of motivation is more specific than the generic use of motivation often seen in some literature, especially in North American literature, in which the term motivation subsumes all goal-related processes, including intentions, goal-directed actions, and volitional processes. In contrast, personal action constructs conceptualise motivation and volition as distinct constructs. Motivation, as described above, is the underlying internalised goal whereas volition is the process that regulates and influences an individual's pursuit of his or her goals.

Collectively, PACs share an interest in the structure and internalised processes of choosing, striving, implementing, and achieving or relinquishing goal-directed actions. Cantor and Zirkel (1990) offer a succinct description of personal action constructs that successfully encompasses many of the characteristics of this family of constructs. They write PACs are "cognitive-motivational units organized around individuals' current self-articulated goals and tasks drawing explicit attention to the future-oriented, forward-looking aspects of personality - those end states towards which individuals feel they are striving, the tasks and projects that they endorse in the process, and the thematic concerns that currently energize their purposive activities." (p. 148).

The approaches conceptually under the PAC umbrella are: current concerns (Klinger, 1975), which are concerns that underlie people thoughts and guides their attention, and the personal strivings (Emmons, 1986) that motivate activity choice. Other approaches are personal projects (Little, 1983, 1989), that organize action to meet desired goals, and life tasks (Cantor, Norem, Neidenthal, Langston, & Brower, 1987), which are the life/age related pursuits. More recently, goals systems analysis (Karoly, 1993b) which look at the self regulatory mechanisms of behaviours. These PACs use self-defined goals and/or goal-related activities to explore how people prescribe meaning in their lives and its relationship to happiness and well-being (Wong & Fry, 1998). They all refer to the conscious objectives by which people organize their present and future lives (Schmuck & Sheldon, 2001). Hence, they can be viewed as "critical constructs for understanding the ups and downs of everyday life" (Emmons, 1999, p. 27).

Personal action constructs occupy a conceptual niche within goal and goal-related constructs that spans cognitive, personality, ecological, and motivational spheres of psychology (Austin & Vancouver, 1996). As mentioned above, the theoretical scope of these constructs includes self-regulation, action goal theory, volition, and self-agency as well as other volitional and motivational theories of human behaviour (Austin & Vancouver, 1996; Cantor & Zirkel, 1990). Personal action constructs are organised around motivational and volitional processes of what people desire, strive for, and actively pursue. These constructs represent peoples' beliefs, concerns, aspirations, and identities. They reflect people's mental schemata about their life: the life and self they are actively constructing, and their perceptions of their place in the world. In summary, they

are cognitive representations of the motives and self-regulatory processes that initiate and coordinate volitional acts (Cantor & Zirkel, 1990; Karoly, 1993a).

A theoretical stance that seeks to determine the unique personal constructs that people develop about themselves and their world is not new. Researchers such as Murray and Kelly proposed the value of a person's self-generated constructs of themselves and their social world as the ideal source of information about the meaning, reasons, and significance of their actions (Christiansen, Little, & Backman, 1998; Little, 1999b). Reminiscent of Kelly's personal constructs theory, PACs assume that people have relatively stable schemata by which they specify, store, organise, prioritise, and evaluate their goals (Karoly, 1993a). Personal action constructs assume that these schemata are visible in the articulation and appraisal of a person's goals, concerns, and personal projects. Thus, these idiographic (i.e., unique to the individual) units of information reveal peoples' view of themselves, their world and the intentions of their actions (Little, 1989; Omodei & Wearing, 1990).

The concept of a three-tiered framework (Little, 1996; McAdams, 1996a, 1996b) provides a useful perspective of the role and scope of PACs in the study of individuals. This framework conceptually accommodates personal action constructs between personality traits, which are the global and enduring features of a person (McCrae & Costa, 1990) and life stories, which are the internalised personal narratives of a person (McAdams, 1999). These three integrated levels have been aptly named "having, doing and being" (Cantor, 1990; Little, 2001). "Having", the first level, are the decontextualised, intractable (fixed) stable traits that we carry with us (Little, Lecci, & Watkinson, 1992). "Doing", or the second level PACs, are the more flexible

characteristics (dispositions) of a person that are contextualised by place, time, or role, and are subject to change (Little, 2001). "Being", the third level, refers to the sense of self that individuals internalise and actively modify as they create ongoing life stories, and are represented in constructs of self and possible selves (Markus & Ruvolo, 1989; McAdams, 1996a). This framework helps convey that personal action constructs function at a middle level of constructs pertaining to human personality. They are the tasks, goals, and projects of an individual that are made concrete with reference to everyday activities and tasks, or are abstract with respect to the themes and meanings in life (Little, 1996; McAdams, 1996a). The flexibility of these mid-level units affords them the capacity to represent the dynamic dispositions of the person engaging in process of living.

Descriptions of Personal Projects and Personal Action Constructs

Up to this point, personal action constructs have been discussed jointly, but each member of this family of constructs have unique as well as shared characteristics. Each has a distinctive conceptual focus and therefore makes a specific contribution (Cantor & Zirkel, 1990). The conceptual and methodological similarities are clarified when these constructs are viewed as an interrelated continuum (Emmons, 1999; Little, 1996). However, a continuum implies a linear relationship, which is an inadequate representation of the interrelations between the PACs. Figure 1 proposes an alternative model of the relative conceptual relationships between PACs, and the arrows show the direction of the progressive overlap between constructs.

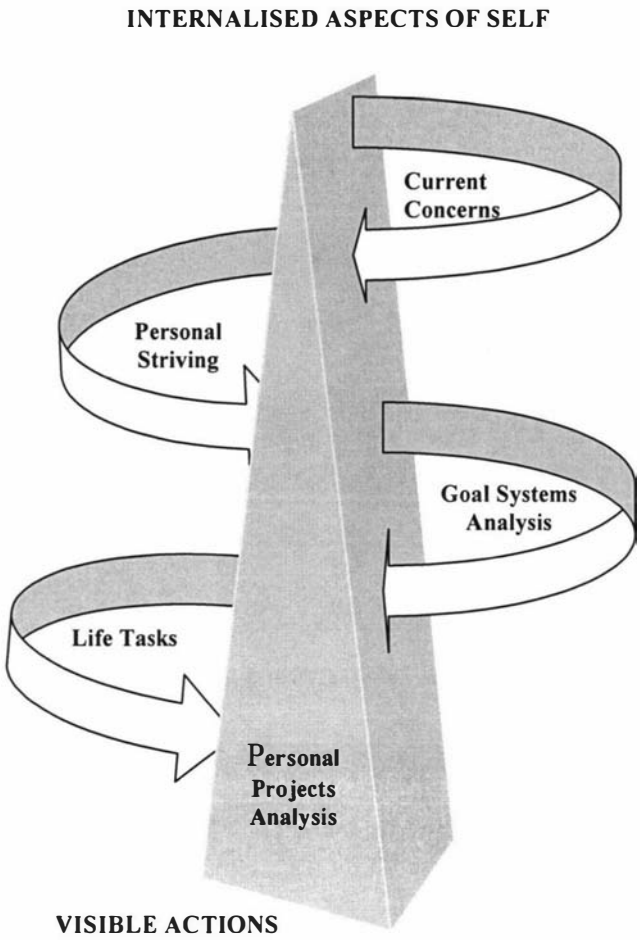


Figure 1. Model of personal action constructs from most internalised to externally visible actions. Arrows show the direction of conceptual overlap between the personal action constructs.

This proposed PACs model (Figure 1) includes current concerns, personal strivings, goal systems analysis, personal projects, and life tasks. Theoretically, the internalised aspect of the self that underlies people's thoughts and guides their attention anchors the apex of the model. These are the abstract values, aspirations, and concerns. The base of this model is anchored in the visible actions people pursue to achieve their goals and to address their concerns. Personal projects are regarded as the most comprehensive of these personal action constructs (Cantor, 1990; Little, 1989; Martin &

Tesser, 1996). The model illustrates that personal projects encompasses the other PACs and can successfully assess the internalised aspects of striving and concern. It also shows that personal projects are essentially goal-directed actions of human endeavour. The wide base of the personal projects pyramid anchored at the visible actions represents this. The other PACs relate to each other more as a continuum. Each subsequent PAC, starting at the apex with current concerns, has its unique focus, but each subsequent construct to a degree progressively subsumes the previous approach, as indicated by the direction of the arrows in the model (Figure 1).

The most internalised state of self is current concerns. Current concerns are motivational and volitional processes that can be viewed as a hypothetical agenda that guides action (Klinger, 1975, 1996; Klinger & Cox, 2004; Nikles, Brecht, Klinger, & Bursell, 1998). They are fantasies, dreams, thoughts, and commitments to action that give meaning and structure to daily life, and offer a conceptual explanation for the interactions of thoughts and emotions (i.e., the mechanisms of cognitive-emotional interactions) (Emmons, 1999; Klinger, 1996). Current concern states can be pre-cognitive (unconscious) sensitisations that cue the individual to elements associated with unmet goals (Klinger & Cox, 2004). They are the changeable and ongoing internal states and are the emotions and thoughts that accompany actions that can cause distractibility from task to task (Klinger, 1996; Little, 1999b). Attention shifts from one task to another when the underlying concerns shift in relative importance. Hence, there is an activation of appropriate cognitive, emotional, or motor responses as actions are started or discontinued (Cantor & Zirkel, 1990).

Personal strivings are also internalised states, but more comprehensive than current concerns. Personal strivings are a person's diverse and individual life themes, which are underscored by the motivational internalised states of current concerns. They are the idiosyncratic motives of a group of acts that share a common goal that a person wishes to achieve (Emmons, 1986, 1989, 1999). Strivings are outcome or end-state oriented. Multiple and diverse actions can be performed over time in the process of striving for that single outcome. People are characterised by their "unique set" of positive strivings (e.g., what people are "trying to do" or "achieve") and negative strivings (e.g., what they are trying to avoid as an outcome) (Emmons, 1999). Personal strivings are desires and a sense of working towards an outcome that energises and motivates a person's actions. Personal strivings do not necessarily relate to the success or failure of specific actions that are pursued in the quest of a goal (Cantor & Zirkel, 1990).

Next conceptually is goal systems analysis (Karoly, 1991), which like other PACs, goal systems analysis assumes people symbolically construct a self-identity. This self-identity includes their socio-cultural environment and their place in that context. Goal systems analysis broadly views motivation as an evolving interdependent process of adaptation. It proposes that this knowledge of self and one's environment regulates behaviour and enables individuals to integrate their past, present, and future perceived self within the influences of their environment (Karoly, 1991). In goal systems analysis, we see the striving and concerns, but we also start to see attention to the context of the goals. In this approach, goals are cognitive-motivational units with the specific focus of goals systems analysis, which is self-regulatory characteristics (i.e., directive, self-

regulation, control and arousal functions, that activate and co-ordinate action) (Karoly, 1993a, 1993b).

Life tasks, situated conceptually in visible acts, are the prescriptive activities that people pursue to meet cultural, social and age-related expectations of a life stage (e.g., middle-age tasks involve parenting, and occupational stability; young adulthood life tasks including independence, career, and intimacy) (Cantor, 1990; Cantor et al., 1991; Cantor et al., 1987; Cantor & Zirkel, 1990). In particular, life tasks could be viewed as a subset of personal projects. They are self-directed acts motivated by personal striving and by the concerns of a specific life stage. Life tasks such as social-cognitive units represent people's beliefs and expectations, which determine their commitments, the direction of their energy, and their view of self at their particular socially defined life stage. They are embedded within and subject to the influences and demands of socio-cultural traditions that designate age-related normative tasks, and are about successfully negotiating these demands of specific social and cultural mores (Cantor et al., 1991; Cantor & Zirkel, 1990). Like personal projects, they are underpinned by and can assess the internalised concerns and goal striving, but the specific contextual and temporal focus of life tasks anchors them firmly in the visible acts that are pursued to meet prescribed goals. Like personal projects, life tasks represent the process of adaptation through "doing".

Anchored conceptually in visible action, personal projects are the goal-directed activities that people pursue in the course of their day-to-day lives. Personal projects are cognitively organised around an individual's beliefs and perceptions, his/her mental representations of self and the context in which the projects are carried out (i.e., transacted). Being the most comprehensive of the personal action constructs, personal

projects represent motivational and volitional processes that address people's concerns and move them towards their desired outcomes or strivings (Little, 1987b). Although personal projects can incorporate the focus of other personal action constructs, the intent of the proposed model is not to imply that personal projects negate the individual value or advantages to research that each of the personal action constructs' specific foci offer. Rather, personal projects is an inclusive approach that is a "window on the everyday plans, pursuits, and passions of people in context" (Little, 1989, p. 22).

A personal projects view of the individual represents the internalised strivings, concerns, intentions, and dispositions of a person. Their scope is the evolving malleable characteristics (i.e., dispositions) of a person rather than stable features such as traits. Externally, a personal projects view represents the physical, social, and cultural context in which a person is situated and where personal projects are pursued offers an ecologically representative perspective.

Characteristics of Personal Projects Analysis

The methodology of personal projects is personal projects analysis. As a "perspective of the problems of living and enhancing human flourishing" (Little & Chambers, 2004, p. 66) it is inherently appealing to add personal projects to the repertoire of integrated perspectives of health psychology. Personal projects provide versatility that can represent continuity of change and adaptation to health problems and/or human well-being. Personal projects analysis, a conative approach, is ecologically representative, and constructivist (Little, 1999b, 2000b). Importantly, a constructivist perspective places the individual central in the research process, as a participant in collaboration with the

researcher, rather than the object of study. Advocating for the use of integrative strategies in health psychology, Spicer and Chamberlain (1996) stress the value of a constructivist view of people as "social agents actively engaged in mutual projects, including the creation and maintenance of their personal identity" (p.167). A personal projects constructivist view of self-determinism and self-agency are articulated in the conative assumption that underscores personal projects as units of assessment. Personal projects as volitional processes of choosing, deciding and acting to exert control over self and one's environment assumes a view of a person as an active self-determining individual within his/her context (Little, 2000b).

The task of personal projects analysis is to examine the structure, content, and processes of goal-directed action that represent people's cognitive schemata, their intentions, beliefs, and perceptions of their actions from their personal perspective (Emmons, 1989; Little, 1983, 1993, 2000b). This idiographic approach precludes the weaknesses of observing a person's actions. Observations of actions are given to ambiguity and easily result in an observer making erroneous inferences about a person and what a person is trying to do (Cantor & Zirkel, 1990; Little, 2001).

Assumptions of personal projects and its methodology, personal projects analysis, are illustrated most effectively by a case-scenario. A case-scenario can demonstrate the conceptual assumptions of personal projects through the characteristics of people and their process of engaging in their personal projects. In the case-scenario below, two young women share an outwardly visible action, jogging. However, there are differences in their personal projects, and they each have their own unique purpose and goals that underpin

their act of "jogging". Their specific personal projects are shaped by their sense of self, their desires, and dispositional characteristics.

> It is January 2004. Amy, the first woman in this scenario is jogging to achieve her personal project of losing weight. Jo, the second woman in this scenario is also jogging. However, her personal project is to run in the Boston Marathon. Amy is running outside on a running path around Mission Bay, Auckland, New Zealand. The sun is shining. To the observer, she is a slim attractive young woman who is probably running with the intention being fit and healthy. However, Amy is striving to lose 10 lbs, which she believes is necessary for her to be able to wear this summer season's fashions. She believes to be attractive is to be slim, similar to the women in the many fashion magazines she avidly reads. She has internalised socio-cultural mores of the 21st Century western society with its demands and pressures on young women that to be thin is desirable. In contrast, the social and physical context of Jo shapes her intentions quite differently. It is snowing and Jo is jogging on an indoor circuit at the University of New England, Maine. The personal salience of jogging is financial. Jo knows to keep her athletic scholarship, she needs to improve her performance and make the spring cross-country team. In addition, Jo wants to achieve good running times early in the spring athletic season to meet the time requirement for the Boston Marathon. She promised herself she would run this Marathon before she was twenty-five.

Consistent with its underlying constructivist premise, personal projects presumes that the intentions of one's actions are subjective (Little, 1999a, 2000b). Therefore, personal projects analysis in the assessment of the personal saliency of projects via personal descriptions presumes an insight into the individual's sense of self and perceived place in the world through their intentions (Little, 1998, 1999b). Furthermore, this idiographic emphasis, from a constructivist stance, is an attempt to avoid objectifying a person.

The young women in the scenario are engaging in the same subordinate action, jogging, but the personal salience, the meaning and intentions of their projects, associated with the act of jogging are idiosyncratic. The projects of jogging represent their distinctive self and may link the subordinate act of jogging with their more enduring superordinate personal projects. For example, Jo attends a University north of Boston and views herself as an athlete. Her athletic scholarship is contingent on her athletic performance. The socio-cultural context of New England, and her family and friends, influence and validate her aspiration to running the Boston Marathon. Financial pressures, the opportunity of continuing to receive an academic scholarship and her athletic aspirations are integral concerns, strivings, and intentions that sustain and motivate jogging for Jo.

The personal salience of jogging for Amy, who is a student in a drama programme at Auckland University, is markedly different than it is for Jo. Jogging helps Amy to attain her personal project, an idealised goal of herself as an attractive young slim female adult in the context of NZ society. She values her physical appearance and she has aspirations of being an actress like her role model, Nicole Kidman. Although the personal saliency of her act of jogging is different, Amy is also influenced by demands and pressures of her external context (e.g., gender-and aged-related media, friends, family, social mores of NZ society) and her beliefs and internalised concerns about who she is, her weight, her appearance, and the future possible self, an actress.

Personal constructs, such as those of these young women, evolve within a rich context of people, places, events, and objects (Grice, 2004; Little, 1996). In these young women's personal projects, we realise the volitional undertaking of these women as they

commit to and pursue goal-direction action that are part of an interrelated open system that is bound inextricably to their environment. The projects that represent their needs and desires are interlaced by the opportunities and demands of the social environment. Contexts provide opportunities and make demands that shape people's cognitive interpretations of their actions and the meaning they ascribe to their projects and experiences. A person's projects are poorly understood if they are divorced from the context in which they are undertaken (Little, 2000b).

Within an overall system of interrelated projects, individual projects are subject to change, modification, or may evolve as required. There are relationships between subordinate and superordinate actions. Personal projects as the units of assessment can represent both these lower level acts and higher order goal-directed actions. Projects are small, often mundane, acts such as "go to the movies with Margo" and "shovel the snow off the driveway" or as in the case-scenario, they might be "run for 40 minutes". Incidental subordinate projects as simple unrelated acts can easily be picked up or with equal ease abandoned. However, subordinate acts may also be part of a series of acts by which abstract higher-order (superordinate or molar level) personal projects (e.g., "be are good friend" or in the case-scenario might be, "be a good athlete" or "be slim") are realised (Little, 1988, 1989, 1999b; Street, 2002). Superordinate projects are often associated with self-identity, values, and/or long-term desires, and are more enduring strivings, such as Jo's view of herself as an athlete or Amy's desire to be an actress.

The pursuit of one project may compete with or conversely may complement another within a person's project system. Living involves the balancing of project content and type, environmental demands, and opportunities combined with the interplay of

competing and complimenting personal projects. As mentioned, an interrelated system of projects does not operate in isolation. A person and their projects at both a micro and macro level are inevitably part of a social network involving other people, organisations, and society. At the micro level, the people most immediately related to the person and their day-to-day life can either support the progress and pursuit of a project or hinder its progress. Similarly, other people's projects and the individuals' projects can conflict. For example, a personal project system of an adult within a social context of a family unit includes careers, parental and personal needs, desires, obligations and expectations. Childcare responsibilities compete with individual and mutual career aspirations and relationship needs of the parents. The complexity of social support, project ambivalence and projects conflict within the social context of the person are all elements of a social support construct.

People are self-agentic entities who pursue identity-affirming projects within an interactive relationship with their socio-cultural and physical world. The temporal, socio-cultural and physical contexts of the young women in the scenario inspire and constrain their projects. Due to the physical climatic conditions of winter in Maine, Jo trains indoors. Temporally, it is the beginning of the academic semester. Her personal projects associated with jogging conflict with studying. The subordinate acts of studying will contribute to her superordinate project of going to graduate school to become an occupational therapist. A hemisphere away, Amy's physical situation allows her to enjoy in all seasons the pleasure of jogging by the sea. She subscribes to health and fitness magazines and works as a part-time aerobics-dance instructor. These activities are congruent with her value system in which her physical appearance is a priority, but like

Jo, Amy must balance competing personal projects. She is working at two jobs to earn sufficient money to pursue her aspiration of studying at the Royal Academy of the Dramatics Arts in England.

As seen in the example of these young women, the superficial act of jogging is more than the act of running. Personal projects analysis is underpinned by an assumption that human action is best understood if it is viewed within the physical, social, cultural, and temporal context in which it is situated (Kielhofner, 2002; Little, 1999a). Physical and socio-cultural context is part of understanding a person's view of self and their adaptive processes as they develop and sustain the intact sense of self within their respective contexts. This characteristic of gathering information about context has earned personal projects the distinction of being an ecological representative assessment unit (Emmons, 1999; Little, 1989, 2000a; McAdams, 1996a).

In the tradition of Murray's extended series of acts, personal projects provide a temporal perspective as extended sequences or series of interrelated goal-directed actions (Little, 1983, 1999b). The interrelationships of the subordinate and superordinate projects in the open project system provide a serial view that is an important aspect of the future-oriented relationship between a person's actions. A person's actions and personal purposive projects give coherence to life that might otherwise be simply random acts. The intentionality of action and the serial relationships between past and present activities, and future goals provides meaning and structure at the everyday level as well as a perspective of the continuity to a person's overall life (Cantor & Zirkel, 1990; Little, 1989). The comprehensiveness of personal projects means projects have the immediacy of personal action constructs, which are current concerns that address the short-term and

the enduring qualities of goals and personal strivings that may extend across a lifetime. For example, some projects meet current concerns (e.g., "watch what I eat"), some involve long-term ambitions (e.g., "avoid getting heart disease") while others have a temporal specificity (e.g., "lose 10 lbs by September"). Such internalised cognitive schemata endow actions with meaning (Little, 1993).

Thus, personal project analysis assessment of the diversity of people's choices, successes, their commitment to, and abandonment of their projects reflect their dispositions and adaptive processes. Even in the simplest of acts and types of projects (e.g., work, leisure, health) that people choose, we can see characteristics of that person, as well as their competencies and frustrations. As people initiate, modify or abandon projects, we see the "flow" of people's life activities, their individual dispositions, and adjustments in their day-to-day lives (Csikszentmihalyi, 1990).

In this thesis, adaptation is conceptualised as a dynamic process of adjustment achieved in pursuing personal projects. The success of this process requires an ability to successfully choose, implement, modify, and achieve meaningful personal projects and to negotiate these personal projects in relation to the demands and opportunities of one's environment. This supposition has support from research that links the properties of personal projects with psychological well-being, physical health, and life stage transitions.

Personal Projects and Well-being

Well-being refers to people's cognitive and affective or emotional evaluation of their lives (Diener, 2000). Well-being is related to engaging dynamically as a self-agentic

individual in one's environment, successfully engaging in goal-directed activity with positive outcomes. There are two perspectives to the role of goal-directed activity in well-being. Autotelic perspectives propose that well-being is related to the positive experiences of activity itself, and telic perspectives postulate that well-being is contingent upon goal attainments or need satisfaction. In personal projects, both perspectives are considered relevant to the development and maintenance of well-being and the preservation of self-esteem (Brunstein, Schulthesis, & Grassmann, 1998; Little, 1989; McGregor & Little, 1998; Omodei & Wearing, 1990). Undertaking personal projects that are perceived as achievable, well organised, supported by others, and not perceived as overly stressful has been shown to enhance well-being (Little, 1989, 1999b). In concert with the pursuit, meaningfulness, and attainment of one's projects, sustainability and manageability of personal projects are also fundamental to maintaining the self, well-being, and "flourishing" as a human (Little & Chambers, 2004).

Although well-being is associated with the ability to make progress with goal-directed activities, it is not solely conditional on the sustainability, progress, and achievement of goals. It is also related to the properties of personal projects: i) the relationship between projects, ii) type and content of projects, iii) an individual's conceptualisation of projects, and iv) cognitive and affective appraisal of the perceived dimensions or characteristics of his/her projects (Emmons, 1996; Little, 1989).

i) Relationship between Projects. Research has shown that within a persons' system of projects there needs to be coherence rather than conflict. Conflict negatively affects well-being. While some projects can be mutually supportive, other projects to

varying degrees can compete for external resources such as time and money, and internal resources such as energy and commitment. Conflict within personal projects has been shown to be stressful and to be associated with negative affective, low satisfaction with life, and an increase in psychosomatic symptoms (Emmons & King, 1988; Palys & Little, 1983). Depressed individuals report more conflict among their important goals than non-depressed individuals (Ryan et al., 1996). Similarly, ambivalence, low expectation of success, and conflict are associated with negative affect (Emmons, 1986). If projects differ in interest, values, choice, and obligations that create internal discord, one might expect a process of adjustment will inevitably occur to reconcile conflict and reduce discordance within the personal project system. If this does not occur, a person's psychological and physical well-being can be compromised.

ii) Type and Content of Projects. Projects and other PACs are conceptualised in relation to underlying motives such as intimacy, attainment, or achievement (Emmons, 1991; Emmons & Kaiser, 1996). For example, a higher proportion of intimacy-based strivings is predictive of positive well-being, whereas power-oriented strivings are associated with less positive well-being (Emmons, 1996). Personal projects are also conceptualised in relation to their particular content (Little & Chambers, 2004). The content of the projects that people undertake varies and may also be classified into general domains such as work, leisure, interpersonal projects involving relationships with other people, instrumental daily activities that maintain the physical self and personal environment, and intrapersonal projects that are related to developing and changing the self. The content of projects may be related to how projects are conceptualised. For

example, intrapersonal and interpersonal projects are generally abstract, and more difficult to attain than projects associated with the physical world, such as many leisure or work projects. Similarly, the overall project system that has balance of content areas is regarded to be adaptive (Little & Chambers, 2004).

Content areas can have a specific relationship with well-being (Christiansen, 2000; Christiansen, Backman, Little, & Nguyen, 1999). Having a high number of intrapersonal projects is associated with depressive symptoms (Little, 1989; Salmela-Aro & Nurmi, 1996). These intrapersonal or self-focused projects have been shown to be associated with lower self-esteem, lower reported well-being, and the presence of more depressive symptoms (Salmela-Aro, Pennanen, & Nurmi, 2001). Likewise, there is a relationship between measures of well-being such as self-esteem and depression, and a person developing more self-focused goals (Salmela-Aro & Nurmi, 1997). There is an argument to be made for well-being and adaptation to be associated with a personal project system. A project system not dominated by one specific project type with a degree of collective harmony is a project system that is likely to support well-being.

iii) Conceptualisation of Projects. People conceptualise their personal projects in either an abstract or a concrete manner. Abstract projects have loosely defined goals that are open-ended especially with respect to time, whereas, concrete projects have specific, well-defined goals having a definite time of completion (Brunstein, 1993). Abstract projects are often long-term and can be associated with thematic superordinate goals. For example, a person might conceptualise his or her project of recovery from low back pain in an abstract manner, such as "accept my back pain". "Accepting my back pain" may be

congruent with this person's thematic life-goal "come to terms with those aspects of myself that I can not change". In contrast, a person may conceptualise recovery in specific concrete terms such as the personal project "go back to work next Monday". This project has a definite outcome and a specified time limit. The abstractness and complexity of the first project results in an ill-defined, nebulous outcome that is difficult to achieve. The second project with its concrete tangible outcome anchored in the physical world with a set end-point is a subordinate project that is more likely to be completed (Little, 1989).

Research demonstrates there are benefits associated with having goals and personal projects that are more concrete. People who have concrete short-term goals experience greater levels of well-being including less negative affect (Emmons, 1992, 1996). However, the downside to this lower level of striving is that people also report more physical illness (Emmons, 1992). Emmons and Kasier (1996) propose that people with lower level goal strivings have a trade-off mechanism of repressive-defensiveness. Little (1989) also points out there is a trade-off between manageable projects versus meaningful projects. Better psychological well-being for people who construe their projects (i.e., goals, concerns, strivings) in concrete terms may result from a lack of personal awareness (Emmons, 1996, 1999). However, the trade-off for better psychological well-being is that these people report poorer physical health (Emmons & Kaiser, 1996). Perhaps the repressive pattern suggested here is consistent with the well-reported relationship between avoidance coping styles and physical health status.

People who have abstract personal projects or goals, especially those they perceive as stressful, experience more depressive symptoms and negative affect than people who have concrete, less difficult personal projects (Carver, 1996; Emmons, 1996;

Wallenius, 2000). Emmons (1992) reported higher level striving (i.e., abstract goals) was associated with psychological distress, particularly depression, and suggests that individuals with higher-level goals are also more reflective than their more concrete peers (Emmons, 1999). There is not just a difference between the conceptualisation of projects as either concrete or abstract, but as mentioned personal projects are not discrete entities. Instead, they are part of an interrelated project system. Abstract thematic projects are more meaningful than concrete projects. They energize, motivate, and their meaning is linked with a person's values and identity. They represent core values and striving that extends over time (Little, 1999b, 2000b). Whereas concrete projects give structure and organization to daily life and are generally achieved within a specified time (Baumeister, 1989; Street, 2002). However, what concrete projects provide in manageability, they lack in meaning (Little, 1989). Concrete projects are often nested hierarchically as the subordinate actions of the abstract thematic projects (Powell Lawton, Moss, & Winter, 2002). Therefore, an interrelated system of projects is concurrently pursued at concrete and abstract levels to address both immediate needs and enduring personal goals (Little, 2000a; Palys & Little, 1983). Failure to achieve concrete projects may result in distress that might seem disproportionate to the relative simplicity of the project, but there maybe an importance attached to the concrete project because of its contribution to an important higher-order abstract project. Consequently, difficulties at any level (concrete or abstract) can affect outcomes and thus the well-being related to goal attainment and need satisfaction.

iv) Appraisal of Projects. The diverse content, interrelationships, and differing conceptual levels of personal projects are part of a personal iterative evaluative system. People's cognitive and affective appraisal of their projects reflects their dispositions in their day-to-day existence and their responses to the vagaries of living. Studies have assessed people's appraisals based on numerous dimensions of personal projects. These dimensions include perceived importance, difficulty, and expectation of outcome, enjoyment, cost of failure, and commitment. Based on the premise that positive human experiences are characterised by engaging in activities and are not just contingent on outcome of activities, the cognitive and affective appraisals of the dimensions of people's projects are thought to provide insight into their dispositions.

Studies have established that there is a pattern between people's cognitive and affective appraisal of the dimensions of their personal projects and how they perceive their status of well-being such as life satisfaction and happiness (Little, 1989; Palys & Little, 1983; Ruehlman & Wolchik, 1988). Generally using statistical procedures, the appraised dimensions are reduced in number to fewer conceptually relevant factors. In previous studies, this analysis has shown a tendency for dimensions to correlate in a similar manner to create theoretically interpretable factors (Little, 1999b; Little & Chambers, 2004). Factors that have been interpreted as characteristic dispositions of an individual are integrity, having projects that are meaningful and congruent with the self, and competency, and structural characteristics of projects, which relate to dimensions of personal autonomy, control, and efficacy. Other common factors are social visibility/communality, which reflects an individual's disposition towards social connectedness and the involvement of others in projects, and stressfulness, which is

correlated dimensions that represent an individual's appraisal of projects as difficult, challenging, demanding, and outside the resources available to them to successfully achieve. Individuals' dispositions in their engagement and structure of their personal projects are shown to be associated with psychological well-being and the successful negotiation of life transitions.

Appraisal of integrity represents projects' dimensions that relates to the congruency of a person's projects with their perception of self (Christiansen, 2000; Little, 1998; McGregor & Little, 1998). Integrity appraisals are the coherence (consistency) and congruence (agreement) of personal projects with a person's beliefs, values, and self-worth (Christiansen, 2000; McGregor & Little, 1998). Self-concordance (Sheldon & Elliot, 1999) and project integrity both denote the "fit" between projects and a person. In this thesis, these terms are used interchangeably. Similar to integrity, the term self-concordance is used to describe goals and goal-directed activities (i.e., personal projects) that are congruent and coherent with a sense of self and interests (Sheldon, 2001; Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001).

McGregor and Little (1998) reported that project integrity was associated with the project dimensions of personal choice, commitment, and an individual rating high their appraisals of the dimensions meaning, enjoyment, manageability, and attainability. Integrity measured by these dimensions has been associated with well-being (McGregor & Little, 1998). Integrity is related to personal growth, the quality of relationships and life purpose. It is these aspects of individual evaluation of the meaning of personal projects and the integrity of personal projects that is related to well-being. Well-being is also related to an individual's perception of happiness. However, this aspect of well-being is

associated with satisfaction with life, and positive and negative affect. Well-being measured by happiness is correlated with the perceived efficacy in personal projects and personal competency (McGregor & Little, 1998).

Generally, individuals feel more competent and effective in their daily activities, and engage in autonomous action because self-concordant activities express their evolving interests and personal values (Sheldon & Elliot, 1999). Furthermore, these self-concordant projects are likely to be sustained (Sheldon & Elliot, 1999). Persisting with projects that are not self-concordant would seem less important and their absence less significant to self-esteem and overall self-identity (Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001).

Some people select goals and projects that are not closely aligned with who they are and their values, while others select projects that are highly meaningful and congruent with their sense of self (Sheldon & Elliot, 1999). Although projects are personally salient, not all projects are equally meaningful to a person or are self-integrated (Little, 1989, 1993, 2000a). Some projects are undertaken due to external contextual influence, such as those pursued out of a sense of obligation and demands from others. These projects may be less affiliated with the self and lack a sense of personal control. These externally motivated, often imposed projects and goals are less representative of enduring values, strivings and interests (Sheldon & Elliot, 1998, 1999). Gollwitzer (1990) suggests that goals that are derived from external forces lack volition and are more likely to diminish when obstacles are encountered (Gollwitzer, 1990; Gollwitzer & Bargh, 1996). Conversely, it is harder to disengage from abstractly construed goals or goal-directed personal projects because they are more value-laden and associated with self-perception.

It is also true that some concrete projects are difficult to relinquish because they are the building blocks of superordinate projects (Street, 2002).

Perseverance with personal projects can have a cost. Being unable to disengage from goals that are unachievable, but which represent commitment to current concerns is associated with depressive symptoms (Klinger, 1987). Furthermore, goals that are not "self-integrated" are not related to changes in well-being, even when these goals are attained or progress is achieved (Sheldon & Kasser, 1998). Sheldon and Kasser suggest that this is evidence that non-concordant goals are not as important to psychological well-being as self-concordant goals. But as McGregor and Little (1998) clarify, this also pertains to self-concordance goals and projects that are associated with the well-being derived from meaning. Pursuing and achieving self-concordant goals related to happiness enhances well-being and failure to attain such goals is associated with a decrease in well-being (Sheldon & Kasser, 1998).

Given the relationship between personal projects and well-being, it is reasonable to propose that in adversity a person would be is less likely to relinquish self-concordant projects because of the psychological importance of these projects to their self-identity. The disruption or loss of self-concordant projects would therefore come with greater psychological cost because of their relationship with the self and related well-being. Some research supports this proposition. Self-concordant goals are associated with initial and ongoing efforts towards goal attainment (Sheldon & Elliot, 1998). People with more self-concordant goals try harder and are better at attaining personal goals. Sheldon and Elliot (1999) postulate that self-concordance of goals has two important roles. First, self-concordant goals enable individuals to sustain the effort to achieve their goals. Secondly,

when goals are achieved that are self-concordant with personal values and beliefs, individuals have a greater sense of personal competency, autonomy, and relatedness to others.

In analysis of appraisals ratings, factors interpretable as personal competency, autonomy, and relatedness to others' dispositions also emerged. Personal autonomy, self agency, competency, and communality with other people (social connectedness) have been deemed to be essential human desires (Ryan et al., 1996; Sheldon, Ryan, & Reis, 1996). Goals and their related goal-directed activities appraised and rated high on dimensions related to these factors are associated with psychological well-being (Ryan, 1995; Sheldon et al., 1996). The dispositions of autonomy and competency in one's personal projects have demonstrated an independent relationship with positive mood, vitality, and physical health (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Well-being depends on progress towards goals that fulfil fundamental human needs for competency, social connectedness and autonomy.

People not only need to feel in control of their actions, but it is equally important that they have a sense of ownership (Sheldon & Elliot, 1998). Autonomy represents the degree to which a person perceives a project or goal to be his/her choice and his or her decision to pursue it (Reis et al., 2000). Autonomy provides intrinsic motivation that also affords the individual a sense of personal control in their projects and life.

Efficacy, which is belief in one's ability and skills to successfully pursue goal-directed activities and achieve the desired outcomes, provides an individual with the perception of personal competency. Competency is developed from achievement and mastery over one's environment (Bauer & McAdams, 2000). If individuals experience

success in their projects, their view of themselves as competent people is enhanced. Such competency and personal efficacy consistently correlates with higher measures of well-being, especially well-being related to measures of happiness (Little, 1989, 1998; McGregor & Little, 1998). Personal competency is associated with positive mood and well-being (Reis et al., 2000; Sheldon et al., 1996). A negative appraisal of competency in one's personal projects is associated with negative affect. There is evidence to suggested that the dispositions of competency, autonomy and social connectedness to others may have adaptive advantages (Reis et al., 2000; Sheldon et al., 1996).

The benefit of social relatedness or social integration and the support it affords an individual is well known (Lyons & Chamberlain, In press). Feelings of connectedness to significant others and social relationships have a role in ameliorating feelings of alienation and social isolation and are associated with happiness (Lecci, Karoly, Briggs, & Kuhn, 1994; McGregor & Little, 1998). Social disengagement and isolation are common clinical features of depression (Sadock & Sadock, 2002). Projects that involve helping friends and family, or activities connected with community that provide meaning are often projects which are also self-concordant (Sheldon & Kasser, 1995). The preference for achievement-oriented goals over social/intimacy-oriented goals has been found to be associated with poorer well-being (Emmons, 1991). Similarly, Lecci et al. (1994) reported that people with depression, not anxiety, report fewer social goals and perceive their projects are less visible to others.

Social support (i.e., others actively helping with, participating in and valuing a person's projects) for personal projects is reported to be positively related to subjective well-being, while hindrance is related to both distress and poorer well-being (Ruehlman

& Wolchik, 1988). Although the caveat here is that, in these personal action constructs studies, a distinction is not made between the various dimensions of social support, social integration, or the quality of social support, so interpretations should only be broad. Greater life satisfaction in college students was shown to be associated with personal projects that were undertaken within their social network and had shared involvement and social support (Palys & Little, 1983). Similarly, in a study of women with fibromyalgia, these women's progress in their inter-personal (social and relational) goals was shown to be associated with an improvement in mood irrespective of their current level of pain (Affleck et al., 1998; Affleck et al., 2001). Overall, social-connectedness has a positive relationship with well-being.

While some attributes of projects and the benefits of dispositional characteristics such as competency and social connectedness have positive benefits in relationship to well-being, negative appraisals of projects are related to poor health outcomes. For example, appraisal of projects as stressful, difficult, lacking in structure and personal control, and not expectation of successful outcome are associated with depression and anxiety (Lecci et al., 1994; Salmela-Aro & Nurmi, 1996). Depressive symptoms over time have been shown to be predictive of negative appraisal of personal projects two years later (i.e., projects that are stressful, difficult, have a low level of attainment or progress, and poorer personal efficacy) (Salmela-Aro & Nurmi, 1996). Depression has been associated with unrealistic goals and vague and abstract goals (Emmons, 1992). Emmons and King (1988) demonstrated that conflicting goals contribute to depression, negative affect and psychosomatic symptoms.

A Functional Personal Project System

As people initiate, modify or abandon projects, or engage in the construction and reconstruction of their personal projects, they are participating in a process of adaptation. Adaptation requires abilities to successfully negotiate the challenge and demands of a current situation and the possession of dispositional characteristics that equip an individual to address these challenges. Individuals who report well-being have many characteristics that might be considered adaptive when negotiating life events. In the pursuit of meaningful, manageable, and sustainable projects, these individuals develop and maintain a sense of well-being. They evaluate their life as meaningful, express satisfaction with life, and have positive affect. The properties of personal projects, namely conceptualisation, content, the interrelationship between projects, and the appraisal of projects are related to this state of well-being. This well-being is enhanced by an individual's disposition to perceive him or herself as competent, efficacious, autonomous, and socially connected in the pursuit of their personally meaningful projects. Importantly, personal projects structure and organise an individual's day-to-day living, and contribute proactively to how the self is developed and maintained. Negative characteristics such as perceived stress, difficulty attaining desired outcomes, and poorly defined abstract projects have an adverse relationship and are associated with poor measures of well-being, particularly depression.

Well-being is associated with a pattern of personal project properties and appraisals. A similar pattern is related to more optimal life transitions, (e.g., retirement, adolescence, motherhood) (Cantor et al., 1987; Lawton, Moss, & Winter, 2002; Salmela-

Aro, Nurmi, & Staisto, 2001). The relationship between properties of personal projects, people's cognitive appraisals of their projects and the use of these in personal project analysis to study well-being, happiness, transitions, and self-identity, have demonstrated the scope and flexibility of personal projects in examining the self-agentic individual negotiating the joys and travails of everyday life (Little, 1996). Given the emerging pattern or trends of personal projects properties and appraisals related to well-being and transition, a hypothesis that might be offered is the concept of a *functional project system*. Hypothetically, a functional project system would have properties such as a balance of project content and a blend of abstract and concrete projects. People with a functional project system would appraise their projects as providing a sense of social connectedness through the involvement and support of other people. They would be more likely to construe their projects as congruent with their present sense of self and the possible self, which they strive for in the future. They would evaluate their chosen projects as mostly attainable, within their control, and that they have capacity to achieve them. They would self-report personal competency, efficacy, and autonomy. Overall, a functional project system would be perceived as manageable and sustainable. Negative appraisal of project dimensions such as stressfulness and difficulty with projects would not be salient in a project system deemed as functional. Instead, a functional project system would provide an opportunity to pursue meaningful projects that met a fundamental human need for competency, autonomy, and relatedness through participation that supports and develops the dynamic self (Ryan et al., 1996).

A presumption of a functional project system provides a model for the assessment of the adaptive processes of everyday lives and evaluation of individual differences in

adaptive responses. There are a few studies that have used personal project analysis to describe condition-specific projects and goal differences between individuals with conditions such as fibromyalgia, hypochondriasis, eating disorders and depression, compared with their non-affected peers (Karoly & Lecci, 1993; Lecci et al., 1994; Salmela-Aro & Nurmi, 1996; Salmela-Aro, Pennanen et al., 2001). However, no published studies have used a personal projects approach to investigate the adaptive response to a health problem.

Chapter 3: Low Back Pain

"Our back is the core of our bodies, which when unable to function normally or effectively, affects our whole being"
(Participant #55, female, 43 years)

The above comment from a participant provides an insight into a commonly held view of people with low back pain of just how significant a role it plays in the management of their everyday lives. The direct affect of this condition on an individual's ability to participate in their typical day-to-day activities makes it particularly applicable to an argument that physical and psychological well-being, as well as adaptation in response to life events, are dependent on their personal projects and how individuals construe these goal-directed actions of everyday life.

Low back pain's rather simplistic biomedical diagnosis, namely the signs and symptoms involving the back below the 12th thoracic vertebra and above the gluteal fold, belies its complexity. It is one of the most problematic and costly health problems of western society. Yet, to say one has low back pain does not always elicit the support and concern usually accorded someone with an illness or recent injury. The typical view of low back pain is a temporary, painful, but transitory condition associated with over-exertion, which is contrary to the actual condition and the experience of low back pain. This case-scenario below is an example of a typical episode of low back pain.

> Steve, a self-employed market gardener, reaches for a box of vegetables and begins to lift. He experiences an all too familiar excruciating pain in his lower back. Cursing, he struggles to find the nearest surface to rest the box. His back has "gone out, again."

> Frustrated, he berates himself for rushing. For a week or so, he will have pain in his lower back. In the next couple of days, he will cut back on the heavy lifting, but he will continue to work despite his pain. When the pain continues and interferes with his daily activities, he will see his physician. Although Steve knows from experience that his physician can do little besides prescribe pain medication and therapies, he worries that there could be some "real" damage to his spine. He will accept, but be doubtful of the negative findings of radiological or similar investigative tests. He will continue to have a nagging fear that his pain will be permanent.

In any given year, over 25 percent of adults will report that they have had low back pain. Over 80 percent of adults will report having had low back pain at some stage in their lives (Hales & Bernard, 1996; Skovron, 1992). As in the case-scenario, low back pain is characterised by recurrent pain episodes often triggered by biomechanical stress and physical exertion that results in a limitation of everyday physical activities and a disruption of work. Previous studies have shown that biological factors (i.e., body weight, musculoskeletal integrity) and the physical load on the musculoskeletal system (i.e., forceful or repetitive movements, prolonged lifting, bending and/or body vibration) increase the risk of low back pain and frequently are the cause of its onset (Bigos et al., 1991; Frank, 1993; Hoogendoorn, van Poppel, Bonger, Koes, & Baxter, 2000).

The scenario also illustrates an interaction of cognitive, emotional, and behavioural factors that are associated with low back pain. Steve wants a "proper" diagnosis. For Steve and many patients with low back pain, this means a diagnosis that a primary care physician provides following investigative tests. Steve would like the concreteness of positive test results and a diagnosis that will attribute his low back pain to a structural or pathological cause. While the sensation of acute pain might presuppose an

underlying neuro-anatomical cause, 80 to 90 percent of diagnoses of low back pain have no physical objective biomedical evidence (abnormal X-ray findings, neurological impairment) to substantiate the pain. Nevertheless, Steve's pain experience is very real. His low back pain distresses him. His distress, his interpretation of his pain and his past experiences will influence how he responds to his pain in the context of his everyday activities.

Low back pain is neither exclusively the mind's perception of bodily painful sensation nor is it an isolated neurosensory phenomenon. Pain is both of these, and it is more. While an initial sensory experience of pain is organized and interpreted in the brain, the meaning, experience, and responses of pain are interpreted in the context of past and present experiences and an anticipation of consequences (Chapman et al., 1999; Sullivan, 2001). The observed pain-related behaviours are a manifestation of these many facets of a person, and the meaning he or she assigns to the pain and his/her environment.

In recognition of the multidimensional nature of low back pain, in the late 1980s there was a conceptual shift from an exclusively biomedical view of low back pain to a more inclusive biopsychosocial model (Borkan et al., 2002; Waddell, 1987). It was an acknowledgment of the multidimensional interaction of a person and his/her environment in the aetiology, onset and course of low back pain (Coste, Paolaggi, & Spira, 1992; Garofalo & Polatin, 1999; Waddell, 1996). A multidimensional interactive perspective of low back pain was a crucial step towards the ability to begin to explain the contradictory clinical presentation and the social, behavioural, and psychological dimensions of low back pain.

A Clinical Perspective of Low Back Pain

Low back pain is one of the most common conditions treated by primary care physicians. However, "it is the suffering, not the pain that brings people to health care" (Loeser, 2000, p. S3). Most people seek treatment for low back pain because they have difficulty with everyday activities (McPhillips-Tangum, Cherkin, Rhodes, & Markham, 1998; Rhodes, McPhillips-Tangum, Markham, & Klenk, 1999). Typically, they want to know the cause of their low back pain, but the diagnosis of low back pain is problematic. There is a tenuous relationship between signs of low back pain and the symptoms experienced and reported by a person with low back pain. When people access help through a primary care clinical setting, a biomedical perspective is used to determine their diagnosis and classify their condition. Consistent with a biomedical perspective, their first treatment most likely will be pain-relieving medications (Koes, Tulder, Ostelo, & Burton, 2001).

In medicine, there is a distinction between signs and symptoms. Here, this medicalised definition of signs and symptoms is pertinent to how we understand the different ways that people (e.g., sufferers, family, healthcare professionals) construe low back pain and the ambiguous position of existing research. At present, it is necessary that low back pain research straddle the world of medicine and psychology; perhaps some would say this is a function of health psychology. A reason for accepting this biomedical distinction of signs and symptoms is that our current understanding of low back pain is undeniably anchored in biomedical research and it is from this base that we shift our understanding and conceptualisation of these musculoskeletal conditions.

Pain is a symptom. As a symptom, it is thought of as a subjective indication of illness (Kugelmann, 2003). Symptoms define low back pain (e.g., pain, difficulty with activities, sensory changes). However, "signs" of illness are regarded as more significant (Kirmayer & Young, 1998; Kugelmann, 2003). Signs are the objective evidence, the pathology or a physical manifestation of illness. In a complaint of low back pain, objective signs ascertained by medical investigation, seldom explain or validate self-reported symptoms. It is said of low back pain that it is a collection of symptoms in desperate search of corroborating clinical signs (Eccleston, Williams, & Rogers, 1997). The lack of substantiating clinical signs is distressing for people with low back pain because there is a distinction between "real" pain symptoms or those with identifiable causes, and unexplained pain symptoms (Kirmayer & Young, 1998). When there is a disparity between signs and symptoms, it is a source of tension between patients and others (e.g., healthcare professionals, family, and work colleagues).

Signs and symptoms, in the tradition of biomedicine, are the basis of the clinical classification of low back pain. The International Association for the Study of Pain recommends a classification system based on pathology. This system categorizes low back pain as non-specific or idiopathic back pain versus back pain that is specified by underlying anatomical pathology (Clark, 1996). Non-specific back pain lacks identifiable causes and is characterised by soft tissue injury due to mechanical stress or overload (Van Tulder & Koes, 2002). This pathology-based classification is used concurrently with other common classification systems, such as the duration of symptoms. Acute low back pain is defined as continuous pain present up to seven days. This term is also applied to continuous pain of several days up to twelve weeks (Frank, 1993). However, a sub-

category of sub-acute back pain is sometimes used instead to refer to continuous pain from one to twelve weeks (Faucett, 1999; Frank, 1993). Chronic low back pain, representing only five to ten percent of all low back pain, is pain that persists beyond 12 weeks (Bratton, 1999; Carey, Evans et al., 1995; Carey, Garret et al., 1995; Deyo & Phillips, 1996). Low back pain with accompanying pathology is 10 to 20 percent of acute back pain episodes, and even fewer cases of chronic low back pain are attributable to objective anatomical and neurological abnormalities such as disc herniation, spondylysis, spinal instability, stenosis, fractures, tumours, or infections (Carey, Garret et al., 1995; Coste, Delecoeuillerie, Lara, Parc, & Paolaggi, 1994; Deyo & Phillips, 1996). In the absence of identifiable organic signs, low back pain often does not meet the criteria for a medical diagnosis that is amenable to medical interventions (MacFarlane et al., 1999; Rossignol, Lortie, & Ledoux, 1992).

Although extensively used, classification systems bear little relationship to people's experience of low back pain. For example, classification by duration implies there is an endpoint to low back pain, but the resolution of low back pain is ambiguous. The general perception that low back pain resolves within 6 weeks with or without medical intervention is not borne out by the actual clinical presentation of low back pain in primary care settings (Deyo & Phillips, 1996; Wahlgren et al., 1997). Pain-free recovery within the first six weeks is less than 80 percent (Deyo & Phillips, 1996; Von Korff & Saunders, 1996). The majority of people's low back pain (70%) is recurrent or it resolves to a low non-limiting level of discomfort (Hashemi, Webster, & Clancy, 1998). The fallacy of a quick resolution of symptoms exists partly because returning to work is used as a surrogate measure for recovery (Ferguson, Marras, & Gupta, 2000). It is well

documented that resuming everyday activities or returning to work does not mean a total absence of pain symptoms or impairment (MacFarlane et al., 1999; Von Korff, Deyo, Cherkin, & Barlow, 1993). Post-consultation studies show that many patients improve by one to two weeks, but only a small percentage of these patients are totally pain-free (Nordin, Cedraschi, & Skovron, 1998; Roland & Morris, 1983). For example, in the study by Carey et al. (1995) the functional status of people with acute and sub-acute low back pain improved within an average of 16 days, and 95 percent of people returned to work within four weeks. Despite returning to work and their usual life style, 31 percent of the people did not describe themselves as fully recovered.

As shown in the process of classification of low back pain, the clinical environment in which people seek help for low back pain continues to view it from a predominantly biomedical perspective. Despite a tacit appreciation that this is an inadequate paradigm to explain or treat this disorder, it persists. This discrepancy between the individual's experiences of low back pain, and our general perceptions and comprehension of the condition as reinforced by our classification and diagnosis of low back pain is the first hurdle that any new low back pain research must consciously address.

The Symptoms of Low Back Pain

The ambiguous and contradictory clinical presentation of low back pain accentuates the lack of visible authenticity of low back pain and the perceived stigma associated with having a condition of unknown cause (Von Korff, Ormel, Keefe, & Dworkin, 1992). The reality of most people's experience of their low back pain condition

is not just pain symptoms in the lower back. It is an inability to function, difficulty doing physical activities and a disruption of their day-to-day life. There is emotional distress, possibly depression and anxiety. As previously mentioned, most of these symptoms of low back pain will not be substantiated by objective signs of pathology (Jackson, 1992). Even when there is pathology to account for the low back pain, the symptoms that an individual reports (e.g., pain intensity or physical limitations) do not reliably correlate with pathology. Reported pain symptoms and functional impairment correlate poorly, especially when the pain severity reported is at or above a midpoint of intensity. Von Korff, Ormel, Keefe, and Dworkin (1992) in a study reported that participants' pain intensity and relative severity of their physical limitations were not correlated. Some participants reported being unable to function, while others with similar pain ratings reported either minimal or no functional limitation. In other studies, participants' pain severity was not proportional to emotional distress, functional limitation or pathology (Reis et al., 1999). Also, pathology (e.g., sciatica, disc degeneration) was poorly correlated with pain intensity and functional limitations (Waddell, Main, Morris, Di Paola, & Gray, 1984).

A dependency of self-reported symptoms, the absence of objective radiological or neurological signs, and an incongruent and inconsistent relationship between people's self-reported pain and their severity of functional impairment adds to the difficulties associated with understanding people's experience and response to low back pain. Nevertheless, people do experience pain and it disrupts their lives. However, the confusing lack of uniformity of the low back pain condition (i.e., inconsistent relationship between pain symptoms and function from person to person) compromises others'

perception of their experience and response. These factors combined with the distress of people with low back pain also contribute to a default to psychosomatic explanations for its aetiology, which both alienates and further distresses those with low back pain (Borkan, Reis, Hermoni, & Biderman, 1995; May, Rose, & Johnstone, 2000; Miller, Pinnington, & Stanley, 1999; Tarasuk & Eakin, 1994). Although we continue to lack explanatory models and research that investigates the underlying process of adjustment and response to low back pain, we have a wealth of studies that identify the relationships between psychosocial factors and low back pain. The majority of research focusing on psychosocial factors related to low back pain is medically oriented, and is not based in the domain of psychology.

Psychological Correlates of Low Back Pain

Back pain research is continually subject to critique, and the common cautionary advice is that the extensive literature on the relationship of psychosocial variables and low back pain needs to be viewed conditionally and not accepted as predictive (Borkan et al., 2002; Borkan & Cherkin, 1996; Borkan, Koes, Reis, & Cherkin, 1998). Most of the problems stem from lack of specificity, which limits generalizability from one study to another or one population to another. The symptomatic nature of low back pain means that the ill-defined term is liberally applied to an array of physical signs and symptoms associated with the lower back. The same circumstances exist with the capricious use of psychosocial factors that can span socio-economic status, personality traits, psychological distress, cognitive coping styles, pain behaviours, job interpersonal relationships and job content-demand characteristics. However, despite these limitations, the literature provides

an overview of the psychosocial factors that are important features of the onset and outcome of having low back pain.

Psychological factors such as depression, work-related distress, emotional and behavioural coping strategies, and erroneous beliefs about the relationship between pain and physical activity have been shown to be associated with low back pain (Gatchel, Polatin, Mayer, & Garcey, 1994; Klapow et al., 1995; Pincus, Burton, Vogel, & Field, 2002; Talo, Puukka, Rytokoski, Ronnemaa, & Kallio, 1994; Waddell et al., 1984). Studies have explored the relationships between personality traits, anxiety, substance abuse, cigarette smoking, and maladaptive cognitive and behavioural patterns, including somatic preoccupation, and low back pain, particularly with chronic low back pain (Burton, Tillotson, Main, & Hollis, 1995; Cairns, Foster, Wright, & Pennington, 2003; Waxman, Tennant, & Helliwell, 2000). These studies constitute the basis of the current understanding of the psychosocial dimensions of low back pain, namely, psychological distress, somatization, personality, and cognitive variables, and how people respond and adjust to this condition (Pincus et al., 2002). Here, psychological factors are discussed under two headings of convenience: psychological distress, which includes psychosocial issues involving work and the work environment, and coping strategies.

Psychological Distress. Because numerous psychometric measures are employed to examine emotional distress and negative affect, the broad term psychological distress is generally used to encompass mood symptoms, depression, and negative affect. Psychological distress is reportedly present in 18 to 33 percent of patients diagnosed with low back pain (Bigos et al., 1991; Coste et al., 1992; Frymoyer, 1992; Gatchel, 1996).

Sleep disturbance, anhedonia, somatization, feelings of despair, and other depressive symptoms are considered concomitant with low back pain (Pincus et al., 2002). Psychologically distressed individuals are more likely to be predisposed to functional limitation, prolonged pain and chronic back pain than if they only have physical factors such as intense pain and other neurological evidence (Cairns et al., 2003; Croft et al., 1996; Kopec, Sayre, & Esbaile, 2004; Viikari-Juntura et al., 1991). Psychological distress (specifically depression, and negative appraisal of self-esteem) has also been found to be predictive of the initial onset of low back pain (Reis et al., 1999).

In new episodes of acute low back pain, depression predicts pain at two months from onset (Gatchel, Polatin, & Kinney, 1995; Philip & Grant, 1991; Polatin, Kinney, Gatchel, Lillo, & Mayer, 1993). Psychological distress (i.e., depression and somatization) has been found to predict outcome differences in acute low back pain populations, particularly the transition from acute to chronic low back pain (Gatchel, 1996; Gatchel, Polatin, & Kinney, 1995; Gatchel, Polatin, & Mayer, 1995; Sullivan, Reesor, & Mikal, 1992). For example, Epping-Jordon et al. (1998) found that in a cohort of 78 men pain intensity, disability, and depressive symptoms were the factors that predicted transition from acute to chronic status. Other studies also show that depression is predictive of chronic back pain (Mercardo, Carroll, Cassidy, & Cote, 2000). Sullivan et al. (1992) found that major depression was three to four times higher in patients with chronic low back pain compared to the general population. Depression and self-reported poor general health are also associated with low back pain in general population samples (Power, Frank, Hertzman, Schierhout, & Li, 2001).

The lifetime risk of low back pain is increased if psychological distress is experienced in early adulthood (Croft et al., 1996; Mannion, Dolan, & Adams, 1996). Other prospective studies indicate that the presence of psychological distress almost doubles the risk of developing serious low back pain (Currie & Wang, 2004). However, there is an ongoing debate concerning the temporal relationship between the onset of low back pain and the presentation of psychological distress especially in relation to depression. Some studies show depression increases the risk and influences the course of low back pain, while equally valid research provides evidence that depression is a consequence of low back pain, especially chronic low back pain (Pincus et al., 2002; Vingard et al., 2000). Both are valid. Depression is a risk factor that predisposes individuals to low back pain and persistent pain symptoms, and the trauma of persistent pain and the associated social and work problems contributes to the onset of depression.

The high costs of work-related low back pain such as worker absenteeism, compensation, and high medical costs have made low back pain a major concern for industry, and has resulted in occupational settings being a favourite site for low back pain research. In addition to individual psychological factors, specific work-related psychological and social factors are associated with the risk, course, and outcome of low back pain in the work environment (Bigos et al., 1991; Bongers, deWinter, Kompier, & Hildebrandt, 1993; Davis & Heaney, 2000; Johansson, 1995; Kerr et al., 2001; Linton & Warg, 1993; Stevenson, Weber, Smith, Dumas, & Albert, 2001). Work-related social support, job demand, stress, decision-making, and job security are all associated with the onset, reporting, duration and recurrence of back pain, absenteeism, and disability (Rossignol et al., 1992; Vingard et al., 2000).

The difficulty that exists for researchers, employers and employees alike is that despite extensive research, the evidence for these relationships is inconsistent. For example, worker dissatisfaction is associated with the reporting of low back pain, but is not reliably correlated with return to work or disability (Fishbain, Culter, Rosomoff, Khalil, & Steele-Rosomoff, 1997; Williams et al., 1998). Other measures of job satisfaction have been shown to have a role in the recovery trajectory of work-related low back pain (Burton, Tillotson, Symonds, Burke, & Mathewson, 1996; Williams et al., 1998). Although the onset of low back pain is often associated with mechanical stress factors (i.e., physical demands of the job), the duration of the back pain is more likely to be associated with psychosocial factors such as job stress and perceived difficulties at work (Hoogendoorn et al., 2000; Schultz et al., 2002). Bongers et al. (1993) reviewed 44 cross-sectional and 15 longitudinal studies to conclude that psychosocial factors associated with the work environment increased the risk of low back pain, but individual psychological factors such as depression and stress symptoms modified the relationship between back pain disorders and work outcomes.

Consequently, much is known about low back pain, but very little is known about the process of adaptation to low back pain. The conclusion that can be most reliably drawn from current research is that the distress expressed in personal accounts can be confirmed and identified in the discreet reliable measures of psychological constructs such as depression or depressive symptoms, negative affect, and anxiety. The relationships between poor functioning, disability, the likelihood of a chronic or persistent pain outcome, and poor scores on psychosocial measures, are unquestionable.

Coping Strategies. In the desire to improve the effectiveness of treatment of low back pain, coping strategies have been a strong interest of treatment and rehabilitation settings. People with low back pain employ the spectrum of their available cognitive, emotional, and behavioural coping strategies when dealing with illness. The coping strategies an individual employs have a significant role in how low back pain is construed as well as its outcome. For example, the type of coping strategies and the presence or absence of neurological signs (i.e., impaired leg raising, or leg pain) predict 69 percent of variance in disability measurement scores after one year of the onset of low back pain (Shaw, Feuerstein, Haufler, Berkowitz, & Lopez, 2001). Similarly, low problem-solving orientation, avoidance, and impulsivity are interactively associated with the level of self-reported function (Symonds, Burton, Tillotson, & Main, 1996).

Cognitive strategies and individuals' cognitive appraisals of their pain have garnered the interest of researchers and clinicians. As in the work setting, where psychosocial factors involve cognitive evaluations of the work and social characteristics of the job and environment (e.g., job satisfaction, co-worker and supervisor support), cognitive strategies, the interpretation of one's pain, and the meaning of that pain in one's context are related to the course and outcome of low back pain. Specifically, negative beliefs about possible recovery, interpretation of pain sensations, and fears about re-injury are associated with the outcome of low back pain. For example, cognitive strategies such as catastrophic thinking and praying have been shown to predict self-reported disability in low back pain (Hadjistavropoulos & Craig, 1994). Catastrophizing is generally described as an "exaggerated orientation towards painful stimuli and pain experiences" (Pincus et al., 2002). Burton et al. (1995) suggest that these cognitive patterns were better predictors

of outcome in a clinical setting then clinical signs determined by physical and neurological testing.

Patterns of negative beliefs about the consequences of low back pain, ability to cope with pain, fears of pain or re-injury, and related-pain avoidance behaviours that result in an individual limiting physical movement and activities have been identified with poor function and unfavourable outcome (Asghari & Nicholas, 2001; Lackner & Carosella, 1999; Vlaeyen & Linton, 2000). Pain-related fear can influence the likely transition from acute to chronic back pain (Asghari & Nicholas, 2001). Personal beliefs, including the ability to perform physical tasks, are unrelated to reported pain intensity (Jensen & Karoly, 1991; Jensen, Turner, Romano, & Lawler, 1994). People with the most pain are not necessarily those who studiously avoid experiencing pain or are unduly cautious for fear of re-injury.

Negative pain-related beliefs are associated with a behavioural hyper-vigilance characterised by a person restricting his or her physical and social activities and engaging in behaviours such as self-protective movements, complaining about pain, resting, and taking analgesics (Jackson, 1992; Keen et al., 1999; Tarasuk & Eakin, 1994). Also, this hyper-vigilance is conveyed in narrative accounts. In this quote from a worker, the perception of increased vulnerability to injury is unequivocal.

> *"I used to be strong and could do a lot. I don't push myself anymore. I know that I could hurt myself and I don't like to be laid up."* (Tarasuk & Eakin, 1994, p. 59).

Pain-related fear is associated with escape-avoidance behaviours that result in reduced everyday functioning (Fritz, George, & Delitto, 2001). A proposed fear-avoidance model of exaggerated pain perceptions suggests there is a continuum of

responses to low back pain, from confrontation to avoidance of pain (Crombez, Vlaeyen, Heuts, & Lysens, 1999; Vlaeyen, Kole-Snijder, Boeren, & Eek, 1995; Waddell, Newton, Henderson, Somerville, & Main, 1993). In this model, confrontational responses to low back pain are considered more adaptive since pain is not perceived as a barrier to resuming activities. There is less disruption of everyday activities and less disability. Avoidance of pain and activity perceived to be likely to cause pain or further injury is viewed as a less adaptive response since inactivity leads to delayed recovery. It can also cause secondary health-related problems and loss of functional abilities, often resulting in long-term disability (Crombez et al., 1999). The reduction in physical activity is associated with physical deconditioning, reduced mobility, loss of strength, and weight gain. It is suggested that the pain-related fear may be more disabling than the pain itself (Fritz et al., 2001; Waddell et al., 1993).

In the majority of the low back pain research whose design is motivated by the common and often pressing need of medical research to identify cause, prevent or treat, the rich contextual experiences of low back pain moves to the background or disappears. Despite wide-ranging and numerous research studies on low back pain, there is a paucity of research examining personal accounts of low back pain. There is no explanation for this omission, other than perhaps the banal commonality of this condition. The few studies that specifically investigate the experience of low back pain focus exclusively on the ten percent of individuals with chronic low back pain (Johansson et al., 1996; May et al., 2000). Additionally, among these few studies, several focus not on the experience of low back pain, but instead explore patients' experience of a physician and patient relationship (Borkan et al., 1995). Research involving clinical presentation, diagnoses,

classification systems, pain ratings, and measures of psychological factors and functional impairment so comprehensively identified in the empirically based research tend to obscure the personal experience of low back pain. It is people's personal narratives of low back pain that reveal the inextricable relationship of the mind and body in the experience of painful physical sensations and the ensuing psychological distress that exists in the context of the sufferer's social reality.

Personal Accounts of Low Back Pain

Most people's stories of low back pain convey personal anguish that is associated with a lack of a relationship between their pain, loss of function, and any objective physical evidence that might explain their pain and disability. People's low back pain engenders an array of cognitive and emotional states, such as fear, anxiety, and depression. Physically and psychologically, low back pain threatens the integrity of a person.

Some say that we can only know about people's pain through their behavioural and verbal expressions of their pain and although few, these personal accounts provide insights into experiences of low back pain. Borkan, Reis, Hermoni and Biderman (1995) observed that participants in their study articulated "... a rich and varied descriptive world of pain sensations and awareness" (p. 980). However, even in a study that is seeking the personal accounts of people with low back pain, we see the subliminal biomedical enculturation of much low back pain research. In the Borkan article, the underlying biomedical perspective objectified the study participants. An illustration is the choice of language that refers to participants in the study as "subjects" which implies they are

objects to be "studied". This point is made to highlight that the conceptualisation that influences our understanding of low back pain research is not necessarily overt or conscious, but it does distance the researchers from those who experience low back pain.

Borkan et al. (1995) directed awareness to the layering of meaning within the descriptors people use to describe their low back pain, and that these descriptive words have a hierarchy of perceived functional limitations, severity of pain, and relative need for treatment. Words like "ache, tiredness", causing "discomfort" or "stiffness" or "nagging like a toothache" expressed a low level of pain. These words implied that while an individual's everyday physical activities are not limited, there was a need for him or her to undertake activities carefully. A person describing his or her pain in this way has a slightly elevated awareness of one's back, yet the pain was tolerable and there was no need to seek medical attention (Borkan et al., 1995). Descriptive words such as "spasm," "hurting," "strong pain," "sharp," "stabbing," and "acute," pain described severe pain accompanied by some functional limitation, which necessitated a person reducing his or her everyday physical activities. In their study, these descriptions were associated with a perceived need to seek and utilize lay and/or medical remedies (e.g., prescription and non-prescription medication). The most severe, graphic, and emotionally laden descriptors of pain were words such as "excruciating", and "unbearable." These descriptors communicated severe pain accompanied by incapacitation, and emotional distress, and the necessity for medical intervention.

People's accounts of low back pain express a core need to describe, to understand, and to explain their back pain (Chew & May, 1997; May et al., 2000). There appears to be a need to defend their experience. Their defensiveness is about their pain being seen by

others as legitimate (Borkan et al., 1995). They especially want to have others understand and acknowledge their suffering and not refute their personal experience of pain, injury, and suffering (Osborn & Smith, 1998). Although pain is an invisible, private experience, objective evidence of the pain is required if it is to be seen as a reality by others. Kugelmann (1999) writes, "Pain must be brought forth as evidence" (p. 1669).

Non-specific diagnoses heighten the propensity of patients to offer an explanation, but self-generated explanations offer little comfort. Explanations focus on non-culpable causes that attribute the low back pain to an external cause (May et al., 2000). The implication is that an external cause will make the condition more permissible and acceptable to other people (Borkan et al., 1995; May et al., 2000). People with identifiable causes for their pain are seen as having a bona fide illness (Rhodes et al., 1999). They cannot be held responsible for their condition and have the right to occupy a sick role and receive the benefits bestowed upon the sick (Kirmayer & Young, 1998; Stein, 1986). Biomedical descriptions in particular provide legitimacy to an individuals' low back pain (Williams, 1996). Therefore, the explanations generated for low back pain usually propose biomechanical, biological, or environmental (e.g., an accident or injury) causes. People will blame physical overuse and stress of the body due to working, or aging. Few people acknowledge a somatic link, such as increased stress causes their low back pain. Unfortunately, this bias towards physical explanations negates the actual experiences of low back pain, which are infused with emotional distress, suffering, and a compromised sense of self.

It is not that people disabled by their low back pain question the veracity of the pain they are experiencing. Instead, it is the doubt inferred by others that causes them

distress. Patients talk of the "stigma" of low back pain and the need to justify their pain as real (Turk & Okifuji, 1999). Even after repeated visits to medical services, most patients will continue to seek diagnostic tests to find an organic cause to have their suffering validated, as seen in this excerpt from a study participant in McPhillips-Tangum et al. (1998, p. 293).

> "*I don't feel satisfied with the care I've received because I still don't know if it is something I did, if it is a pinched nerve or if its something that I'm going to have to live with the rest of my life. I mean there are a lot of questions that I never get answers for. I don't think the doctors really even know.*"

In this quote, there is an expression of anxiety mixed with frustration. Similar to the case scenario at the beginning of the chapter, the person is searching for an explanation. She or he needs a specific diagnosis and is concerned that the existence of his/her pain means there is something wrong anatomically or neurologically. Physicians and lay persons alike erroneously assume pathology is necessary to cause pain (Chew & May, 1997). This belief is reinforced when an individual seeks healthcare. A physician's first procedure is a physical examination and prescribing tests to ascertain underlying organic cause. Therefore, it is not surprising that patients identify in their narrative accounts a desire for external validation from their physician and they express a loss of trust and a sense of hopelessness and disillusionment when doctors fail to meet their expectations (Johansson et al., 1996; Osborn & Smith, 1998). Research reports that women patients with low back pain felt that their self-esteem was undermined by encounters with their doctors. They felt their doctors ignored, disregarded, and rejected them (Jackson, 1992).

The implication of personal fault or weakness on the part of the individual is dispelled by a diagnosis of underlying pathology (McPhillips-Tangum et al., 1998). In the following quote, there is relief that any doubt in the minds of other people about the genuineness of their pain is settled by positive test results.

> *" I kind of felt relieved. I felt like, well, here's proof. It is not me going crazy or complaining. This is proof. It's black and white and anyone can see it."*
>
> Study participant, (Borkan et al., 1995)

The dilemma of the legitimacy of low back pain is accompanied by an ambivalence about how to present one's self to others, such as family members or co-workers. One option is to be in pain, but to appear healthy. This means complaints of pain are likely to be doubted, or worse, the individual may be considered neurotic, a hypochondriac, or when he or she is unable to do ordinary things or to work, a malingerer (Kirmayer & Young, 1998). The other option is to assume an appearance of being ill and disabled. Some people speak of amplifying symptoms, but while they may be believed, they are subjected to pity, which can diminish them (May et al., 2000).

These perceived options, as mentioned above, are seen in two common patterns of response to low back pain (Borkan et al., 1995). Low back pain is not an adjunctive experience to living. It becomes integral to how one construes living. One pattern of response can be characterised as "living with the pain." These people avoid taking on a sick role. They attempt to continue with their daily routines, irrespective of the severity of their low back pain. They stoically refuse to permit their pain to redefine their perception of themselves and their lives. Often these people ignore their pain, and they do not seek therapy (Philip & Grant, 1991; Wahlgren et al., 1997).

The contrasting pattern of response is when low back pain limits people's ability to continue with their usual activities. Their pain controls their lives. These people carefully "live their lives around their pain"(Borkan et al., 1995). Pain becomes a way of being in the world. Somatic preoccupations, pain-related fears, and perceived pain intensity influence choice and participation in activities. These factors also prolong their pain and may lead to further disability. Low back pain for this group of people becomes part of who they are, determines what they do, and how they view themselves.

It is a paradox that although low back pain is reportedly a self-limiting acute disorder, lasting less than three months, many people talk about their low back pain as if it is permanent (Borkan et al., 1995; Osborn & Smith, 1998; Tarasuk & Eakin, 1994). It is often viewed as a "life sentence" (Tarasuk & Eakin, 1994). While it is true that low back pain has a high incidence of recurring or remitting only to a low non-problematic level of pain, this does not fully account for the fears expressed about low back pain, especially their fears of physical vulnerability and re-injury (May et al., 2000; Osborn & Smith, 1998). It has been suggested that given the distinctive responses to low back pain, it is a "special case" of sick role behaviour (Gillette, 1996). People with low back pain see their pain as intractable, and adopt the social role of victim. Chew & May (1997) observe the chronic low back patients in their study had a uniformly low expectation that medical intervention would alleviate their symptoms and permit a return to normal life. There is a tone of despondency when talking about people with low back pain that conveys they are caught in a cycle of disillusionment and despair (Borkan et al., 1995; Klapow et al., 1995; Klapow et al., 1993).

Much of the distress, described by individuals with low back pain, is associated with an inability to do everyday activities. The effect of low back pain on functioning is a salient feature of most personal accounts. In their struggle to reconcile with their experience of low back pain in their lives, people compare their current self with the former pain-free and active self. The discrepancy between their pre-back pain self-identity and current abilities to carry out activities related to this identity makes some people feel threatened, uncomfortable, and despondent. In the narrative accounts, "doing" has a role as a visible representation of the self. This inability to function as before and be able to do those things that were representative of the self seriously undermines self-esteem (Osborn & Smith, 1998; Tarasuk & Eakin, 1994). For example, in Osborn and Smith's (1998) analysis of nine women's experience of low back pain, the loss of function is salient in relationship to self-identity. These women expressed their loss of self-identity in descriptions of activities and the loss of their abilities to successfully do them. An incongruence of self and activities was associated with feelings of worthlessness, and depression (Osborn & Smith, 1998).

People with low back pain also compare themselves to other people who have more severe disabilities and to people without disabilities (Johansson, Hamberg, Westman, & Lindgren, 1999). These comparisons of their current abilities with the abilities and circumstances of others more disabled that are intended to bolster self-worth, in reality, only deepen their despair (Johansson et al., 1996; Johansson et al., 1999; Osborn & Smith, 1998).

Personal accounts of low back pain communicate compromise and loss, diminished self-respect and integrity, alienation, and altered patterns of activities to

accommodate the pain. These accounts highlight behavioural patterns undertaken to adapt. At the core of personal accounts of low back pain is the distress and pressure associated with presenting one's pain in a manner that makes one's condition acceptable to one's self and others. People with low back pain struggle with responses of inferred culpability, accusations of malingering and demands for verification of their suffering. Sufferers, especially those with chronic low back pain, feel stigmatised by a perception that low back pain is questionable as a "legitimate" illness (Rhodes et al., 1999).

Low Back Pain: A Functional Disorder

There are "sick people" that evoke and merit compassion, and there are "trolls", a group of patients who may or may not have a bona fide illness, who are held responsible for the control of their disease. These "trolls" are seen as being resistant to recovery, which would be possible if they would "only try harder" (Stein, 1986). Unfortunately, people with low back pain often falls into this latter group. The diagnostic process, classification and the issues of validation and legitimisation of low back pain align healthcare providers and people with low back pain in a relationship marred by frustration, unmet needs, and disillusionment. In part, it is because we are currently unable to explain and understand how people translate their perceptions of their low back pain into the adaptive processes of their everyday lives.

The psychometric measures that have previously been used must be supplemented with strategies that will capture the individual experiences to adequately investigate differences in adaptation to low back pain. This would require substantive changes to how low back pain is researched. It would start with bringing closer together the

biomedical perspective of low back pain as a musculoskeletal disorder that is defined, classified, and diagnosed, with the alternative perspective of low back pain as an experience characterised by contradiction, suffering, and a loss of self that occurs when important identity-related everyday activities are disrupted.

Current research, though for the most part appropriate and undertaken with the intention of being rigorous, has produced ambiguities and contradictions, since the initial objectives were to explain back pain and its related functional disabilities by the presence or absence of demonstrable pathology. Low back pain is not a life threatening disorder, yet it engenders much suffering and distress. The pain and the loss of function that co-exists with that pain undermine people's sense of self and place in their world. Low back pain is a functional disturbance. It inevitably disrupts the ability to carry out day-to-day activities. Viewed as a functional disturbance, low back pain becomes, as the Forum for Primary Care Research of Low Back Pain suggests, a recurrent mostly manageable syndrome rather than a disorder that will be treated with the objective of it being cured (Borkan et al., 2002). The conceptualisation of low back pain as a functional disorder is more congruent with the physical, psychological, and social experience that manifests in a loss of the typical everyday flow of living that is grounded in those activities that depend on the body.

The functional disturbance of low back pain as both a consequence of and a contributor to the pervasive distress associated with low back pain needs to be examined. The personal lens of the response to low back pain is particularly pertinent to the question of why for some people low back pain is a salient factor that shapes their life and their response, while for others it is a painful, disruptive, yet transitory experience. Seeking an

explanation of this contradictory presentation and its unpredictability from person to person is the key question of any psychological inquiry into low back pain.

Chapter 4: The Present Study

Omodei and Wearing (1990) recommended that personal projects analysis be adopted to research "how persons experience their lives as a whole" (p. 768). Since personal projects methodology studies people's lives in such a comprehensive manner, it was ideal to examine the process by which people negotiate illness in the context of their everyday lives. A comprehensive approach was important because illness is not an adjunctive experience to day-to-day living. Illness becomes an integral part of living. It disrupts everyday activities, and often the process of recovery requires the assumption of a new set of behaviours associated with being "sick". An assumption of the sick role and/or that of a patient means relinquishing many current everyday activities, reducing activity level, and relying on others to meet one's self-care and instrumental needs. Illness disrupts the sustainability, manageability, and progress of everyday personal projects. It may compromise the most "trivial of pursuits" as well as the "magnificent obsessions" without prejudice to their importance to an individual (Little, 1989). In doing so, illness challenges personal values and meaningful projects that are integral to sustain and continue to develop the self. A loss of the ability to do everyday activities is a loss of both the self and one's place in the world (Kugelmann, 1999). This process significantly undermines psychological well-being and is associated with psychological distress.

From a personal projects perspective, it is as if an individual's personal project system shifts on its axis in the presence of illness. Not only are some projects difficult to engage in because of pain, fatigue, and physical limitations, but also as mentioned, new

projects related to the illness and the process of recovery will become part of the current project system. For example, a current unpublished study by Dr. A. Peterman of North-Western University considers changes in personal projects in relation to coping with cancer. This study focuses on the new concerns that must be addressed and the attention of shift to these new concerns that displaces former concerns and goals.

In the lives of people dealing with an illness, on-going strivings and personal goals are reappraised and either sustained or changed. There can be new external demands and opportunities. Sometimes a new sense of purpose and self are found in the struggle with illness (Mattingly, 1998). However, the process of making changes and assuming new projects involves an underlying process of negotiating and adapting in the context of the existing personal project system, its content and structure and the dispositional characteristics of the individual as they engage in their personal projects. The premise of the current study was that by examining that process we might achieve further insight into how individuals adjust to an illness on the elemental level of their everyday lives.

Revisiting the earlier case-scenario of the young women we might ask: What if Amy and Jo were to develop low back pain? This is certainly plausible because young adulthood is the peak age of onset for low back pain. Based on existing research we can list the potential psychological and social factors that could be related to the course and outcome of their low back pain. We could have predicted which of them was more likely to develop low back pain, and who is more at risk of having their symptoms persist and become chronic. We can describe the coping strategies they might use, and the relationship between their choice of coping strategies and the outcome of their low back pain. Anecdotally, we might be able to hypothesize about the experience they may have

had dealing with healthcare professions, their families and peers. However, a challenge for the researcher in understanding the personal salience of the experience of low back pain is learning how people manage that experience in the context of their ordinary lives. This study used people's choices of personal projects, and their commitment to, participation in, and appraisal of those personal projects to explore the processes of adaptation. The study began by asking:

> *What can we learn about the processes of adaptation to low back pain in the naturalistic context of everyday life using personal projects analysis?*

The challenge was to step back from existing established paradigms to consider conceptualising research of low back pain from an alternative perspective, especially when there existed well-established discipline-based models for research, as well as a strong presiding paradigm that influenced how the condition is construed. Health psychology research has favoured cognitive and/or social models to understand how people make sense of health, illness, and disability, and how people engage in health-related behaviours. This study using personal projects analysis to study people's responses to low back pain represented a departure from the established approaches. It required conceptualising low back pain as a functional disturbance. Attention was shifted from low back pain as a biomedical disorder to the symptoms of low back pain that characterise the experience for an individual. In particular, this study focused on the functional dimension of low back pain and the process of adjustment seen in the ability to engage in one's goal-directed activities.

This perspective acknowledges that an understanding of low back pain requires an appreciation that pain is a private, personally salient experience interpreted in the context

of a person's life. The use of personal projects analysis meant that instead of beginning with pre-existing psychometric measures of psychological constructs to measure the psychological variables associated with low back pain, we start within the context of people's lives using their personal projects as the unit of assessment. Through their choice of personal projects, people actively chart their lives. Therefore, the person's personal projects were the dynamic, flexible units that assessed the individual in his or her day-to-day negotiation of living, and his or her dispositional characteristics associated with adaptation to his or her low back pain. The relationships between personal project properties and appraisals of the project dimensions were then used to explain or predict variability and differences observed in people' functional and pain responses to their low back pain.

Purpose of the Study

The purpose of this study was to use personal projects analysis to examine how people's patterns of personal projects and perceptions of their personal projects described the adaptive processes related to negotiating everyday life with low back pain. The study examined the relationships between personal projects properties (project content and structure) and individuals' dispositions assessed by their appraisals of their projects, and selected measures of low back pain (i.e., functional status, pain severity, general health and psychological well-being).

Questions asked in the study about individuals with low back pain were:

- Do their appraisals of their personal projects account for differences in participants' functional status and physical and psychological well-being, including pain severity?
- Are personal projects of different content areas appraised the same?
- How are projects that are self-focused and interpersonal related to functional status and well-being?
- Is there a relationship between the characteristics of personal project systems of individuals with low back pain viewed as "functional", and their function and health status?
    - Are personal competency, self-concordance, and social visibility positively associated with higher scores on measures of functioning and well-being, and negatively associated with measures of pain-related fear and pain severity?
    - Are perceived stressfulness and pain salience negatively associated with measures of functioning and well-being and positively associated with measures of pain-related fear and pain severity?

Chapter 5: Methodology

To be effective in the use of personal projects analysis to investigate how people who have low back pain negotiate their illness, a strategy for subject recruitment and data collection and analysis was necessary. This chapter outlines the subject selection and recruitment process, including a summary of decisions made to alter the original subject population and recruitment issues. Also detailed descriptions of the multiple measures and procedures employed are provided.

The sites selected to recruit the target population, people with low back pain, were healthcare settings in Maine and New Hampshire. These sites were identified as recruitment sites because people who seek treatment are likely to report that their pain disrupts their everyday lives. Two institutional Review Boards for the Protections of Human Subjects (IRB) reviewed and approved the research proposal. These were the University of New England IRB, the affiliation site of the author, and the Maine Medical Center IRB for recruitment of subjects in sites affiliated with the Center.

A data collection trial was done to determine the best healthcare provider sites for recruiting subjects. Three initial sites (a Family Physician Group Practice, a Chiropractic Clinic, and a Physical Therapy Clinic) were evaluated. Thirty questionnaires were administered, ten at each site. After six weeks, the subject recruitment and practicality of data collection were discussed with clinicians and other personnel at all three sites. Completed questionnaires from all sites were compared to assess data quality and completeness. At the end of the questionnaire, the respondents were asked to comment on any sections or questions they found difficult to interpret. It was determined that the

Family Physician Practice with its large volume of diverse patients who are seen very quickly was unsuitable as a site. The physical therapy and chiropractic clinics had been satisfactory in their ability to recruit suitable subjects. It was decided to use these clinics and similar healthcare sites for data collection. These sites had a high incidence of musculoskeletal disorders in their patient population and therefore higher numbers of people with low back pain.

During the two and half years from June 2001 to December 2003, thirty-eight chiropractic, physical therapy, osteopathic and occupational health clinics in Southern Maine and New Hampshire were approached and asked to be data collection sites for the study. Twenty-eight sites agreed. Fourteen sites were physical therapy clinics, seven were chiropractic clinics and the remaining seven were either occupational health clinics or osteopathic clinics including one walk-in community outpatient for minor emergencies.

Many sites received in-service education and staff training on the study and data collection criteria. Frequent follow-up phone calls and personal visits to each site provided constant monitoring and aimed to facilitate data collection. For six months, one day a week was spent at the community outpatient clinic to recruit participants.

Recruitment of Participants

The healthcare providers were instructed to recruit participants, eighteen years or older, who sought treatment for current symptoms of low back pain. The pain needed to be consistent with a diagnosis of low back pain. This was identified as back pain located below the 12^{th} thoracic vertebrae, the standard anatomical definition for a diagnosis of low back pain (Van Tulder & Koes, 2002). An inclusion-exclusion visual reference sheet

that listed the criteria and included a diagram of the location of the low back pain was given to all healthcare providers. It was recommended that participants have a high school education and/or basic literacy in written language, although the readability level of the questionnaire was 8th grade, the standard for most national daily newspapers. A minimum education level was set because the personal project analysis measure required a moderate level of comprehension skills to be successful completed.

Healthcare providers excluded people with non-musculoskeletal low back pain such as people with neoplasty and/or a history of malignancies, inflammatory disorders (e.g., rheumatoid arthritis), primary infection, or low back pain secondary to pregnancy. They also excluded post-surgical patients who had had surgery in the past six weeks because their current pain would most likely be caused by their surgical procedure and most healthcare visits would be post-surgical follow-up, such as medication for pain relief or post-surgical rehabilitation therapy for reconditioning. Post-surgery, people are expecting that their current limitations will be resolved when they heal from the surgery.

Overall, 616 questionnaires were distributed to the 28 healthcare providers sites, and 146 useable completed questionnaires were returned. Three questionnaires were incomplete and these were omitted from the analyses. At the end of participant recruitment, the healthcare providers returned 152 questionnaires that they had not distributed. The other 318 questionnaires had been distributed to participants and not returned, or had been misplaced at sites. Although questionnaires were coded by site, it was impossible to track them and establish if they had been given to participants or lost. For example, one clinic moved location and misplaced or disposed of the questionnaires during the move. Other clinics failed to locate and return remaining questionnaires at the

end of the study, yet reported that they had not handed out all of the questionnaires. Potentially 464 questionnaires were distributed and 146 were returned giving a conservative estimate of a return rate of 31.5 percent, which for a postal return, is an acceptable response rate.

Table 5.1 lists the number of participants in the study from each type of data collection site. Almost 75 percent of the participants were recruited from physical therapy or chiropractic clinics. It is not possible to state whether utilization of physical therapy and chiropractic treatment in this study is representative as there is no national data available for the utilization of these therapies for low back pain.

Table 5.1

Number and Percentages of Participants Recruited by Clinical Discipline of Data Collection Sites (N=143)

Clinical Discipline of Site	Number of Participants Recruited	Percentage of Participants Recruited
Physical Therapy	72	50.3
Physician/Nurse	23	16.1
Chiropractic	48	33.6

The data collection for the study proved to be somewhat problematic. The number of participants recruited was below the target number of 250. Given that there were 28 recruitment sites, it had been expected that each site would be able to recruit at least ten subjects. This would have meant a potential sample of 280. Initially, only people with acute low back pain were recruited, but when less than ten participants were recruited in the first six months, the criterion was expanded to include all people with musculoskeletal low back pain, irrespective of duration.

It is not possible to attribute the low recruitment to a single factor that might have been remedied. The low rate was likely due to a number of factors. Chiropractic and physical therapy clinicians attributed the low recruitment to a lower than expected number of people with low back pain being referred for their services. Before referral to physical therapy or chiropractic services people must consult a primary care provider who acts as a "gatekeeper" to other healthcare services. The primary care provider often will prescribe pain relief and wait and see if the low back pain improves before making referrals (Van Tulder, Koes, Bouter, & Metsemakers, 1997; Von Korff & Saunders, 1996). Given low back pain often remits in one to two weeks, this gate-keeping process likely reduced and/or delayed referral to allied healthcare services.

Retrospectively, some clinicians reported that they had been reluctant to ask clients to complete further questionnaires, since they were already burdened by excessive paperwork such as clinic assessments, and medical insurance companies' documentation for reimbursement. A need to maintain positive client relationships for professionals in the current consumer driven environment appeared to impede the recruitment at some sites. Clinicians felt that clients would see filling in the questionnaire as a burden.

The environment of the community healthcare clinic was clearly a barrier to successful recruitment of subjects. Clinicians reported that in the busy community-based practice, it was difficult to remember to recruit subjects. Despite the current emphasis placed on evidence-based practice by professional organisations, many practicing clinicians felt that it was difficult for them to make research an integral component of their practice. The job stressors of these providers such as increased documentation, decreased reimbursement, and the overall fiscal constraints of healthcare, create a climate

that limits involvement in research, especially if the research project was perceived as external to the clinic's needs. It was as if the stressors of time and the demands the clinician personally felt, they projected onto their clients. The reluctance to recruit participants seemed to be an expression of clinician's own feelings of the many demands they were experiencing.

At a recent behavioural health and medicine conference, a study examining barriers to recruitments in primary care community settings cited insufficient consultation time, concern for patients, and perceived relevance of the research to the clinician's practice, as barriers to subject recruitment (Kerr, Richardson, Horn, & Plumridge, 2004). Presenters concluded that the barrier to recruitment occurred at the clinician level rather than the patient level, which concurred with my experience of working with clinicians in this study.

Characteristics of Study Participants

Epidemiological studies report that low back pain occurs in all age groups with a similar prevalence for men and women (Garofalo & Polatin, 1999). This study recruited more women than men (59 males and 84 females). The higher proportion of women to men is probably due to women's higher use of health services and that women are more likely to reporting symptoms (Bendelow, Carpenter, Vautier, & Williams, 2001). This sample was recruitment from healthcare settings. Previously, studies show that women report experiencing more physical symptoms and engage in more illness behaviours including seeking healthcare than men (Wijk & Kolk, 1997).

Table 5.2. *Demographic Characteristics of Study Participants (N=143)*

Variable	Number of Participants	Percentage
Age		
18-29	22	17.0
30-39	25	21.7
40-49	34	28.3
50-59	23	20.8
60 and above	13	11.1
Missing	26	
Gender		
Female	84	58.7
Male	59	41.3
Ethnicity		
Native American	2	1.4
Asian or Pacific Island	0	0
Black not Hispanic	0	0
Hispanic	2	1.4
White not Hispanic	138	96.9
Other	1	0.8
Missing	2	
Marital Status		
Never married	36	25.4
Married	88	62.0
Divorced	13	9.2
Separated	2	1.4
Widowed	3	2.1
Missing	1	
Household Composition		
Living with partner and children	50	35.2
Living with partner no children	43	30.3
Sole adult with children	3	2.1
Living alone	23	16.2
Living with other adults	22	15.5
Missing	2	
Educational Status		
Completed some grade school	1	0.7
Some high school	9	6.4
Graduated from High School	16	11.4
Some College*	36	25.7
Graduate College	45	32.1
Graduate Education	33	23.6
Missing	3	

*College = Studied at associate or baccalaureate level at a University or Community College.

Demographic data is provided in the Table 5.2 above. The participants ranged in age from 19 to 83 years. Consistent with low back pain peak prevalence (Borenstein, 1997; Skovron, 1992; Wing, 2001), 48.7 percent of the participants were between 40 and 60 years of age and the mean and median ages were 43 years (SD = 15.51). The majority of the participants (96.9%) reported they were, White, Non-Hispanic. This is representative of the population in States where they were recruited. In the 2000 census, 96.9 percent of Maine's population and 96 percent of New Hampshire's population described themselves as White Non-Hispanic (U.S. Government, 2000).

Sixty-two percent of the participants were married, and approximately 25 percent had never been married. The remainder of the participants were divorced or separated (10.6%), or widowed (2.1%). Participants living with partner and children was 36.5 percent, 31.7 percent was living with just a partner, and another 28 percent were living either alone or with other adults such as roommates.

Ninety three percent of the participants had a high school level of education or higher and approximately 56 percent had graduated from university. Only seven percent had not graduated from high school. Two of the data sites were physical therapy clinics on University campuses, which may explain the number of subjects with University education (see Table 5.2 above).

The largest group of the participants were in full-time employment (61.7%). Twelve percent were in part-time employment and 17.7 percent described their work status as "other" (see Table 5.3). These groups were mostly retired persons or students. When asked if they were on leave from work because of their low back pain, 17 percent of the subjects said yes. However, only five percent described their work status as

receiving disability or compensation. This is consistent with current recommended medical management for low back pain that advises people remain at work whenever possible, even if modified duties are required (Borkan et al., 2002; Wing, 2001).

Table 5.3

Work Status of Participants (N =141)

Work Status	Number of Participants	Percentage
Full-time permanent.	87	61.7
Part-time permanent	17	12.1
Temporary employment	5	3.5
Disability/compensation	7	5.0
Other (Retired/Home maker)	25	17.7

The percentages of participants using each of the identified treatments are reported in Table 5.4. Pain-relief medication use, chiropractic and physical therapy are common treatments for low back pain in primary care settings, but study participants also reported using multiple types of treatment concurrently. They reported combinations of physical therapy, chiropractic treatment, and complementary therapies. As expected, the most widely used treatment by participants (74%) was prescription and/or non-prescription medications. Participants receiving physical therapy was 52 percent and 41 percent were utilizing chiropractic treatments.

Table 5.4

Treatment Used by Participants

Treatments Used	Number of Participants*	Percentage
Medication (prescription and non prescription)	106	74.1
Physical Therapy	74	51.7
Chiropractic	59	41.3
Rest	91	63.6
Osteopathic-manipulation	17	11.9
Other (massage and complementary medicines)	49	34.3

*Participants used more than on treatment

Contrary to the current medical treatment guidelines for low back pain in primary care, 63 percent of the participants reported using rest as a treatment (Koes et al., 2001) and 34 percent were using an alternative or complementary treatment. These complementary therapies were in addition to medication, physical therapy or chiropractic treatment. The most frequently mentioned complementary therapies were massage, acupuncture, and the application of heat. A mixture of physical therapy, chiropractic, and complementary therapies is a pattern of treatment also seen in documented health care utilization by people with low back pain. A national representative survey with 2055 respondents reported on findings of people who had neck and back pain in the past twelve months (Wolsko, Eisenberg, Davis, Kessler, & Phillips, 2003). In this particular national survey, 37 percent had seen a conventional health care provider and 54 percent had used complementary therapies (complementary category included chiropractic treatment, massage, relaxation techniques and other treatments) (Wolsko et al., 2003).

Measures

All measures and additional questions were combined into a comprehensive questionnaire (Appendix II) with an attached information cover sheet (Appendix I). To further ensure that every effort was made to provide a readable, easily to complete questionnaire for a community-based sample, a health literacy consultant reviewed the questionnaire. The questionnaire was anonymous and complied with the standards of the United States Health Insurance Portability and Accountability Act of 1996 (HIPAA) guidelines. The measures used were: Personal Projects Analysis, SF-36 Health Survey, Center for Epidemiological Studies Depression Scale, Satisfaction with Life Scale and Scale of Kinesiophobia.

Demographic and Low Back Pain Characteristics. The purpose of initial section of the questionnaire was to obtain basic demographic information. The questions included age, gender, marital status educational level, and living arrangement. The section also asked specific questions about the participants' low back pain such as the frequency of low back pain episodes, duration as well as work and disability status and treatment use.

Personal Projects Analysis. The personal projects analysis section of the questionnaire was developed for the study based on the personal projects analysis methodology. Personal project analysis (PPA) is not a fixed instrument with set test items, however, in the appraisal procedure of PPA, there are a number of similar items that are used in studies. These items are not considered prescriptive and even if used phasing may differ in each situation. The procedural steps of the personal projects

analysis were implemented according to the steps outlined in Figure 2 and described below.

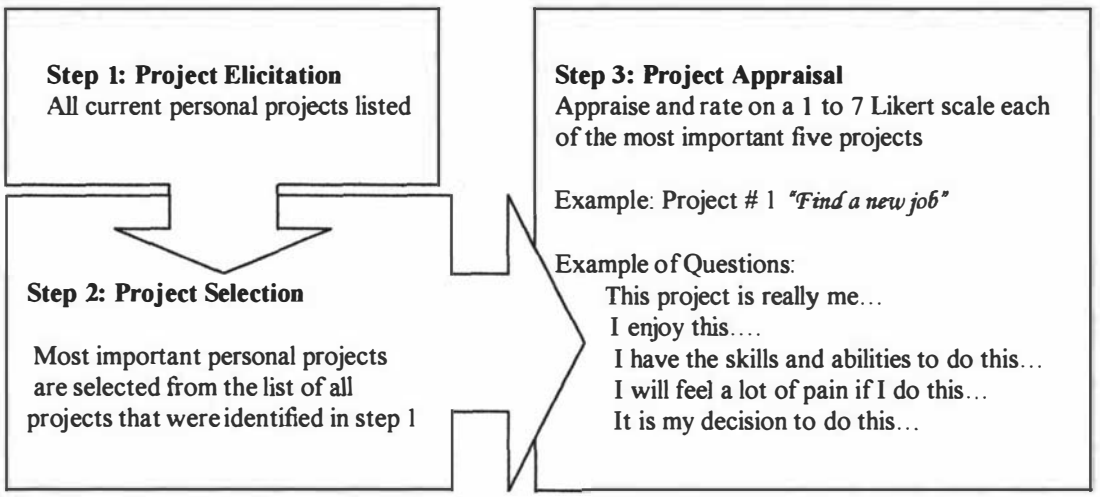


Figure 2. Personal projects analysis procedural steps of projects elicitation and appraisal

The PPA procedures involved elicitation of individuals' personal projects and the selection and appraisal of their five most important projects. In step one, study participants were told that personal projects were "*activities, tasks, and goals*" and it was explained that, "*everyone has a number of projects at any one time that they are thinking about, planning, and doing.*" The participants were given examples that highlighted the diverse nature of personal projects (See Questionnaire in Appendix II) and asked to generate a written list of their personal projects. They were instructed to "*Make a list of the projects that are part of your everyday life.*"

After the initial project elicitation in step two, the participants were asked to select from their total list the five projects that were the most important to them. Participants were asked to choose their most important projects because it was considered that

participants would be more invested in these projects and such projects would be more likely to be representative of the participants and their usual patterns of appraisal.

In the final step (Step 3, Figure 2), participants appraised and rated their five most important projects on 26 questions. These questions, referred to as *dimensions* in personal projects analysis. The questions used are provided in Table 5.5. Hereafter the term dimension is used when discussing the participants' appraisal ratings of their personal projects. Participants were given instructions that read: "On the next five pages, you are asked the same set of questions about each of your most important projects. There is one page for each of the projects. Please answer one page for each of your most important projects."

Participants rated each of their five most important projects on each dimensions using a zero to seven Likert scale (0, "strongly disagree" to 7, "strongly agree"). The dimensions were presented as first person statements (e.g., "I find this project difficult"). First person statements provided direct expression of the dimension aimed to improve participants understanding. This structure was different to the usual PPA format, which favours asking dimension appraisal in a question format (e.g., "How difficult do you find it to carry out this project?") Since the researcher was not present to administer the questionnaires, it was not possible to answer questions for participants that would clarify queries that they had about the meaning of the dimensions.

Twenty-six dimensions were used in this study. Some were developed for the study and others were modified PPA dimensions that had previously been used in other studies (McGregor & Little, 1998; Palys & Little, 1983; Pychyl & Little, 1998). The dimensions were specifically chosen to examine the constructs pertinent to the study

questions especially the premise of a functional projects system. Dimensions measured participants' dispositional characteristics towards their participation in their everyday goal-directed activities. These measured participants' self-efficacy, autonomy, and the stress they experienced in relation to engaging in their personal projects as well as their perception of the role of their pain in relation to their projects and the concordance between self and personal projects. In addition, sociability-social connectedness of participants was measured by appraisal of the visibility and involvement of other people in their personal projects.

The dimensions are listed in Table 5.5. Specific dimensions selected to measure self-concordance, the extent to which participants' choose and engage in projects congruent their values and perception of themselves, and experience pleasure and self-worth from participation and achievement of these projects were dimensions 1 to 6. Dimensions 7 to 11 measured autonomy, participants' overall belief and perception of control, choice, and independent initiation of their personal projects. The dimensions 13 to 15 measured stressfulness, which was participants' stress derived from their perceptions of the demands and challenges of their projects. This included an appraisal of the demands of a project in relation to personal resources. Dimensions 16-18 measured self-efficacy, participants' appraisal of their progress towards a successful completion of projects, and perceptions of their competency to achieve the project. Dimensions 20 to 23 measured social-connectedness of participants in assessment of the visibility of projects to others and the involvement, investment, and relative support of other people that participants reported. The last three dimensions, 24 to 26, measured pain salience, which

was participants' appraisal of the influence and experience of pain relative to their participation in their personal projects.

People are engaged in many goal-directed acts and have many personal projects. As previously mentioned, some are subordinate acts that are short-term and easily completed or abandoned. Often these are concrete, time-specific projects. Because projects are dynamic and changing, typically personal projects dimensions appraisals are not typically stable over time. Projects, dynamic flexible units, can be expected to reflect change. However, some studies have also shown that dimensions can demonstrate stability (Salmela-Aro & Nurmi, 1996). When project appraisals on dimensions are aggregated and entered into factor analysis, the interpretations of the factors loadings as disposition characteristics are showed to demonstrate a relatively high level of stability over time (Little, 2000a).

Table 5.5

Personal Projects Rating Dimensions

Dimension names	Dimensions as used in questionnaire
1. Self identity	This is "really me."
2. Future self	Doing this helps me become the person I want to be.
3. Enjoyment	I enjoy doing this.
4. Value congruency	This fits in with the values and/or beliefs that guide my life.
5. Self worth	This makes me feel good about myself.
6. Significance	This makes me feel important when I do it.
7. Control	I feel in control of this
8. Commitment	I am committed to this
9. Decision-self initiated	It is my decision to do this.
10. Time Adequacy	I have enough time to work on this.
11. Personal investment	I want to do this.
12. Stress	I find this is stressful.
13. Psychological risk.	If this fails it will have unpleasant consequences for me (e.g. feeling stupid, having my hopes disappointed)
14. Difficulty	I find this difficult.
15. Challenge	I find this project challenges me.
16. Progress	To date, I have been successful with this.
17.Competence	I have the abilities and skills to finish this.
18. Outcome	I will successfully finish this.
19 Importance to others	It is important to others that I successfully finish this.
20. Visibility	Other people know I am working on this.
21. Involvement of others	I choose to do this with other people (friends, family, workmates)
22. Social support.	Other people are helpful with this.
23. Hindrance of others	Other people make it difficult to do this.
24. Pain avoidance	I avoid doing this because it would cause back pain.
25. Pain intensity	I feel a lot of back pain if I do this?
26. Pain disruption	My back pain will prevent me from achieving this.

The final evaluation of personal projects was on inter-project conflict, which assessed negotiating the competing demands of one's projects. Participants rated the conflict they experienced between their projects on a matrix (see questionnaire, Appendix 1). They evaluated the extent to which they considered their important projects conflicted with or supported one another. Pairs of projects were rated on a 5-point scale (+2, "helps very much" to –2, "hinders very much"). This measure was not analysed because too many participants failed to complete this assessment and in other cases, the data were incomplete. In designing the study, this assessment was identified as the most complex task in the questionnaire and for that reason only a one-way matrix was included rather than a more difficult two-way matrix. For example, in the two-way matrix the assessment is of the potential conflict of project A with project B and the reverse relationship, project B with project A. These are not necessarily the same relationship. However, in this study, even the one-way matrix, despite an example and carefully worded instructions, was too difficult and the response to this item was unreliable. Consequently, the data was unsuitable for analysis.

Short-Form-36 Health Survey: Measure of Function. Function was measured by selected subscales of the self-administered SF-36 of the Medical Outcome Study Questionnaire (Ware, 2000; Ware, Snow, Kosinski, & Gandek, 1997). The SF-36 is a widely used public domain health outcome research measure that assesses physical, social, and emotional functioning, vitality, mental health, and perceived general health. It has previously been used with musculoskeletal patients and specifically with low back

pain (Beaton, Hogg-Johnson, & Bombardier, 1997; Gatchel, Polatin, Mayer, Robinson, & Dersh, 1998; Lurie, 2000).

Six of the eight SF-36 Health Survey subscales were included in the questionnaire. The physical and social function, and disruption of emotional and physical roles subscales measured functional status. The pain bodily subscale measured pain severity and the sixth subscale was used as the perceived general health measure. The mental health and vitality subscales were omitted since they did not directly pertain to function.

The SF-36 bodily pain, physical and social function, and disruption of emotional and physical roles subscales were modified so that the functional disruption measured by participants was attributed only to their low back pain. The term "general health or physical health" used in the standard SF-36 was replaced with "low back pain' in this questionnaire. For example, the SF-36 question was "The following items are about activities you might do during a typical day. Does your **health** limit you in these activities? If so, how much?" This question was changed to read: "The following items are about activities you might do during a typical day. How much does your **back pain** limit you in these activities?" The raw scores were transformed to a score value between 0-100 using the formula specified in the SF-36 manual. This transformation of scores orients all items so that higher scores are optimal and represent less pain, better health, and higher functional status (Ware et al., 1997).

The SF–36 has sound psychometric properties with respect to reliability and validity (McDowell & Newell, 1996). The six subscales used consistently report reliability statistics than exceed the recommended minimum standard of 0.70 test-retest

reliability and internal consistency (Ware, 2000). The SF-36 two-week test-retest correlations is reported to typically exceed 0.80 for perceptions of physical functioning and general health (McDowell & Newell, 1996). Studies have demonstrated that the SF-36 has high content and construct validity (McDowell & Newell, 1996; Ware et al., 1997). The reliability coefficients of the six subscales used in this study were 0.79 or higher. These alphas values are shown below in Table 5.6.

Table 5.6

Study Reliability Coefficient for SF-36 Subscales

SF-36 Subscale	Number of Participants	Number of Items	α Values
General Health	134	5	.79
Bodily Pain	141	2	.85
Physical Functioning	139	10	.93
Physical Role Functioning	141	4	.79
Emotional Role Functioning	142	3	.86
Social Functioning	142	2	.85

The SF-36 is rated as comparable with other generic health status measures and has some advantages as an outcome measure (Beaton, Bombardier, & Hogg-Johnson, 1996; Lurie, 2000). Lurie (2000) recommends the use of SF-36 in his comparative evaluation of five health status measures, because in musculoskeletal patients the sensitivity of the SF-36 was higher than the Nottingham Health Profile, the Sickness Impact Profile and the Duke University Health Profile. In patients receiving hip replacement, the SF-36 was more sensitive in detecting change in physical scores and in relatively well populations, the SF-36 detected minor levels of discomfort that are overlooked by the Nottingham Health Profile.

Satisfaction with Life Scale and the Center for Epidemiologic Studies Depression Scale): Measures of Well-being. Well-being is viewed as having cognitive and emotional components (Pavot & Diener, 1993; Schmuck & Sheldon, 2001). Since there are both cognitive and emotional components to people's evaluative response to their lives, two scales were selected to measure psychological well-being. These were the Satisfaction with Life Scale (SWLS) and the Center for Epidemiologic Studies Depression Scale (CES-D). Although life satisfaction and emotional components of well-being are moderately correlated, the individual satisfaction and emotional components have been shown to have different relationships with other variables and behave differently over time (Pavot & Diener, 1993). It is recommended to use complementary cognitive and emotional measures when evaluating psychological well-being (Pavot & Diener, 1993).

The SWLS was used as a cognitive assessment of how satisfied people are with their lives (Pavot & Diener, 1993). The SWL scale is a global rather than a specific judgement of life satisfaction (Diener, 1984; Pavot & Diener, 1993). This is an individual assessment based on how people evaluate their lives relative to a comparable standard that they have internalised as appropriate to themselves (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993). The five-item measure is scored on a one to seven Likert scale. The highest possible score indicates higher satisfaction with life. An advantage of the SWLS is the brevity of the scale. This brevity does not compromise the validity of this measure. Evidence of construct validity for the SWLS comes from groups such as prisoners, psychiatric patients, abused women and students in countries with conflict scoring low on the scale. The SWLS has also been found to change in the expected direction in response to major life events (e.g., elderly caregivers whose spouses

have been diagnosed with dementia) (Vitaliano & Young, 1991). The SWLS is considered to be a valid and reliable measure of a person's cognitive judgement of satisfaction with the quality of their life (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993). Diener et al. (1985) reported a coefficient alpha of 0.87. A two-month test-retest reported a reliability coefficient of 0.82. However, over longer periods test-retest stability decreases (Diener et al., 1985). In this study, the internal consistency reliability coefficient was 0.91.

The CES-D, which assesses depressive symptoms, was selected to represent the emotional component of well-being (Geisser, Roth, & Robinson, 1997). A measure of negative affect was selected from the possible measures because of the reported co-morbidity of depression with low back pain. The CES-D is a widely used 20 item self-report measure designed for screening depressive symptoms in the general adult population with an emphasis on detecting depressed mood (Radloff, 1977). The items ask participants to rate their actions and feelings of the past week on a 0 to 3 scale, with a total possible score range of 0 to 60. The higher scores indicate an increased severity of depressive symptoms and a score of 16 has predictive validity for a clinical criteria of depression (McDowell & Newell, 1996).

CES-D is viewed as a reliable screening tool for depression in community samples and it has been widely used as a self-report measure in populations with medical conditions including chronic pain (Geisser et al., 1997). Giesser, Roth, and Robinson (1997) in their comparative study of the Beck Depression Inventory and the CES-D with chronic pain patients concluded that CES-D was superior and was likely to produce less false positives due to greater specificity. It is regarded to be reliable in identifying

depressed patients in primary care clinics (Zich, Attkisson, & Greenfield, 1991), and has good predictive validity in identifying depression among patients with chronic pain (Turk & Okifuji, 1994). It is regarded as having reliability and validity across a wide variety of groups of people with differing conditions and ethnicity, and is a good choice for community-based studies such as the present one. In both general populations and those with psychiatric diagnoses, the CES-D has demonstrated predictive validity (specificity 53%-84% and sensitivity 86%-100%) (Weissman, Sholomskas, Pottenger, & et, 1977). Reliability in community samples is high. Internal consistency alpha coefficients range is between 0.80 and 0.90 (Devins & Orme, 1985; Knight, Williams, McGree, & Olaman, 1997; Radloff, 1977). The CES-D has been reported to have internal consistency alpha coefficients ranging from 0.63 to 0.93 across groups of healthy people and people with physical illness, with a test-retest reliability of 0.61 (Devins et al., 1988). Internal consistency in the current study was high (coefficient alpha of 0.93). In addition, Devins et al. (1988) reported that the CES-D was unaffected by differences in somatic health and illness groups, therefore it is unlikely to be biased by the somatic symptoms of low back pain.

Physical health is also recognised as a component of well-being (Schmuck & Sheldon, 2001). In this study perceived health was measured by the SF-36 subscale, discussed above.

The Tampa Scale of Kinesiophobia: Measure of Pain-related Fear. Underpinning pain-related fear is the belief that movement will increase the likelihood of re-injury and cause further pain. Since anticipation of pain and/or re-injury results in poor behavioural

performance and functional outcomes (Crombez et al., 1999; Waddell et al., 1993) pain-related fear was measured. The Tampa Scale of Kinesiophobia (TSK) was used (Kori, Miller, & Todd, 1990). This is a 17 item instrument developed to assess fearfulness of re-injury due to movement in patients with musculoskeletal disorders (Crombez et al., 1999).

The TSK items are scored on a one to four Likert scale, (1 "strongly agree" to 4 "strongly disagree") with the higher score indicating greater fear or avoidance of physical activity (Silver et al., 2002). The TSK has demonstrated internal consistency and reliability, with reported reliability coefficients between 0.76 and 0.77 (Silver et al., 2002; Vlaeyen et al., 1995). The internal consistency reliability coefficient of the current study was 0.79. The TSK total score is recommended as a valid overall measure of fear of re-injury and movement. The TSK scores were shown to predict self-reported disability better than pain catastrophizing, pain intensity, pain duration or negative affect (Crombez et al., 1999; Vlaeyen et al., 1995; Vlaeyen & Linton, 2000).

Procedure

Clinicians at the recruitment sites identified patients with low back pain symptoms that met the study criteria. These patients were told about the study and invited to participate. They were advised that the study involved completing an anonymous questionnaire and only aggregated data would be disseminated (see Appendix II). Assurance was also given to all patients that, whether they participated or not, their clinical care/treatment would not be affected. Participants who expressed an interest were given a one-page information cover sheet describing the purpose of the study, and a

questionnaire (Appendix I-II). Consent was implied by completion of the questionnaire, which took approximately 35 minutes. However, as participants completed it at home, they were able to complete it at their own pace, taking breaks if needed. Healthcare providers were asked on follow-up appointments to encourage participants, who they had recruited, to complete and mail the questionnaire. The interest and encouragement of the healthcare provider would increase the likelihood that the participants would follow through and return the questionnaire.

Each participant received a stamped addressed envelope in which he/she could mail the questionnaire. Alternatively, the sealed envelope could be handed to the receptionist at clinical site and it would be put in the outgoing mail. The envelope containing the questionnaires went directly to the principal investigator at the University of New England. The healthcare providers never saw completed questionnaires. A $10.00 reimbursement for completed questionnaires was offered to participants. This required them to complete a separate sheet providing their name, address and social security number. These were required so the business office of the University of New England could issue them a cheque for $10.00. This sheet was separated immediately from the questionnaire to maintain the anonymity. All completed questionnaires were stored at University of New England in a locked file cabinet.

Chapter 6: Results

The study results are in four sections. In the first section are participants' descriptive accounts of their experience of low back pain. Following the narrative descriptions, the second section consists of demographic characteristics, the characteristic of participants' low back pain (LBP), their functional status, and their health. This section also includes the results of bivariate analyses used to examine the relationships between these variables. Descriptive information about the participants is discussed in the context of related existing research.

The third section of the chapter focuses on the analysis of the personal projects and the dimension appraisals of projects. It outlines the number and types of personal projects mentioned by participants, and presents the results of factor analysis, from which scales were generated to represent the participants' dispositional characteristics in the pursuit of their goal-directed activities. The later part of this section deals with the relationships between participants' project dispositions and function, pain characteristics and health.

The fourth section of the results chapter considers the content of projects and presents analyses based exclusively on participants' intrapersonal and interpersonal projects, because losses of these highly personal projects are described in the narratives as causing intense distress. These projects are more aligned with self and values and it had been proposed that appraisal of self-concordant projects and function would be related. The procedures of earlier analyses were repeated to explore further the relationship of projects dispositions and function. This analysis considered whether the types of projects,

such as relational and self-projects, are appraised differently than other types of projects, and therefore have a different relationship to function and health.

Section 1: Participants' Accounts of Low Back Pain

The participants' descriptions of low back pain from their personal experience provided a rich contextual commentary for the personal projects analysis findings of this study. These accounts came from the opportunity provided at the end of the questionnaire that asked participants if they would like to write about their experience of low back pain. The questionnaire stated, *"Now we would like to give you a chance to tell us about your experience of back pain in your own words. If you could talk to the researchers what would you like them to know about low back pain?"*

The response to this request was itself revealing. Surprisingly, even after filling out a lengthy 17-page questionnaire, the vast majority (94%) of participants wrote about their experience of low back pain. This may be an indication of the strong need that people with low back pain have to explain their experience. The overwhelming response to this item in the questionnaire and the richness of the accounts led to thematic analysis of these responses. In keeping with methodological protocol for qualitative research analysis, a peer-review process was employed (Huberman & Miles, 1994). A colleague, who was a healthcare professional and academic, independently read, analysed the accounts, and identified themes that matched the themes identified by the author.

The main themes that emerged in the thematic analysis were the descriptions of pain, issues of authenticity and legitimacy of pain, and two distinct themes that dealt with the consequences of having low back pain. These themes related to how low back pain

disrupted participants' everyday activities and participants' emotional distress associated with low back pain.

Descriptive Accounts of Low Back Pain. Participants described their low back pain using three characteristics: the reason for their pain, the duration of their pain, and the intensity of their pain. Participants described their low back pain by its cause. What was distinctive is that they sought to attribute their pain to a tangible reason. Participants typically gave reasons consistent with a biomedical perspective of low back pain in which they described an injury or some aspect of their particular diagnosis that indicated pathology, a structural abnormality, or trauma. There accounts often began with a statement about a past injury to which their back pain could be attributed. For example,

> *"My pain started when I got into a car accident ten years ago"*
> *(P #45, female, 40 years)*

> *"I broke my back while lifting...." (P #22, male, 37 years)*

If there was not an incident to account for the low back pain, participants described their diagnosis, offered an explanation for lack of diagnosis, or highlighted their need to have a diagnosis.

> *"I have a degenerated disc disease." (P #62, male)*

> *"My pain began in my tailbone two years ago and to date there has been no definite diagnosis... Not knowing the reason for my low back pain is extremely stressful and frustrating." (P #3, male)*

> *"Back pain is scary - it took almost a year for the doctors to decide that I had torn tissue in my back. First diagnosis was "bone cancer or Paget's disease - any questions?" Many blood test and x-rays." (P #49, female, 56 years)*

For some of the participants, giving the reason for their low back pain seemed to be an important precursor to talking about how their pain affected them or how they

managed their pain. They sought to legitimise their pain and to dispel any perceived personal culpability. By doing this, they implied they were entitled to have pain, since they had not brought it upon themselves. Ascribing their pain to a physical cause, participants were making their pain "real" in the sense that it was associated with the body. Pain that was construed as being part of the physical body seemed more acceptable to them, and by providing a reason for their pain, they seemed to feel less vulnerable to needing their pain sanctioned by other people. Other studies have shown that people feel that their pain is legitimised in the presence of objective evidence (Jackson, 1992; Rhodes et al., 1999).

In addition to the descriptions of cause, participants described their low back pain by noting the duration of their pain and number of pain episodes experienced. In particular, when discussing duration and frequency of episodes, participants highlighted the unpredictability of their low back pain. Participants' descriptions of duration also featured accounts of the recurrence of their low back pain. Underlying these descriptions were concerns about the possibility that their pain would be permanent. There also were fears that they might contribute in some way to a worsening of their condition or cause further injury.

> "*Low back pain is always ready to reappear. It can be immobilizing at times and then seem to disappear and lull one into a false sense of security. Acute attacks are usually without warning and can be very disruptive." (P #101, male, 46 years)*

> *"During episodes of back-pain, I sometimes fear that this episode or occurrence could be the one that will not subside. Performing duties that have in the past triggered back pain episodes tend to be the ones, I put off, even though they may be critical to the current project." (P #57, male 45 years)*

Participants' descriptions of the intensity of low back pain were graphic, and were an attempt to convey to the reader the actual sensory experience of pain and how it felt. Similarly, they described the severity of the pain by talking about the drastic steps they might take to free themselves from the pain. These descriptions were particularly vivid, illustrative images:

> *"... my left leg and foot is a constant aggravation like a dripping faucet that sometimes drips icicles." (P #53, male)*

> *"...back pain came like a malignant lighting bolt." (P #52, female, 80 years)*

> *"It hurts so bad I feel like taking a knife and cutting it out."*
> *(P #50, female, 40 years)*

These detailed descriptions, including the cause and the nature of their pain, were an attempt by participants to convey their experience so that others might be able to appreciate what it is actually like to have low back pain. Both descriptions of pain intensity and duration were also defining characteristics of pain descriptions cited by participants in the study by Borkan et al., (1995).

The descriptive accounts of causes, intensity of pain and duration served as background, which participants then elaborated on with further comments about the experience of low back pain in their everyday lives. After describing their pain, they wrote about the authenticity of their pain and the effect of their low back pain on them, especially emotionally.

Participant Accounts about the Authenticity of their Pain: "Other people do not understand..." Acknowledging the invisibility of their low back pain, participants expressed that other people did not appreciate their suffering, and that they questioned the authenticity of their pain. They had difficulty having others recognize their pain and be

supportive. Participants made explicit statements about the genuineness of their pain. In addition, the difficulties associated with the legitimacy of pain, and the importance of their pain being caused by a "real" pathology was present in their responses. They expressed that an absence of overt signs or symptoms led others to not appreciate just how limiting back pain was for them. They talked about the dilemma of appearing normal, given that there are no external signs of low back pain, and that this made it easier for other people to not take their pain seriously.

> *"Back pain is invisible, therefore hard to describe, it is debilitating. Back pain truly hurts. Back pain can come on so suddenly and take a long time to heal. Back pain does not discriminate." (P # 1, female, 32 years)*
>
> *"Pain is "real" and "stress" can trigger it." (P #77, female, 43 years)*
>
> *" It [chronic pain] inhibits activity and interaction and saps strength. Sometimes others are less patient with the disability because, except for the reported pain, sufferers look and function normally." (P #107, female, 53 years)*
>
> *"... Because I can't do activities or tours and my husband gets disgusted because I can't keep up with him..." (P #25, female, 60 years)*

Some participants focused on the issue of authenticity of their pain when they were dealing with medical professionals. Participants talked of not receiving the treatment they wanted, having either a vague or no diagnosis, and not having confidence in the ability of healthcare professionals to understand their condition. For back pain patients, the issues of validity and legitimacy of their back pain are intensified by the external (physical appearance) and internal (negative diagnostic test results) invisibility of their condition (Jackson, 1992; Rhodes et al., 1999). This underpinned the comments about their relationship with healthcare professionals:

> *"I become extremely stressed when dealing with insurance companies and some doctors who don't really care about your pain. People treat you very differently when*

you are disabled and have to use a cane or wheelchair. I'm not hopeless." (P #19, female, 30 years)

"Doctors don't seem to be able to fix the pain." (P #40)

"All I hear from doctors is " we don't want to give you pain medications because of dangers of addiction." So, I am forced to suffer through the pain. I feel this is extremely unfair to me. I am told there is nothing medically that can be done for me. So I guess I am left to suffer." (P #110, male, 47 years)

The tone of these comments echoes the disillusionment, pessimism, and scepticism associated with lowered expectations. There was a reduced expectation that there would be a satisfactory explanation provided by health professionals, or that medical intervention would alleviate their pain or improve their condition. This disillusionment and pessimism is often voiced in narrative accounts of chronic low back pain (Chew & May, 1997; May et al., 2000). The participants' responses tended to confirm the findings in other studies that reported that low back pain patients based on their experiences, often doubt the ability of medicine to help them, especially if physicians are unable locate the problem and confirm their pain with positive test results (Cherkin, Deyo, & Berg, 1991; Rhodes et al., 1999). Since healthcare is sought to find a cause for the pain, preferably based on diagnostic testing, this unmet need adds to their frustration.

Consequences of Low Back Pain: Disruption of Everyday Activities. All participants gave accounts that spoke of the effects of low back pain on their ability to function. Simple tasks, such as dressing, driving, and bending over to pick something up from the floor, were common accounts mentioned. Two themes that emerged were related to the consequences of having low back pain. The first theme was that participants described how pain disrupted their day-to-day activities. The second theme dealt with the

emotional distress participants experienced due to the difficulties performing personal activities. In these accounts, participants described how they responded in order to cope with their pain. One type of response was characterized by states of defiance and determination to manage their low back pain. Participants who responded in this way wrote about not permitting their low back pain to control their lives. Their responses expressed their determination to confront their pain and the problems it presented in their lives. Their decision not to let the pain interfere with activities was the predominant theme in their responses:

> *"I fight the pain even when it wears at me and it makes me tired, I won't let it win."(P #91, male, 46 years)*

> *"I know it is not life threatening. I know how to get rid of severe pain. I refuse to let my back pain interfere with my life." (P #34, female)*

> *"I have lower back pain almost daily for the past 20 or so years. It sometimes slows me down but never really stops me. I have learned what my limitations are and usually work around them." (P #76, male, 47 years)*

Contrasting sharply with the response of battling and defying the pain were the descriptions where participants recounted having to give up activities they enjoyed because they had lost their functional abilities due to their pain. In these accounts, they were demoralized, and described how their pain determined how they were living their lives. Pain was central to how these participants described themselves, and it was shaping their choices of activities.

> *"Sometimes I feel it has taken over my life." (P #79, female)*

> *"My back pain is ruining my life. There are times when I feel consumed by the pain. It has robbed me of my right to a better, more enriched lifestyle. I have been forced to quit doing almost everything I enjoy." (P #101, male, 46 years)*

> *"It is one of the constant forces that dominates my life. It keeps me from doing things I want to do." (P #51, male, 47 years)*

"My biggest complaint is that I've had to give up many things that I used to enjoy and burn off stress with- skiing, backpacking, skating, aerobic dance, golf, etc. Additionally, I've had to change the way I dress as I can no longer wear high heals which makes me feel frumpy." (P # 78, female, 45 years)

These responses are similar to those reported by Borkan et al. (1995). In that study, as in the current one, participants' descriptions fell into one of two categories. Participants gave descriptions of refusing to "give in to their pain" and continued to engage in their activities, or they gave descriptions of reorganizing their lives around their pain, and that all activities were undertaken tentatively.

Participants' accounts described pain as a powerful entity that controlled their lives. They reported the influence of pain and how in response to that pain they protected themselves from further pain or re-injury. There were participants who voiced concerns about the unpredictability of low back pain. They wrote about being cautious with activities, and their fear that pain would reoccur if they were not careful.

"Sometimes I over protect myself." (P # 55, female, 43 years)

"It's surprising how back pain affects everything... I found myself limiting myself subconsciously from doing thing I normally would just do to try and not get a flare up of the pain." (P #68, female, 42 years)

In these accounts pain appeared to be constantly present in participants' thinking, even though they might not currently be experiencing low back pain. It was as if low back pain was now part of how they construe their self, as a "person with low back pain". In both types of responses, whether it was living one's life as chosen despite low back pain, or living a life organised around low back pain, participants' accounts of their adaptation and adjustment were about struggling with their pain. There was an underlying story that participants conveyed. It was a story of how they dealt with a desire to be pain free and

still being hopeful of a full recovery. Yet, at the same time, they experienced a sense of hopelessness that they would always have pain and never regain the former self.

Consequences of Low Back Pain: Emotional Distress. Participants expressed the emotional distress they felt in relation to a disruption of their valued activities. It compromised who they were and reshaped their identity. These losses of valued activities and the accompanying emotional impact were expressed in their responses.

> *"Now I feel more vulnerable and weak. I love sports, coaching, and playing. This injury has made it difficult to do both. I have few real pleasures in life, coaching my boys is top of the list. Not being able to do that, as I want, causes me pain emotionally. My kids are growing and I feel like time is running out and I am missing something." (P #90, female, 38 years)*

> *"I am unable to play with my children and engage in most activities. I struggle to carry a laundry basket and it leaves me feeling less of a mother/wife. I haven't been able to mop my floor in months." (P #112, female, 25 years)*

> *"I would give anything to have my former life back" (P #22, male, 37 years)*

Participants' responses talked specifically about how the emotional distress of low back pain affected their mood. Most frequently, participants expressed frustration and/or depression.

> *"I feel it alters my personality to a degree." (P #4, female, 43 years)*

> *"I have to cancel plans, appointments, not able to help family or work. It makes me very unreliable and I can't even tell from one day to the next how I'm going to function. It's frustrating and depressing especially when your body won't function the way your mind is telling it." (P #115, female, 35 years)*

A small group of participants made a connection between their low back pain and their stress. Instead of emotional distress being consequence of low back pain, they described their low back pain as a symptom of their stress.

"My low back pain is also a result of stress – that's when it comes out."
(P #109, female, 23 years)

"Beyond physically based pain, STRESS ALSO CONTRIBUTES TO PAIN."
(P #88, female)

"I believe some of my back pain I caused from stress. However, it is difficult to distinguish if there is actual structural damage causing the pain. Pain is not normal. Therefore, I pay attention to what is going on with me as a whole person! Physically, spiritually, mentally, and emotionally." (P #101, male, 46 years)

Participants' descriptions of their low back pain characteristics identified low back pain as an on-going disorder. They did not view their pain and physical limitations as short-term nor did they expect to fully recover. They associated their low back pain with distress, disrupted lives, and alienation. The descriptions from participants in this study had similar themes to other more comprehensive narratives of low back pain (Jackson, 1992; Johansson et al., 1996; Osborn & Smith, 1998). Outside the experience of low back pain, it can seem perplexing to others that a non-life threatening and largely self-limiting episodic disorder can generate such concern, distress, and disruption to lives. As we discuss the analyses of functional and psychological measures, these descriptions serve as an important reminder of the individual experience and its subjectivity that is difficult to quantify. It is more than simply an inability to perform ordinary, mundane life tasks. It is, in part, who these people are. As one of the women in the study said,

"*I struggle to carry a laundry basket and it leaves me feeling less of a mother/wife. I haven't been able to mop my floor in months....*"

The connection this woman makes between her household tasks and identity as a mother highlights the importance of attempting to understand these volitional processes that are assessed by examining personal projects and a person's appraisal of her personal projects. Her comment illustrates the distress that is incurred at a loss of even mundane tasks. It is

difficulty with simple everyday activities that drives individuals to seek healthcare (Johansson et al., 1999). Since recruitment of the sample occurred in healthcare settings, we might surmise this distress at the loss of engaging in ordinary activities is germane to many of the participants in the present study.

Section 2: Participants' Demographic Characteristics, Low Back Pain, Functional Status and Well-being

The participants recruited were receiving medical care from a primary care physician or they were receiving therapy from a healthcare professional for low back pain. Initially participants were asked questions about their low back pain. These included demographic characteristics, the ability to carry out physical and social activities, and their assessment of their negative affect and satisfaction with life.

Participants' current low back pain varied from one day to 22 years. The mean numbers of days of pain was 406 days, the median 65 days (N = 140, SD = 1018.73). However, a review of the distribution showed eight participants with extreme scores. They reported with persistent pain between 7 and 22 years. When these outlier participants were excluded from the sample, the mean duration of pain was reduced to 262 days and the median was reduced to 60 days (N = 132, SD = 451.68).

A clinical classification of low back pain based on duration would classify 56 percent of participants as having acute low back pain and 44 percent of participants as having chronic low back pain. Chronic low back pain usually accounts for 10 percent of the incidence of all low back pain. The high proportion of participants with chronic low back pain in the sample was mainly due to recruitment of participants from healthcare

settings. It has been shown that people with chronic low back pain utilized healthcare services significantly more than peers with acute low back pain (Cats-Baril & Frymoyer, 1991; Rainville, Sobel, Banco, Levine, & Childs, 1996). The physical therapy and chiropractic clinicians who recruited the participants also reported anecdotally that they were receiving more referrals of people with chronic low back pain than acute low back pain since it is primary care physicians who undertake the initial management of acute low back pain (Koes et al., 2001).

Participants with symptoms that lasted longer were slightly more likely to have frequent episodes of low back pain ($r_{(138)} = 0.26$, $p < 0.01$). The duration and recurrence of low back pain in this sample were similar to the clinical presentation of low back pain in primary care settings, which commonly view low back pain as an on-going health problem characterised by episodic recurrent pain.

Consistent with existing research on the incidence of low back pain, 50 percent of the participants reported recurrent low back pain. The frequency of their pain episodes was once a year to four or more times per year. The moderately high rate of recurrent LBP among participants is consistent with epidemiological data that estimate the recurrence rate for LBP as between 30 and 70 percent following the first episode, and 60 percent of these episodes will reoccur within two years of the previous episode (Garofalo & Polatin, 1999; Skovron, 1992; Wahlgren et al., 1997).

In the current study, 34 percent of the participants reported continuous pain. Low back pain is seldom self-limiting within 3 months. The more common pattern is for people to have either persistent symptoms with intermittent exacerbations, or pain that remits to a lower level with sub-acute symptoms that extend beyond three months.

(Skovron, 1992; Von Korff et al., 1993). Interestingly, although 44 percent of the participants reported the duration of their pain as chronic, 10 percent of these participants would have also reported that their low back pain was episodic or that it was their first episode of low back pain. The remaining 16 percent of participants reported that this was their first episode or that they had LBP less than once a year.

The SF-36 bodily pain subscale measured participants' self-reported pain severity. A lower score indicated moderate to severe pain and the sample mean was 40.12 (SD = 21.65). The availability of normative data for the SF-36 makes it possible to compare the current sample to the distribution of scores in the normative sample (U.S. population) (Ware et al., 1997). The mean and median scores for the sample are well below the 25th percentile for the general U.S. population on this subscale (e.g., Bodily pain, M = 75.15, SD = 23.69, 25th percentile 61.00). Table 6.1 shows the participants' SF-36 mean scores and the mean (50th percentile) for the U.S. general population.

The SF-36 subscales measured physical, social, and emotional functioning and general health. Presented in Table 6.1 are the mean scores of these measures. Many participants reported they were functionally impaired due to their low back pain. The sample mean scores for physical role disruption, emotional role disruption, physical functioning, and social functioning were below the 25th percentile for the general US population on these SF-36 subscales. These scores indicated that participants had difficulty with basic self-care activities, problems with work and other daily activities due to both their low back pain and emotional problems. Furthermore, their low back pain interfered with their ability to participate in their typical social activities.

Table 6.1

Descriptive Statistics for Function

SF-36 subscales	N	Participants		U.S. General Population	
		Mean	SD	Mean	SD
General health	134	63.60	23.41	71.95	20.34
Physical functioning	138	61.25	27.38	84.15	23.28
Physical role disruption	141	24.65	33.54	80.96	34.00
Emotional role disruption	142	63.38	42.44	81.26	33.04
Social functioning	142	61.88	28.06	83.28	22.69
Bodily pain	141	40.12	21.65	75.15	23.69

Higher scores on the measures are indicative of better function. (Normalized score 0-100)

U.S. General Population scores are estimates for persons without chronic conditions.

Limitations in one area of functioning were likely to be related to limitations in other areas of function. The functional subscales were weakly to moderately correlated (see Table 6.2). In particular, physical limitations in both role and physical activities were associated with limitations in social functioning. The most problematic aspect of functioning for participants was their physical roles. The mean score of 24.65 was well below the 25th percentile for the general US population, and 91 percent were below the 50th percentile. Hence, the majority of participants had reported the ability to carry out their day-to-day physical roles, especially work roles, was disrupted. This significant level of physical role disruption (also measured by the SF-36 role disruption subscale) in low back pain patients has been reported elsewhere (Miller et al., 1999).

Table 6.2

The Inter-Correlation of Variables Describing Function (N=137)

SF-36 Subscales	SF-36 Subscales		
	Physical Functioning	Physical Role Disruption	Emotional Role Disruption
Physical functioning	--		
Physical role disruption	.355**	--	
Emotional role disruption	.243**	.307**	--
Social functioning	.475**	.489**	.321**

** $p < 0.01$.

In general, participants in this study had poor general health and well-being. To assess well-being, two measures were used. These were the Center for Epidemiologic Studies Depression Scale (CES-D), which assessed symptoms of depression, and the Satisfaction with Life Scale. The mean CES-D score of the sample was 17.29 and the median was 14 (N = 140, SD = 12.51). Over half the participants (57%) scored above 16, which is considered a valid predictor of depression (Radloff, 1977). A higher level of depression in low back pain populations is consistently reported (Gatchel, Polatin, & Kinney, 1995; Hampton Atkinson, Slater, Patterson, Grant, & Garfin, 1991; Polatin et al., 1993; Von Korff, Dworkin, La Resche, & Kruger, 1998). For example, Haas, Nyiendo & Atikens (2002) screened for major depression and reported that 32.3 percent of 1182 primary-care low back pain patients' reported symptoms consistent with major depression. Although depression is one of the most common psychiatric disorders in primary care practice, the level of depression in the study is well above the prevalence of depression (5%-9% of adults) in primary care settings. However, it is in keeping with the

comorbidity of depression and low back pain (Geisser et al., 1997; Staiger, Gaster, Sullivan, & Deyo, 2003; Von Korff et al., 1998).

Participants' satisfaction with life, which was used to measure the cognitive component of well-being, was assessed by the Satisfaction with Life Scale to yield a single score (Diener et al., 1985). Participants had a mean of 22.42 and a median of 25 (N = 137, SD = 7.90). Norms for the SWLS have not been established. However, a third of the participants reported not being satisfied with their current lives.

Participants scored poorly when rating their perceived general health on the SF-36 general health subscale. The mean score was 63.60 (SD = 23.41). Although general health was poor among the participants, unlike the other SF-36 subscale scores, the general health mean fell slightly above the 25th percentage for the US general population of 57.00 (SD = 20.24), but still below the 50th. Thirty-six percent of the participants were below the 25th percentile, while 66 percent of participants were at or below the 50th percentile for the US general population.

All health and well-being measures were significantly correlated with each other at a level of $p = 0.01$. The CES-D and SWLS, which were the measures of psychological well-being, were highly negatively correlated ($r = -.715$). Participants who reported being satisfied with life were less likely to report feeling depressed. Similarly, general health and depression were negatively correlated ($r = -.459$). Understandably, individuals who reported satisfaction with life were also more likely to assess their general health to be good. These health measures were positively correlated ($r = .513$). The converse is also true in that participants, who reported poorer general health, were more likely to have poor psychological health as measured by the SWLS and CES-D.

Pain-related fear has been shown in previous studies to be a strong predictor of distress, and disability (Crombez et al., 1999; Fritz et al., 2001). In this study, the Tampa Scale of Kinesiophobia (TSK) measured pain-related fear. The sample had a mean score of 36.44 and a median of 36 (N = 143, SD = 8.23). The only comparative data available for this TSK pain-related fear measure is for chronic back pain patients. In the current study, participants with chronic back pain had a mean of 37.2 on the TSK. Similarly, Vlaeyen, Kole-Snijder, Boeren and van Eek (1995) reported a mean of 38.4 in their sample of chronic low back pain patients on the same measure.

Differences between Chronic and Acute Low Back Pain

Before proceeding with analysis, it was important to determine if participants with acute versus chronic low back pain in this sample differed significantly in their demographic characteristics, pain and functional status, well-being and general health. As mentioned, low back pain is clinically classified as two distinct categories based on duration. Participants who meet the criteria for acute low back pain self-report pain of less than 90 days, and participants who report chronic low back pain, have persistent pain lasting 90 days or more. Typically in research and clinical settings, these categories of low back pain are portrayed as having different presentations, especially with respect to the psychosocial characteristics.

Participants with acute and chronic low back pain did not differ significantly in age ($F_{(1,112)} = 0.69$, $p > 0.05$), education ($F_{(1,136)} = 0.73$, $p > 0.05$) or gender($\chi^2_1 = 0.11$, $p > 0.05$). Participants did not differ in severity of pain ($F_{(1,136)} = 0.84$, $p > 0.05$) but did differ in the frequency of episodes ($\chi^2_4 = 31.81$, $p < 0.00$). Participants with chronic pain

also reported more frequent episodes of low back pain. Participants with chronic and acute low back pain also differed on measures of satisfaction with life ($F_{(1,132)} = 4.11$, $p < 0.05$) and on their physical functioning ($F_{(1,135)} = 4.68$, $p < 0.05$). On both these measures, participants with chronic low back pain had lower mean scores indicating greater physical limitations and less satisfaction with life. The participants did not differ on the other measures of function: social limitations ($F_{(1,137)} = 0.23$, $p > 0.05$), emotional role disruption ($F_{(1,136)} = 3.35$, $p > 0.05$) and physical role disruption ($F_{(1,136)} = 0.49$, $p > 0.05$). There were also no differences with respect to measures of general health ($F_{(1,136)} = 0.33$, $p > 0.05$), depression ($F_{(1,135)} = 0.30$, $p > 0.05$), and pain-related fear ($F_{(1,138)} = 1.90$, $p > 0.05$). These were unchanged when the eight outliers for chronic low back pain were excluded. The lack of difference on the depression measure between acute and chronic is consistent with the ambiguity regarding the temporal relationship between depression and onset of low back pain (Gatchel, 1996; Gatchel, Polatin, & Mayer, 1995; Gatchel et al., 1994).

Although the acute and chronic pain participants differed on two of the outcome measures (SWLS and physical function), they were similar on most of the measures. Therefore, it was decided to proceed with the analyses with the sample as one group. However, steps were planned to control for the potential effect of acute-chronic status differences on SWLS and physical function measures. In addition, although a distinction is frequently made between chronic and acute back pain populations, others also claim that chronic low back pain and acute low back pain patients may not differ on psychosocial dimensions to the extent that is surmised (Crombez et al., 1999; Hadjistavropoulos & Craig, 1994). Importantly, as in other studies, the baseline analyses

show that acute and chronic low back pain were more similar than different (Hoogen, Koes, Eijk, Bouter, & Deville, 1997).

Data Management

The SPSS (version 11.5) software was used for data management and analysis. Standard procedures were used to assess the variables to ensure that the data would meet the necessary assumptions. The two scales, SF-36 emotional and physical role disruption subscales, were not normally distributed. The emotional role disruption scale was bimodal and the physical role disruption scale was skewed to the left (i.e. low score indicating extreme disruption of role) with a long tail (see Appendix III for histograms of these subscales with normal distribution plotted). A dichotomised emotional role and physical role disruption variable was used for biserial analysis in correlations, and log transformations of these two variables were used in regressions analyses.

Relationships between Participants' Measures of Function, Health, and Low Back Pain

Pearson product-moments correlations were used to examine the relationships between participants' low back pain (duration, frequency of episodes, and pain severity), pain-related fear, health and function measures. The health variables were assessed by perceived general health and well-being measures, while function variables were based on SF-36 subscales (physical, social functioning, and physical and emotional role disruption).

Function. Predictably, function and low back pain characteristics were related (See Table 6.3). Participants' pain severity was associated with limited and disrupted

functioning. Pain severity was strongly related to limitations in participants' social activities ($r = 0.77$, $p < 0.01$) and moderately related to physical role (includes work and self-care activities) ($r = 0.54$, $p < 0.01$). Pain severity was associated with having difficulty with their physical function ($r = 0.56$, $p < 0.01$) and to a lesser extent with disruption of emotional role ($r = 0.36$, $p < 0.01$). The moderate relationship between pain severity and function was expected. Generally, pain and function are modestly related. We expected pain to be more directly and strongly related to the disruption of function. It is somewhat surprising, that one of the strongest relationship was between social function and pain severity. Although, there may be a connection between withdrawing from social activities and individuals with low back pain feeling that others question the legitimacy of their pain.

Duration and frequency of pain had somewhat different effects on function. Duration of pain was related to physical and social functioning and emotional role disruption, whereas frequency of back pain episodes was related only to physical function and emotional role disruption. As expected, participants who reported pain-related fear were more likely to have physical functional limitations and role disruption, since both of these areas of function are related to engaging in physical activity. However, participants' pain-related fear was related to social functioning and emotional role disruption. The relationship between pain-related fear and physical functioning is understandable, but the relationship between pain-related fear and role disruption due to emotional problems and social functioning is less obvious. One possible explanation is that depressed people limit their social activities and their roles in relation to their emotional state. Previous studies show that depression is characterized by withdrawing from social contact and disruption

of social relations, lethargy, and a disinterest in normal activities (Geisser et al., 1997; Street, 2002). It is understandable that this functional pattern would also be present in participants with depression and low back pain. Depression was significantly associated with limitations of social functioning and disruption of normal activities due to emotional problems (see Table 6.5).

Table 6.3

Relationships between Low Back Pain Characteristics and SF-36 Function Scales (N=137)

	Function			
Low Back Pain Characteristics	Physical Function	Physical Role Disruption	Emotional Role Disruption	Social Function
Duration	- .277**	- .121	- .123	- .166*
Frequency	- .186*	- .211**	- .150	- .149
Pain Severity	.565**	.543**	.359**	.769**
Pain-related Fear	- .530**	- .326**	- .375**	- .562**

*p < 0.05, ** p < 0.01.

Health. Generally, participants who reported greater pain severity and more pain-related fear were also likely to have poorer health scores. Specifically, general health was associated with greater pain severity (lower scores on the SF-36 pain scale indicates greater pain severity, $r = 0.33$ $p < 0.01$). The relationships between health measures and low back pain characteristics were as expected (See Table 6.4). Consistent with other low back pain studies, participants with episodes that are more frequent, longer duration of pain, and more pain-related fear were also likely to report poorer general health. It has previously been shown that poorer perceived general health is associated with chronic LBP, and has been shown to independently predict duration of LBP symptoms (Croft et al., 1996).

Depressed participants were also more likely to be fearful of pain and re-injury, and less satisfied with life (see Table 6.4). Participants who reported they were dealing with severe, persistent pain, longer duration of pain, and more frequent episodes were less likely to express satisfaction with life and more likely to report pain-related fear. Depression was associated with pain severity and frequency of episodes of low back pain, but interestingly it was not associated with duration of low back pain. This finding differs from other studies that showed chronic low back pain is more likely to be associated with depression (Gatchel, Polatin, & Kinney, 1995; Polatin et al., 1993). However, participants in this study did not differ in mood in relation to acute or chronic pain status.

Table 6.4 *Correlations of Pain Characteristics with Health Measures (N = 135)*

	Health Measures		
Low Back Pain Characteristics	General Health	Depression	Satisfaction with Life
Duration	- .347 **	.177 *	- .235 **
Frequency	- .337 **	.313 **	- .294 **
Severity	.339 **	- .303 **	.403 **
Pain-related Fear	- .425 **	.438 **	- .399 **

** $p < 0.01$, * $p < 0.05$

Table 6.5 *Correlations of Health-Related Measures and Function (N=128)*

	Function			
Health Measures	Physical Functioning	Physical Role Disruption	Emotional Role Disruption	Social Functioning
Depression	- .408**	- .234**	- .481**	- .370**
Life Satisfaction	.399**	- .194**	.399**	.408**
General Health	.465**	.244**	.303**	.346**

** $p < 0.01$. Both role disruption variables dichotomised variables - point-biserial correlations)

The examination of participants' health and functioning showed that participants who were limited by their pain were likely to be less happy with their lives, and generally felt that their poor overall health was worse than other people's health. Participants' physical and social functioning and their health were related moderately. Hence, we might conclude that low back pain is associated with a pervasive state associated with poor health and limited functioning in everyday life.

Section 3: Personal Projects Analysis

The participants' personal projects described their work, leisure, interpersonal relationships, intrapersonal goals and everyday tasks such as maintaining the yard, and house, and their personal self-care and health. These projects included relatively mundane projects related to daily living such as "filling up the car with gas", "cleaning out the garage" or " doing the grocery shopping" and less tangible intrapersonal projects such as "understanding myself" or "learn to be a happier person".

In the initial list, participants listed between 3 and 47 personal projects. The average number of projects listed was 14; women listed significantly more projects than men (($F_{(1,141)} = 5.52$, $p < 0.05$). The average of 14 projects listed in the initial elicitation was similar to the average number of projects elicited in other studies (e.g., Little, 1989; Little & Chambers, 2004).

Participants identified their five most important projects, and these projects were categorized according to the content categorization scheme proposed by the Carleton University Social Ecology Laboratory (Little, 1994; Little & Chambers, 2004). The administrative category was renamed *instrumental activities of daily living* (IADL) in this

study. The term IADL is typical terminology in healthcare settings for the types of tasks designated as "administrative" in the Carleton University Social Ecology Laboratory classification scheme. Using this categorization scheme, the projects were classified into seven content areas: occupational/academic, leisure, health, interpersonal, intrapersonal, instrumental activities of daily living and other. Table 6.6 gives examples of study participants' projects and the percentage of projects in each category.

Participants' most important projects could be classified into one of the six content categories. A seventh category, termed "other", was for projects that did not meet the criteria of the specific content categories. Steps taken to ensure the reliability of the classification process included having two health professionals (an occupational therapist and physical therapist) as well as the author classify 503 projects (projects from 102 participants). The agreement between coders was high, particularly between coders 1 and 2. The reliability kappa coefficient of concordance statistics were coder 1* coder 2, κ = 0.841, coder 2* coder 3 κ = 0.753, and coder 1* coder 3 κ = 0.796.

For the projects that were classified by all three coders, the content category that most of coders selected was the category used in the study. Because of the high level of agreement between coders, it was considered acceptable for only the author of the study to classify the projects of the remaining 41 participants.

Table 6.6

Percentage of Personal Projects by Content Category (N=702 projects)

Project Category	Percentage of Projects	Examples of Projects
Interpersonal	21.7 %	Care for my mother. Be a good friend to Wendy.
Intrapersonal	17.7 %	Try to be happy. Be a more spiritual person.
Instrumental activities of daily living	20.4 %	Clean the house. Pay off car loan.
Leisure	14.3 %	Kayak in Canada. Play golf.
Health	13.3 %	Lose weight. Exercise regularly.
Occupational/Academic	12.6 %	Start a business. Improve job skills.

Overall, intrapersonal and interpersonal projects were the most common personal projects identified as important. These personal projects accounted for 42 percent of the projects listed by participants (21.7 percent and 20.4 percent respectively). Instrumental activities of daily living were 17.7 percent, leisure projects were 14.3 percent, health projects were 13.3 percent, and occupational/ academic were 12.6 percent.

Men and women differed in the types of important personal projects ($\chi^2_5 = 11.87$, $p < 0.05$). Men identified more leisure, IADL and health-related as most important to them whereas women were observed to listed more intrapersonal and interpersonal projects as their most important projects. In the general listing phase of projects elicitation, women list more projects than men do.

Commonly listed health personal projects were losing weight, exercising more, and having a healthier diet. It was interesting that although all participants were receiving treatment for low back pain, they seldom identified health projects related to their low back pain condition. Even at the general initial elicitation, when all currently pursued personal projects were identified, only 11.8 percent of participants reported health

projects pertaining to their low back pain (e.g., "be able to work without pain" or "go to physical therapy 3x a week"). When asked to select their most important projects, recovery or managing back pain practically disappeared from the projects listed. Only 1.4 percent of participants felt that back pain related projects such as recovery was one of their five most important projects, yet they all reported pain and some disruption of their current lives due to their low back pain.

Personal Project Dimensions

In order to answer whether individuals' dispositions assessed by their appraisals of their projects were related to functional status, pain severity, general health, and psychological well-being, factor analysis was performed to reduce the number of dimensions. Factor analysis was preliminary to analysis addressing the study specific questions: Can people's appraisals of their personal projects account for the variability in participants' response to back pain in relation to their functional status and physical and psychological well-being? Is there a relationship between a functional personal project system characterised by higher appraisals of personal competency, self-concordant projects, social visibility, and function, perceived general health and psychological well-being?

Participants had appraised their five most important personal projects on 26 dimensions. Each dimension's scores were aggregated across each of the participants' five most important projects to obtain a mean for each of the dimensions. These dimension means of each participant were entered into principal axis factor analysis. This procedure was exploratory based on a tentative expectation that 26 dimensions might load

on five or six factors that were conceptually relevant to the study's objective of looking at the dispositions of participants associated with the process of adaptation to low back pain, as well as participants' health. The dimensions used in this study did not an exactly duplicate those used in previous studies. However, sixteen of the 26 dimensions used in the current study were modified from existing dimensions considered "core" because of their repeated use in personal projects analysis studies and more recently, their inclusion in the on-line personal projects analysis workbook (www.brianlittle.com/ppa/index/htm) (Christiansen, 2000; McGregor & Little, 1998; Palys & Little, 1983). Variants of the core dimensions have been demonstrated to load in a similar pattern (Little, 1989; McGregor & Little, 1998). Consistent with the flexibility of PPA methodology, additional content-specific dimensions and modifications to dimensions, particularly related to perceived salience of pain in relation to goal-directed activities, were made to meet the specific focus of the present study.

All dimensions were entered into principal axis factor extraction with Varimax orthogonal rotation. A dimension loading above 0.32 was considered interpretable (Tabachnick & Fidell, 1996). The 26 project dimensions yielded a seven factor solution (see Table 6.7). These seven factors collectively accounted for 58.6 percent of the variance. Before proceeding, other factor procedures were performed to possibly identify a better solution. These analyses included an oblique rotation that failed to reach solution after 26 iterations and a forced six-factor solution using a Varimax rotation. The initial principal axis factor analysis was considered to be the best solution.

The first five factors were conceptually interpretable (see Table 6.7). The dimensions in each of the factors were conceptually similar and were consistent with the

psychological construct they were intended to measure. However, the sixth and seventh factors were not acceptable. Foremost, neither factor had more than two dimensions. Tabachnick and Fidell (1996) recommend at least three items with high loading are required before a set should considered a factor. The sixth factor was poorly defined with only one dimension loading on one factor ("To date, I have been successful with this project") and the seventh factor, although having two dimensions that loaded above 0.32 was not meaningful because the two dimensions seemed conceptually unrelated. These dimensions were: not having enough time to pursue a project, and having the project make you feel important. The" enough time" dimension was expected to load on the factor that was interpreted as stressfulness; while "successful to date" was a personal efficacy dimension and "feel important" was related to self-concordance.

Table 6.7

Principal Axis Factor Analysis of Personal Project Dimensions

	Factor							
Dimensions	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Communalities
Factor 1: Self Concordance								
Really me	**.780**	.069	.029	.141	.007	.136	-.034	.638
Become me	**.726**	.202	-.023	.118	.065	-.040	.199	.723
Enjoy	**.688**	-.122	.169	.089	.047	.288	.044	.597
Values	**.675**	.028	-.177	.258	.081	-.090	.310	.698
Want to	**.570**	-.094	-.066	**.481**	-.034	**-.465**	.005	.795
Good about me	**.401**	.207	.169	.351	.024	-.094	.231	.591
Factor 2: Stressfulness								
Difficult	.045	**.885**	.122	-.065	-.025	-.127	.097	.773
Stressful	-.124	**.784**	.147	-.098	.147	-.087	.163	.703
Challenging	.220	**.642**	.107	.171	.020	**-.361**	.054	.691
Others make difficult	-.020	**.534**	.086	-.277	.162	.052	-.090	.426
Failure	.286	**.455**	.075	-.090	.102	.140	.053	.400
Factor 3: Pain Salience								
Cause pain	-.056	.124	**.940**	-.050	.007	-.071	.041	.827
Pain will interfere	.142	.082	**.805**	-.102	.074	-.187	.141	.732
Feel pain	.003	.191	**.803**	-.115	.033	.133	.037	.759
Factor 4: Personal Competency								
Successfully finish	.106	-.057	-.257	**.668**	.105	.211	-.091	.553
Abilities & skills	.150	-.262	-.247	**.628**	.050	-.044	-.039	.586
Commitment	**.502**	-.146	-.064	**.595**	.011	-.070	.169	.764
Decision	**.449**	.055	.105	**.542**	-.097	-.131	-.075	.550
Control	.160	**-.378**	.117	**.459**	.081	.289	.217	.562
Factor 5: Social Visibility								
Others help	.042	-.091	.024	-.031	**.836**	.041	.022	.530
Choose to do with others	-.089	.164	-.044	.053	**.630**	.072	-.011	.440
Important to others	.060	.284	.112	-.127	**.554**	.243	-.028	.481
Others know about	.180	.033	.062	.235	**.416**	-.116	.070	.375
Success to date	.169	-.210	-.143	.082	.173	**.678**	-.122	.573
Feel important	.177	.332	.236	.115	.181	.211	**.556**	.466
Enough time	-.100	-.014	-.042	.035	.028	.095	**-.388**	.264
Percentage of Variance (%)	12.89	11.48	9.94	9.28	6.73	5.06	3.22	-

The five factors retained were taken to represent the participants' dispositional characteristics in their negotiations of their personal projects. The first factor, defined as self-concordance, correlated highly with six dimensions. Dimensions are the single items or variables that correlated with the factors. The self-concordance factor represents participants' appraisals of how congruent their personal projects are with their view of self and who they hope to be in the future. It measured the fit between what they were doing (i.e., their projects), and their personal values and beliefs. These projects were appraised as enjoyable and participants pursue them out of a personal desire to do so, not because they feel obligated. The second factor was concerned with how stressed the participants were when they engaged in their projects. This stressfulness factor correlated with five dimensions that were concerned with the appraisal of challenge, difficulty, and stressfulness. It was also comprised of the psychological cost of failure in the pursuit of personal projects and the stress produced by others, hindering a project progress or outcome. The third factor, pain salience, highly correlated with three dimensions that all dealt with the influence of low back pain on project participation and completion. The fourth factor was interpreted as participants' perceived personal competency. The five dimensions, the personal competency factor was concerned with was participants' appraisals of their self-efficacy and autonomy with respect to their personal projects. The dimensions correlated with this factor were the perception of having the necessary prerequisite skills and abilities for the project, the expectation of a successful outcome, participant's personal commitment and autonomy in the pursuit of their personal projects as well as perceived control. The fifth factor was interpreted as participants' social connectedness and was labelled social visibility because the dimensions that correlated

with this factor were concerned with the participants appraisals of the involvement of others in the personal projects, the visibility of the projects to others, the participation of others, and importance of the projects to others.

Once a factor analysis is has been done, it is common practice to create a score for each participant on each of the factors (Warner, in preparation). There are several different ways can be done. Factor scores can be generated using SPSS, which estimates a factor score coefficient. This generates almost perfectly uncorrelated factor scores. However, these are factors score coefficients like the factor loading are fairly unstable and so weights that are used are optimal for the specific data set. Therefore, in preference to the factor score coefficients the current study created scale scores. The scales scoring method had an advantage of simplicity, and that easily be replicated in future studies which was in keeping with the objective of examining the utility of personal projects analysis in health research. From the dimensions that loaded on each of the five interpretable factors, the computed aggregation of the scores of the dimensions created five scales. These five scales, labelled according to the conceptual construct that they represented, were self-concordance, stressfulness, personal competency, pain salience and social visibility.

The scales scores were highly correlated with their comparable factor scores coefficients ($r \leq 0.9$). There was minimal difference between unit-weighted scale scores and factor score coefficients (Fava & Velicier, 1992). Regardless of the method used to compute the scores, studies have demonstrated the scores will generally correlate at around $r = 0.98$ (Fava & Velicier, 1992). In this study, scales scores and factor score

coefficients were correlated between $r = 0.90$ and $r = 0.96$. This nearly exact equivalence means that the two methods yield the almost same information (Warner, in preparation).

While, the relatively low statistical power of the sample size might also be regarded as an additional factor in favour of scale scores, there is some evidence that sample size as a function of the number of variables does not always influence the stability of the factor pattern (Guadagnoli & Velicer, 1988). The scales were assessed for reliability of the composition of the scales. The alpha coefficients were above 0.70, with the exception of social visibility, which was 0.66 (see Table 6.9 for Cronbach alpha values).

As expected there were some scales that correlated, especially those with overlapping dimensions that had loaded on more than one factor, such as personal competency and self-concordance ($r = 0.55$, $p = 0.01$). In particular, the dimensions of commitment, decision, I want to, and feel good about me, had loadings above 0.35 on both factors. Table 6.8 presents the inter-correlations of the scales. The self-concordance disposition was unrelated to appraisals of pain salience or stressfulness in personal projects. Participants who had positive appraisals of their personal competence in their projects were less likely to appraise pain as salient or perceive their projects as overly stressful. The social visibility of participants' personal projects was associated with stressfulness of projects. Pain salience was also associated with participants who construed their projects as stressful. The relationships between the scales, especially the moderate correlations or greater will make it more difficult to distinguish the unique contribution of these variables in regression analysis.

Table 6.8

The Inter-correlations of Disposition Scales (N=143)

	Disposition Scales			
Disposition Scales	Self Concordance	Stressfulness	Pain Salience	Personal Competency
Stressfulness	.126			
Pain Salience	.023	.300**		
Personal Competency	.551**	-.294**	-.200*	
Social Visibility	.077	.275**	.092	.072

* $p < 0.05$, ** $p < 0.01$.

Correlations of the Disposition Scales, Participants' Demographic Characteristics, and Treatment Choices

The participants' demographic characteristics such as marital status and age were related only slightly with disposition scales ($r \leq 0.30$). For example, younger participants were slightly more likely to appraise their projects as stressful ($r = 0.27$, $p < 0.01$) and stressfulness of projects was associated with reporting rest as a choice of treatment ($r = 0.23$, $p < 0.01$). Participants with more education were slightly more likely to find their projects stressful ($r = 0.18$, $p < 0.05$), whereas pain salience was associated with lesser education ($r = -0.22$, $p < 0.05$.). Sex was associated with self-concordance ($r = -0.27$, $p < 0.01$.). Further analysis confirmed that men and women differed in relation to the congruency between beliefs, values, sense of self and their engagement in projects that were consistent with these aspects of themselves ($F_{(1,141)} = 11.52$, $p < .001$). The female participants were more likely to have congruency between self and their important projects. However, men and women did not differ in personal competency, social visibility, pain salience, or stressfulness.

Correlations of the Project Disposition Scales, Low Back Pain Characteristics, Function, and Health

As an initial step to examine the relationship between participants' personal project dispositions and the outcome variables (low back pain characteristics, function and health), bivariate correlations were obtained. These findings are discussed under the sub-headings: low back pain, function and health.

Low Back Pain. Participants who approached their personal projects thinking that their pain would interfere with their participation in the project or expected that engaging in the project would cause them to feel pain (i.e., pain was salient to their projects) were more likely to report greater pain severity, and more frequent episodes of low back pain (see Table 6.10). Understandably, these participants were more likely to express pain-related fear. Pain-related fear and pain salience correlated only moderately ($r = 0.44$, $p < 0.01$). Even though it was expected these two variables would be related, the appraisal of pain salience dimensions were designed to be more functionally oriented and to evaluate not only their anticipation of pain when engaging in their personal projects, but also their expectation that pain would be a barrier to the successful completion of their personal project.

Participants' sense of personal competency in their projects was inversely related to their fear of pain caused by their activities. A somewhat unexpected finding was the lack of relationship between participants' stressfulness of projects and pain intensity. We might have expected that participants' appraisals of the difficulty of personal projects might have been related to their pain making it more challenging for them to complete the project. This does not appear to be so as there is no significant correlation between

perceived stressfulness and pain severity. Social visibility, self-concordance, and personal competency were not associated with participants' low back pain symptoms (See Table 6.9).

Table 6.9

Correlations of the Project Disposition Scales and Low Back Pain Characteristics (N =137)

	Low Back Pain Characteristics				
Project Disposition Scales	Cronbach alphas	Pain Severity	Duration	Frequency of Pain	Pain-Related Fear
Stressfulness	.78	-.074	-.045	.109	.264**
Self Concordance	.83	-.154	-.070	.135	.123
Social Visibility	.66	-.016	.004	-.021	.032
Pain Salience	.90	-.515**	.065	.225**	.437**
Personal Competency	.76	-.031	-.071	-.027	-.034**

** $p < 0.01$.

Function. Participants' pain salience and stressfulness were associated with limited functional abilities. Again, those participants with beliefs and expectations of pain in relation to their personal projects were more likely to be impaired in their function in all four areas assessed (disruption of physical and emotional roles, limited physical and social functioning). Participants' stressfulness of projects was only associated with one area of function, emotional disruption of roles, which is an assessment of the extent to which emotional problems have interfered with usual daily activities. Although it was expected that participants' self-concordance of projects, social visibility, and their perceived personal competency in personal projects would be related to functional status, the analyses did not demonstrate such a relationship. In Table 6.10, presented below, are the correlations among measures of function and disposition.

Table 6.10

Correlations of the Project Disposition Scales and Function (N =138)

Project Scales	Function			
	Physical Functioning	Physical Role Disruption	Emotional Role Disruption	Social Functioning
Stressfulness	- .114	.046	- .266**	- .084
Self Concordance	- .042	- .042	.008	- .126
Social Visibility	- .035	.139	.045	- .020
Pain Salience	- .429**	- .245**	- .365**	- .447**
Personal Competency	.140	.112	.159	.005

** $p < 0.01$. High scores on functional measures indicates higher functioning

Health. Participants' personal competency in their personal projects, the appraised stressfulness of their projects and the salience of their pain were related to health. Health is inclusive term used here for participants' perceived general health and the measures of (psychological) well-being (CES-D and SWLS). Participants' disposition of self-concordance was not related to any of the health measures (see Table 6.12). Interestingly, the relationship between personal competency and the measures of well-being and the absence of a relationship between these measures and self concordance is a similar to the relation reported in McGregor and Little (1998) study. They distinguished between well-being measures that were associated with happiness and well-being measures that were associated with meaningfulness and purpose of life. They found that appraisal of self-efficacy in one's projects was related to well-being measures (depression scales, satisfaction with life) associated with happiness. Whereas, integrity of projects was associated with well-being measures higher scores of purpose of life. Like McGregor and Little's integrity factor, the self-concordant of projects in this study is a measure of

project congruence with values and beliefs and sense of self. Therefore, as they found in their study, so this study also found this construct of project appraisal is not associated with well-being measures such as depression scales and satisfaction with life.

Participants' project social visibility was not related to their health. This is in contrast to similar variables such as social significance and communality which in other studies have been demonstrated to be related to well-being (Christiansen, 2000; McGregor & Little, 1998). Participants' project disposition of stressfulness and their belief and expectations surrounding the salience of their pain were related to health outcome measures. Stressfulness was associated with both the affective and cognitive components of well-being as well as perceived general health (See Table 6.11). Participants who reported high salience of pain in relation to their projects were more likely to have depression and lower scores on measurements of satisfaction with life and general health. Likewise, the measure in the current study that included dimensions related to self-efficacy was correlated with the well-being measures (CES-D and SWLS) used.

Table 6.11

Correlations of the Project Disposition Scales and Health Measures (N = 137)

	Health Measures		
Project Disposition Scales	General Health	Depression	Satisfaction with Life
Stressfulness	-.231**	.478**	-.444**
Self Concordance	-.016	.023	-.030
Social Visibility	-.008	.080	.021
Pain Salience	-.340**	.349**	-.283**
Personal Competency	.189*	-.287*	.229**

** $p < 0.01$, * $p < 0.05$.

Are Projects Dispositions Correlated with Functional Status, Health, and Pain Severity in Patients with Low Back Pain?

In the current study, we proposed to use personal projects analysis to describe the characteristics of individuals with low back pain and to examine their processes of adaptation. We used standard regression analyses to explore the role of these dispositions in relation to the characteristics that exemplify low back pain, and compromised health and function. As is the procedure for standard regression, all project disposition scales were entered into the analysis in one step and each regression used only one dependent function or health variable.

Participants' disposition scales predicted the variance in both function and health measures, but as is common in psychological research, the amount of variance explained by these variables following regression analyses was not large. Participants' expectations of pain, and beliefs about the influence of their low back pain on their personal projects (pain salience), were the only significant variable to explain function. The semi-partial correlation squared was used to assess the percentage of variance explained by the significant variables. This disposition explained 17 percent (r_i^2 = -0.419) of the physical function, 18 percent (r_i^2 = -0.430) of the social function, 9 percent (r_i^2 = -0.304) of emotional role disruption, 6 percent (r_i^2 = -0.252) of physical role disruption and 23 percent (r_i^2 = -0.483) of the report pain severity. See Table 6.12 for the respective β-weights of the disposition scales.

Stressfulness and pain salience were the two variables to significantly predict the health measures Stressfulness accounted for 10 percent (r_i^2 = -0.316) of the variance in

satisfaction with life, 9 percent ($r_i^2 = 0.308$) of the variance in depression. Pain salience explained 7 percent ($r_i^2 = -0.271$) of the variance in perceived general health, 4 percent ($r_i^2 = 0.192$) of the variance in depression, and only 2 percent ($r_i^2 = -0.147$) of the variance in satisfaction with life. However, unlike functional status in which pain salience explained most of the variance, stressfulness explained much of the variance in participants' measures of well-being with pain salience. On the well-being measures, stressfulness was a stronger predictor of depression and satisfaction with life ($\beta = 0.36$, $\beta = 0.37$) than pain salience ($\beta = 0.20$, $\beta = 0.16$). Unlike the psychological measures of well-being (CES-D and SWLS), the variance of participants' assessment of their general health and pain severity was explained by pain salience in a way similar to their functional status (Table 6.12).

Table 6.12

Prediction of Function and Health from Projects Disposition Scales using Standard Multiple Regression

Predictor Independent Variables Dependent Variable: **Health-related**	Beta	Predictor Independent Variables Dependent Variable: **Function-related**	Beta
DV: Depression		DV: Physical Function	
Self Concordance	.064	Self Concordance	.076
Stressfulness	.363**	Stressfulness	.029
Pain Salience	.204**	Pain Salience	-.439**
Personal Competency	-.180	Personal Competency	.111
Social Visibility	-.006	Social Visibility	.011
$R^2 = .298$, $F_{(5, 128)} = 10.85$, $p < 0.001$		$R^2 = .214$, $F_{(5, 128)} = 6.82$, $p < 0.001$	
DV: Satisfaction with Life		DV: Social function	
Self Concordance	-.060	Self Concordance	- .157
Stressfulness	-.371**	Stressfulness	.084
Pain Salience	-.155*	Pain Salience	-.455**
Personal Competency	.126	Personal Competency	-.026
Social Visibility	.064	Social Visibility	.026
$R^2 = .238$, $F_{(5, 131)} = 8.18$, $p < 0.001$		$R^2 = .218$, $F_{(5, 136)} = 7.25$, $p < 0.001$	
DV: General Health		DV: Emotional Role	
Self Concordance	-.106	Self concordance	-.138
Stressfulness	-.109	Stressfulness	-.020
Pain Salience	-.314**	Pain salience	-.322**
Personal Competency	.157	Personal competency	.163
Social Visibility	.095	Social Visibility	.081
$R^2 = .178$, $F_{(5, 128)} = 5.55$, $p < 0.001$		$R^2 = .155$, $F_{(5, 135)} = 4.75$, $p < 0.001$	
DV: Pain Severity		DV: Physical Role	
Self Concordance	-.139	Self Concordance	-.131
Stressfulness	.074	Stressfulness	-.108
Pain Salience	-.511**	Pain Salience	-.267**
Personal Competency	-.026	Personal Competency	.119
Social Visibility	.017	Social Visibility	.053
$R^2 = .265$, $F_{(5, 135)} = 9.29$, $p < 0.001$		$R^2 = .087$, $F_{(5, 128)} = 2.47$, $p < 0.05$	

$p < 0.05$, ** $p < 0.01$.

Participants with acute low back pain differed from participants with chronic low back pain on the measures of physical function and satisfaction with life. Would the results of analysis in Table 6.12 differ duration of pain was statistically controlled? To answer this question duration was entered in the first step of the regression to control for the variance that might be explained by duration and the disposition scales were entered on the second step (see Tables 6.13 and 6.14) Participants' beliefs and expectations regarding their pain continued to explain most of the variability in physical function independently of duration. However, when duration of low back pain was considered, pain salience did not significantly account for variance in satisfaction with life ($F_{(1, 130)} = 7.70$, $p < 0.01$, $R^2 = 0.55$). Stressfulness accounted for most of the variance in satisfaction with life ($F_{(5, 127)} = 7.83$, $p < 0.01$, $R^2_{change} = 0.223$), which was shared with duration of low back pain. It is important to note that because days of pain were used rather than the dichotomised variable acute/chronic pain in these analyses one cannot generalise these findings to those studies using the clinical classification of acute and chronic low back pain.

Table 6.13

Regression of Satisfaction with Life on Duration and Projects Disposition Scales

Predictor Independent Variables Dependent Variable: **Satisfaction with Life**	Beta	Percent of the Variance (R^2)
Step 1		
Duration	- .235	
Step 2		
Duration	- .246**	6%
Self Concordance	- .057	
Stressfulness	- .390**	11%
Pain Salience	- .128	
Personal Competency	.094	
Social Visibility	.072	
Step 1 R^2 = .055, R^2change = .055, $F_{(1,132)}$ = 7.702, p < 0.01		
Step 2 R^2 = .278, R^2change = .223, $F_{(5,127)}$ = 7.829, p < 0.01		

** p < 0.01

Table 6.14

Regression of Physical Function on Duration and Projects Disposition Scales

Predictor Independent Variables Dependent Variable: Physical Function	Beta	Percent of the Variance (R^2)
Step 1		
Duration	-.291	
Step 2		
Duration	-.265**	7%
Self Concordance	-.074	
Stressfulness	-.001	
Pain Salience	-.421**	16%
Personal Competency	.086	
Social Visibility	.002	
Step 1 R^2 = .085, R^2change = .085 $F_{(1,129)}$ = 11.947, p < 0.01		
Step 2 R^2 = .284, R^2change = .21, $F_{(5,124)}$ = 6.884, p < 0.01		

** p < 0.01

The analysis up to this point shows that the variance in functioning and health of individuals with low back pain can be explained in part by participants' disposition. Specifically, participants' dispositions to appraise their projects as stressful and/or

construe their pain as a salient to their projects and that their pain is likely to disrupt the progress of their projects. Stressfulness accounted for more of the variance associated with well-being (depression and satisfaction with life) whereas pain salience was the only disposition to explain functioning, general health and pain severity.

Pain-related fear and pain severity were moderately correlated with pain salience and pain-related fear was weakly correlated with stressfulness. Conceptually, the pain salience dimensions were aligned with avoidance and also with fear of pain, so the significant relationship of these two measures was expected. In previous studies, the pain-related fear and pain severity measures were shown to predict physical functioning and psychological distress (Bongers et al., 1993; Hoogendoorn et al., 2000; Pincus et al., 2002). Therefore, to assess whether personal project analysis dispositions contribute uniquely to the explanation of function and health in the participants after using measures, which are most commonly used as predictors of function in low back pain patients, the regressions were repeated with each of these variables in the regression model. To control for pain-related fear or pain severity, these variables entered into the regressions on the first step. The results are summarized in Table 6.15 and 6.16. These tables show the variables of health and functioning that remained significant after controlling for pain-related fear or pain intensity, which dispositions were significant, and the percentage of the variance they explained.

After controlling for these variables, the predictive power of the dispositions towards personal projects was considerably reduced. However for the most part, those variables that had previously explained function and health continued to do so. In particular, stressfulness of personal projects was contributed to the variance of well-being

after the variance explained by either pain-related fear or pain severity had been accounted for. However, pain-related fear, or pain severity were the only significant variables to account for physical role functioning and general health and pain severity accounted for the variance in social functioning. Pain salience was no longer significantly contributed to either any of the health measures so may assume that appraisal of pain salience within the context of personal projects does not add any additional information to explaining the variability in health in individuals with low back pain than that which can be explained by either pain severity or pain-related fear.

Table 6.15

Prediction of Function and Health from Disposition Scales after adding Pain-related Fear as a Control Variable

Added Control Variable and Dependent Variable (DV)	R^2 inc (Significant for Dispositions stated)	Significant Individual Dispositions Scales & Percentage of Variance Predicted
Control Variable: Pain-related Fear		
DV: Satisfaction with Life	$R^2_{inc} = 0.18$, (Yes)	Stressfulness, $\beta = -.329^{**}$ (8%)
DV: Depression	$R^2_{inc} = 0.15$, (Yes)	Stressfulness, $\beta = -.321^{**}$ (7%)
DV: General Health	$R^2_{inc} = 0.06$, (No)	(No dispositions significant)
DV: Pain Severity	$R^2_{inc} = 0.11$, (Yes)	Pain Salience $\beta = -.347^{**}$ (9%)
DV: Physical Functioning	$R^2_{inc} = 0.08$, (Yes)	Pain Salience $\beta = -.281^{**}$ (6%)
DV: Social Functioning	$R^2_{inc} = 0.07$, (Yes)	Pain Salience $\beta = -.271^{**}$ (8%)
DV: Emotional Role Disruption	$R^2_{inc} = 0.07$, (Yes)	Pain Salience $\beta = -.219^{**}$ (4%)
DV: Physical Role Disruption	$R^2_{inc} = 0.04$, (No)	(No dispositions significant)

** $p = 0.01$ R^2_{inc} = step 2 – step 1

Table 6.16

Prediction of Function and Health from Disposition Scales after adding Pain Severity as a Control Variable

Added Control Variable and Dependent Variable (DV)	R^2 inc (Significant for Dispositions stated)	Significant Individual Dispositions Scales & Percentage of Variance Explained
Control Variable: Pain Severity		
DV: Satisfaction with Life	$R^2_{inc} = 0.21$, (Yes)	Stressfulness, $\beta = -.415^{**}$ (12%)
DV: Depression	$R^2_{inc} = 0.26$, (Yes)	Stressfulness, $\beta = -.390^{**}$ (11%)
DV: General Health	$R^2_{inc} = 0.10$, (Yes)	(No dispositions significant)
DV: Physical Functioning	$R^2_{inc} = 0.07$, (Yes)	Pain Salience $\beta = -.221^{**}$ (3%)
DV: Social Functioning	$R^2_{inc} = 0.01$, (No)	(No dispositions significant)
DV: Emotional Role Disruption	$R^2_{inc} = 0.08$, (Yes)	Pain Salience $\beta = -.169^{**}$ (3%)
DV: Physical Role Disruption	$R^2_{inc} = 0.02$, (No)	(No dispositions significant)

$^{**}p = 0.01$ R^2_{inc} = step 2 – step 1

Section 4: Analysis of Intrapersonal and Interpersonal Projects

As others have suggested, not all projects are equal (Ryan et al., 1996; Salmela-Aro, Pennanen et al., 2001). To this point, analysis used participants' appraisals of personal projects. We were also interested in the properties of personal projects in relation to the health and functional status of the participants. Other studies have categorized goal-constructs by the intentions of the goal such as intimacy and attainment orientation (Emmons, 1986) or by developmental transitions tasks (Cantor & Blanton, 1996). In this study, personal projects were categorized by the content of the domain of focus, such as work, health, and leisure. When asked to select their most important personal projects, 42 percent of the projects chosen fell into two categories, intrapersonal and interpersonal projects. The interpersonal projects pertained to participants' relationships with others, as well as projects undertaken for other people. Intrapersonal

projects were participants' self-focused projects such as improving, altering or developing some aspect of the self.

In both the written accounts by participants in the current study and published accounts of low back pain, distress was particularly attributed to disruption of self-focus and relational aspects of living. Disrupted relationships due to the inability to participate in interpersonal activities and the loss of self-identity previously derived from personally meaningful activities seem to elicit descriptions of psychological distress and loss of self-esteem. Being unable to mow the lawns did not created as much anxiety as not being able to care for children or an ailing mother. Such intrapersonal and interpersonal personal projects were connected to how the individuals construed who they were and their place in their social context. Consequently, the question to explore is the relationship between the disruption of intrapersonal and interpersonal types of projects compared with other projects that are perhaps not as intimately connected with the self. The key question here is whether the presence of a debilitating illness that compromises function and/or well-being is undermined more significantly by the disruption of certain types of projects.

Interpersonal projects support participants' need for social connectedness. In social connectedness and social integration are important human needs met through participation in social activities and the attainment of social goal-directed activities (Reis et al., 2000), and other sources document that general construct of social support has been consistently related to physical health and health outcomes (Berkman, 2000; Lyons & Chamberlain, In press). Other interpersonal dimensions of goals such as intimacy are also associated with well-being (Emmons, 1996, 1999; Emmons & Kaiser, 1996).

Similarly, self-focused intrapersonal projects are often more abstractly conceptualised than concretely construed projects. Self-focus projects are difficult to attain and disengage from because they are value-laden (Emmons, 1992; Little, 1989). Individuals have been shown to persist more with value-laden projects and it could be said that they have more of themselves invested in self-focus projects and are more committed to achieving them. The achievement of value-laden projects yields greater benefit to individuals' well-being compared to less important projects. This study used the "most important" projects because it was believed that their disruption would come at a greater psychological cost. Intrapersonal projects, in previous studies, have a relationship with well-being (Salmela-Aro, Pennanen et al., 2001).

Before examining how the intrapersonal and interpersonal projects were related to function and health, a preliminary step was taken to assess if participants actually appraised their intrapersonal and interpersonal projects differently to other categories of projects (work, health, IADL and leisure). Participants' projects were divided into two groups (group 1: intrapersonal and interpersonal projects and group 2: other projects). The second group were projects that were considered external, task-based and less value-laden, such as work, IADL and leisure projects.

The differences between project types (intrapersonal and interpersonal personal projects compared to the "other" projects) were assessed on the 26 dimension project appraisal ratings using one-way ANOVA. Participants' rated their intrapersonal and interpersonal projects differently on 14 of the 26 dimensions. The intrapersonal and interpersonal projects differed from the second group of projects on those dimensions designed to examine the congruency of projects. The dimensions that differed included,

really me ($F_{(1, 699)} = 5.818$, $p \leq 0.01$), *become the person I want to be* ($F_{(1, 699)} = 16.542$, $p \leq 0.001$), *fits values and beliefs* ($F_{(1, 699)} = 23.303$, $p \leq 0.001$), *makes me feel good about me* ($F_{(1, 699)} = 6.822$, $p \leq 0.01$) and *I am committed to* ($F_{(1, 700)} = 20.048$, $p \leq 0.001$). Although all categories of projects were represented among participants' most important projects, it might be that different types of projects are chosen for different reasons as "most important". Furthermore, appraisals of different categories of projects suggest that we reconsider the meaning for individuals of what makes projects "important" and what makes projects "meaningful". For example, contrary to a presumption in this study, not all "important" projects are highly representative and congruent with a concept of self.

It was interesting that the means for social visibility dimensions were higher for intrapersonal and interpersonal projects than the other group of projects, which might be due to the interpersonal projects within this group. The appraisals of intrapersonal and interpersonal projects social visibility dimensions (i.e., *the importance to others, help and hindrance by others, the awareness of others to the project, and the participation of others in the project*) were significantly different to the other group of projects.

Group two projects had higher appraisal means for the dimensions assessing pain salience (i.e., beliefs and expectations of pain interfering with project or project causing pain). A simple explanation is the categories of projects in Group 2 projects such as the IADL projects, leisure or work projects might be expected to require physical abilities, whereas these may be needed to a lesser extent for intrapersonal and interpersonal projects.

Given that participants viewed intrapersonal and interpersonal projects differently on many of the dimensions, the relationship between these projects and functional status

and health were examined. In the earlier analysis, all categories of projects were included. In this analysis, only the intrapersonal and interpersonal projects scores were used. In some cases, participants had only one project in this category while other participants had several. However, some participants listed no intrapersonal or interpersonal projects among their most important projects, which reduced the sample size to 117 participants. As in previous factor analyses (refer to Section 3 above), participants' projects dimension appraisals scores were aggregated and the means of each of 26 dimensions were entered into principal axis factor analysis. Both Varimax and direct oblique rotation analyses produced an eight-factor solution. The oblique factor solution was selected for further analysis, as more factors (seven of the eight) were conceptually interpretable in this solution. Table 6.17 shows the oblique principal axis factor solution.

The dimensions loaded on factors that were conceptually similar to the factor analysis derived from all categories of personal projects. The similar factors were given the same labels that were previously used (self-concordance, stressfulness, pain salience, and social visibility). The main difference between this analysis and the factor analysis that used all categories of projects was that personal competency dimensions in this analysis loaded on two factors, whereas they had loaded on only one factor in the earlier analyses. Dimensions assessing personal decision, commitment, and the desire to engage in the project loaded on one factor, whereas dimensions appraisals of negative characteristics that related to barriers and failure loaded on a second factor. The dimensions previously subsumed under the label personal competency were now two factors labelled autonomy and failure. The labels autonomy and failure were better in that they conceptually represented the constituent dimensions of these factors.

Table 6.17

Principal Axis Factor Analysis of Intrapersonal and Interpersonal Project Dimension with Oblique Rotation (N = 117)

		Factors							
Dimensions	Communalities	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Values & beliefs	.700	**.794**	.106	-.151	.032	-.167	-.027	.053	-.022
Become me	.673	**.706**	.086	-.117	-.106	-.066	-.316	.083	.198
Really me	.469	**.533**	-.078	.093	-.038	-.023	.025	-.045	.058
Abilities & skills	.488	**.417**	-.047	-.129	.091	.042	.264	-.258	.048
Difficult	.752	.038	**.749**	.164	.100	.028	.048	.268	.087
Challenge	.507	.000	**.665**	.099	-.077	-.072	.144	.071	.036
Stressful	.655	.078	**.661**	.046	.058	.239	-.036	.167	.113
Enjoyment	.564	.337	**-.505**	.146	-.016	.116	.129	.293	.133
Avoid doing	.782	-.161	.063	**.939**	-.066	.000	-.053	-.141	.090
A lot of pain	.667	.053	.068	**.800**	.023	.014	.110	-.003	.011
Pain prevents achieving	.661	.026	-.056	**.752**	.047	-.045	-.223	.159	-.018
Others help	.548	.006	-.023	.031	**.865**	.049	-.067	-.132	-.037
Important to others	.421	-.102	-.121	-.173	**.611**	-.045	-.149	.232	.145
Others know	.550	.169	.057	.252	**.577**	-.185	.007	-.045	-.223
With others	.335	-.064	.053	-.004	**.455**	.021	.098	.023	.060
Want to do this	.525	-.028	-.073	.039	.003	**-.791**	-.031	-.053	-.133
Decision	.525	.051	.023	.004	.022	**-.744**	.185	.095	.067
Committed	.607	.180	-.056	-.035	.065	**-.443**	-.039	-.114	.305
Successful to date	.530	.328	**-.359**	-.042	.085	.112	**.566**	.004	-.038
Time adequate	.144	-.049	.060	-.035	-.023	-.062	**.250**	.017	-.012
Others make difficult	.504	.009	.170	.034	.083	.021	.138	**.587**	.037
Will succeed /finish	.369	.159	-.010	.025	.177	-.159	.119	**-.427**	.261
Unpleasant consequences	.512	.119	.291	-.009	.151	-.133	-.058	**.378**	.005
Good about me	.653	.207	.115	-.018	-.059	-.268	-.289	-.018	**.639**
Control	.561	-.103	**-.526**	.070	-.037	.028	.277	-.049	**.550**
Feel important	.409	099	.128	.083	.115	.116	-.024	.016	**.518**
Percentage of Variance	-	15.82	13.40	8.07	5.94	4.60	3.25	2.68	2.47

Factor labels are Factor 1: self-concordance, Factor 2: Stressfulness, Factor 3: Pain Salience Factor 4: Social Visibility, Factor 5: Autonomy Factor 6: not interpretable, Factor 7: Failure, Factor 8: Self-worth

Disposition unit weighted scales were computed using the dimensions that correlated with each of the factors and reliability was assessed (see Table 6.18). Factors identified as representing autonomy, pain salience and stressfulness had acceptable alphas above 0.7. Factors seven and eight, were deemed unacceptable and were discarded, as the internal consistency alpha values were .398 and .456 respectively. Self-concordance and social visibility also reported lower alpha scores, but the deletion of one dimension raised the alpha scores to an acceptable level of 0.727 and 0.726 respectively. These scales now consisted of three dimensions each and were regarded to be more internally consistent measures of the constructs they represented. The disposition scales were correlated slightly (see Table 6.18).

Table 6.18

The Inter-Correlation of Scales for Appraisals of Intrapersonal and Interpersonal Projects (N = 110)

	Project Disposition Scales			
Scales	Self Concordance	Stressfulness	Pain Salience	Autonomy
Stressfulness	- .018	--		
Pain salience	- .141	.298**	--	
Autonomy	.375**	-.043	.032	--
Social visibility	.113	.126	.133	.225*

* $p < 0.05$, ** $p < 0.01$.

Correlations of Intrapersonal and Interpersonal Project Disposition Scales, and Low Back Pain, Function, and Health

Low Back Pain. Participants who reported pain salience in their projects were also more likely to report pain related fear, higher frequency of episodes and greater pain severity (see Table 6.19). This pattern was the same as in the previous analysis when all

projects were included. Perceived project stressfulness was also associated with participants reporting of pain-related fear, but duration of pain was also more likely to be associated with intrapersonal and interpersonal projects reported as stressful. Previously, duration of pain was not related to project stressfulness.

Table 6.19

Correlations of Intrapersonal and Interpersonal Project Disposition Scales and Pain Characteristics (N =117)

	Pain Characteristics				
Project Scales	Cronbach alpha	Pain severity	Duration	Frequency of pain	Pain-Related Fear
Stressfulness	.79	.017	-.226*	.135	.288*
Self Concordance	.73	-.018	-.135	-.095	-.018
Social Visibility	.73	-.051	-.047	.022	.126
Pain Salience	.85	-.441**	-.011	.260**	.429**
Autonomy	.72	-.142	.014	.141	-.051

** $p < 0.01$, * $p < 0.05$.

Function. As in the earlier analysis, participants' pain salience was related to participants functioning. Pain salience for participants was related to all aspects of physical and social functioning and was related to disruption of their typical roles. Participants reporting perceived autonomy (the personal competency dimensions of the all projects appraisal had correlated to create two factors in intrapersonal and interpersonal projects appraisal, one was dimensions related to autonomy) were more likely to experience disruption in their physical roles. Commitment to projects, personally deciding to engage in projects, and wanting to do a project were the dimensions of this factor that were associated with better physical functioning in participants' personal and

work roles. The relationship between function and project-related dispositions are presented in Table 6.20.

Table 6.20

Correlation of Intrapersonal and Interpersonal Project Disposition Scales and Function (N =116)

	Function			
Project Scales	Physical Functioning	Physical Role Disruption	Emotional Role Disruption	Social Functioning
Stressfulness	-.059	-.003	-.034	-.036
Self Concordance	.073	.057	-.067	.000
Social Visibility	-.038	-.146	-.035	-.126
Pain Salience	-.274**	-.321**	-.329**	-.400**
Autonomy	-.059	-.206*	-.038	-.131

** $p < 0.01$.

Health. The relationship between health measures and participants' dispositions to their intrapersonal and interpersonal projects differed from previous analyses performed with all types of projects. Similar to previous analyses, participants who reported their projects as more stressful and had more pain salience were more likely to report poorer on health measures (see Table 6.21). However, in this analysis self-concordance was also associated with less depression (r = -0.22, $p < 0.05$) and slightly related to better general health (r = 0.19, $p < 0.05$). Project stressfulness positively correlated with depression and negatively correlated with satisfaction with life, but it was not correlated with perceived general health. As before, participants reporting pain salience were more likely to report poorly on measures of depression, poorer satisfaction with life and general health.

Table 6.21

Correlations: Intrapersonal and Interpersonal Project Disposition Scales and Health Measures (N = 110)

	Health and Well Being		
Project Scales	General Health	Depression	Satisfaction With Life
Stressfulness	-.166	.337**	-.296**
Self Concordance	.191*	-.216*	.184
Social Visibility	-.080	.088	-.054
Pain Salience	-.298**	.391**	-.288
Autonomy	-.035	-.099	-.018

** $p < 0.01$, * $p < 0.05$.

Intrapersonal and Interpersonal Personal Project Dispositions as Predictors of Function, Health, Well-being and Pain Severity

Multiple regressions were performed to investigate further the relationships between personal project dispositions and dependent variables. Results are presented in Table 6.22. All scales were entered into the analysis on one step. Examination of the beta values reveals that overall the participants' perception of the salience of their low back pain was predictive of both function and health. However, intrapersonal and interpersonal projects appraised to be self-concordant were predictive of perceived general health and role disruption due to emotions. Self-concordance almost reached significance in relation to depression and satisfaction with life, accounting for 18 percent of the variance ($p = 0.06$ see Table 6.22). As in the previous analysis, stressfulness predicted depression (beta = 0.27), but the percentage of the variance explained was similar to pain salience (beta = 0.29). In the multiple regressions performed with all projects, stressfulness had accounted for more of the variance than pain salience.

Table 6.22

Regression Measures of Function, Well-being and Perceived General Health on Personal Projects Disposition for Intrapersonal and Interpersonal Projects

Predictor Independent Variables Dependent Variables: Health	Beta	Predictor Independent Variables Dependent Variable: Function	Beta
DV: Depression		DV: Physical function	
Self Concordance	-.180	Self Concordance	.096
Stressfulness	.263**	Stressfulness	-.066
Pain Salience	.285**	Pain Salience	-.277**
Autonomy	-.065	Autonomy	-.083
Social Visibility	.118	Social Visibility	-.020
$R^2 = .267$, $F_{(5, 100)} = 7.291$, $p < 0.001$		$R^2 = .10$, $F_{(5, 99)} = 2.383$, $p < 0.05$	
DV: Satisfaction with Life		DV: Social function	
Self Concordance	.184	Self Concordance	-.003
Stressfulness	-.254**	Stressfulness	.096
Pain Salience	-.200*	Pain Salience	-.421**
Autonomy	-.088	Autonomy	-.103
Social Visibility	-.008	Social Visibility	-.057
$R^2 = .172$, $F_{(5, 102)} = 4.245$, $p < 0.01$		$R^2 = .185$, $F_{(5, 101)} = 4.57$, $p < 0.001$	
DV: General Health		DV: Emotional Role	
Self Concordance	.223*	Self Concordance	-.199*
Stressfulness	-.114	Stressfulness	.137
Pain Salience	-239**	Pain Salience	-.395**
Autonomy	-.116	Autonomy	.055
Social Visibility	.025	Social Visibility	-.005
$R^2 = .317$, $F_{(5, 99)} = 3.169$, $p < 0.01$		$R^2 = .151$, $F_{(5, 101)} = 3.601$, $p < 0.01$	
DV: Pain Severity		DV: Physical Role	
Self Concordance	-.024	Self Concordance	-.120
Stressfulness	.150	Stressfulness	.134
Pain Salience	-.505**	Pain Salience	-.331**
Autonomy	-.117	Autonomy	.226*
Social Visibility	-.038	Social Visibility	-.110
$R^2 = .225$, $F_{(5, 100)} = 6.846$, $p < 0.001$		$R^2 = .18$, $F_{(5, 100)} = 4.54$, $p < 0.001$	

p = 0.05 ** p = 0.01

Participants' pain salience predicted participants' function and health status, making a similar contribution as it had when all categories of projects had been used in the analysis. There was, however, one difference in that participants' self-concordance of intrapersonal and interpersonal projects was related to measures of health when other projects were excluded. At the level of bivariate analysis, participant self-concordance of projects was related to their measures of depression and general health. However, self-concordance only accounted for variance in general health and not depression when the relationship was explored further with multiple regression analysis. Although self-concordance had not been related to emotional role disruption at the level of bivariate analysis, when considered with the other disposition scales in multiple regression analysis, it along with pain salience were both predictive of participants' emotional role disruption. Self-concordance also approached a 0.05 level of significance in relation to depression and satisfaction with life outcomes measures ($p = 0.06$). The pattern of relationships that emerged in multiple regressions suggests that self-congruency in intrapersonal and interpersonal projects have a relationship to perceived general health and psychological well-being and as well as to the function.

Summary of Results

The unanticipated main result of this study was that people's disposition to their appraisal of the salience of pain in their personal projects emerged as predictive of both function and health. It was apparent from assessments of participants that their low back pain truly was a disabling condition that disrupted the flow of everyday life and

interrupted their identity-affirming, goal-directed activities. Yet, their day-to-day dispositions in navigating their activities, as assessed by personal projects analysis, did not facilitate their ability to deal with their low back pain. Instead, it was the condition-specific cognitive appraisal of pain that determined not only their function, but also explained in part the variance in participants' health.

In the study, participants' descriptions of psychological distress in the open-ended question were substantiated by the psychometric measures. Overall, the health of the participants was poorer than the general population, a common observation of individuals with low back pain. Even though all participants were dealing with low back pain, and 44 percent had chronic low back pain, the high level of depression, the low satisfaction with life and significant self-assessment of poor general health reported by this group was noteworthy. Depression, general health, and satisfaction with life, were related to the duration of pain, but they were not related to chronic pain (i.e. pain persisting longer than three months). Limited by the cross-sectional design, we cannot say whether participants with poorer health were likely to be those whose symptoms persisted or if their health deteriorated as the pain persisted from the time of onset. These health results, yet again, highlight the biopsychosocial presentation of low back pain.

The functional challenges of the participants were clearly not restricted to decreased physical performance due to biological factors such as pain and the deconditioning due to inactivity. These functional limitations also included participants social functioning and typical roles disrupted due to their emotional status. The reporting by the participants of social and emotional functioning as well as physical function was a feature of the study methodology that had assessed individually the various aspects of

everyday function. Previously, studies have tended to report either a general composite measure of functioning or low back pain measures specific to physical tasks performance.

The use of a community sample of individuals in this study with low back pain irrespective of pain duration is not commonly found in the literature, much of which focused exclusively on the chronic low back pain population. While poorer psychological well-being, general health, and functioning are typically associated with chronic low back pain, individuals in this study with acute pain and those with chronic low back pain were found to be similar in their presentation.

The specific results of the personal project analysis in the study found that participants' appraisal of the salience of their pain to their projects was correlated with their functional status, general health, and pain severity. In contrast, psychological well-being (depression and satisfaction with life) was related to both participants' appraisals of stressfulness of their personal projects and their appraisal of the salience of their pain. However, stressfulness explained more of the variance in these measures than participants' pain salience.

Although pain salience and stressfulness turned out to be weaker predictors, they were still related to participants' functional and health status on most of the measures after controlling for the more traditional indicators (i.e., pain severity and pain-related fear) of function and health. Exceptions were that disposition no longer explained physical role function or general health, and pain severity explained social function.

At the second level of personal project analysis, which considered the content of personal projects and which singled out the intrapersonal and interpersonal projects for analysis, the relationships between participants' dispositions and health were different to

the earlier analysis with all types of projects considered. It was significant that pain salience was still the predominant predictor of function. However, self-concordance (the congruence between sense of self, beliefs and values and personal projects) joined participants' stressfulness and pain salience in explaining general health and emotional role functioning, while autonomy joined pain salience to account for variance in participants physical role functioning. Self-concordance was somewhat correlated to satisfaction with life and depression, although not at a significant level ($p = 0.06$).

Therefore, based on these results, pain salience was the predominant disposition contributing to the functional status and pain severity in individuals with low back pain. This was also the case even when the projects were limited to the intrapersonal and interpersonal types. The strength of participants' expectancy of pain and its role in both their performance and outcome of their projects is a central finding of this study. Significantly, we observed that adaptation was not associated with strong positive dispositions construed as characteristics of a functional project system. Instead, the difficulties individuals have in the day-to-day negotiation of their low back pain was related to the strength of negatively appraised dispositions of condition-specific dimensions of pain salience, and the stressfulness of their personal projects.

Chapter 7: Discussion: A Personal Projects Analysis of Low Back Pain

"Pain is not simply a matter of sensing and feeling, but also a matter of thinking."
(Kugelmann, 1990, p. 1668)

Almost all of us at some time in our lives will have an illness or disability. For some people, it will be acute and transitory, for others chronic, but for all, it will likely interfere with the ability to function. The stress and disruption of that experience will require that we adapt. In this study, it was proposed that adaptation to illness is enhanced by a person's capacity to engage in personal projects; projects which they feel are personally meaningful, manageable, that they feel efficacious in achieving, and do not regard as unduly stressful or difficult (Little, 1999b). In examining adaptation, this study addressed perennial questions asked about low back pain. Specifically, what factors can explain the ambiguous and incongruent relationship between individuals' function and pain, and what accounts for their concomitant psychological distress? These questions, central to the study, were reframed to examine the disruption of function associated with low back pain from a personal projects perspective as: "What can we learn about the processes of adaptation to low back pain in the naturalistic context of everyday life using personal projects analysis?"

The discussion in this chapter addresses this central question in two parts. First is a discussion of the specific results, interpreted in the context of personal projects and the pertinent low back pain literature. Next, the decision to use personal project analysis is revisited by examining how this choice of methodology contributes to our knowledge of how individuals construe and adapt to illness.

A Personal Projects Analysis of Low Back Pain

As summarized in chapter 6, the results indicated that the way people with low back pain appraised their personal projects predicted their function, health status and pain severity. However, the hypothesized relationships between project appraisals and participants' symptoms (i.e., function and health) were not realised. Participants' stressfulness and pain salience appraisal of their personal projects were associated with limited functioning and health status, whereas their personal project competency, social visibility and self-concordance were not. Even though the self-concordance of projects was not related to health or function relative to all types of projects, it did predict emotional role disruption and perceived general health when participants appraised only their intrapersonal and interpersonal projects.

Two central findings emerged from the study. One was that pain salience explained the various aspects of function in this sample of individuals with low back pain. This meant that individuals who considered their pain a hindrance to their projects and expected pain when they engaged in their projects were more likely to be those who were limited in their work, had difficulties caring for themselves and their home, and were less involved in their social activities. Importantly, this finding was not limited to tasks that required physical activities, but also to social activities and to the roles that are contingent on an individual's emotional status.

The second major finding concerned the primary predictors of health. In discussing the health-related findings, it is pertinent to mention that, in general, the participants were found to have poor psychological well-being and perceived general health. Individuals with low back pain, especially chronic pain, frequently score poorly on

health measures (Beaton et al., 1996; Cassidy, Carroll, & Cote, 1998; Nickel, Egle, Rompe, Zollner, & Hoffmann, 2001). Based on previous research that has shown that better well-being and health is associated with personal agency (i.e., control, efficacy, autonomy), social visibility/connectedness and the meaningfulness of projects, it was predicted that a similar relationship would be found in this study. However, the results did not support this assumption. Possessing such dispositions showed no adaptive advantages for individuals with low back pain. A main difference between this current study and other studies that have found a relationship is that participants had an illness. Thus, illness and its relationship to people's abilities to engage and achieve personal projects may alter the relationship of those dispositions that influence the volitional process of projects. Hence, the dispositions that were predictive of poorer well-being and perceived physical health were participants' appraisal of their pain as salient to their projects and negative appraisal of project stress.

Salience of Low Back Pain in the Pursuit of Personal Projects. Giving added weight to the quotation that opens this chapter, "pain is also a matter of thinking," this study showed that pain salience cognition was significant to the volitional processes of personal projects of individuals with low back pain. Irrespective of the content of their projects, participants' cognitive appraisal of the condition-specific pain salience of their projects predicted their functionality. In contrast, participants' function was not related to other dispositions that reflected their overall appraisals of their personal projects (i.e., how they typically approached their goal-directed activities).

By returning to the case scenario of the young women joggers, the findings concerning the importance of pain salience might be interpreted. It is assumed that these women's cognitive appraisal of their pain and their expectation that their pain would interfere with their performance would predict how limited they are likely to be in their physical and their social functioning. Hence, the overall affect of their low back pain on their everyday lives is partly explained by their perceptions of their pain in relation to their actions. As the personal projects assessment used people's most valued personal projects, we might assume the pain salient disposition would indicate their propensity to construe their pain as salient in relation to many of their personal projects. In this way, the personal projects approach provided a broader understanding of our participants' adaptation to their pain, revealing how they construed their pain symptoms in the context of navigating their lives.

There are several points of interest in this particular finding. First, it is clear that it was a condition-specific disposition that superseded the importance of other dispositions in explaining people's adaptation as measured by physical and social functioning. Similar to claims of other researchers with respect to goal cognitions (Karoly & Lecci, 1997), it would seem that project cognitions are specific to the disorder they reflect. Next, it appears that while there is a more obvious relationship between pain salience and physical function, pain salience was also associated with limited social function and the perception of poorer general health. Finally, relative to other dispositions associated with how individuals are functioning in their lives and that might be considered to afford some advantages when dealing with illness, pain salience was the only disposition to predict their function. Therefore, the personal projects analysis approach assesses how

individuals construe their everyday volitional processes. This permits us to postulate that irrespective of how efficacious people feel about their abilities, how meaningful and socially connected their important goal-directed activities might be, illness-related cognitions, such as cognitive appraisal of one's pain, will be factors in how people's goal-directed activities are pursued in the context of an illness.

The significance of pain salience is in keeping with previous work which has shown that the meaning attributed to pain is central to how pain is experienced (Karoly & Lecci, 1993; Kugelmann, 1999). In the present study, we saw a "functional" meaning in participants' appraisal of pain. Their pain salience was not only related to those tasks that directly exacerbated their pain, such as physical activities, but also was related to their ability to function socially and to the activities affected by their emotional status. However, this finding regarding the salience of pain is different in several ways from typical findings reported in low back pain studies that had, for the most part, a clinical or occupational focus. Because this study departed from the usual methods of measuring function, the contribution of pain salience was observed in relation to each aspect of function. Namely, it went beyond the exclusive focus on physical function and did not use psychological measures (e.g., depression scales, anxiety scales) as indirect indicators of social functional performance. Rather, in this study, functioning was divided into its various domains, and patients' social functioning and roles associated with emotional status were assessed separately in addition to their physical function. The use of specific, SF-36 subscales to measure function permitted us to differentiate the various aspects of function and their relationship with the participants' project dispositions. For example, this study was able to distinguish physical role disruption, which is an assessment of roles

that are based on physical performance, from emotional role disruption, which is related to emotional status.

Using personal projects analysis approach, this study's findings supports current low back pain research that states that an individual's cognitive appraisal of pain is related to the individual's functional performance and disability. Existing work using value-expectancy models suggest that personal projects, in particular, meaningful goals (such as the self-concordant projects), predict persistence with such projects (Karoly, 1999; Scheier & Carver, 2003). Even when looking at projects considered high in meaningfulness (i.e., the intrapersonal and interpersonal projects), pain salience still emerged in this study as the important factor in physical and social functioning. However, when participants appraised intrapersonal and interpersonal projects alone, excluding other projects, their project self-concordance did provide additional predictive information about their level of functioning in the activities affected by emotional status. This finding may be reflecting the more abstract nature of intrapersonal and interpersonal projects, previously shown to be associated with poorer psychological well-being (Emmons, 1996). Abstract projects are perceived as more stressful and difficult and are also associated with depression (Carver, 1996; Wallenius, 2000).

These results vary from the pain-related fear and pain-avoidance research focusing on the relations between fear, activity avoidance, and function. These previous studies did not consider the independent relationship between appraisals of pain and function in the context of other factors that have a role in effective day-to-day function, as was the model in the present study. This study demonstrated that the relationship between pain salience

and function exists in relation to valued activities (i.e., peoples' most important" personal projects) independent of the other dispositions.

Studies that have used other personal action construct approaches, which emphasized goals as self-regulatory, demonstrated that having pain (with a non-specified diagnosis) was associated with specific cognitive appraisals of goal and goal content (Karoly & Lecci, 1997; Karoly & Ruehlam, 1996). However, those studies were comparative (e.g., individuals with pain compared to peers without pain) and did not address the relation between the appraisals of perceived volitional processes of one's personal projects relative to performance. For example, in a study comparing adults with and without pain, persistent pain was associated with self-defeating appraisals of everyday and future goals (Karoly & Ruehlam, 1996). Those adults with persistent and episodic pain, when compared with their pain-free peers, were shown to have lower levels of goal-centred values, self-efficacy, and positive arousal, and higher goal-based self-criticism, negative arousal and conflict between work and non-work goals (Karoly & Ruehlam, 1996). Notably, these same studies also showed that goal appraisals accounted for psychological status (i.e., depression and anxiety) over and above the distress associated with pain. The current study also found that participants' projects dispositions accounted for depression, independent of pain severity.

Research has shown that self-defeating schemas that construe pain to be a barrier to goal attainment and goal progress are critical factors in people's adaptation to chronic pain (Jensen & Karoly, 1991; Jensen et al., 1994). The present study further demonstrates a critical relationship between the cognitive appraisals of pain (negative appraisal of pain and its potential consequences) and an individual's self-imposed limitations on

participation in everyday activities. This current study showed that the cognitive appraisal of pain in projects was related to psychological distress and poor physical health. Specifically, study participants who had a tendency to cognitively appraise their project performance with an expectation of pain and anticipated disrupted function were the most adversely affected by their low back pain. This is also borne out in the literature, which suggests that pain expectations and pain-related fears are associated with poor functional performance and psychological distress (Crombez et al., 1999; Vlaeyen & Linton, 2000).

The pain salience construct shares common ground with functional self-efficacy (distinct from pain self-efficacy), pain expectancy, and fear-avoidance models. These models suggest that individuals evaluate their ability to undertake a task and consider this appraisal of their abilities and their appraisals of the possible pain and/or re-injury they might experience if they undertake the task. Together these evaluations will determine of an individual's functional performance (Crombez, Vervaet, Lysens, Baeyens, & Eelen, 1998; Lackner & Carosella, 1999). Previous research based on these models has shown that when the cognitive appraisals are made in relation to specific performance, there was greater explanatory power than appraisals of pain, anxiety or the ability to control pain (Lackner & Carosella, 1999; Lackner, Carosella, & Feuerstein, 1996; Vlaeyen & Linton, 2000). In the present study, pain salience was an assessment of the perceived ability to function and undertake activities relative to pain and was the best predictor of function in all areas. Overall, the present study agrees that individuals' differing appraisal of pain, including their ability to perform, is useful in predicting adaptation and function when dealing with low back pain. Participants who reported pain as salient, who anticipated pain in their projects, and who predicted their pain would affect their ability to achieve

personal projects, were more functionally limited. There was evidence to support the idea that the emotion, fear is associated with poor adaptation to low back pain. In this study, pain-related fear was related to disruption of function in everyday activities. Fear in combination with the cognitive appraisal of pain, partially explains people's avoidance of daily activities that impede volitional processes of project pursuit and goal attainment. Thus, the significant predictive role of pain salience found in this study suggests that the cognitive process of negatively appraising the affect of pain on performance, including self-defeating schema of personal projects and goals and an avoidance of daily activities, is a maladaptive mechanism associated with decreased function. Based on this finding, there is support to extend the functional efficacy model from patients' perceptions in relation to performance of specific physical tasks to a more general model that would claim that such cognitive appraisal is also predictive of performance in everyday activities. As Waddell (1993) has previously said, it was as if the "fear of pain and what we do about it is more disabling than the pain itself" (p. 164).

The personal projects analysis variables, self-concordance/integrity (Christiansen, 2000; McGregor & Little, 1998), self-focus (Salmela-Aro, Pennanen et al., 2001), self-efficacy (Palys & Little, 1983) and interpersonal social relations (Reis et al., 2000) are associated with persistence of individuals in their personal projects, and with their perception of their own well-being. In this study, we suggested that assessing the way in which these highly personal needs are met through personal projects would show a positive relationship between function, well-being, and individuals' personal projects dispositions, and that this might explain the diverse adaptive responses to illness (e.g., low back pain). We predicted that the attributes of personal projects (i.e., content) and

individual dispositions in these projects might be associated with the trajectory (i.e., functioning despite their pain, or assuming a sick-role with reduced functioning) individuals take as they attempt to navigate the challenges of low back pain. However, how individuals' appraisal of pain explains the difference between those who restructure their lives around their pain using pain to determining their choice of and participation in activities, and others, who stoically continue with their lives despite their pain is left unexplained. It is interesting that the current study showed that the members of this latter, stoic group reported less functional impairment and disruption of life, but also found they did not necessarily report less pain. While pain severity could account for some of the individuals' functional status, it was pain appraisal that remained the critical factor in determining whether individuals functioned in their day-to-day tasks. Perhaps more important psychologically, their pain appraisal predicted whether they perceived that they could maintain and achieve their most important personal projects, thus preserving their sense of self-integrity. The lesser disruption of important personal projects in individuals less likely to perceive their pain as an obstacle was also related to better psychological well-being. Similarly, the relationship between positive "optimist" dispositions and being less apt to conceive pain and fatigue (i.e., condition-specific appraisals) as barriers to goals was reported in women with fibromyalgia (Affleck et al., 2001). We can conclude, based on both previous findings and the results of this study, that avoiding activities because of an expectation of pain and construing pain as salient to one's project outcome may be a contributing factor in pain-related disorders involving functional limitations. Concomitant with disruption of function is depression and dissatisfaction with life. These results add credibility to rehabilitation approaches that include cognitive-behavioural

strategies in the treatment of people with low back pain. However, neither the content of personal projects nor the congruence of projects with an individual's self-identity was significant in predicting function. Although participants were purportedly more committed and invested in these projects, this did not influence whether the projects were pursued. This finding was surprising given the comments of participants who described their distress, in part, resulting from disruption of valued self-identity projects. As with many exploratory studies, further questions emerge. In this study, the nature of the relationships between self, personal project disruption and psychological distress in illness requires clarification.

Project Dispositions, Health and Low Back Pain. To reiterate, an important finding of this study was that two of the dispositions, namely, project stressfulness and participants' pain salience, predicted well-being as measured by depression and satisfaction with life scales. However, pain salience alone predicted individuals' perceived general health. Karoly and Ruehlman (1996) contend that how individuals construe their goal-directed actions might be an integrative bridge between pain and mental health. In like fashion, we had proposed that it was the agency of an individual's actions that would contribute to that individual's health status, which we defined as well-being and perceived health. In this study, the use of personal projects enabled us to make this connection more explicit by identifying the agency of dispositions that meets human needs important to well-being (social visibility, self-concordance, personal competency) and the specific projects that more directly address these needs (intrapersonal and interpersonal projects). However, individuals' disposition to construe their pain as salient

and the stressfulness of projects emerged independently as most important to their health. This finding is evidence of the profound affect of negative appraisals. If we also see the pain salience and stressfulness dispositions as interfering with personal project progress, the poor well-being may be related to the lack of progress towards project completion, which is considered more critical to well-being than the outcome of those goals (Emmons, 1996).

The interpretation of the relationships between project stressfulness and pain salience and health are given depth and made more real through the poignant descriptive accounts of the psychological distress experienced by the participants, as illustrated below.

> *My back pain is ruining my life. There are times when I feel consumed by the pain. It has robbed me of my right to a better, more enriched lifestyle. I have been forced to quit doing almost everything I enjoy. There are times that I am so depressed that I would just go to sleep and never wake up again. All I hear from doctors is " we don't want to give you pain medications because of dangers of addiction." So, I am forced to suffer through the pain. I feel this is extremely unfair to me. I am told there is nothing medically that can be done for me. So I guess I am left to suffer. I am trying to file for disability, but I will probably be turned down because I am working to pay bills. I drive a taxi for a living and sitting for 12-15 hours per day and picking up and carrying luggage, groceries etc. only aggravates my condition. I know I need to see some specialist or find a doctor that will sign a statement saying I am physically unable to work my job. Then I could get disability long enough to heal and go to vocational rehab and learn to do something else that doesn't aggravate my condition. Then maybe I would not be so depressed about my situation and I could live a healthier, happier life. (Participant # 110, male, 47 years)*

This description illustrates an intimate interrelationship between function and health. This relationship was borne out in the psychometric measures used in this study, which showed that all the function and health variables were correlated. In this participant's

description of the salience of his pain to his mood, "I am so depressed that I could go to sleep and never wake up," and his evaluation of satisfaction with life, "It [pain] has robbed me of my right to a better more enriched life style," we see these relationships vividly realised. The stressfulness of the participant's personal projects is evident in his emotional account.

The challenge in analysing these narrative accounts lies in providing a conceptual explanation. A personal projects conceptualisation of the processes which enhance well-being is broader than a simple end-point of goals attainment and successful outcomes. It includes well-being that is associated with progress towards one's goals, and is not necessarily contingent on the attainment of those goals (King, Richards, & Stemmerich, 1998). It is equally important that we engage in projects and sometimes have success, but there is particular value in the volitional processes of engaging in meaningful, goal-directed activity itself (Little & Chambers, 2004; Pychyl & Little, 1998). Low back pain disrupts those processes of engagement in meaningful projects that sustain and enhance human well-being. This relationship between low back pain's disruption of activities and well-being is demonstrated by this study's measurement of well-being in the context of the everyday adaptation to low back pain.

Why was Recovery not an Important Personal Project?

A surprising finding of the study was that participants did not list recovery from their back pain as one of their personal projects. For the participants, their pain was certainly a current problem in their lives to the extent that they had sought out and were currently receiving treatment. All participants reported that it disrupted their everyday

lives to a level that placed their overall condition well below the general population to a degree that they could be described as being disabled. Although an explanation for this remains elusive, this finding has significant individual, social, and economic implications and warrants further investigation.

It is possible that people with low back pain do not construe their pain as a controllable disorder from which recovery is possible. Their experience of recurrent pain and the unpredictable nature of its onset could reinforce how they construe pain. Therefore, if recovery perceived as an unattainable goal, people may not be inclined to invest in recovery as a project. The responses to the open-ended question reflected this view. Participants described how they were not expecting their low back pain condition "to be cured," rather it was a condition "one lived with." Their words of defiance and their resolute efforts to continue with activities despite pain did not extend to applying determination to get better. Instead, their words were associated with not letting their low back pain interfere with their lives. It was viewed as an inevitable presence in their lives and an aspect of who they were.

Tarasuk and Eakin (1994) found permanence to be a central feature of workers' experience of low back pain. Similar to their findings, the perception of permanence in the present study had two distinct components. Participants were unconvinced that their low back pain condition could be cured, and they also perceived they were physically vulnerable to further injury or episodes of low back pain, even though recurrence is not inevitable.

It would be interesting to investigate recovery from illness as a specified personal project (e.g., ask people to specifically list their illness recovery projects). There is value

in specifically looking at how recovery is represented in the volitional processes that produce intentional actions towards recovery. Although there is extensive work addressing illness representation, personal projects' use of nomothetic and idiographic procedures provides an opportunity to further identify how individuals uniquely construe recovery and perceive and translate these projects into intentional action.

Another unanswered question in the present study is whether the absence of recovery projects is unique to the low back pain condition. In keeping with existing interest in perceived control in illness, as well as the perceptions of low back pain as a permanent condition that is raised repeatedly in personal accounts, examining this as a condition-specific phenomenon has merit. A personal projects assessment of low back pain may ascertain whether individuals construed low back pain as an intrinsic, controllable occurrence, which they can proactively address. The converse is that individuals view low back pain as an uncontrollable event, a disorder for which the responsibility of recovery is either given to others (such as health professionals) or is abandoned as a goal. Both perceptions of low back pain have significant implications for the effectiveness management and rehabilitative strategies used.

Revisiting Personal Projects Analysis

Two statements in the literature resonated with the objectives of the present study. One statement was, "Whether one is interested in the key theoretical questions or practical implications of psychology, the study of goal constructs promises to be a stimulating research area, particularly given their potential for integrating psychological

domains" (Austin & Vancouver, 1996, p. 363). The other statement was that personal action constructs are "critical constructs for understanding the ups and downs of everyday life" (Emmons, 1999, p. 27). These statements were realised in this study's objective of investigating the adaptive processes of individuals as they engage in navigating everyday life while dealing with their illness.

Previously, personal project research showed individuals' dispositions and the properties of their personal projects to be associated with well-being (i.e., operationalised as cognitive and affective measures, such as depression scales, satisfaction with life scales, and/or similar measures). In particular, these studies have established that there is a relationship between well-being and individuals' positive appraisal of their personal projects, such as integrity, enjoyment, social support, meaningfulness and efficacy (McGregor & Little, 1998; Palys & Little, 1983; Ruehlman & Wolchik, 1988). This previous research was an antecedent to hypothesizing in this study that individuals' dispositions relative to how they appraised their personal projects would be associated with how they negotiate low back pain. It was postulated that personal projects analysis would illustrate relationships between personal projects properties, individuals' appraisals of their personal projects, and individuals' status of well-being. Similarly, in keeping with the objectives of the current study, personal project analysis would elucidate the relationship between project properties and appraisals and the adaptive functioning of individuals with low back pain.

Health-related research provides on-going evidence that individuals' dispositions, such as self-efficacy, self-worth, competency, and social integration, as well as their perception of social support, are associated with better health outcomes and overall health

status (Berkman, 1995, 2000). In the present study, it was proposed that those dispositions that were related to positive appraisals of self and social connectedness would offer adaptive advantages in dealing with low back pain. Specifically, we proposed a variation of the personal project system, namely a *functional project system,* which we hypothesized would be associated with optimal adaptation and negotiation of the functional limitation of low back pain. It was participants' dispositions (project personal competency, self-concordance and social visibility of their personal projects), which would be positively associated with a more optimal process of adaptation. Support for the proposed functional project system was drawn from the emergent patterns in personal project research that have consistently shown that well-being and better life transitions are associated with particular appraisals of personal projects (Lawton et al., 2002; McGregor & Little, 1998; Pychyl & Little, 1998; Wallenius, 1999). Examining the volitional processes of day-to-day living via personal projects, this study had a contextualised view of participants' responses to low back pain in their functioning and health status.

The functional project system is characterised by dispositions: personal competency; self-concordance of projects; social visibility; and a low appraisal of stress. The proposition that this functional project system might offer adaptive advantages to individuals with low back pain was not supported by the results of the study. None of these dispositions mentioned above were related to function. However, the findings did show that personal competency was associated with participants' perception of their general health and well-being. While this may offer some advantages in respect to the health status of individuals with low back pain, it did not predict health status independent of the other dispositions. Hence, the expectation that these dispositions

would afford adaptive advantages that would enhance function described as "human flourishing," even in the adverse context of dealing with an illness (i.e., low back pain), were not confirmed (Little & Chambers, 2004, p. 66). Instead, health status and the ability to function in everyday tasks were related to the dispositions of stressfulness and pain salience.

On the basis of the current findings, we might tentatively suggest that it is not the beneficial adaptive processes of positive dispositions in one's personal projects that ensure that individuals continue to function in their everyday activities without disruption to their important projects. Rather, it is the dispositions derived from the negative appraisal of personal projects that explain functioning and health. For individuals with low back pain, the disposition of appraising their pain as salient was predictive of the various areas of function, and stressfulness was predictive of their health status. Furthermore, the study showed that the role of these dispositions was independent of the traditional factors (e.g. pain severity and pain-related fear) that are associated with assessing function and health in individuals with low back pain.

Study Critique

The current study suffers from the inherent weaknesses often attributed to cross-sectional design and the use of self-reported measures. However, implicit in all PACs methodologies, including personal projects analysis, is the assumption that people will respond in a credible manner when asked about their personal goals and projects (Cantor & Zirkel, 1990; Little, 1993, 1999b). The result is units of analysis that are personally

relevant and reflective of the "individual's daily reality" that are socio-ecologically informative (Karoly, 1993b; Little, 1993, p.162)

This study began as a broad deductive process with an objective of exploring *"the process of negotiating low back pain in everyday life using the day-to-day personal projects that motive and structure a person's life."* The challenge that became evident in the study was the emergence of two competing but interrelated themes and areas of study. Part of the critique of this study must consider the complexity of meeting the demands of these two areas, either of which could assume the foreground and shape the direction of the study. On the one hand, this was a health psychology study of low back pain, the findings of which would enable us to examine the role of cognitive expectations in relation to performance and function. However, on the other, this was also a study about personal projects and conceptualising the adaptation to illness in the volitional goal-directed projects of individuals. The weaknesses and strengths of this study drive from the desire to serve both agendas equally. Thus, the middle ground represents an attempt to straddle the content and theoretical issues of low back pain and the methodological and theoretical issues of personal projects and personal project analysis.

Methodological issues that arose in the course of this study were discussed in the methods chapter. These included the difficulties in recruitment resulting in a smaller than anticipated sample, and the shift from using exclusively people with acute low back pain to recruiting people independently of pain duration. However, the more diverse sample permitted a valuable comparison between the two groups (acute and chronic) and provided the observation that despite the intense focus of research on individuals with

chronic low back pain, the difference that has previously been postulated between the two groups may be less significant than previously believed.

The most disappointing of the methodological issues was the failure of participants to comprehend and accurately complete the personal project analysis matrix. This prevented investigating the role of inter-project conflict as originally planned. In future studies, especially when using community populations with diverse comprehension and language skills, this assessment might be acquired using a more structured and explicit format to ask individually about each project in relation to other projects.

In hindsight, there are also measurement explanations that offer insights into some of the study's outcomes. The lack of significance involving participants' social visibility disposition may relate to how the affect component of well-being was measured, which, in this study, was a depression scale that focused on negative affect. The construct of social connectedness, or social support, presented in the literature is related with positive affect, and this relationship is demonstrated when positive affect is measured. Higher social connectedness is related to positive affect, but the inverse of this relationship is not consistently found when negative affect is measured (Lawton et al., 2002; Reis et al., 2000). For example, in a study of personal project content in elders, it was reported that activities directed towards others (interpersonal) were associated with greater positive affect, a higher valuation of life, and lower measures of depression (Lawton et al., 2002). As mentioned in the results chapter, a similar measurement issue occurred in assessing self-concordance and the measure of well-being.

A final critical look at this study is directed at its use of personal projects analysis. The legitimacy of any investigative process is dependent on the clarity and cogency of the

methodology that guides the research (Spicer & Chamberlain, 1996). This thesis embraced the concepts and methodology of personal projects, an approach with an overarching goal of providing an integrative approach to research. In an effort to explain the vagaries of adjustment to low back pain, this methodology offered a unique perspective on examining adaptation. The idiographic aspect of the study involved participants listing their personal projects and selecting their unique set of "most important" projects. This allowed the nomothetic assessments and analysis procedures to originate from a basis of highly self-relevant variables that were truly representative of each participant.

A Personal Reflection

A participant in this study wrote about her low back pain:

> *Back pain is probably the most painful, most frustrating experience I've ever had. It affects so many aspects of my life - mood, activity level, motivation, social, physical, self-esteem, etc. For me, it is difficult because I am typically a very active and independent individual. I can't drive (I have a standard vehicle) which means I rely on my husband to transport me while I'm recuperating. I have felt angry, sad, frustrated and weak the past two weeks at some point or another – not everyday, but more so than if I were feeling pain free and were able to perform my daily tasks independently. I really miss working out, running, and lifting. I feel like I'm losing time every day – which I've worked very hard for years to maintain – I resent my body for failing me, especially when I work so hard to be good to it!! I find it frustrating that it takes so long to feel better, even though I've made progress. I've been more cranky the last couple of days because I'm out of work and I have difficulty sleeping at night. (I'm tired but I' don't do anything!). I'm amazed how much I drop things everyday! I guess I've always taken my physical health for granted. Never do I remember having to bend and pick things up as much as I have these past 2 weeks! It is funny, but very frustrating at the same time. I've realized how bored I get when I'm not physically active. I also tend to think about the things I would be doing if I*

didn't injure my back...maybe in a few weeks, if all goes well. If I had to sum up how back pain affects my life, I would have to say it affects everything. I am much more sympathetic to those who suffer from chronic back pain. Our back is the core of our bodies, which when unable to function normally or effectively, affects our whole being. I will be happy when I can jump and click my heels together and say, "Yeah, no more back pain!" I know that day will come! (Participant #55, female, 43 years)

I could have written these words, or words similar to them. Early one morning, part way through my doctoral studies, I found myself in a hospital emergency room because of a car accident. I had been in New Zealand less than an hour and was barely 10 miles from the Auckland airport; I had come from the U.S to spend eight weeks at Massey working on my thesis. The topic was adaptation to low back pain. Thus, in what could be viewed only as black humour resembling that of Monty Python, an orthopaedic consultant pronounced that I had a compound fracture of the 11th Thoracic vertebrae. With the singular focus of a doctoral student, I commented that unfortunately that was one vertebra above the inclusion criteria for participants in my study. I had become one of the 80 percent of adults who will have low back pain at some time in their lives. My inquiry into the process of adjustment to low back pain shifted from professional, academic interest to personal experience.

As I conclude this study on the adaptation to low back pain, I ask whether the manner in which I construed my pain in relation to my important personal projects determined whether I pursued those projects or not. My findings suggest that how I construed my pain was an important determinant of my willingness to engage in those important personal projects, despite my pain. However, as I continue to negotiate my everyday, goal-directed activities in the presence of recurrent mid back pain, select the

projects to pursue or abandon in relation to my pain, I acknowledge that how I appraise the salience of pain in relation to my personal projects contributes to the volitional process of continuing with a given project. However, I also acknowledge that there is more to this complex, day-to-day process than that. There is more to be understood by exploring the motivational and volitional properties of personal projects and their self-affirming, self-defining dimensions in the process of an individual's unique negotiation of illness. There are unanswered questions concerning the variability of functional outcome about why some people recover and others do not. In particular, the study of chronic illness and the way it that affects the ability to function in the ordinariness of day-to-day life has unfulfilled potential. Living is not about destination; rather it is a means to an end. Living is about the volitional conative processes we do every day; the tasks, decisions, choices and actions that move us either towards or away from our personal goals. Illness, especially chronic illness, such as diabetes, arthritis, or back pain, requires that individuals reorganise their personal projects and the goals, concerns, and desires that are volitionally translated into actions that sustain their integrity and facilitate their well-being, irrespective of their condition. Personal projects analysis is another paradigm from which health psychology might conceptualise and investigate the manner in which the people with chronic conditions construe their health in the context of "...the serious business of how people muddle through complex lives" (Little, 1989, p. 15).

University of New England Letterhead

Consent to Join a Study

Back injuries are a major cause of disability in America. We invite you to join a study about people's low back injuries and their projects, goals, and activities. What we will learn will help us to better understand how back pain affects people in their day-to-day lives. If you agree to join this study, complete the attach survey. Your name is not required.

About the Study:
The study asks you questions about:

- Your projects, activities, and life goals
- Your health
- Your feelings
- Your back pain

This study
Kerryellen Vroman of the University of New England is conducting this study. All this study requires is your time to complete the questionnaire package. There are no adverse risks to you from participating in this study. It may help you understand your response to and the impact of your back pain on your daily life.

Anything you tell us is confidential to the research team.

You are free not to answer any questions you do not feel comfortable answering but it is most helpful to the study if you answer **all** questions. Whether you agree to join the study or not, it will not effect the quality of care you receive. Your health-care provider, physician, therapist from whom you are receiving care will not receive the information you give in this questionnaire. Information will be used collectively in articles and presentations but individual data will not be identifiable

Questions about the study can be answered by:
Kerryellen Vroman (207)283-0170 X2288 : kvroman@une.edu

Appendix I

Questionnaire Instructions

Thank-you for joining this study on back pain

1. Please read letter of consent that indicates your willingness to be in this study. Questionnaires are not identified by name and all information is confidential.

2. Read the instructions on the questionnaire and complete. Please answer <u>all</u> the questions, as complete data is important to the study. It is estimated that this questionnaire will take about 40 minutes to complete.

3. Place the completed questionnaire in the envelope provided and return to the receptionist or your healthcare provider. You can mail it directly to the researcher if you prefer.

If you would like to be receive $10:00 for contributing to this study, complete the information below. (Payment is provided for completed questionnaires)

Name _____ Social security _____

(Social security number is required for business office to process reimbursement)

Address: _____

_____

Signature: _____

CODE#_____

University of New England
Survey on Back Pain and Daily Activities

This questionnaire is in three sections. First it asks general questions, then it asks about your health, low back pain and about your daily activities. The last section asks about how you are feeling. Some questions may seem similar, but it is important that you answer **ALL** questions.
Take rest breaks as often as you want to. It will take about 30 minutes to complete this questionnaire. Answer each question as best you can. Thank you.

SECTION 1: Please answer the following demographic questions:

1. (Circle one number)

Male 1
Female 2

Year of Birth 19 . . . . . .

2. What is your present marital status? (Circle one number)

Never Married 1
Married 2
Divorced 3
Separated 4
Widowed 5

3. What are your usual living arrangements? (Circle one number)

Living with Partner & Children 1
(Including Common Law)
Living with Partner & No Children 2
(Including Common Law)
Sole Adult with Children 3
Living Alone 4
Living With Other Adults 5
(Parents, Roommates)
Other 6

4. What is your ethnic background? (Circle one number)

American Indian or Alaskan Native 1
Asian or Pacific Island 2
Black, not of Hispanic Origin 3
Hispanic 4
White, not of Hispanic Origin 5
Other 6

5. What is the highest level of education you completed? (Circle one number)

Completed Grade School....1
Some High School....2
Graduated from High School....3
Some College....4
Completed College....5
Graduate Degree(s)....6

THESE ARE QUESTIONS ABOUT YOUR HEALTH AND BACK PAIN:

Answer ALL question by marking the answer as indicated. If you are unsure about how to answer a question, please give the best answer you can.

6. In general, would you say your health is? (Circle one number)

Excellent....1
Very Good....2
Good....3
Fair....4
Poor....5

7. How **true** or **false** is **each** of the following statements for you? (Circle one number on each line)

	Definitely True	**Mostly True**	**Don't Know**	**Mostly False**	**Definitely False**
I seem to get sick a little easier than other people.	1	2	3	4	5
I am healthy as anybody I know.	1	2	3	4	5
I expect my health to get worse.	1	2	3	4	5
My health is excellent.	1	2	3	4	5

8. The following items are about activities you might do during a **typical day**. How much does your **back pain** in these limit your activities? (Circle one number on each line)

	Limited A Lot	**Limited A Little**	**Not Limited At All**
Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports.	1	2	3
Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf.	1	2	3
Lifting or carrying groceries.	1	2	3
Climbing **several** flights of stairs.	1	2	3
Climbing **one** flight of stairs.	1	2	3
Bending, kneeling, or stooping.	1	2	3
Walking **more than a mile**.	1	2	3
Walking **several blocks**.	1	2	3
Walking **one block**.	1	2	3
Bathing or dressing yourself.	1	2	3

9. During the past 2 weeks, have you had any of the following problems with your work or other regular daily activities because of your **back pain**?

(circle one number on each line)	YES	NO
Cut down on the **amount of time** you spent on work or other activities.	1	2
Accomplished less than you would like.	1	2
Were limited in the **kind** of work or other activities.	1	2
Had **difficulty** performing the work or other activities (for example, it took extra effort)	1	2

10. During the past 2 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any **emotional problems** (such as feeling depressed or anxious.)

(Circle one number on each line)	YES	NO
Cut down the **amount of time** you spent on work or other activities.	1	2
Accomplished less than you would like.	1	2
Didn't do work or other activities as **carefully** as usual.	1	2

11. During the past 2 weeks, to what extent has your **back pain or emotional problems** interfered with your normal social activities with family, friends, neighbors or groups.

(Circle one number)

Not at all 1
Slightly 2
Moderately 3
Quite a bit 4
Extremely 5

12. How much **back pain** have you had during the last 2 weeks?

(Circle one number)

None 1
Very mild 2
Mild 3
Moderate 4
Severe 5
Very severe 6

13. During the past 2 weeks, how much did **pain** interfere with your normal work (including both work outside the home and housework)?

(Circle one number)

Not at all 1
A little bit 2
Moderately 3
Quite a bit 4
Extremely 5

14. During the past 2 weeks, how much of the time has your **back pain or emotional problems** interfered with your social activities (like visiting with friends, relatives, etc.)?
(Circle one number)

All of the time 1
Most of the time 2
Some of the time 3
A little of the time 4
None of the time 5

15. Do you have back pain now

YES 1
NO 2

If you answered YES

How long have you had your current episode low back pain? _____Days _____Weeks_____Months

16. Is this your first episode of low back pain? (Circle one number)

YES 1
NO 2

If you answered NO

How often on average do you have back pain? (Circle one number)

Less than once a year 1
Once a year 2
Two times a year 3
Three or more times a year 4
Never pain free 5

17. Are you on leave from work because of your current back pain?
(Circle one number)

YES 1
NO 2

18. Your usual work status is? (Circle one number)

Full-time, Permanent 1
Part-time, Permanent 2
Temporary 3
On Disability (including Workers Compensation) 4
Other (includes retired & home-maker) 5

19. Your occupation (work) is _____

20. Your approximate gross household income from all sources before taxes in 2002 is $_____ for a household of _____adults _____children

21. What treatments do you use for your back pain?

(Circle **all** numbers that apply)

Medication 1

Please specify what medications:

_____

_____

_____

_____

Physical therapy 2

Chiropractic 3

Rest 4

Manipulation - osteopathic medicine 5

Others: (please specify)

22. Do you have other medical conditions or health problems?

YES 1

NO 2

Please State

_____

_____

SECTION 2: Activities and Personal Projects

The focus of this research study is the activities that motivate and shape people's everyday lives. In this section of the questionnaire, we wish to learn about the activities, tasks and goals you have. These activities, tasks and goals are called ***personal projects***. Everyone has a number of personal projects at any one time that they are thinking about, planning, or doing. These personal projects can be short-term and easily achieved or life long dreams and aspirations that are on going and strived for.

We are interested in **ALL** the different and many personal projects that you have. For example the personal projects you have at work or do for fun, to relax, your projects at home and in the community.
Some projects are everyday activities: Examples: Try to get to work on time this month
Mow the lawns this weekend
Exercise twice a week
Call my mother, my girlfriend,
Eat healthy foods
Avoid junk food
Complete the end of month report for work

Other projects take longer to do. These projects are about what we are doing now or about what we are working towards in the future.
Examples are: Save to buy a house or car
Learn to trust in others
Take a vacation at the Lake, or travel overseas
Learn to play golf
Spend thanksgiving with my family this year
Be a good husband, friend, mother or wife...
Try to stop smoking or perhaps lose weight or reduce my drinking
Control my anger better
Write a book
Retire at 55 years old
Accept my weaknesses
Get a new job

What are your personal projects? Make a list of the projects that are part of your everyday life on this page and the next. Write down as many as you can in 10 to 15 minutes.

.....continue on to the next page

You can continue to write on to the back of this sheet of paper

Select from the projects which are the FIVE (5) projects MOST IMPORTANT to you
Write these five projects <u>MOST IMPORTANT</u> below.

1. _____
2. _____
3. _____
4. _____
5. _____

On the <u>next five</u> pages, you are asked the same set of questions about each of you most important projects. There is one page each of the projects. Please answer a page for each of your <u>most</u> important projects. All five pages.

Write the first of your five most important projects No 1. _____

Answer all the following questions for the project you have written in this box. Circle the number that best fits with how you agree or disagree with the statement. For example:

	Strongly disagree						Strongly agree
There are good reasons for me to do this	1	2	3	4	5	6	7

Read these statements and circle the number that best shows how much you agree or disagree.

This is "really me".	1	2	3	4	5	6	7
Doing this helps me become the person I want to be.	1	2	3	4	5	6	7
I enjoy doing this.	1	2	3	4	5	6	7
This fits in with the values and/or beliefs that guide my life	1	2	3	4	5	6	7
If this fails it will have unpleasant consequences for me. (feeling stupid, having my hopes disappointed)	1	2	3	4	5	6	7
This makes me feel good about myself.	1	2	3	4	5	6	7
This makes me feel important when I do it.	1	2	3	4	5	6	7
I feel in control of this.	1	2	3	4	5	6	7
I am committed to this	1	2	3	4	5	6	7
It is my decision to do this.	1	2	3	4	5	6	7
It is important to others that I successfully finish this.	1	2	3	4	5	6	7
I find this is stressful.	1	2	3	4	5	6	7
I have enough time to work on this.	1	2	3	4	5	6	7
I want to do this.	1	2	3	4	5	6	7
To date, I have been successful with this.	1	2	3	4	5	6	7
I have the abilities and skills to finish this.	1	2	3	4	5	6	7
I will successfully finish this.	1	2	3	4	5	6	7
I find this difficult.	1	2	3	4	5	6	7
I find this project challenges me.	1	2	3	4	5	6	7
I choose to do this with other people (friends, family, workmates)	1	2	3	4	5	6	7
Other people are helpful with this.	1	2	3	4	5	6	7
Other people make it difficult to do this.	1	2	3	4	5	6	7
Other people know I am working on this.	1	2	3	4	5	6	7
I feel a lot of back pain if I do this?	1	2	3	4	5	6	7
I avoid doing this because it would cause back pain.	1	2	3	4	5	6	7
My back pain will prevent me from achieving this.	1	2	3	4	5	6	7

Write the second of your five most important projects No 2. _____

Answer all the following questions for the project you have written in this box. Circle the number that best fits with how you agree or disagree with the statement. For example:

	Strongly disagree						Strongly agree
There are good reasons for me to do this	1	2	3	4	5	6	7

Read these statements and circle the number that best shows how much you agree or disagree.

This is "really me".	1	2	3	4	5	6	7
Doing this helps me become the person I want to be.	1	2	3	4	5	6	7
I enjoy doing this.	1	2	3	4	5	6	7
This fits in with the values and/or beliefs that guide my life.	1	2	3	4	5	6	7
If this fails it will have unpleasant consequences for me. (feeling stupid, having my hopes disappointed)	1	2	3	4	5	6	7
This makes me feel good about myself.	1	2	3	4	5	6	7
This makes me feel important when I do it.	1	2	3	4	5	6	7
I feel in control of this.	1	2	3	4	5	6	7
I am committed to this	1	2	3	4	5	6	7
It is my decision to do this.	1	2	3	4	5	6	7
It is important to others that I successfully finish this.	1	2	3	4	5	6	7
I find this is stressful.	1	2	3	4	5	6	7
I have enough time to work on this.	1	2	3	4	5	6	7
I want to do this.	1	2	3	4	5	6	7
To date, I have been successful with this.	1	2	3	4	5	6	7
I have the abilities and skills to finish this.	1	2	3	4	5	6	7
I will successfully finish this.	1	2	3	4	5	6	7
I find this difficult.	1	2	3	4	5	6	7
I find this challenges me.	1	2	3	4	5	6	7
I choose to do this with other people (friends, family, work-mates).	1	2	3	4	5	6	7
Other people are helpful with this.	1	2	3	4	5	6	7
Other people make it difficult to do this.	1	2	3	4	5	6	7
Other people know I am working on this.	1	2	3	4	5	6	7
I feel a lot of back pain if I do this?	1	2	3	4	5	6	7
I avoid doing this because it causes back pain.	1	2	3	4	5	6	7
My back pain will prevent me from achieving this.	1	2	3	4	5	6	7

Write the fourth of your five most important projects No 4. _____

Answer all the following questions for the project you have written in this box. Circle the number that best fits with how you agree or disagree with the statement. For example:

	Strongly disagree						Strongly agree
There are good reasons for me to do this.	1	2	3	4	5	6	7

Read these statements and circle the number that best shows how much you agree or disagree.

This is "really me".	1	2	3	4	5	6	7
Doing this helps me become the person I want to be.	1	2	3	4	5	6	7
I enjoy doing this	1	2	3	4	5	6	7
This fits in with the values and/or beliefs that guide my life.	1	2	3	4	5	6	7
If this fails it will have unpleasant consequences for me. (feeling stupid, having my hopes disappointed)	1	2	3	4	5	6	7
This makes me feel good about myself.	1	2	3	4	5	6	7
This makes me feel important when I do it.	1	2	3	4	5	6	7
I feel in control of this.	1	2	3	4	5	6	7
I am committed to this	1	2	3	4	5	6	7
It is my decision to do this.	1	2	3	4	5	6	7
It is important to others that I successfully finish this.	1	2	3	4	5	6	7
I find this is stressful.	1	2	3	4	5	6	7
I have enough time to work on this.	1	2	3	4	5	6	7
I want to do this.	1	2	3	4	5	6	7
To date, I have been successful with this.	1	2	3	4	5	6	7
I have the abilities and skills to finish this.	1	2	3	4	5	6	7
I will successfully finish this.	1	2	3	4	5	6	7
I find this difficult.	1	2	3	4	5	6	7
I find this challenges me.	1	2	3	4	5	6	7
I choose to do this with other people (friends, family, work-mates).	1	2	3	4	5	6	7
Other people are helpful with this.	1	2	3	4	5	6	7
Other people make it difficult to do this.	1	2	3	4	5	6	7
Other people know I am working on this.	1	2	3	4	5	6	7
I feel a lot of back pain if I do this?	1	2	3	4	5	6	7
I avoid doing this because it causes back pain.	1	2	3	4	5	6	7
My back pain will prevent me from achieving this.	1	2	3	4	5	6	7

Write the third of your five most important projects No 3. _____

Answer all the following questions for the project you have written in this box. Circle the number that best fits with how you agree or disagree with the statement. For example:

	Strongly disagree						Strongly agree
There are good reasons for me to do this.	1	2	3	4	5	6	7

Read these statements and circle the number that best shows how much you agree or disagree.

This is "really me".	1	2	3	4	5	6	7
Doing this helps me become the person I want to be.	1	2	3	4	5	6	7
I enjoy doing this.	1	2	3	4	5	6	7
This fits in with the values and/or beliefs that guide my life.	1	2	3	4	5	6	7
If this fails it will have unpleasant consequences for me. (feeling stupid, having my hopes disappointed)	1	2	3	4	5	6	7
This makes me feel good about myself.	1	2	3	4	5	6	7
This makes me feel important when I do it.	1	2	3	4	5	6	7
I feel in control of this.	1	2	3	4	5	6	7
I am committed to this	1	2	3	4	5	6	7
It is my decision to do this.	1	2	3	4	5	6	7
It is important to others that I successfully finish this.	1	2	3	4	5	6	7
I find this is stressful.	1	2	3	4	5	6	7
I have enough time to work on this.	1	2	3	4	5	6	7
I want to do this.	1	2	3	4	5	6	7
To date, I have been successful with this.	1	2	3	4	5	6	7
I have the abilities and skills to finish this.	1	2	3	4	5	6	7
I will successfully finish this.	1	2	3	4	5	6	7
I find this difficult.	1	2	3	4	5	6	7
I find this challenges me.	1	2	3	4	5	6	7
I choose to do this with other people (friends, family, work-mates).	1	2	3	4	5	6	7
Other people are helpful with this.	1	2	3	4	5	6	7
Other people make it difficult to do this.	1	2	3	4	5	6	7
Other people know I am working on this.	1	2	3	4	5	6	7
I feel a lot of back pain if I do this?	1	2	3	4	5	6	7
I avoid doing this because it causes back pain.	1	2	3	4	5	6	7
My back pain will prevent me from achieving this.	1	2	3	4	5	6	7

Write the fifth of your five most important projects No 5. _____

Answer all the following questions for the project you have written in this box. Circle the number that best fits with how you agree or disagree with the statement. For example:

	Strongly disagree						Strongly agree
There are good reasons for me to do this.	1	2	3	4	5	6	7

Read these statements and circle the number that best shows how much you agree or disagree.

This is "really me".	1	2	3	4	5	6	7
Doing this helps me become the person I want to be.	1	2	3	4	5	6	7
I enjoy doing this	1	2	3	4	5	6	7
This fits in with the values and/or beliefs that guide my life.	1	2	3	4	5	6	7
If this fails it will have unpleasant consequences for me. (feeling stupid, having my hopes disappointed)	1	2	3	4	5	6	7
This makes me feel good about myself.	1	2	3	4	5	6	7
This makes me feel important when I do it.	1	2	3	4	5	6	7
I feel in control of this.	1	2	3	4	5	6	7
I am committed to this	1	2	3	4	5	6	7
It was my decision to do this.	1	2	3	4	5	6	7
It is important to others that I successfully finish this.	1	2	3	4	5	6	7
I find this is stressful.	1	2	3	4	5	6	7
I have enough time to work on this.	1	2	3	4	5	6	7
I want to do this.	1	2	3	4	5	6	7
To date, I have been successful with this.	1	2	3	4	5	6	7
I have the abilities and skills to finish this.	1	2	3	4	5	6	7
I will successfully finish this.	1	2	3	4	5	6	7
I find this difficult.	1	2	3	4	5	6	7
I find this challenges me.	1	2	3	4	5	6	7
I choose to do this with other people (friends, family, work-mates).	1	2	3	4	5	6	7
Other people are helpful with this.	1	2	3	4	5	6	7
Other people make it difficult to do this.	1	2	3	4	5	6	7
Other people know I am working on this.	1	2	3	4	5	6	7
I feel a lot of back pain if I do this?	1	2	3	4	5	6	7
I avoid doing this because it causes back pain.	1	2	3	4	5	6	7
My back pain will prevent me from achieving this.	1	2	3	4	5	6	7

On this page, we want to know about how each of your projects hinders or helps your progress with other projects you listed.
Projects can be helpful to the other projects we are doing
e.g., *"walking to work helps you get fit but it would also help you save money you towards the holiday you are planning".*

However, one project can also make it difficult for us to do another project. For example: sometimes projects compete with each other for your time and resources
e.g. *"getting promoted at work may require working long hours but this conflicts with or hinders another project such as coaching a son's baseball team".*

In this example, one project competes and hinders our success with another project. You cannot work long hours, do extra work for a promotion and at the same time be available to spend time being involved in your child's activities.

Rate how much each of your five important projects help or makes it difficult to do other projects. Use the rating scale below to complete the chart. Only fill the blank areas of the chart

+2 = helps very much
+1 = helpful somewhat
0 = neither helps nor hinders
-1 = hinders somewhat
-2 = hinders very much

EXAMPLE

Ask yourself how much do project these project help or hinder each other? List your five important projects below.	Project 1	Project 2	Project 3	Project 4	Project 5
1. *Feeling good about myself* ✍		+2	0	+1	+1
2. *Get fit by running.*					

In this example: Running "to get fit" also is very helpful with a second project of "feeling about one's self" so the rating is +2

List your five important projects below and rate how much each of the other projects (list across the top of the chart) help or hinder you doing it	**Project 1**	**Project 2**	**Project 3**	**Project 4**	**Project 5**
1 ✍					
2					
3					
4					
5					

SECTION 3: This section asks how you are feeling

Below are questions that asks about some of the ways that you might have felt or acted recently.

Please choose a number from the scale that represents how often you felt the following during the last week.

1= rarely or none of the time (less than 1 day)

2= some or a little of the time (1-2 days)

3= occasionally or a moderate amount of time (3-4 days)

4=most or all of the time (5-7 days)

(Circle one number on each line that best represents how you have felt in the last week)

	Rarely ss than 1 day	Some/a little 1-2 days	Occasionally 3-4 days	Most of the time 5-7 days
I was bothered by things that do not usually bother me	1	2	3	4
I did not feel like eating; my appetite was poor	1	2	3	4
I felt that I could not shake off the blues, even with help	1	2	3	4
I felt that I was just as good as other people	1	2	3	4
I had trouble keeping mind on what I was doing	1	2	3	4
I felt depressed	1	2	3	4
I felt that everything I did was an effort	1	2	3	4
I felt hopeful about the future	1	2	3	4
I thought my life had been a failure	1	2	3	4
I felt fearful	1	2	3	4
My sleep was restless	1	2	3	4
I was happy	1	2	3	4
I talked less than usual	1	2	3	4
I felt lonely	1	2	3	4
People were unfriendly	1	2	3	4
I enjoyed life	1	2	3	4
I had crying spells	1	2	3	4
I felt sad	1	2	3	4
I felt that people dislike me	1	2	3	4
I could not get "going"	1	2	3	4

Please circle the number that best describes what is true for you over the last week.

	Not at all----------Extremely
I'm afraid that I might injure myself if I exercise.	1.....2.....3.....4
If I were to try to overcome it, my pain would increase.	1.....2.....3.....4
My body is telling me I have something dangerously wrong.	1.....2.....3.....4
My pain would probably be relieved if I were to exercise.	1.....2.....3.....4
People aren't taking my medical condition seriously enough.	1.....2.....3.....4
My accident has put my body at risk for the rest of my life.	1.....2.....3.....4
Pain always means I have injured my body.	1.....2.....3.....4
Just because something aggravates my pain does not mean it is dangerous.	1.....2.....3.....4
I am afraid that I might injure myself accidentally.	1.....2.....3.....4
Simply being careful that I do not make any unnecessary movements is the safest thing I can do to prevent my pain from worsening.	1.....2.....3.....4
I wouldn't have this much pain if there weren't something potentially dangerous going on in my body.	1.....2.....3.....4
Although my condition is painful, I would be better off if I were physically active.	1.....2.....3.....4
Pain lets me know when to stop exercising so that I don't injure myself.	1.....2.....3.....4
It's really not safe for a person with a condition like mine to be physically active.	1.....2.....3.....4
I can't do all the things normal people do because it's too easy for me to get injured.	1.....2.....3.....4
Even though something is causing me a lot of pain, I don't think it's actually dangerous.	1.....2.....3.....4
No one should have to exercise when he/she is in pain.	1.....2.....3.....4

Below are five statements that you may agree or disagree with. Using the 1-7 scale below indicate your agreement or disagreement with each item.

1 strongly disagree
2 disagree
3 slightly disagree
4 neither agree or disagree
5 slightly agree
6 agree
7 strongly agree

Please be open and honest in your response

(Circle one number on each line)

	Strongly disagree			**Neither Agree or disagree**			**Strongly agree**
In most ways my life is close to ideal	1	2	3	4	5	6	7
The conditions of my life are excellent	1	2	3	4	5	6	7
I am satisfied with my life	1	2	3	4	5	6	7
So far, I have gotten the important things I want in my life.	1	2	3	4	5	6	7
If I could live my life over, I would change almost nothing	1	2	3	4	5	6	7

Now we would like to give you a chance to tell us about your experience of back pain in your own words. Write as much as you like.
If you could talk to the researchers what would you like them to know about low back pain?

_____

_____

_____

_____

_____

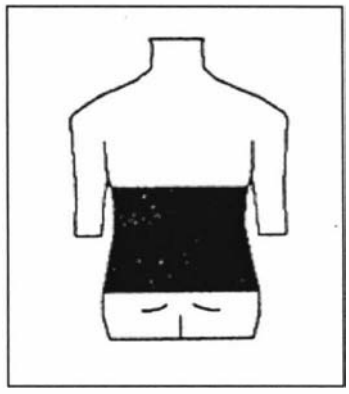
_____

Thank-you. We greatly appreciate you taking the time to fill out the questionnaire
Please place in the envelope and mail or you may hand it to the receptionists at your clinic

Thank-you very much for assisting with the data collection of this low back pain study, *Personal projects: An Examination of the Experience of Low Back Pain.*

To be eligible for the study people must have

- Low back pain (current symptoms).
- Acute or recurrent or chronic pain.
- Be over 18 years.
- Pain location is below T12 as shown in the diagram.
- Requires reasonable reading skills e.g. completed high school or some tertiary education.



People <u>not</u> eligible for the study are those who

- Have a presence of either neoplasty (cancer) or history of malignancy
- Are pregnant
- Have primary infection or inflammatory disease e.g. rheumatoid arthritis or similar conditions
- Are receiving post-surgical treatment (recently had surgery for back pain)

It will take about 40 minutes to complete. This envelope can be return by mail or to the healthcare provider or receptionist at this facility. I would ask you encourage people to return the questionnaire to you, as this will increase the likelihood of it being completed

Your part in this project is appreciated.

Kerryellen Vroman M.H.Sc Or/L
kvroman@une.edu ph: 603 749 7569 or 207 283 0170 x2288

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