The Relationship Between Personal Agency and Meaningful Work: An Exploratory Study

By Wendy Elliott Shaia

B.A. in Psychology, May 1989, Hampshire College
M.S.W. in Management and Community Organization, May 2001, University of Maryland

A Dissertation Submitted to

The Faculty of
The Graduate School of Education and Human Development
of The George Washington University
in partial fulfillment of the requirements
for the degree of Doctor of Education

May 20, 2012

Dissertation directed by

Neal Chalofsky
Associate Professor of Human and Organizational Learning

The Graduate School of Education and Human Development of The George Washington University certifies that Wendy Elliott Shaia has passed the Final Examination for the degree of Doctor of Education as March 8, 2012. This is the final and approved form of the dissertation.

The Relationship Between Personal Agency and Meaningful Work:
An Exploratory Study

Wendy Elliott Shaia

Dissertation Research Committee

Neal Chalofsky, Associate Professor of Human and Organizational Learning, Dissertation Director

Marilyn Wesner, Assistant Professor of Human and Organizational Learning, Committee Member

Howard Kea, Senior Organizational Development Consultant, NASA Committee Member

Dedication

To John Thomas, Julia, Timothy, and Tyler; because in God, all things truly are possible. Thank you for your love, patience and understanding with me over these past seven years. You can finally have your Mommy back. To Debra, thank you for your love and encouragement. To Gayle, thanks for letting me cry on your shoulder during this journey. To Carver, thanks for the critical introductions. To John Shaia, Sr., thanks for pushing me in the beginning.

Acknowledgements

I would like to express my sincere gratitude to Dr. Howard Kea for his tireless assistance with gaining access to the employees of the NASA Goddard Space Flight Center (GSFC). I would also like to acknowledge the leadership of GSFC who opened their organization to me and invited me come in and learn about them. I sincerely hope this will be useful to you.

I would also like to thank Dr. James Côté from the University of Western Ontario for granting me the use of the Multi-measure Agentic Personality Scale and for his willingness to read and comment on my proposal. I hope I have been able to contribute a little more to the body of knowledge on personal agency.

I would like to acknowledge my committee chair, Dr. Neal Chalofsky, who has fathered and pushed me and held my toes to the fire during this process; I could not have done it without you. Thanks also to Dr. Marilyn Wesner, for jumping in at the last minute and sharing your knowledge and encouraging words. Thanks to my dissertation readers, Dr. Peggy Dolet and Dr. Micheael Marquardt; my dissertation is better because of you.

Abstract of Dissertation

The Relationship Between Personal Agency and Meaningful Work:
An Exploratory Study

This qualitative study explored the relationship between personal agency (comprised of ego strength (resilience), internal locus of control, purpose in life, and self-esteem) and meaningful work (defined as work which is interesting, satisfying, has a significant purpose and impact, and allows the employee to express him or herself through work). More than 300 employees of the NASA Goddard Space Flight Center took part in a survey to determine personal agency scores and identify a sample of 20 participants for face-to-face in-depth interviews.

Results indicated that employees who took part in the study have high personal agency scores and find their work meaningful. Employees experience conflict between the desire for autonomy which characterizes their agentic personalities, and the organizational bureaucracy which prevents them from taking complete ownership and experiencing the full enjoyment of their work. It is making a contribution toward the mission, however slow and incremental that contribution may be, and the resulting recognition (rather than simply recognition for their work) which allows employees to feel successful at their jobs. Employees enjoy flexible work arrangements, but may experience work/life conflict as a result.

The study highlights the importance of professional autonomy to knowledge workers, such as the NASA scientists and engineers who took part in this study. Implications for practice include ensuring that organizational processes are critically

analyzed to ensure they are truly necessary and do exist simply based on the assumption that employees will shirk their responsibilities and must be externally controlled. Such processes infringe on knowledge workers' abilities to apply their expertise autonomously and lead to great frustration. Management can have a significant impact on how employees experience their work by moving from industrial-type manager/director to a reinvented role as a coach and partner of engaged, self-managed knowledge workers, who are very different from the "hired hands" of previous ages. In this role, managers do less telling and more facilitating employees in a process of collaborative problem-solving around organizational issues.

Table of Contents

PAGE

Dedication ……..iii

Acknowledgments ……..iv

Abstract of Dissertation ……..……v

List of Figures…….……ix

List of tables…….x

CHAPTER 1 1

Overview 1
Statement of the problem 5
Purpose and research questions 6
Statement of potential significance 6
Conceptual framework 7
Personal agency 7
Meaningful work 9
Summary of the method 10
Limitations 11

CHAPTER 2 13

Personal agency 14
Self-esteem 18
Internal locus of control 20
Purpose in life 24
Ego strength (resilience) 26
Meaningful work 27
Sense of self 30
Identity theory 31
Social identity theory 32
Multiple identities 33
The work itself 35
Sense of balance 36
Spirituality at work 39
Sense of self is agentic personality 42

CHAPTER 3 44

Overview of methodology 44
Epistemology 45
Theoretical perspectives 48
Methodology 48
General steps in methodology 48
Specific methods 50
Sampling 50
Data gathering 50

PAGE

Data analysis 51
Verification 55
Data management 55
Human participants and ethics precautions 56

CHAPTER 4……..……57

Results 57
Surveys 57
Interviews about meaningful work 60
Emerging themes 62
Data summary 75

CHAPTER 5……..……78

Conclusions 78
Recommendations for future practice 89
Implications for further study 92
Reflections 93

APPENDICES

References……..……93
Appendix A: Email introduction from GSFC 102
Appendix B: Email introduction from researcher 103
Appendix C: Personal agency and meaningful work study 104
Appendix D: Reminder to complete online survey 109
Appendix E: Email from researcher to schedule interview 110
Appendix F: Email confirmation of interview 111
Appendix G:Informed consent form 112
Appendix H:Survey tables 114

List of Figures

PAGE

Figure 1: Personal agency (sense of self) impacts meaningful work…….10

Figure 2: Chalofsky's (2003) framework of meaningful work……..28

List of Tables

PAGE

Table 1: Important work criteria……59

Table 2: Comments of meaningful work……...60

Table 3: Demographics of interview sample……61

Table 4: Personal agency score by gender, race, age, education and department……...115

Table 5: Personal agency by department ANOVA……..116

Table 6: Perception of work as meaningful and personal agency score …....……...116

Table 7: Trying different careers and personal agency score……..117

Table 8: Trying the same career again and personal agency score…….…….117

Chapter One

Overview

According to the U.S. Office of Personnel Management (OPM), the United States federal government, the largest nation's largest employer, holds a workforce of over 2.75 million civilians (FY2009 figures). The average length of service in the federal government, says OPM, is just over 16 years, and the average turnover rate (voluntary separation, excluding retirements) for federal agencies is less than 2%. In comparison, the U.S. Department of Labor (DOL) cites the median length of tenure for civilian employees nationwide as just over four years (4.4 years in FY2010 for federal and private employees, 4.0 years for private employees only). Where the length of service for federal employees cited above by OPM includes movement between employers within the federal government, DOL cites the median length of tenure for federal civilians with their current federal employer in 2010 as just under eight years; still almost double the national average.

Research has long linked employee turnover with an employee's experience of satisfaction and engagement with the job (Langkamer & Ervin, 2008; Walker et al, 2008) With such a large, relatively stable workforce, it would be easy to assume that the federal workforce is satisfied with, engaged in and committed to its work. After all, why else would a workforce consistently remain in place for so much longer than the national average?

In a 2008 study of the federal workforce, the U.S. Merit Systems Protection Board surveyed almost 37,000 federal employees to determine their level of engagement, defined as: pride in their work or workplace, satisfaction with their leadership, perception

that they have an opportunity to perform well at work, satisfaction with the recognition they receive, belief that they have some prospect for future personal growth, and perception of their work environment as positive and team-focused. The study found that one-third of federal employees are engaged, almost one-half are somewhat engaged, and the remaining 17 percent are not engaged. In some agencies only one-quarter of the workforce was engaged, in other agencies, nearly half. In the same survey, a correlation was found between federal agencies where employees were highly engaged and more successful agency outcomes (Nierli & Marrelli, 2008). The authors conclude their report with a number of suggestions for how the federal government can better engage employees in their work.

May et al (2004) defines job engagement as the extent to which an individual employs his or her self in the performance of his or her job, involves the active use of emotions and behaviors, in addition to cognition, and is closely tied to identity. In a study the authors found that meaningfulness, the value of work in relation to an individual's personal goals and standards, had the strongest relationship to engagement, and was a strong mediator between engagement and job enrichment (the characteristics of the job) and work role fit (the relationship between the individual's self-concept and his or her perceived work role). The authors conclude that, in order to better engage their employees, managers should attempt to foster meaningfulness in their employees' work through the effective design of jobs.

Lips-Wiersma & Morris (2009) note some theorists have focused their attention on the idea that, since individuals have a need for meaning in their work, leaders must either find ways to enhance meaningfulness for the worker or protect workers from

meaninglessness in their work. The authors conclude however that, rather than frame meaningful work as a dimension of leadership or the employing institution, meaningful work should be framed as a property of human beings.

According to Baruch and Hall (2004), although the individual employee always had ultimate responsibility for his or her career, in the past there was more of a sense that the organization had some ownership in "managing" the person's career. There was more of a sense then that there were established, well-known career paths to the top. Now, with flatter and rapidly changing organizational structures, career paths are very dynamic, and sometimes cease to exist. It is now more up to the individual to figure out his or her own path through the complex opportunities that are available. People are partly the products of their environments, but have a significant ability to produce their own environments by selecting, creating and transforming their circumstances through exercising personal agency (Bandura, 2006).

Personal agency is a sense of responsibility for one's life course, the belief that one is in control of one's decisions and is responsible for their outcomes, and the confidence that one will be able to overcome obstacles that impede one's progress along one's chosen life course. Personality attributes related to personal agency include ego strength, internal locus of control, purpose in life, and self-esteem (Côté, 2002). Personal agency is an intangible asset, a form of identity capital, which provides an individual with the wherewithal to negotiate the complex social, occupational and personal challenges and opportunities presented in life (Côté, 1997).

> "The self is not a passive entity determined by external influences; in forging their self-identities…individuals contribute to and directly promote social influences that are global in their consequences and implications." (Giddens, 1991, p.2).

In nineteenth century Western culture, modernization dissolved the structure of feudal society and replaced it with industrial society, which was characterized by a focus on patterns of work and life, learning about science and technology, economic growth, religious world views and democracy. Industrial society is now being modernized and replaced with yet another society; a late modern society, where the struggle for daily bread has lost its urgency as the foundation for daily life, and the concepts of science and technology, work, leisure, the family and sexuality are being demystified (Beck, 1992). Unlike earlier modern society, in late modernity individuals are no longer bound in adherence to externally subscribed roles and customs, but are more internally driven, relying less on a view of themselves through the eyes of others, but on a constant remaking of themselves based on their own knowledge, choices and experiences (Giddens, 1991).

As humans have attempted to adapt to late modern forms of social organization where choice has replaced obligation as the basis of self-definition, identity formation has become a more difficult, precarious, and solitary process for which many people are unprepared (Côté & Levine, 2002). Where in previous generations individual decisions were made based on collectively-ascribed roles and expectations, a new focus on individual decision-making has made identity development a personal project for many adults and may require the exercise of personal agency in negotiating the passage to adulthood (Schwartz et al., 2005). People are not only agents of action, but also self-examiners of their own functioning. Through reflective self-consciousness, people evaluate their motivation, values, the meaning of their life pursuits, and choose one action over another. In this metacognitive activity, people judge the correctness of their

predictive and operative thinking against the outcomes of their actions. They are able to make cognitive connections between the effects that other people's actions produce, what others believe, deductions from established knowledge and the results of their own behavior (Bandura, 2001).

Statement of the Problem

Sense of self has long been associated with an employee's perception of meaning in his or her work. Chalofsky (2003) developed a framework for meaningful work, which is the integration of employee sense of self, the work itself, and the balance between the two. The framework serves to identify and integrate the elements of meaningful work, and begins to explain how people find meaning in their work. Those elements, however, have been introduced in their most basic form, and raise many questions, which remain unanswered. For example, since human beings are so complex, "sense of self" is potentially a very large area, encompassing biological, psychological and sociological elements. Which aspect of sense of self most impacts how people find meaning in their work? What might an employer do to help employees find more meaning in their work or, if sense of self may not be externally impacted, how might an employer understand which characteristics to look for in a prospective employee who will find the work meaningful?

While Chalofsky's (2003) framework provided the foundation for the discussion of meaningful work as a construct, no research has been conducted to examine which aspect of "sense of self" most impacts how an employee finds meaning in his or her

work. This study will explore the concept of personal agency as the aspect of sense of self which most contributes to meaningful work as Chalofsky (2003) has defined it.

Purpose and Research Questions

The purpose of this study is to explore if there is a relationship between high personal agency, defined as a combination of ego strength, internal locus of control, purpose in life, and self-esteem (Côté, 2002) and employee perception of work as meaningful. If a relationship exists the study seeks to understand the nature of this relationship; its context and meanings by the people who are experiencing it. The study seeks also to explore whether high personal agency is what Chalofsky refers to as "sense of self" in his model of meaningful work. Research questions are:

1. To what extent do employees with high personal agency (ego strength, internal locus of control, purpose in life, and self-esteem) exercise that construct in their work lives?
2. How do high agency employees perceive the meaningfulness of their work (based on Chalofsky's 2003 definition of meaningfulness in work)?
3. What is the relationship (if any) between the four elements of personal agency and perception of meaningful work?
4. Is personal agency what Chalofsky (2003) calls "sense of self"?

Statement of Potential Significance

This study will contribute to the existing knowledge in several ways. First, the study will identify whether or not high personal agency is associated with employees who

find meaning in their work. Second, the study will provide rich contextual data about the professional journey taken by employees who find their work meaningful, and may provide organizations with information about how to attract, develop, and retain employees who find their work meaningful and thus more engaging.

Instead of organizations trying to figure out how to make work meaningful for their employees, it is possible that where they need to focus their attention is on identifying the characteristics of employees who are most likely to find meaning in their work. If high personal agency is found to be a major component of meaningful work, organizations may do well to attempt to identify this characteristic in potential employees during applicant screening, or explore methods for increasing personal agency in their existing workforce.

Conceptual Framework

The constructs personal agency and meaningful work both have their roots in psychological theory: personal agency may be found in the vast body of literature on identity theory; and meaningful work comes out of the school of motivation theory.

Personal Agency

Personal agency is a sense of responsibility for one's life course, the belief that one is in control of one's decisions and is responsible for their outcomes, and the confidence that one will be able to overcome obstacles that impede one's progress along one's chosen life course (Côté and Levine, 2002). The etymological roots of "agency" may be traced back to a fourteenth century usage based on the Latin *agere*, which means to do, set in motion, drive, urge, chase, stir up (Ahmad & Broussine, 2008). Bandura

(2001) says that the term is commonly used today to describe an "agentic" person, or someone who possesses a sense of personal agency and self-efficacy. To be agentic is to intentionally make things happen by one's own actions (Bandura, 2001). Personality attributes related to personal agency include self-esteem, internal locus of control, purpose in life, and ego strength (resilience) (Côté, 2002).

The concept of personal agency is deeply rooted in identity theory. Erikson's (1963) theory of human development conceptualizes each person's progression through a series of eight psychosocial crises, the adolescent crisis being identity versus role confusion. During the transition from childhood to adulthood, adolescents search for an integrated sense of self; identify their roles, values, talents, and beliefs; and blend them into a cohesive and unique sense of who they are (Njus & Johnson, 2008). According to Erikson (1956), successful resolution of this stage leads to the attainment of a person's own identity. Failure at this stage of development leads to role confusion or diffusion, in which a person lacks a cohesive sense of self and appears adrift, aimless, and without purpose (Njus & Johnson, 2008).

Personal agency is an intangible asset; a form of identity capital, similar to other assets, such as money, education, social status. Where these assets may be used to assist in ensuring the success of an individual, personal agency provides an individual with the wherewithal to negotiate the complexities of modern life. Like most assets, the need for and use of personal agency is context-specific, and adapt to social and cultural needs (Côté, 1997).

Meaningful Work

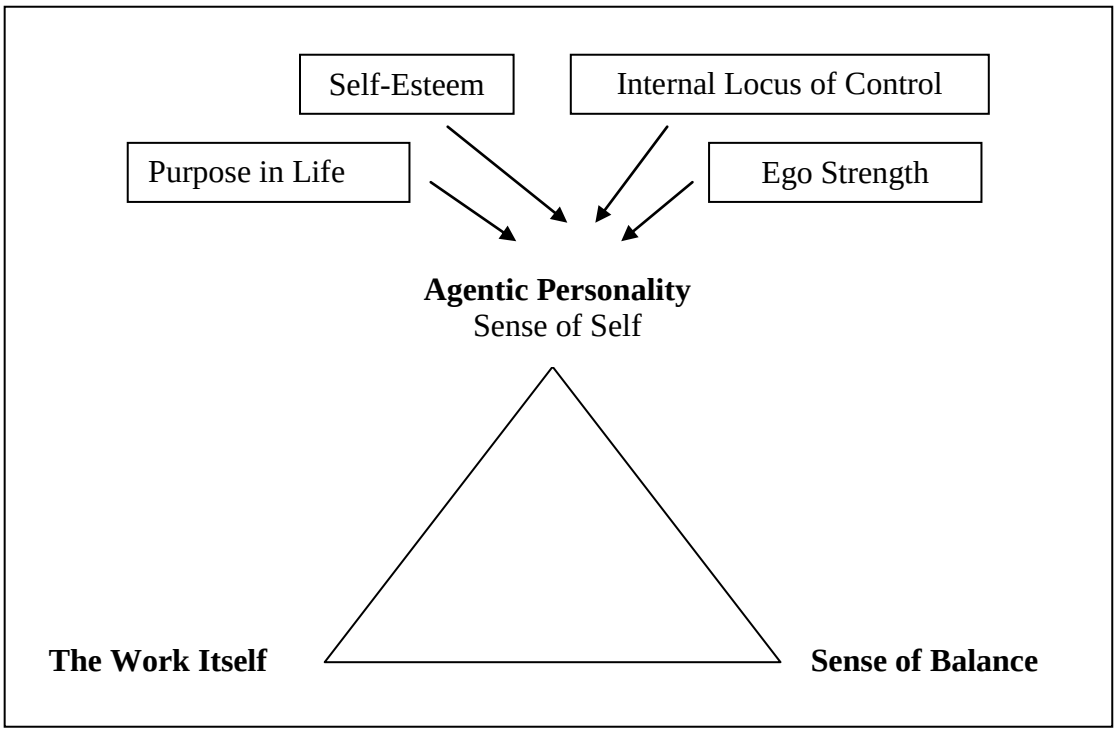
In his discussion of the emerging construct of meaningful work, Chalofsky (2003) says that for an individual to find meaning in his or her work an interplay is required between three themes: sense of self, the work itself, and a sense of balance between the two. Sense of self is described as bringing one's whole self, including mind, body, spirit and emotion to the work, and recognizing and developing one's potential and purpose. The work itself includes the act of performing the work, as well as the creativity, learning, growth and pursuit of purpose the work entails. The balance between the two includes the balance between and among work self, personal self, spiritual self, and giving oneself to others (Chalofsky, 2003).

Maslow (1954) and later Herzberg (1966) theorized that an individual's behavior is based on a hierarchy of needs. Each need, ranging from the need for basic sustenance and safety to self-actualization becomes the focus of a person's behavior until it is fulfilled, after which it no longer drives behavior. Herzberg's (1966) theory focused more on job satisfaction, and stated that the adequacy of hygiene or maintenance factors (i.e. benefits, good supervision, etc.) contributed to dissatisfaction, and motivator factors (i.e. autonomy, recognition, opportunities for advancement, etc.) contributed to job satisfaction and (Chalofsky, 2003, might add) to an employee's perception of meaning in his or her work.

Where Chalofsky (2003) says that meaning may be found in work when sense of self (or identity) and work are balanced, this paper seeks to support the idea that it is the agentic search for professional identity and the resulting career choice which enables an individual to find meaning in his or her work. Figure 1 illustrates Chalofsky's (2003)

framework of meaningful work with sense of self represented by agentic personality (the combination of four personality characteristics: purpose in life, self-esteem, internal locus of control and ego strength (Côté, 2002).

Figure 1: Personal agency (sense of self) impacts meaningful work



Summary of the Methodology

This study will use the Multi-Measure Agentic Personality Scale (MAPS), which will be given to 200-300 employees across multiple professional areas of one organization to identify a smaller population to be studied. The responses will be analyzed to determine the level of personal agency exhibited by each respondent. At the

end of the survey participants will be asked to indicate whether they would be willing to take part in a one-hour interview regarding their perceptions of meaningful work.

When the responses are coded, a small sample of employees (20) will be chosen for in-depth interviews to determine to what extent those employees feel that they find meaning in their work. The overall purpose of qualitative research is to understand how people make sense of their lives and their experiences (Merriam, 2002), and so these interviews will focus on Chalofsky's (2003) concept of meaningful work, i.e. the extent to which employees feel that they are able to bring their whole selves (mind, body, spirit and emotion) to work; that they feel their work contributes to something larger than themselves; that they believe their work allows them creativity, growth and learning; and the extent to which they believe they have the opportunity to achieve appropriate balance between their work and their lives.

.

Limitations

The fact that the study will be conducted within one federal agency limits the generalizability of the findings. Also limiting is the expectation that most of the participants in this sample are likely to have high personal agency because of the nature of their work (predominantly scientists and engineers) and the amount of intangible resources required to achieve their professional status. It is hoped, however, that the organization is similar enough to many other organizations to allow the findings to be generalized to other organizations within the federal government. While this study will examine in great detail one theme of Chalofsky's (2003) framework for meaningful work (sense of self), two additional themes, the work itself and the balance between the two,

will not be explored in great detail. Further research will be necessary to explore those areas.

Chapter Two

This literature review examines several topics: identity development, personal agency, locus of control, self-esteem, purpose in life, ego strength, and meaningful work. Most literature reviewed was written between 1995 and 2009; however, a few classics theorists from the 1950s and 1960s, such as Erik Erikson and James Marcia are included. Searches were executed primarily in ProQuest, Ebsco and Dissertation Abstract databases.

The purpose of the literature review is to examine existing theories and empirical research which provide previous thinking and context for the discussion of how personal agency impacts employee perception of meaningful work. It is the intent of this literature review to suggest that identity plays a large role in whether or not an employee perceives his or her work as meaningful, that what Chalofsky (2003) calls "sense of self" in his framework of meaningful work is really personal agency, and that employees with high personal agency are more likely to find their work meaningful. The discussion begins with an exploration of personal agency and how it relates to identity development. The four elements of personal agency: internal locus of control, self-esteem, purpose in life, and ego strength (Côté, 2002) are each examined in detail.

Chalfosky's (2003) concept of meaningful work is then discussed by examining each of the three areas making up his triangular framework. Sense of self is explored as identity, and begins with classic theories of identity development, detailing the process of individuation, or the separation of a child and then an adolescent into a being unique from

the people around him or her. The work itself is discussed in terms of an organization's role (if any) in providing its employees with meaningful work.

Finally, the third element of Chalfosky's (2003) framework, sense of balance, is discussed in terms of work/life balance and the most recent thinking about generational differences in the workplace related to managing the demands of work and life. The review also includes a discussion of spirituality at work, as a means of creating balance between life and work. The chapter concludes with the idea that it is the exercise of personal agency, through career exploration and commitment, through which an employee finds meaning in his or her work.

Personal Agency

Agency is a sense of responsibility for one's life course, the belief that one is in control of one's decisions and is responsible for their outcomes, and the confidence that one will be able to overcome obstacles that impede one's progress along one's chosen life course (Thoits, 1993; Côté & Levine, 2002; Bandura, 1999, 2002, 2006). With its roots in social cognitive theory the agentic perspective of human development posits that three types of agency exist: personal agency, which is exercised by the individual; proxy agency, in which people influence others to act on their behalf; and collective agency, in which people act together to achieve mutually desired outcomes (Bandura, 2002, 2006). All three agentic modes are required to operate effectively (Bandura, 2002), and since it seems impossible to discuss one type of agency without looking at the others, for the purpose of this study all references to agency, personal agency or human agency include all three.

People practice agency in the operation of their life courses and think about future courses of action to accommodate changing situations. Although fortuitous situations occur, it is the development of personal attributes that enable people to take advantage of fortuitous situations and thus shape their own destinies (Bandura, 1999). If we accept the premise that individuals can be activists in their own lives, it is important to show that individuals' pre-existing physical and psychological characteristics influence their subsequent acquisition of role-identities in society (Thoits, 1993). Personal agency exists within the context of social systems which impact human behavior, and there is a bidirectional influence between social structures and human agency. For example, human learning occurs by observing and modeling the behavior of others. People profit from observation by repeating the successes and avoiding the failure of others. Rather than simply mimicking what they see, however, higher level abstract modeling allow humans to extract the rules from what they have observed and apply them to new situations, developing new courses of action which go beyond what they have observed. In that way, human agency operates generatively and proactively on social systems, not just reactively (Bandura, 1999).

As humans have attempted to adapt to modern and late modern forms of social organization where choice has replaced obligation as the basis of self-definition, identity formation has become a more difficult, precarious, and solitary process for which many people are unprepared (Côté & Levine, 2002). The societal changes resulting in decreased collective decision-making, which were available to previous generations have made identity development a personal project for many emerging adults and may require the exercise of agency in negotiating the passage to adulthood (Schwartz et al., 2005). If

emerging adults are to make enduring life commitments, such as romantic commitments and career choices, they must first undertake the psychological task of individually forming a stable and viable identity that can guide and sustain these commitments (Côté, 2002; Côté & Levine, 2002; Schwartz et al., 2005).

Thoits (2003) in her discussion of agency in the accumulation of multiple role-identities says that research has focused on the physical or mental health consequences of role accumulation and has not examined the determinants. For sociologists, she says, the desire to demonstrate "social causation" rather than personal selection establishes that social arrangements and social relationships have important consequences for human beings that cannot be ignored. The focus on social causation processes, she says, diverts attention from the importance of human agency in social life. When one's identity was primarily familial (as in traditional societies), the key to understanding individuals was understanding the sources of identity and their impact on social life. Identity is now fragmented; individualism permits people to view themselves as intentional actors capable of choosing among various alternatives both in their private lives and in their public personas as members of society (Dombrowski, 1998). Likewise, Hitlin and Elder (2007) say that agency is a necessary aspect of humans struggling to adapt and make sense of their environments. Theoretical and abstract discussions of agency need to include the realities about how people interact with their environments.

The individualization process involves determining meaning in one's life and forming bonds where none or few exist. While many find the individualization process onerous and difficult, it can also be the source of opportunities, especially for those who can shed traditional identities and reject traditional norms that restricted their ability to

act as self-determining agents. The exercise of agency: the ability to effectively interpret one's environment and effectively act on it accordingly will anchor goals, values and beliefs, but needs to include flexibility, which is crucial to a well-established identity (Côté, 2006).

Bandura (2006) posits there are four core elements of human agency: intentionality (people form plans to achieve their goals); forethought (people bring their future into the present by anticipating and visualizing the outcomes related to their goals); self-reactiveness (people motivate and regulate the execution of the plans to achieve their goals); and self-reflectiveness (people examine their own functioning, the soundness and meanings of their thoughts and actions, and make adjustments accordingly).

By making self-evaluation conditional on matching personal standards, people give direction to their pursuits and create self-incentives to sustain their efforts for goal attainment. They do things that give them self-satisfaction and a sense of pride and self-worth, and refrain from behaving in ways that give rise to self-dissatisfaction, self-devaluation, and self-censure (Bandura, 2001). People are increasingly required to "individualize" their life courses in general and their identities in particular, by taking the initiative to form working and personal relationships, to gain educational credentials and employment experience, and to plan for the future (Schwartz et al., 2005; Côté, 2002). Those who address these issues in a proactive and agentic manner may be most likely to form a coherent sense of identity that can then be used to guide their life paths and to negotiate for social resources and positions. On the other hand, those who adopt more passive or procrastinary approaches may have trouble forming coherent identities,

resulting in an inability to take full advantage of the opportunities provided by affluent, but unstructured Western societies (Schwartz et al., 2005).

The capacity to exercise control over the nature and quality of one's life is the essence of humanness. Human agency is characterized by a number of core features that operate through phenomenal and functional consciousness. These include the temporal extension of agency through intentionality and forethought, self-regulation by self-reactive influence, and self-reflectiveness about one's capabilities, quality of functioning, and the meaning and purpose of one's life's pursuits (Bandura, 2001). According to Côté (2002), personality attributes related to personal agency include self-esteem, internal locus of control, purpose in life, and ego strength (resilience). Schwartz el al. (2009) refer to these four attributes together as *adaptive psychosocial functioning.* The next section of the literature review examines each of these personality attributes in greater detail.

Self-esteem

One of the most widely studied constructs in psychology is self-esteem, or a person's level of approval of him or herself (Judge, 2009). People intuitively recognize the importance of self-esteem to their psychological health, and so parents, teachers, and politicians have made raising the self-esteem of children a high priority in Western society (Baumeister et al., 2005).

High self-esteem has long been regarded as the key to happiness, positive behavior, and success. Low self-esteem has been associated with low achievement, risky behavior, and general unhappiness (Crocker & Knight, 2005). High self-esteem is often lauded as the root cause of many positive behaviors; so much so that managers have been encouraged to build their employees' self-esteem in order to help them succeed (Tang &

Baldwin, 1989; Krueger, 1997; Nurullah, 2010). Self-esteem is not only widely used in the field of psychology; it has become such a common concept that, unlike the other three elements of personal agency, is as widely discussed by researchers and non-researchers alike.

Organization-based self-esteem (OBSE), or an employee's perceived value as a member of an organization is considered more likely to predict organization-related phenomenon than task-specific or global self-esteem measures (Pierce et al., 1989; Rank et al., 2009). Global self-esteem is an overall perception of one's self-worth, whereas task-based self-esteem reflects a person's perception of his or her ability to perform specific tasks in the future (Newstrom et al., 2007). People with high OBSE may also exhibit high global or task-specific self-esteem, since perceived self-worth in one domain is likely to be related to perceived self-worth in another, and global self-esteem is a partial determinant of OBSE (Pierce et al,. 1989).

Self-esteem is a powerful determinant shaping an individual's capacity for self-direction and productivity at work. OBSE has been found to be a moderating variable in an employee's willingness to give him or herself to his or her work beyond what is expected by the job (Royle, 2010); on the need for employees to be motivated through transformational leadership (Rank et al., 2009); and on organizational deviance (Lance et al., 2009).

In recent years, however, researchers have begun to question the positive effects of high self-esteem (Crocker, 2002; Heatherton & Wyland, 2003; Baumeister et al., 2005; Cocker & McKnight, 2005; Crocker et al., 2006). Many reasons exist for this. First, because self-esteem is, by and large self-reported, and many people with high self-esteem

exaggerate their success and positive attributes, self-esteem is difficult to measure. Second, the modest correlations between self-esteem and school achievement in some studies do not necessarily indicate that self-esteem leads to good performance. Rather, it is likely that high self-esteem is the result of good school performance. While, under some circumstances, high self-esteem has been associated with success and creates pleasant feelings, by and large laboratory studies have failed to find that high self-esteem results in higher task performance (Baumeister et al., 2003).

The idea that the importance of self-esteem lies less in whether it is high or low, and more in contingencies of self-worth, or what a person believes he or she must do to have value and worth as a person, has become of great interest to researchers in recent years. When self-esteem is contingent, it does not maintain stability, but fluctuates, based on specific events. Humans are motivated to succeed and not fail. High self-esteem is pleasurable and low self-esteem is painful, and so it is possible for the pursuit and maintenance of high self-esteem to become the focus of an individual's behavior, rather than the desired outcome of high self-esteem. The pursuit of self-esteem may inhibit an individual from exploring and learning from mistakes, may allow his or her behavior to be influenced in external pressures, and may result in narcissism (Crocker, 2002; Crocker & Knight, 2005; Crocker et al., 2006).

Internal locus of control

The concept of internal versus external control of ones environment has long been of interest to social scientists. Individuals determine the degree to which they attribute what happens in their lives to their own behavior, or to the behavior of others. Individuals who believe their fate (attainment of rewards or avoidance of punishment) is largely

determined by their own actions are considered to possess internal locus of control (LOC). Conversely, individuals who believe their fate is determined by others (e.g. luck, social activities, people in authority, or external circumstances) are considered to possess external LOC (Gore & Rotter, 1962; Spector & O'Connell, 1994; Hattrup, et al., 2005; Nordstrom & Segrist, 2009).

Developing from social learning theory, several studies suggest that LOC significantly predicts performance at work (Spector & O'Connell, 1994; Hattrup, et al., 2005; Martin, et al., 2005; Dormann et al., 2006). Internal LOC is positively associated with job satisfaction, positive perception of organizational climate, high commitment and morale, and negatively correlated with job stressors, work anxiety and interpersonal conflict (Spector & O'Connell, 1994; Furnham & Drakely, 1993).

Internal LOC has been shown to positively impact job performance, even when controlled for cognitive ability (analytic, numerical, and applied reasoning) and conscientiousness (work ethic, persistence, use of time, physical presentation, and decisiveness). Hattrup et al. (2005) conducted a study of operators at a U.S. paint processing facility, in which participants were given cognitive ability, conscientiousness and LOC scales. Their job performance was also rated by their supervisors, using a measure which included initiative, work motivation, leadership, dependability, attention to detail, practical learning, teamwork, technical knowledge, and quantitative and qualitative problem solving. LOC correlated significantly with more effective task performance, job dedication, and interpersonal facilitation. LOC was later found to be even more strongly correlated with the interpersonal facilitation dimension than with the

task performance dimension, demonstrating the relationship between internal LOC and effectiveness in leadership and teamwork.

In a study of core self-evaluation (CSE), or how people see themselves, Dormann et al (2006) hypothesized that CSE is comprised of four elements: LOC, self-efficacy, self-esteem, and negative affectivity. CSE influences what types of environments people seek, and whether they are successful in attaining them. When this environment is a positive job situation, people have better experiences, which makes them more successful and perform better at work. The results of the study supported the idea that internal LOC is strongly correlated with job satisfaction. The authors theorize that individuals with internal LOC can react to threatening situations in a more relaxed manner, or may choose not to react at all, because they know they are in control of their environments.

LOC is an important antecedent of the type of relationship developed by managers and subordinates and, as a result, impacts work performance (Martin, et al., 2004; Srivastava, 2009). Managers with internal LOC perceive role stresses in more healthy ways, and use positive methods to solve conflicts and to even deal with his or her own inadequacies. As a result, internal managers tend to be more effective in their roles (Srivastava, 2009). At the same time, managers have different relationships with the internals and externals they manage, which affects individual and organizational outcomes. Subordinates with internal locus of control develop positive relationships with their managers, using influencing tactics with managers, and using strategies to change their managers' behavior (Martin, et al., 2005).

While most tend to view internals more favorably than externals, Srivastava (2009) says that internals are more likely to make their own judgments, tend to resist the

influence of others, and often attempt to control the behavior of others. For that reason, they are more likely to be punitive and less sympathetic than externals. In one of the earliest studies of internal-external control, Phares & Lamiell's (1975) research of internals' response to others described as in need of assistance found that internals are significantly less prone to regard other people in need as deserving than externals. The authors hypothesize that internals and externals project their own beliefs about locus of control onto others, so that an internal might believe that a person in need was completely responsible for his or her own situation, while an external might believe a person in need might have been a victim of circumstance or that the situation was somehow misattributed.

External LOC is more likely to be seen in collectivist cultures, whereas internal LOC is expected more in individualistic cultures (Spector et al., 2002a; Spector, et al., 2002b). The current Western concept of LOC does not necessarily transfer to non-Western cultures. In a study of employees of many Lebanese companies, the hypothesis that Arab workers with an internal LOC would have more job satisfaction than those with an external LOC was not supported. The authors suggest additional research is necessary to better understand the impact of religious background determining LOC in Arab versus Western societies (Sidani & Gardner, 2000). In a study of Iranian and U.S. managers in the area of LOC and job stress, Spector, et al (2002b) found that Iranians were more external in their LOC, and perceived more job stressors and strain, although there was no significant difference in job satisfaction between the two samples. Internals in both groups reported less strain, more job satisfaction and less intention to quit.

Purpose in life

Purpose in life (used by some authors interchangeably with 'meaning in life') is a component of psychological well-being which relates to an individual having goals in life, objectives for living and a sense of direction. He or she feels that there is meaning to life, both past and present, and holds beliefs that give life purpose (Ryff, 1995; Ryff et al., 2003; Strauser et al., 2008; Steger et al., 2009; Wagnild & Collins, 2009).

Purpose in life is positively correlated with perceptions of fair treatment, intimate relationships, self-acceptance, religion, achievement, and a sense of belonging to one's community (Donohoe & Green, 2009). The more meaning people experience in their lives, the greater their experience of emotional well-being (Dreher, 2006; Kosine et al., 2008; Steger et al., 2009). Having no purpose is to assume that the present, in and of itself, is a solution to life's problems and that there is nothing beyond today. Focusing on purpose creates a larger, long-range view of life that connects our past and our future, and orients us toward personal growth, enlightenment, and the maintenance of important social relationships. If the context is religion, the time frame may be eternity (Hughes, 2006).

In addition to being motivated by individual needs, the development and pursuit of goals may also be motivated by the needs or desires of people in close relationships with the individual. In a study of Americans and Japanese Gore et al (2009) found that for both groups relationally-autonomous reasons as well as personally-autonomous reasons predicted effort and progress toward purpose in life. Purpose in life is important not only because it is motivating, but because it connects us to other people and fuels social processes that create new meaning in society (Hughes, 2006).

Adversity and challenges in life sometimes contribute to a deepened sense of purpose and meaning in life (Ryffe et al., 2003). In a study of young and emerging adults, however, Schwartz and Finley (2010) found that troubled rumination about parents (a phenomenon describing a negative attachment to and feelings of rejection by parents) was negatively correlated with purpose in life.

Purpose in life may be seen to differ across age and race. In a study to determine the effects of perceived inequality and discrimination on well-being, Ryff et al. (2003) found that at low levels of education, the black and white participants in the study reported the same level of purpose in life. With increased education, however, there was a growing gap in purpose in life between blacks and whites, with more educated blacks having higher purpose in life than similarly educated whites. One subset of the Mexican-American participants in the study (those in Chicago) did not demonstrate the same increase in purpose in life with higher education. Across all races perceived discrimination was a negative predictor of purpose in life.

Research on purpose in life across the life span has produced mixed results. Ryff (1995) reports that purpose in life (as a component of psychological well-being) is seen to decline in later adulthood. Steger et al. (2009), however, reports that meaning in life is found to increase over the life span. The authors point out that most studies do not discriminate between *having* meaning in life and *searching for* meaning in life, which are two separate constructs. Where meaning in life increases with age, Steger et al. (2009) say, the search for meaning in life is associated with lower well-being later in life.

Ego strength (resilience)

Ego strengths or "virtues" is a set of progressively maturing strengths which support an individual, provides a sense of identity, and provides the ability to cope with difficult circumstances. Beginning in childhood and progressing to old age, these strengths develop and solidify as an individual interacts with his or her environment and solves psychological crises (Erikson, 1968). Ego strength provides a mechanism for coping and active problem-solving behavior, which results in the ability to adapt to, resolve and master distress (Worden & Sobel, 1978; Al-Naser & Sandman, 2000; Badran & Kafafy, 2008; Payne, 2009). Erikson (1968) identifies eight ego strengths which develop throughout an individual's life: hope, will, purpose, competence, fidelity, love, care, and wisdom. Love is the first ego strength in adulthood, and wisdom develops in old age.

In the past ten years, much of the discussion of ego strength is focused around resilience, or the ability to cope in the midst of adversity. Despite adversity, resilient individuals recognize that there is still hope in the world, and that with life comes difficulty. Resilient adults have the ability to reflect on their lives and recognize the strengths, successes, and wisdom they have experienced over their lives, which no one can ever take from them (Wagnild & Collins, 2009). The very definition of resilience as a protective factor that allows individuals to cope in the face of adversity suggests that, for resilience to exist, an individual must face some degree of risk. Explanations of what constitutes a significant degree of risk and the resulting competence are patchy in current literature (McMurray et al., 2008).

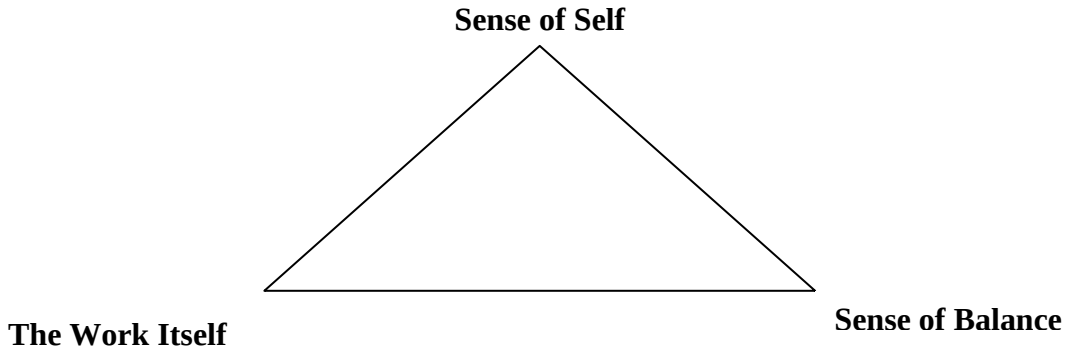
In the workplace, while burnout is often considered the result of organizational and situational factors, not everyone gets it. In fact, some workers who look at life with more forebearance, are willing to let go of perceived injustice, and are willing to look after themselves with a clear conscience are seen to experience less stress (Gustafsson et al., 2010). Recent thinking in cognitive behavioral therapy suggests that, rather than a "change" oriented approach to dealing with stress, resilience may be built in individuals by encouraging them to experience and accept thoughts and feelings, even those which are unpleasant, without any attempt to alter or block them (Payne, 2009). Resilient individuals do not feel pressure to conform to others' expectations, but accept who they are (good and bad), enjoy their own company, and are willing to live by their own beliefs and values, even if it means they must go it alone (Wagnild & Collins, 2009).

In discussing nursing practice, Hodges et al. (2005) says that resilience is critical for practice in a chaotic world. Resilience is necessary to develop new perspectives on emerging new challenges, and that through exploring personal meanings and new philosophies on the work at hand, resilience can be learned. Resilient nurses are those who can transform a disastrous day into a learning experience and then move forward.

Meaningful Work

Meaningful work is the integration of sense of self, the work itself, and a sense of balance between the two. The sense of self involves the worker bringing his or her mind, body, emotion and spirit into the work. The work itself includes autonomy, flexibility, empowerment, continuous learning, risk taking and creativity. The sense of balance concerns the choices the worker makes between time spent at work, at home, and in community (Chalofsky, 2003).

Figure 2: Chalfosky's (2003) framework of meaningful work



An agent has to be not only a planner and forethinker, but a motivator and self-regulator as well. Having adopted an intention and an action plan, one cannot simply sit back and wait for the appropriate performances to appear. Actions give rise to self-reactive influence through performance comparison with personal goals and standards. By making self-evaluation conditional on matching personal standards, people give direction to their pursuits and create self-incentives to sustain their efforts for goal attainment. They do things that give them self-satisfaction and a sense of pride and self-worth, and refrain from behaving in ways that give rise to self-dissatisfaction, self-devaluation, and self-censure (Bandura, 2001).

Lair et al (2008) differentiates between the terms 'meaning of work' and 'meaningful work'. Meaning of work, the authors say, refers to the significance or purpose of work, as attributed by the worker him or herself, while meaningful work refers to the culturally privileged qualities of work itself, considered in terms of the types of qualities ascribed to the Maslowian concept of self-actualization in work (Lair et al., 2008). Since Chalofsky's (2003) framework of meaningful work includes the work itself,

this study will include meaning of work as a sub-component of meaningful work. In other words, the framework for meaningful work is made up of three components: sense of self, the work itself (to which the worker must attribute significance or purpose), and a sense of balance between the two.

Chalofsky (2003) describes meaningful work as that which gives essence to what we do and what brings a sense of fulfillment to our lives. Work can serve as a tonic for personal identity in that it helps boost self-esteem. When an individual performs meaningful work, he or she actually develops a sense of identity, worth and dignity. By achieving meaningful results, he actually grows and even actualizes his full potential (Morin, 2004).

Morin (2004) describes the work instinct, which leads to meaningful work in terms of active (rather than passive) behavior. She says that meaningful work provides pleasure through the opportunity to achieve something, to surpass oneself, to exercise one's imagination and intelligence, to become a better person, to know oneself, to meet other people, to help people, to feel competent and powerful, to be effective, and to transcend one's own death by leaving traces of one's existence.

In the same way, Csikszentmihalyi, in his (1990) book, *Flow* describes how uneducated and unsophisticated workers transformed their work into complex activities. They did this by recognizing opportunities for action, where others did not and by focusing on the activity in front of them, and developing new skills. These workers allowed themselves to be so immersed in the work that they transformed their work as well as themselves (a phenomenon he refers to as "flow"), and emerged stronger. In other

words, these workers exercised their personal agency to change their environment and their work in order to enrich their own lives.

Csikszentmihalyi (1990) cautions that it would be incorrect to assume that every situation, even the most favorable, automatically leads to a flow experience for the worker. The optimal experience of work, he says, depends on a subjective evaluation of what the possibilities for action are, and of one's own capacities. This characterization of the flow experience sounds remarkably similar to Côté's (2002) description of developmental individualization, or the active, strategic approach to personal growth and life projects, which is the foundation of agentic personality.

Sense of Self

Two sets of scholars have studied the "self" or identity: psychologists and sociologists. Psychologists, such as Erik Erikson and James Marcia, studied how the identity develops from childhood, through adolescence and into adulthood. Sociologists, such as George Meade and Nelson Foote, later wrote about the interaction of identity and society (Weigert et al, 1986). The theories are two very similar perspectives on the dynamic mediation of the socially constructed self between individual behavior and social structure, yet there is almost no systematic communication between the two perspectives, allowing them to occupy parallel but separate universes (Hogg, et al. 1995). They share at least two similarities: the first is that both sets of theories state the criticality of an understanding of roles to predicting human behavior, and the second is that both psychologically-based identity theory and sociologically-based identity theory are premised on socially-defined self-concepts and realities. In other words, we come to

know who we are through interactions with others and society, and our behavior is based on these socially defined roles (Cable & Welbourne, 1994). What follows is a brief description of both the psychological and sociological perspectives of identity theory in order to set the stage for understanding how identity impacts meaningful work.

Identity Theory

From a psychological perspective, identity formation involves a synthesis of childhood skills, beliefs, and identifications into a more or less coherent unique whole that provides an individual with both a sense of continuity with the past, and a direction for the future (Marcia, 1993). The process, beginning at birth, is always changing and developing: at its best it is a process of increasing differentiation, and it becomes ever more inclusive as the individual grows aware of a widening circle of others significant to him, from the maternal person to "mankind" and does not end until death (Erikson, 1968). Identity begins to be constructed when the individual begins to make decisions about who to be, with which group to affiliate what beliefs to adopt, what interpersonal values to espouse, and what occupational direction to pursue (Marcia, 1993).

One may have either a conferred identity (given by others), or a constructed identity (determined by self). The experience of having an identity is that one has a core, or center, to which experience or action can be referred. One can trace one's history in a meaningful way to one's present situation and can extend that line into probable future. Individuals with either a conferred or constructed identity have this sense of inner coherence. Individuals who construct their identity, however, modify or reject some conferred elements, and possess a sense of having participated in a self-initiated and self-

directed process. They not only know who they are, they know how they came to be that, and that they had a hand in the becoming. Furthermore, they have developed skills useful in the adaptive process of further self-construction and self-definition (Marcia, 1993).

Social Identity Theory

Sociological approaches to identity explain social behavior in terms of the reciprocal relationships between self and society. This approach is strongly associated with symbolic interactionism, which posits that people come to know who they are through their interactions with others. Identity theory views the self not as an autonomous psychological entity, but as a multi-faceted social construct that emerges from people's roles in society (Hogg et al., 1995). Hall (1976) refers to "subidentity", which he defines as that aspect of the total identity engaged when a person is behaving in a given role. All subidentities have a certain area of overlap, or core, in common. Individuals, he says, can vary in different respects, such as number of subidentities, degree of integration between subidentities, and congruence between subidentity and role.

Role theory presumes a thoughtful, socially aware human actor, and thus is often tied to orientations such as cognitive and field theories in social psychology or exchange theory and phenomenological approaches in sociology. For that reason, role theorists tend to adopt methods of research which require research subjects to report their own or others' expectations (Biddle, 1986). Social identity theory (SIT) seeks to explain how individual behavior is influenced by group memberships. SIT uses the group as the fundamental unit of analysis to explain behavior within and between groups. SIT

proposes that an individual's concept of self is built on personal identity (an individual's unique characteristics) and social identity (based on membership in social groups and categories). Under certain conditions, social identity becomes more important than personal identity, leading to behavior based on group membership. According to SIT, group behavior is motivated by the need to maintain a positive social identity, and thus a positive self-concept (Paulsen, 2003).

Paulsen (2003) lays out very clearly the importance of multiple identities to inter and intra group dynamics within organizations. He briefly mentions identity influences from outside the organization, such as biological issues (race, age, gender) and professional identity (engineer, accountant), but he gives these externally-endowed identities only superficial attention. He does not mention the other external identities individuals bring into organizations, such as culture, family status, class, sexual orientation, religion, etc. In contrast, Stryker and Burke (2000) say that individuals live their lives in relatively small and specialized networks of social relationships, through roles that support their participation in society. The authors describe society as a mosaic of relatively durable patterned interactions and relationships, differentiated yet organized, embedded in an array of groups, organizations, communities, and institutions, and intersected by crosscutting boundaries of class, ethnicity, age, gender, religion and other variables.

Multiple Identities

Wayne et al (2006) say that individuals invest effort in identities on which they place importance, finding that individuals with strong career identities invested more

effort in their careers than those with weaker career identities. Strong identities provide great meaning and purpose, and greater psychological meaningfulness contributes to greater engagement. Such deep engagement likely results in the experience of more enthusiasm, alertness, energy, and pleasant mood to transfer across roles.

Katz and Kahn (1978) used role theory to describe how people form roles for themselves and others within groups and organizations. Role theory has been used to examine the behavior of people in organizations, families, and other types of groups. Saleh and Hosek (1976) say that an individual might invest more in a role he or she identifies with because the individual considers his or her performance in that role important to his or her self-worth. Likewise, Kahn (1990) asserts that in the process of defining a role for themselves ("self-in-role") in their social environment, people define their identities based on the value they place on those roles, or the pleasure they derive from them. He goes on to say that in organizations, employees maintain varying levels of commitment and involvement in their work roles, depending on the degree to which they consider a job central to their lives and to their identities.

Stryker and Burke (2000) say that individuals possess as many selves as groups of persons with which they interact. The authors refer to each group-based self as "identities", asserting that individuals have as many identities as distinct networks of relationships in which they occupy positions and play roles. Roles are external expectations attached to positions occupied in networks of relationships. Identities are internalized role expectations, and are internally organized in a salience hierarchy, reflecting the importance of hierarchy as an organizational principle in society.

Identity salience then, Stryker and Burke (2000) say, is the probability that an identity will be invoked across a variety of situations. For example, the salience of an individual's religious identity predicts time spent in religious activities, and the salience of the religious identity is predicted by commitment to role relationships based on religion. In other words, individuals will seek opportunities to engage in activities which allow them to behave in accord with highly salient identities. When several roles are at play, conflict can arise when an individual who strongly values a particular role is forced by situational constraints to spend less time than he or she would like in that role (Carlson, et al, 1995).

The Work Itself

Meaningful work

Scroggins (2008), in describing the self-concept-job fit theory, says that meaningful work is a function of the interaction between work tasks, the context in which the work is performed, and the individual's self-concept. He says that work is experienced as meaningful when the job duties are consistent with the individual's perception of who he or she is, and confirms what he or she wants to become. It is the fit between the work and the individual's self-concept which makes the work experience meaningful. Similarly, May et al (2004) found that meaningfulness was a strong mediator between work engagement and both job enrichment (the characteristics of the job) and work role fit. Both May et al (2004) and Scroggins (2008) conclude with the recommendation that human resources professionals create meaningful work for employees in order to increase engagement and reduce attrition.

The very concept of meaningful work, says Lair et al (2008) suggests privilege: Western academic indulgence in narcissistic elitism. What elevates one type of work over another to the status of meaningful? A better concept might be to consider the meaning of work. This question allows for the inclusion of those for whom work's meaning is more extrinsic than intrinsic, and for whom work is merely a matter of survival. The danger of the latter view, however, is that of condescension: that one type of work is not worthy of meaning. Despite the danger of indulging in elitism or condescension, to abandon either, says the authors, risks the loss of a guide by which we might hope to improve jobs.

Bowie (1998) contends that no organization can provide meaningful work for its employees. In order to do so, the manager would have to impose his or her own concept of meaningful work on less powerful subordinates; an ethically questionable practice. Since meaningful work is entirely subjective and individually defined by each employee, a manager cannot possibly be obligated to provide meaningful work. Instead, an organization can create an environment of freedom and autonomy, opportunities for development, and adequate economic reimbursement. It is within this environment that employees are free to pursue their individual conceptions of meaningful work. In other words, where Scroggins (2008) suggests the organization provide an active role, and the employee a passive role in creating meaningful work, Bowie (1998) suggests the organization's responsibility is merely to create the appropriate environment and allow the employee to take the active role of making his or her work meaningful.

Sense of Balance

Organizations wield a tremendous amount of power over their employees, influencing how employees negotiate the balance between demands of their work and the rest of their lives (Hoffman & Cowan, 2008). The issue of work life balance, the process of reconciling work, family and individual demands and time (Grady & McCarthy, 2008), has taken on new significance in the past several years as a result of the changing demographic of women in the workplace, especially women with small children, and of men having working spouses. The change has required that organizational employees seek a balance between work and home lives, because such a balance may impact work satisfaction and productivity (Grady & McCarthy, 2008; Moon & Roh, 2010).

In a study of fathers and their work life balance, Duckworth & Buzzanell found that work life balance was not an attempt to equally allocate resources to the two domains, rather that the fathers made an attempt to prioritize and juxtapose family activities around the given requirement of work. In some organizations, employee prestige comes with working long hours and being constantly present, as an expression of organizational commitment. Rejecting the culture of long hours and presenteeism portrays the employee as less committed than others and puts him or her at risk in both the personal and professional spheres, as job security may be compromised (Frame & Hartog, 2003; Watts, 2009).

The purpose of family-friendly workplace policies was traditionally to meet the needs of women with young children, since most workplace policies were originally designed for a male-dominated workforce. The significant increase in female employees, however, has made it difficult for these male-oriented policies to meet the needs of the

entire workforce (Moon & Roh, 2010). Past research on work life balance has focused almost exclusively on women, without much regard for the man's role in the family as father, and the balance he must achieve between work and home to maintain that role (Duckworth & Buzzanell, 2009).

In a study of organizational rhetoric found on corporate websites of the 2004 *Fortune 500*'s Best Places to Work list, Hoffman and Cowan (2008) say employers send mixed messages about the relationship between work and life. The very language used: putting "work" before "life" illustrates the true purpose for which most of these organizations exist, which is to make a profit and fulfill their missions. Discussions of "balance" on the websites suggest that work and life represent equal parts of a whole, although work traditionally occupies only 40 of the 168 hours in each week. Additionally, language on websites consistently suggests that the traditional family is the only acceptable interests outside of work, which may place more pressure on those without families to work longer hours. Other language suggests that employees bear the responsibility to *navigate, juggle* and *manage* the balance between life and work, suggesting that negative consequences await those who fail to do so successfully. In addition, this language suggests that the purpose of managing employee's personal life is, not to improve those lives, but to remove all obstacles to the employee focusing exclusively on the organization's work, thus suggesting the work is a priority over personal life. The authors conclude that organizational work/life programs may increase, rather than decrease organizational involvement in personal life through promoting the ideology that work is more important than life.

Consulting firm, Accenture, found that in a poll of its employees 83% reported that the ability to manage work-life issues will impact their commitment to stay with the company, even more than career progression, compensation and benefits (Klun, 2008). Although the Accenture study found these results across all generations, recent research has suggested that generational differences may be seen in employees' attitudes toward their work (Arsenault, 2005; Yrle et al., 2005; Davis et al., 2006; Johnson & Lopes, 2008). The Center on Aging and Work/Workplace Flexibility study found that approximately half of Generation X and Y employees report they focus more on family than on work, compared with 41% of Baby Boomers. Baby Boomers, on the other hand, were almost twice as likely to report focusing more on work than family, when compared to Generation X and Y respondents (Pitt-Catsouphes, et al., 2009). Generations X and Y are keeping the pressure on companies to find flexible, innovative ways in which to better allow employees to manage the competing demands of work and family (Klun, 2008).

In a review of data from 1.4 million people who completed personality, attitude, psychopathology, or behavior scales between the 1930s and the present, Twenge and Campbell (2008) found that Generation Y (whom the authors often referred to as GenMe) demonstrated more burnout, higher self-esteem, narcissism, anxiety, and depression, more external locus of control, and women with more agentic traits. The authors recommend that companies promote work/life programs, especially for families with children, to help mitigate the stress and create better balance between home and work needs.

Spirituality and work

Spirituality at work involves a sense of well-being, a sense that one's work makes a contribution. Spirituality is the idea of being connected with a greater whole, whether that is nature, a specific higher being, or a nebulous higher force (Kinjerski & Skrypnek, 2006; Lair et al., 2008). It is the experience of trust among those involved in a work process, stimulated by individual goodwill, sustained by reciprocity and resulting in enhanced performance, which is translated into lasting organizational excellence (Marques, 2008). Beyer (1999) says that spirituality has two components: meaning and belonging. As meaning-seeking animals, we seek meaning in our work. As social animals we seek to belong to social groups. Both meaning and belonging "enhance the inner lives of individuals and give their work a spiritual dimension (p.1)."

While spirituality is often seen as a matter of personal life, the reality is that workers do not simply leave their spirituality at some nebulous threshold between their private and work lives. In fact, the involvement of spirituality in the workplace (by either the organization or the worker) can make work meaningful by linking work activities and organizational values to those most typically associated with private life (Lair et al., 2008). Not synonymous with any specific religion or ritual practice, spirituality includes recognized religions and practices, as well as individual meditations, feelings, and experiences (Gockel, 2004; Marques, 2008; Kinjerski & Skrypnek, 2008).

Spirituality in the workplace is an umbrella term for a large number of policies and practices that focus on the recognition and acceptance of issues related to the soul or spirit at two overlapping levels: organizational and personal. Much of the literature about spirituality at work focuses on how organizations may more fully incorporate spiritual

practices or encourage employees to do so through the use of vision and mission statements, transformational leadership, and socially-responsible and value-driven business practices (Gockel, 2004; Kinjerski & Skrypnek, 2008). Even the possessions one chooses to bring to work for display in one's work areas are means by which to extend the home life to work These possessions may exist at work for the purpose of self-reflection and reminders of aspects of identity not otherwise included in the work environment (Tian & Belk, 2005).

Spirituality may be viewed in two contradictory ways; the first is that spirituality's qualities are passive, static, and trait-like, similar to possessions (like beliefs) or actions (rituals), and remain constant over time. On the other hand, spirituality's qualities may be seen as dynamic: a set of skills, resources, capacities, or abilities that are evolving and developing and interacting with the external environment. These set of skills, resources, and abilities lead the worker to engage in spiritual activities which impact the work experience (Giacalone & Jurkiewicz, 2003). In the latter view spirituality at work is established when the worker possesses an internal drive and accompanying resources and capabilities to do well. (Marques, 2008).

Employees have spiritual needs, much the same as they have physical, emotional, and cognitive needs, all of which contribute to their individual identities or inner life (Duchon & Plowman, 2005), and which accompany them into the workplace. Congruence between this inner life and the employee's work leads to greater motivation. Shamir (1991) says that humans express feelings and self-concepts, and are motivated by internal guides, which enhance their feelings of self-worth. Individuals are made up of many different identities: some individual and some social. These identities are

motivating to the individual based on their salience, or importance. The more salient an identity (such as spiritual identity), the more motivating it will be, and the more likely to be engaged in different settings, such as work and home. Some individuals whose self-concept includes a level of spirituality will be more motivated by a work setting which allows it some expression (Dushon & Plowman, 2005).

Personality is important in the creation of workplace spirituality, and people who report that their work has a spiritual dimension share common personality traits. They have positive energy, are open to new ideas and are dedicated to their work (Kinjerski & Skrypnek, 2006a). As mentioned above by Giacalone & Jurkiewicz (2003), spirituality may be seen as a dynamic set of skills, resources, and abilities; spiritual attributes which may be translated into spiritual activities. For example, the authors say, the attribute of a "broader world view" is translated into "acting on positive attitudes and relationships with the world"; "confidence that one's own existence has purpose" translates into "acting with authenticity"; and "an integrating factor within personality" translates into "embracing the experiences that life provides as opportunities for growth".

Sense of self is agentic personality

This study will also examine what Chalofsky (2003) calls "sense of self", specifically agentic personality, and its impact on how employees find meaning in their work. This study theorizes that what Chalofsky (2003) calls "sense of self" is the combination of internal locus of control, self-esteem, purpose in life and ego strength which, when found together constitute personal agency. It is proposed that the exercise of

agency, through exploration, flexible commitment, and deliberate decision-making, as theorized by Schwartz et al (2005), leads to the most appropriate career choices, which provide the employee with more meaningful work. Personal agency continues to act as the employee transforms his or her work to make it meaningful. The combination of meaningful work and a sense of balance within the employee's life reinforces the perception that agency leads to positive results, and the cycle continues. Whether the decision-making is related to career choice or, as Csikszentmihalyi (1990) says, to exploring and transforming the work, it is possible that the study will show that individuals with high levels of agency will report experiencing more meaning in their work.

Chapter Three

Overview of Methodology

The purpose of this study is to examine the relationship between high personal agency, defined as a combination of ego strength, internal locus of control, purpose in life, and self-esteem (Côté, 2002) and employee perception of meaningful work. The four major research questions are:

1. To what extent do employees with high personal agency (ego strength, internal locus of control, purpose in life, and self-esteem) exercise that construct in their work lives?
2. How do high agency employees perceive the meaningfulness of their work (based on Chalofsky's 2003 definition of meaningfulness in work)?
3. What is the relationship (if any) between the four elements of personal agency and perception of meaningful work?
4. Is personal agency what Chalofsky (2003) calls "sense of self"?

A survey is used to identify the population for the study; a sample of which will be administered an in-depth interview. Survey data will be analyzed using basic descriptive statistics, but the most in-depth data analysis will be performed using qualitative methods.

Research Procedures

Epistemology

A constructionist epistemology contends that, rather than a passive process of gaining understanding of the external world, an individual's experience is an active process of interpreting and acting on information gained (Jacobs and Manzi, 2000). In this way, individuals have great power, or agency, in constructing their own reality. At the same time a cursory review of history will show that there exist some shared human views of rationality and shared moral sense that provides an objective basis for whether one social construction or type of experience is better than another, and whether there exist shared human needs beyond those needed for physical survival, i.e. self-realization (Wakefield, 1995).

The concept of epistemology, defined as 'ways of knowing' presumes a cognitive definition. Epistemology, however, is more than a framework for knowing and understanding reality, epistemic assumptions result in corresponding actions and behaviors; an individual's way of knowing predisposes as way of being (Reybold, 2002). In pragmatic approaches to research, what counts as knowledge includes both external and internal (or individual) perspectives. The pragmatic researcher begins with a problem that needs to be solved and uses the necessary tools to understand it. For this reason, a philosophical stance such as the location of knowledge is secondary to the question of the problem to be solved (Creswell & Miller, 1997).

The presenting problem for the current study is that organizations need to understand how to buy (hire) or grow (develop) more employees who find their work

meaningful, and thus remain engaged and highly productive. While we know how people who find their work meaningful think and feel about their work (see Chalofsky, 2003), there is little in the literature which sheds light on whether there exist certain characteristics shared by people who find their work meaningful.

The purpose of the current study is to examine one set of personal characteristics (ego strength, internal locus of control, purpose in life, and self-esteem), embodied in personal agency to determine whether or not agency is related to the participants' perceptions of meaningful work. While it is possible a causal relationship exists between the two constructs (agency and perception of meaningful work), it is not the intent of the current study to show cause. Rather, it is the study's intent to build on existing research by supporting the possibility that agency plays a role in employees finding their work lives meaningful, and that it is *high* personal agency which (when combined with the proper work and work/balance environment), leads to employees perceiving their work as meaningful.

If, in fact, participants who show a high level of agency are also found to have strong perceptions of meaningful work one may, through the process of deduction, conclude that there is a relationship between the two constructs; a theoretical perspective which is most associated with *quantitative* research methods. Showing a possible relationship, however, does not provide us with any understanding about how such a relationship might have occurred, nor does it allow us insight into possible contextual differences within which this relationship may be seen, and that is not the purpose of the current study. In-depth interviews will seek to understand meaning systems from the point of view that they are incredibly complex, individually-organized, with links

between meanings, such that any belief or desire can potentially influence another, and the same action may result from many different causes (Wakefield, 1995); an inductive theoretical perspective which is most associated with *qualitative* research methods, and the type of inquiry this study hopes to conduct.

Research methods have been oversimplified to assume that qualitative research is most concerned with words, while quantitative research is most concerned with numbers. In terms of which data are reported, the oversimplification goes on to assume that qualitative research reports meaning, while quantitative data reports behavior. Neither of these assumptions is necessarily true, since both research approaches may focus on people's views and actions (Brennen, 2005).

Based on the fact that both quantitative and qualitative paradigms have inherent strengths and weaknesses, researchers should regard their research paradigm as laying on a continuum between quantitative and qualitative perspectives, without leaning too far towards purity in either direction. Such a re-framing would allow researchers to focus more on research strategies, than on paradigmatic issues (Onwuegbuzie, 2002). A multi-method strategy may enter into one or more phases of the research process, i.e, research design, data collection, and interpretation and reporting of data (Brannen, 2005). In the present inquiry, using the pragmatic approach, the researcher starts with a problem that needs to be solved and uses the tools available to understand it. This means that a philosophical stance, such as adherence to a particular epistemology, is secondary to the larger question of the problem that needs to be solved (Creswell & Miller, 1997).

In the current study, review of the literature has suggested there may be a relationship between personal agency and meaningful work, but what (if any) is that

relationship? The purpose of the in-depth interviews is to build a theory about that relationship, if one exists, using the relayed experiences of the participants during the interview. The process of coding the participants' narrative, grouping the codes into categories and looking for relationships, both within and between participants, allows any existing theory to emerge.

Theoretical Perspective

This pragmatic exploratory study approaches data collection in two distinct phases. The first phase, the survey, intended to identify the population for the study, applies a research instrument, the 20-item Multi-Measure Agentic Personality Scale (MAPS), an unpublished instrument developed by James Côté of the University of Western Ontario, to determine where each individual falls on the agency scale. In the main phase of the study, the interview phase, the researcher is the instrument, and attempts to explore those thoughts, feelings, and attitudes in more depth through interviews; to situate them in context (historical and otherwise), and to better understand their evolution. Like in most qualitative research, it is understood that reflexivity, the influence of the researcher on the collection, analysis, and interpretation of the data, must be considered at every point in the study.

Methodology

General Steps in Methodology

1. Develop a list of individuals, with GSFC personnel, to invite to participate in the research study.

2. Send email of invitation (from sponsoring organization) informing prospective participants of the study and its purpose, and introducing the researcher (see Appendix A).

3. Send introductory email (from researcher), describing the study in detail and encouraging prospective participants to respond to the instrument when they receive it (see Appendix B).

4. Send email link to web-based instrument (see Appendix C).

5. Send reminder email to participants asking them to complete the instrument if they had not already done so (see Appendix D).

6. Close instrument and extract data into spreadsheet format. Conducted initial review of data and identified which participants indicated interest in taking part in an in-depth interview.

7. Analyze prospective interview sample to determine distribution of agency within sample.

8. Send email to prospective interview sample requesting interview date and time (see Appendix E).

9. Call prospective interviewees to confirm date and time of interview.

10. Email participants confirmation email (Appendix F) with an Informed Consent form attached (Appendix G).

11. Conduct one hour, tape-recorded interview (see Appendix H) with each interview participant.

12. Compile interviewer's personal notes, reflections, and observations.

13. Transcribe interviews verbatim.

14. Analyze interview transcripts for themes by hand.

15. Analyze interviewer's notes and reflections by hand.

16. Validate themes with participants, and incorporated their feedback into analysis.

17. Identify and name themes.

18. Develop matrix of interview excerpts associated with themes.

19. Two other raters match excerpts with named themes to determine inter-rater reliability. Re-analyze themes where discrepancies exist.

Specific Methods

Sampling

The first phase of this study will aim to engage employees of NASA Goddard Space Flight Center (GSFC) in Greenbelt, Maryland to take part in the web-based instrument. Participants will be invited from five divisions of the organization (Engineering; Science, Projects and Facilities). The four divisions total approximately 2,000 employees, the largest of which was Engineering. Target size for the survey phase of the study is 200-300 participants. Divisions were chosen to access the greatest diversity in employee professional background, i.e. administrative, scientific, and engineering. This diversity was considered important to reducing the effects of lurking variables, such as differences in professional background, which might impact the results of the study when the sample is aggregated. Other possible confounding variables, such as race, age, and gender, while not used as variables for stratification of the sample, will be considered during data analysis.

In the interview phase of the study, a sub-sample of 20 respondents interested in being interviewed will be chosen randomly and contacted to arrange interview venue.

Data Gathering

Data will be gathered in two stages, beginning with the survey. The instrument used will be the Multi-Measure Agentic Personality Scale (MAPS), a 20-item instrument comprised of scales designed to measure four personality attributes selected to represent agentic personality: ego-strength, internal locus of control, self-esteem, and purpose in life. Developed originally as an effort to identify internal resources related to the identity

capital model, the MAPS was the combination of scales of six personality qualities constituting the agentic personality: self-esteem, purpose in life, internal locus of control, ego strength, self-actualization, and ideological commitment (Côté, 1997).

Originally a 74-item scale, the MAPS was eventually reduced to a 20-item scale comprised of only four scales: ego-strength, internal locus of control, self-esteem, and purpose in life (MAPS20). The overall scale had a Cronbach's alpha of .73, and the four subscales (ego-strength, internal locus of control, self-esteem, and purpose in life) had alphas ranging from .61 to .75, according to an unpublished report by Côté.

The ego-strength scale asks participants to rate the truth of five statements related to their feelings about being in challenging situations, and the ease with which they are distracted from tasks. The internal locus of control scale asks participants to rate their agreement with five statements related to their sense of how much their own efforts impact their life circumstances. The self-esteem scale asks participants to determine whether a series of statements are "like" them or "unlike" them. Two of the statements are reverse scored. The purpose in life scale asks participants whether they see their lives as exciting and new, and whether they consider themselves responsible. Two items on this scale are reverse-scored.

While the MAPS20 was originally developed for use with adolescents and college students, this study will focus only on adults. For that reason, one question in the self-esteem scale, which originally read, "I'm popular with people my age" will be changed to, "I'm popular with my colleagues."

An additional, non-scored section related to meaningful work was included in the instrument. This section asked the degree to which the participant finds his or her current

work meaningful (a definition of meaningful work is provided). The participant is also asked to rank several work criteria in order of importance. The instrument concludes with a request that the participant indicate interest in a one-hour interview about meaningful work.

The second stage of data gathering will consist of 20 one-hour long, semi-structured interviews with survey participants who have indicated interest in an in-depth interview. The participants are asked to provide their email addresses when indicating interest. The researcher will then send an email (see Appendix E) requesting a date and time for the interview. Interviews may be scheduled during or after work hours, at the participants' convenience. The email will also contain a definition of meaningful work, and will ask participants to reflect on their own experiences of meaning in their work, in order to prepare for the interview. The email will encourage participants to jot down notes of anything of particular interest they would like to share during the interview. A confirmation email (Appendix F) will then be sent to the participants confirming the date and time of the interview. Attached to the email will be an Informed Consent form (Appendix G), which participants will be asked to review in advance of the interview. The researcher will collect a signed copy of the form at the time of the interview.

The semi-structured interview contains questions of which some are more structured than others. Since specific information is desired from all participants, some questions are structured so as to elicit this type of information, however much of the interview is exploratory, and so the questions flow from the direction of the conversation, rather than in response to a previously-defined script (Merriam, 2002). Since the interview will be audio-recorded, the researcher will not take detailed notes during the

interview. Instead, she will jot down any thoughts or reflections she has during the interview for later analysis.

Data Analysis

Data will be analyzed in two phases. At the close of the survey period responses will be analyzed using the online instrument, Excel, and SPSS. Potential scores on the MAPS range from 1-100 and participant scores will analyzed to determine range, mean and distribution. Predictive statistical analysis will be conducted to determine whether there were any significant differences in agency score for participants based on age, gender, race, age and occupational category. Additional analysis will be conducted to determine whether statistical significance is detected between participants' personal agency scores and responses about the meaningfulness of their work. This analysis will be used to further inform the interview stage of the study.

The main phase of data analysis will include the analysis of the audio-recorded interviews. First the interviews will be transcribed verbatim, and then proofread while listening to recordings, in order to identify and correct errors. The corrected transcript will be sent to the participant for review and correction, if necessary. Member checks are a common strategy for ensuring validity in qualitative research. The researcher takes his or her tentative findings back to some of the participants to determine the accuracy with which he or she captured the participants' thoughts and feelings. Participants should be able to recognize their experiences in the researcher's interpretation, and may be able to suggest some fine-tuning of the data to better represent their perspective (Merriam,

2002). Additional comments made by participants will be added to the transcript as an addendum. Researcher reflections will also be added as an addendum.

When the transcripts are finalized with participant comments and researcher reflections, the researcher will use the non-linear qualitative data analysis (QDA) method of noticing, collecting, and thinking, as described by Seidel (1998). *Noticing* involves gathering data, i.e. making observations, writing notes, tape-recording interviews, etc. Once the record has been gathered the researcher focuses on noticing interesting things in the record, and making note of, or coding them. *Collecting* involves sorting the interesting data that have been noticed into categories or groups which seem related to each other. *Thinking* involves examining those things the researcher has collected to look for patterns or relationships within and across collections in order to make general discoveries about the topic being researched (Seidel, 1998).

The transcripts will be read three times: the first time through simply for comprehension; the second and third times with the researcher attempting to notice specific issues and trends. Notes will be written in the margins of the transcripts. The notes will be condensed into labels, and a short summary will be written for each interview, using labels identified from the transcripts, general researcher impressions from analyzing the transcript and from re-reading researcher notes taken during the interview. When all interviews have been analyzed, the summaries will be read together, and common themes identified, named, and analyzed. Excerpts from different interviews will be identified to represent named themes. A matrix will be made up of verbatim interview excerpts corresponding with the separate list of named themes, along with the

descriptions of the themes. Two additional researchers will be asked to match excerpts with the themes, in order to validate that the excerpts accurately reflect those themes.

Verification

Two types of data verification will be used for analysis of the interview data. First, through member checks, participants will be given the opportunity to review the interview transcripts to determine whether the researcher accurately captured their experiences as they relayed them to her. In addition, a secondary researcher will verify the interview summaries with the original transcript in order to determine whether the summaries accurately captured the themes emerging from the interviews. The secondary researcher will also verify the themes identified in the aggregated summary of the interviews.

Data Management

Survey and interview data will be maintained on the researcher's home computer. The interviews will be recorded on a digital audio-recorder, after which the recordings will be downloaded onto the researcher's computer, and transcribed verbatim. The audio recording will be stored in a filing cabinet at the researcher's home. Hardcopies of the transcripts and of the raw survey data will also be kept in a filing cabinet at the researcher's home.

Human Participants and Ethics Precautions

At the beginning of the interview participants will sign the Informed Consent Form. The form explains the purpose of the study and how the data will be used. Participants are informed that participation in the study is completely voluntary, and that each participant may withdraw at any time without explanation or penalty. The form also explains that only the researcher and her non-GSFC associates will have access to the data. At no point will individual data be shared with anyone related to GSFC. Only aggregated participant data will be shared in the form of research findings. Audio recordings of the interviews will be destroyed at the end of the study. Participants are also informed that there is no cost or compensation associated with participation in the study.

Chapter Four

Results

This study of the relationship between high personal agency and meaningful work was conducted at the NASA Goddard Space Flight Center (GSFC) in Greenbelt, Maryland. To explore the potential relationship between these two constructs, this study collected data via two sources: an online survey and in-person, semi-structured, in-person interviews. The purpose of the survey was to identify participants' personal agency scores and to identify participants for a smaller sample for in-depth interviews. A few additional questions about how participants find meaning in their work were included in the survey, and so participants' responses to these are discussed briefly.

Surveys

Employees of five GSFC directorates were sent email invitations by their department heads to take part in the survey. Employees were required to click on a link in the invitation email, which took them to the survey. A total of 2,567 employees were sent emails: 1,394 in Engineering; 550 in Science and Technology; 120 in Projects; 428 in Facilities; and 75 in Human Resources. The target sample size for the survey was 300. 374 employees began the survey; 338 proceeded through the entire survey, although some skipped certain questions. Participants who did not complete all questions contributing to the MAPS score were removed from the sample of surveys analyzed for personal agency score, for a total of 318. All 338 surveys were analyzed for issues not related to personal agency score.

Personal agency scores showed a normal distribution, although all scores were high, with the lowest score at 53 and the highest score at 97. Both mean and median were 76, as there were few outliers. The standard deviation for the distribution was 7.4. Appendix H shows the demographic data of the respondents.

Most of the demographic groupings showed mean personal agency scores within a few points of the overall mean for the entire sample. One-way analysis of variance (ANOVA) tests were performed to determine whether there were any statistically significant relationships between demographic variables and personal agency score. There were no significant differences in personal agency score found for gender, race, age or educational level. More detailed data on the statistical analysis of the survey findings may be found in Appendix H.

Personal Agency and Meaningful Work

Participants were asked to rate how meaningful they find their work on a Likert scale from 1 to 7, with 1 being "not at all meaningful"; 4 being "neutral"; and 7 being "very meaningful". Meaningful work was defined for respondents as "work which is interesting, satisfying, has a significant purpose and impact, and allows the employee to express him or herself through work."

Participants scoring between 5 and 7 consisted of 88% of the sample, with 28% reporting that they found their work "very meaningful". Participants who responded that they found their work meaningful were also more likely to have higher personal agency scores. A one-way ANOVA was performed on personal agency scores and survey participants' reporting of how meaningful they find their work. The results were

statistically significant. Post hoc Tukey's HSD tests indicated that higher agency scores for respondents who indicated they found their work "very meaningful" (7 rating on the Likert scale) were statistically significant. All other comparisons were not significant.

Important work criteria

Survey respondents were asked to rank seven work criteria in order of importance to them, with 1 being most important and 7 being least important. "Interesting work" was rated most important, with an average rating of 2.6; "challenging work" and "knowing that my work has impact" tied for second place, with ratings of 3.66 and 3.67 respectively. Rated least important was "authority to make decisions related to others", with an average rating of 5.76.

Table 1 – Important Work Criteria

Response	Average Rating	Response Count
Interesting work	2.60	328
Challenging work	3.66	328
Knowing that my work has impact	3.67	328
Autonomy, or freedom to shape my work (duties)	4.00	328
Salary	4.13	328
Flexibility	4.18	328
Authority to make decisions related to others	5.76	328

Respondents were asked to provide comments on how meaningful they find their work. A total of 140 respondents provided comments. Comments were analyzed and assigned to any of 16 categories based on their content. Most comments were assigned to more than one category. The largest category was for responses indicating that the work was important and had high impact, with 29% of responses making some mention of the importance of the work to humankind, to science, and to the earth. The second most

mentioned issue was the limitations of agency bureaucracy (paperwork, administrative processes and funding concerns) on the respondents' ability to do their work.

Table 2 – Comments on Meaningfulness of Work

Response	Number of Times Mentioned	% of Responses
Important/High Impact	96	29
Bureaucratic	25	7
Satisfying/Rewarding	18	5
Challenging	17	5
Fun/Exciting/Interesting	15	4
Develop/Guide Others	12	3
Respect/Status	11	3

Interviews About Meaningful Work

The original goal for the next phase of the study was to conduct 20 in-person interviews to compare how participants feel about the meaningfulness of their work. To identify the sample for the in-person interviews, the 154 respondents who indicated their willingness to be surveyed were segregated into a sub-sample, and arranged by personal agency score. Each response was assigned a number in order of arrangement on the spreadsheet and then a sample was drawn using a table of random numbers. A total of 36 participants was drawn, and emails were sent to all of them to request the arrangement of an interview time. Not all contacted participants responded, and the researcher continued to reach out to respondents until a total of 20 interviews was scheduled.

Table 3 shows the demographics, agency scores and meaningful work ratings of the interview participants. Agency scores for the participants interviewed ranged from 56-87. It is interesting to note that the higher the agency score, the less likely the

participants were to respond to requests for an interview, despite the fact that they had initially indicated their interest in being interviewed. In order to identify potential non-responder bias, the 36 randomly drawn prospective interviewees were separated into bins of high, medium and low agency scores. While several participants with the highest agency scores (90-100) volunteered to be interviewed and several were pulled in the random sample, none of them followed through with setting an interview time and so there were no interviews completed of participants with the highest agency scores. 60% of the invited participants in the lower agency bin were interviewed; 40% of the participants in the medium agency bin were interviewed; and only 27% of the participants in the higher agency bin were interviewed.

Table 3 – Demographics of Interview Sample

Agency Score	**Meaning. Work Rating**	**Gender**	**Age Range**
50-59 5% 60-69 45% 70-79 25% 80-89 25%	7 -- 55% 6 -- 15% 5 --25% 2 -- 5%	M 60% F 40%	<25 10% 26-35 10% 36-45 15% 46-55 40% 56-65 15% >66 10%
Race	**Directorate**		**Years at NASA**
Asian 10% AA/Blk 10% White 80%	Engin. 50% Projects 20% Science 20% Other 10%		1-10 25% 11-19 5% 20-29 55% 30-33 15%

Emerging Themes

Interviewees were asked to describe how they feel about their work, what makes them what to come to work or, alternately, not want to come to work, what they like most and least about their work and what makes them feel successful and unsuccessful at work. Interviewees were also asked how their work impacts their personal lives and how they would feel if they were unable to work. Finally, interviewees were asked whether they felt that they could bring their whole selves to work. A few major themes emerged:

1. A little meaning goes a long way
2. Bureaucracy impacts how I feel about my work
3. Making incremental progress in meaningful work is the greatest reward
4. Sometimes work **is** life

A little meaning goes a long way

The benefit of qualitative research became immediately clear, in that the interviews provide rich context around the participants' responses on the survey. While completing the survey, participants predominantly rated their work as meaningful (95% of the interview sample rated their work between 5 and 7 on a Likert scale of 1-7 on meaningfulness), during the in-depth interviews, interviewees expressed the dynamic natures of their jobs, and discussed how, in some cases, much of their jobs were filled with frustrating, bureaucratic requirements, but that even fleeting opportunities to work on interesting technical problems provided them with some meaning. Without exception, all 20 interviewees mentioned their excitement to be associated with NASA's important mission, and some described in great detail how NASA's work saves lives and helps all mankind.

Of the 20 interviewees, 17 had an either engineering or science background. In interviews all 17 of those interviewees expressed a desire to spend more of their time doing technical work, solving technical problems, conducting research or doing more scientific work. In response to questions about what they liked most about their jobs, interviewees talked much about NASA's mission, and 70% of interviewees talked about enjoying the challenge of the work; solving problems; interesting technical work; being part of the mission; and having an impact on the world. 70% of interviewees expressed frustration that bureaucratic requirements had become so much a part of their jobs. Because the interviewer had not reviewed their meaningful work scores before the interviews, some of the interviewees' expressions of frustration led the interviewer to believe they might have given lower ratings for meaningful work on the survey. Consequently, the researcher was surprised to later find that most of the interviewees had rated their perceptions of their work as very meaningful on the survey, despite the frustrations expressed during the interview. This appeared to be different for younger, more inexperienced employees, with relatively little responsibility, in terms of their descriptions of the flexibility afforded them. The three younger, newer, lower-level interviewees in the sample were the only interviewees who did not mention any type of bureaucracy and, in fact, mentioned that they had flexibility to explore their work with few restrictions; even the one young interviewee who was an engineer. All other interviewees made some mention of bureaucracy, administrative work, document generation, "stupid" work or requirements documents in some way.

Comments from participants who rated their work as highly meaningful (6-7):

> "Certainly when it comes to things like explaining to new people what I do or cocktail chatter kind of thing, it's certainly great to sound interesting, I think it's really exciting stuff that we're doing….. But, like all things, when you actually get here, you see how the sausage is made, you know, you get a little disillusioned, I think. There's just a lot of bureaucracy and politics than I realized that go into every step of the mission planning, from deciding what the target is and deciding who's involved and which instruments make it and who gets to work on it...I just feel that I spend more of my time doing things that I'm not interested in doing, not well suited to doing, things like the administrative tasks or management things that I'm not really well-trained for and I'm stumbling a lot.. And so that's been a little disappointing. So I feel that I'm kind of struggling to find the meaning of the work."

> "The things that I tolerate are micro managers from higher levels in the organization...although we're not organized bureaucratically there is a lot of bureaucratic elements in this work and my supervisor is the worse micro manager I have ever...and he just doesn't trust me. I've been in this business now for close to 30 years. I've never had a failure. I've brought everything in on time, on schedule and met all the requirements and he does not trust me. I don't know what to do about that. I tolerate it, fortunately he might give me a bad review, but it doesn't make a whole lot of difference in my salary and bonus, so I ignore him. I tolerate it and I'm like, okay, he doesn't appreciate what I do. Everybody else here does."

> "Everything is based on money. I'm responsible for making sure everyone in the department is fully funded. I have no power to do that. Dealing with spreadsheets full of numbers. I didn't go into science to be an accountant, but that's what I am sometimes. I'm not doing it very well, and so that's something that's very, very important, affects a lot of people, I'm not good at and don't have full control over. So that's my least favorite part."

Comments from interviewees giving a rating of 5 on meaningful work:

> There have been times when I've wanted to come to work, but that was because I had some kind of design challenge that I had

> been working on and I was making progress, but it wasn't solved yet. And I wanted to get in there and make more progress. But that happens so infrequently now.

> So, for example, the project I'm working on right now… although I have to write a management plan, which a long time ago we didn't have to write and although we have to follow all kinds of regulations, there are all kinds of interesting little tidbits that I get to do, for instance, I can see ways where I can save the taxpayer many millions of dollars…So I've found that little piece of interesting work to do. And in previous assignments, I was able to find technical work from time to time. And whenever I get to do technical work, I'm happy.

One participant interviewed expressed great frustration that she felt unable to contribute to the mission. While she found her enjoyment in the paycheck and benefits, and enjoyed the NASA name, she felt that she did not get the opportunity to contribute to the mission, despite her technical background. Her time was focused on doing the best she could to meet the requirements of her job, taking surveys and granting interviews whenever asked, and on counting down to retirement . She expressed that she loved all of NASA's workplace flexibilities, but none of them took the place of her longing to leave her mark on the mission. She rated her work as not very meaningful (2):

> "Well, you want to contribute. At the end of the day it would be really nice if there was a line of code that was written that I influenced. Or if there were a piece of hardware that got built that I contributed to. If there were something tangible that I could point to and say, "I did that"."

This interviewee, like several others, pointed out that NASA had just been ranked fifth among the top ten agencies in the federal government as one of the best places to

work, and had been in this prestigious group for several years. She felt that she had not experienced the type of work environment for which NASA received its rating; and that the environment of which she spoke was primarily one in which she could have an impact on the mission.

In the interview phase, respondents rated interesting work, challenging work, and knowing that my work has impact (in order) as the three most important work criteria. In the analysis of comments about the meaning of their work during the survey, the importance of their work and having high impact work were mentioned most frequently. Interviewees mentioned that in the Best Places to Work survey, NASA employees rated their workplace highest on seeing how their work impacts the mission.

Bureaucracy impacts how I feel about my work

Of the 20 interviewees, 17 mentioned the bureaucratic processes they face, but in slightly different ways. The interviewees who expressed that they enjoyed management, and enjoyed "guiding" or "developing" people seemed to have less difficulty with the bureaucracy; rather these interviewees seemed to consider it par for the course. It was also interesting to note that more of the interviewees who expressed that they enjoyed "guiding" and "developing" others appeared to have higher agency scores, but the sample was not large enough to determine whether or not this observation might be significant. Comments from some of these interviewees about bureaucratic processes included:

> "I think it's a necessary evil. I'd like to know what those people propose as a solution to take the place of bureaucracy. I ask because I think I'm a fairly positive person that can tend towards

> overly optimistic...you know, it's easy for me to overlook some of that bureaucracy if the net effect is positive."

> " I call it part of the game. Changes in policy, new procedures and processes and stuff like that. That happens. That's no big deal. I have no problem with that. Because that's just the nature of the game. I have no problem with change in political environment. I've been here 30 years...it doesn't matter...it just doesn't really matter. So a lot of that stuff...a lot people get upset about. I don't get upset about that anymore because I know it really doesn't make any difference."

> "So there're a certain amount of documents, things that have to be generated, you know, program plans, project plans, engineering management plans, schedules and things like that. So you're kind of by yourself. You've got to do this drudge through it...but you know it comes along with it."

Scientists or engineers who managed other scientists and engineers, but who saw their main roles as scientists or engineers first and managers second, or who did not discuss "guiding" and "developing" people as something they found enjoyable, took the attitude that their job was to manage the bureaucracy so their subordinates could get on with their jobs:

> "My role as lab chief is mostly protective of all of the idiocy that comes from above. Be that Congress, President, headquarters, center, directorate, division, everyone has their own level; everyone thinks they're helping but for people who do research, we're enough of a different breed, that the help is actually harmful."

Interviewees who did not discuss that they enjoyed "guiding" and "developing" people, and were more interested in performing technical or scientific work, conducting research, and solving problems appeared more frustrated by bureaucratic constraints. These interviewees expressed frustration that the bureaucratic constraints seemed to take

away their freedom to use their knowledge and experience to solve problems, and felt that bureaucratic processes caused them to lose ownership of their work:

> "…for example, when you came into my office, I was working on something called a post risk analysis. It's this giant spreadsheet. The fact is that when I do a design, I pretty much do that in my head as I do the design, because I have to choose which parts I'm gonna use for which part of the circuit, so I already know what the outcome is gonna be. I'm not just a zombie when I do this. And I've found that that's true of people who are competent and have experience and have run into pitfalls before. The things in the post risk analysis that don't really show up...it ends up being a box that somebody checks off in their schedule, matrix, whatever. It's not really satisfying. Its time consuming, sometimes they assign it to somebody else who doesn't really have the level of expertise and then they come to me asking me for all the data."

> "They've forgotten they hired you to do the engineering work, and that you're the one who has the knowledge and they think they know it all. And sometimes I see things head off in the wrong direction. So these things are a great disappointment. And what I see sometimes too is...they're paying me all this money to do something for them that I do very well, and then they don't listen to what I have to say."

> "There are lots of things...when I don't like coming to work when I feel like I am a body who can do something… that I'm awake and I'm competent but I'm not adding value from my background and I'm necessarily the right person to be doing it, so I feel very uncomfortable with the task. Those are the things that I don't like, because they actually end up making me feel worse about myself."

Some of the interviewees who were technical or scientific and were now in a management role talked about the fact that the organization was structured in such a way

that one was required to become management if one wanted to progress professionally and so, for some, management was attained somewhat reluctantly:

> "…but you know it may be a natural progression, because I remember a long time ago I had a talk with one of my peers. She was also a software systems engineer, software manager at the time. And she was telling me, "It's time for you to give up these technical problems and start managing things. And I said, that I wasn't ready. And she said, "No, but the time will come." So maybe it's a natural progression. So here's the thing, a person goes to school and they study to be an engineer and they solve certain kinds of problems and they come out into the real world and you run into something else. You know, you have financial obligations, so you can't just say, "Until I find the job that I want, I'm just going to not work." You can't do that. So you'll take a job and eventually have to settle into it and do the best you can. And that's where I am."

> "[I like]…solving problems. And it could be with personnel, because you do get the satisfaction of solving problems with personnel, but those problems don't always stay solved. When you solve a technical problem, those problems tend to stay solved, you know, there may be something else, but you think you fix something, a dynamic in personnel, but that tends not always to stay fixed."

Making incremental progress in meaningful work is the most important reward

Interviewees discussed the fact that it often takes 15-20 years to launch a satellite or space craft, and so success must be measured in currency besides launches in order to make the work worthwhile. Half of the interviewees cited feedback and/or recognition as one of the things that makes them feel successful, and said that not receiving feedback makes them feel unsuccessful, however 17 of the 20, or 85%, cited gaining some sense of

success from feeling that they were “making contributions” “making progress”, “accomplishing [things]” and “getting things done”.

> “If it was only getting things launched it would drive me crazy because they're so few and far between, so the celebrating the milestones along the way is really important…but just checking things off. When I get really busy I start writing things on my white board and then erasing them from the white board makes me feel good.”

> “Successful? I would say mission accomplished type thing. In this environment, where we're building a satellite and launching it. You know, the launch, and the actual operation of it would make you feel successful. That’s the ultimate goal, but in any line of work there's always little milestones in between that make you feel successful in between. So getting to critical design phase and seeing that all come together and then having it all work and go well, so to speak. Getting the approval of the review team that you’ve done a good job. Those things make you feel good.”

> “We're working on 15 year projects, so we won’t really know that it works…so there's got to be little steps along the way where we have successes. So we have these milestones along the way, preliminary design reviews, critical design reviews, etc. and getting feedback on our technical progress from an independent review board, for example, you know. It feels really good when we've been successful…we don't have very many actions out that are...you know, I mean, the board likes what we're doing, for example. So it seems minor but just to know it’s progress in the right direction. Feels good.”

Some interviewees had much to say about how the agency and the greater federal government reward employees who perform their type of work. Because of the highly-skilled and highly-educated workforce, and because many people are engaged in missions they consider important the expectation is that many employees will be high-achieving. With a performance system that only allows for a limited number of high ratings because

of budget constraints, some high-achievers will not be recognized through their performance rating. Yet other types of rewards like days off only create work-related problems, especially for the scientists, who have to raise the money to pay their staff.

> "For scientists if you give someone an award of a vacation day, it's a slap in the face… because we have to pay for our time under full cost accounting. So we have to bring in enough money to pay for 2080 hours per year, regardless of whether or not anyone's around. I don't need a vacation day; I need time to get things done. An award is to leave me alone to get my work done. So that's how the scientists behave. But there are many people in my organization who never get awards because there's not money left….but there are other people who are unlucky, which happens, and they're punished for being unlucky, or they are doing well, but not on something that management cares about. And so...obviously these are pet peeves. Real management issues...the way things are done and part of it are limited resources, and every year the awards budget gets smaller. And so there will be fewer high awards. .. The higher up you go the more fair you think the system is."

> "Well, because money's tied to the higher levels, there's a quota about how many people are allowed to be at the higher levels. So the first cycle through I get a mediocre performance evaluation because I didn't support a launch that year. And it was probably one of my most productive years ever and it just really irked me...the money didn't matter at all. It was the recognition of the work I had done and how huge an impact I had had on the mission that year. and the people I was working with directly understood that and we're matrix management here, so my own supervisor, whether he got that feedback or not, it didn't matter, because he had a certain number of each of the levels and he could only hand them out and so at any rate…We're all rocket scientists here, so most of us are above average performers..."

*Work sometimes **is** life*

Several employees commented on the positive impact of NASA's flexibility on their personal lives, in that it is possible to work from home when necessary, and that email could be checked from home if an employee is unable to make it into the office because of personal life commitments; however it became clear that this workplace flexibility had the potential to infringe on work/life balance. Some interviewees work hard to create boundaries, while others find that it impacts their personal lives:

> "I may have deadlines to meet at work at the same time...usually something can give and one of the beauties about this job, is I can take my work home, get up in the middle of the night and get it done. So usually the two can be kept separate. Right now, for instance, I've been working on this management plan many nights because I plan to go on vacation. It's mature enough to make the deadline that I have set up but I wanted to be further along. And I'm working nights at home to make sure it's far enough along so that when I leave to go on vacation it's in great shape."

> "It is, for me, well, I say forty hours, maybe sixty hours a week on occasion, but only if there's something that requires it. But I go home, and in fact, I set up my appointments with my trainer so that I have to leave here at four o'clock. I have to leave at four o'clock. And once I'm home that's it. So I set up a schedule on my home life that requires that I go home and be at home. And on occasion, I admit, I check my email before I go to bed so I know what I'm getting ready to face the next day, but I don't do work associated with it. If there are actions in there I need to do, I just know that that's what I've got to do tomorrow. So in a way, some would see that as taking home work, but for me it's preparing for the next day. But, no, I do not like to take work home."

> "Too much. It's a dominant role for me right now. I am actively working on my own balance, trying and often failing to make it home for dinner. Trying and often failing not to take home email

all the time, all night, first thing I do in the morning, last thing before I go to bed. So my wife and daughter suffer and I know they're suffering so I try to change. It's hard. And I'm in an area that's very fast paced. Not business fast paced, I guess, but there are real time commitments and people view the 24/7 schedule and really accept that. Some of them are life's careers. I sent you an email Saturday morning; it's already Monday why haven't you done it yet? Okay, I'm expected to have read it, researched it, responded to it before Monday morning. So that's expected. Sometimes I'll get it at eleven at night and it's already nine in the morning. Why haven't you answered it? "

"It's like the hungry beast that I really have to draw lines and I have never gotten formal, official grief. My performance reviews have been fine, they're good. I mean I don't succeed to the highest levels because it's a choice I've made which is to not do all of the work that goes into getting to that point, but I don't ever feel like I'm looked down upon. ..It's more just every once in a while...you didn't answer an email and then I show up Monday morning totally caught off guard about something, and it's like, I'm trying to make it clear that I don't like to...I think things can wait, and it's kind of the culture devoted to ...it is acceptable for me to email you on Sunday night at nine o'clock and ask you to be ready to give a presentation at nine in the morning. I'm like, why is that acceptable? It's like with email we've lost our ability to plan ahead. And so that's something I feel I have to keep pushing...I don't find that acceptable."

"My family… the work/life balance is a huge counter balancing force and I want to be at home right now. I have a four year old; her birthday is tomorrow; she turns four. So I work from home as much as I can, which is not a lot, it's probably less than five percent I actually work from home, but I have the option, which is a great bonus. Practically speaking it rarely works out…what percentage of my life is dominated by work, but it's a big percentage. and I try...at least I'm aware that I shouldn't define myself by my work, and I think just thinking about that more recently, after becoming a civil servant and I've had some other opportunities for different jobs here and haven't followed the new path, but have considered it. So that's kind of forced me to think about how I define myself. So I guess the bottom line answer is, work is a huge part of my life…"

In response to the question about what they would do if they could no longer work, most interviewees said they would have to find some other use of their time that enabled them to feel useful, contributing members of society. Some of the participants who are nearing retirement age, commented that coming to work gives them structure in their lives and a daily schedule. Some of the interviewees shared their thoughts about their upcoming retirement:

> " It has really gotten to the point where it's something I have to get up in the morning and do, but it's better now, that even if I have to do it…it's better to do it than just not do anything… I mean one of the things that's good about coming in apart from the fact that it keeps you from lying around the house, although there is that, but it's also...you just think about all the human interactions, all the stories, all the contacts with people. At home it doesn't happen so much. So that's a good thing."

> "Retirement is a death sentence for me. I'm not social; I'm an introvert. I don't have a lot of friends. My wife and my kids and my brothers they have their lives and we don't spend a lot of time together. So it's just my wife and kids and the kids are growing up. What do I do with myself? … It's my social life. It gives me something to do besides watching TV… it gives me a regularity, a schedule, a reason to get up and get out of bed. Weekends I could stay in bed all day. You know, sit down and read and sleep and I can actually sometimes, I can get so lazy I won't eat. I'll just sit there and think I really should get up and eat, so it starts affecting me in that regard. So it gives me a reason to get up and get moving, keeps my body in a case of regularity. You've gotta go to bed at the same time, you gotta wake up at the same time and you gotta eat at the same time otherwise my body doesn't function well. Just last week I did something and I had a sense of accomplishment, so I like that."

> "This is scary. There is considerable pressure on me to retire. The next thing coming up is a system of buy outs to reduce the labor force for Congress' benefit. I've been offered buyouts twice before and they depress the hell out of me. And I fully expect to

> be offered a buyout in February and it will depress the hell out of me again."

> "I feel [work provides] a very big contribution. I have a lot of hobbies…but when I took a retirement course, and you have to decide what you're gonna do with the time when you have 40 additional hours because you're retired, and I recognized, going through that exercise that actually a great deal of what I enjoy and take a lot of pride in is what I do here. I still haven't decided at some point…when I want to retire. I think it would have to be when either my wife's health isn't as good, if that were to come up then I would retire, or if my health wasn't so good."

Data Summary

In this study of personal agency and employees' perceptions of meaningful work, employees of the NASA Goddard Space Flight Center in Greenbelt, Maryland were invited to take part in a survey and then in-depth interviews, in which participants responded to questions about personal agency and how they find meaning in their work. In the survey phase of the study, it was determined that participants' personal agency scores were high, with a mean score of 76 and a standard deviation of 7.4. There were no statistically significant differences found in personal agency scores or ratings of meaningful work found by age, race, education, gender or department.

Participants scoring their work as meaningful to very meaningful (5-7) on a 7-point scale made up 88% of the sample, with 28% reporting that they found their work "very meaningful", or 7 on the scale. Participants in this sub-sample were also more likely to have higher personal agency scores, and for this sub-sample a statistically significant relationship was found between personal agency scores and meaningful work ratings.

Participants were asked whether, if they could go back and do it again, they would still choose the same career. 58% of respondents indicated that this statement was "very true". Respondents in the sub-sample indicating the statement was "very true" had higher personal agency scores than other participants. A statistically significant relationship was found between the indication that the statement was "very true" and the higher personal agency scores.

In ranking work criteria in order of importance to them, "interesting work" was rated highest, followed by "challenging work", which was very closely followed by "knowing that my work has impact". Comments provided by participants on what makes their work meaningful overwhelmingly focused on the mission being important and having a high impact. The second most cited issue was related to bureaucracy.

Participants took part in 20 in-depth interviews about how they find their work meaningful. Four major themes emerged:

1. *A little meaning goes a long way*: while many interviewees expressed great frustration with their work, they still scored their work as meaningful or very meaningful.
2. *Bureaucracy impacts how I feel about my work*: most interviewees discussed the impact of the organization's bureaucratic processes on their work in some way, and how they cope with them.
3. *Making incremental progress in meaningful work is the greatest reward*: most interviewees discussed making progress or making accomplishments toward meaningful work as important to their feelings of success in their jobs, even more frequently than they mentioned recognition or feedback.

4. *Sometimes work **is** life*: most interviewees discussed work as being an important part of their lives, and said that if they could not work they would have to find some other meaningful way to contribute to society. Some of the interviewees nearing retirement expressed concern about losing their work as a means of maintaining daily structure and a healthy lifestyle.

Chapter Five

Conclusions

This study explored the relationship between high personal agency (comprised of ego strength, internal locus of control, purpose in life, and self-esteem) and meaningful work, defined as work which is interesting, satisfying, has a significant purpose and impact, and allows the employee to express him or herself through work. More than 300 employees of the NASA Goddard Space Flight Center took part in a survey about personal agency and meaningful work and, of that group, 20 participated in interviews.

The research also explored whether "sense of self" in Chalofsky's (2003) framework of meaningful work is related to high personal agency. The study found that employees with high personal agency scores were more likely to find their work meaningful, and that their ability to take ownership over work that is impactful and challenging, yet provides comfortable balance with their non-work life, was important to how meaningful they found their work.

Since the participants all had high personal agency scores, it was clear that they also had high scores in the four personality characteristics of personal agency. Most participants believed they were well educated and had the work experience and intellectual ability necessary to be very successful in their jobs, so it was clear they had high *self-esteem*. Participants were very mission-focused, and felt that their main reason for doing their work was that they were contributing to a better world for mankind, indicating that they had *purpose in life*. Participants were often frustrated with the lack of autonomy in their work, and felt that they were very capable of completing their work

successfully without the need for institutionalized processes and procedures to tell them what to do, indicating that they had *high locus of control*. Finally, participants were aware that they may not see the fruits of their labor for 15-20 years, and that it was possible that, despite all their work, projects might fail. Their willingness to work toward a distant goal, pick themselves up and recover after a failure indicated *ego strength, or resilience.*

The findings suggest that the combination of these four personality characteristics are in essence similar to what Chalofsky (2003) calls "sense of self". It is likely that more agentic employees will desire work that is challenging and impactful, where they may work autonomously and influence the outcome of their work, yet may find that their drive for impactful work creates conflict with their non-work lives. It is reasonable to question whether these agentic employees approach their non-work lives with the same desire for meaning, impact and autonomy. If so, it is understandable that some may experience conflict between work and personal lives as each person, no matter how agentic, has a finite amount of internal resources available for use at any one time.

Agentic employees drive the meaningfulness of their work

According to a 2008 survey of 37,000 federal employees by the U.S. Merit Systems Protection Board (USMPB) only one-third of federal employees were found to be engaged and one-half were somewhat engaged (USMPB, 2008). Engagement was defined as having pride in their work or workplace, satisfaction with their leadership, perception that they have an opportunity to perform well at work, satisfaction with the

recognition they receive, belief that they have some prospect for future personal growth, and perception of their work environment as positive and team-focused.

While the question on the survey in the current study did not encompass the entirety of the USMPB's definition of engagement, *meaningfulness*, or the value of work in relation to an individual's personal goals and standards, has the strongest relationship to job engagement (May et al, 2004). The fact that 88% of the sample rated the meaningfulness of their work as 5-7 on a 7-point scale, and 28% rated their work as 7 or "very meaningful" suggests that work engagement for this population should be high, if May et al (2004) are to be believed.

As a whole, the participants in the study had high personal agency scores. Most of the survey respondents indicated that if they had to go back and do it again they would choose the same career, indicating that they found their work satisfying enough to do it again if given the opportunity. Morin (2004) describes the work instinct which leads to meaningful work in terms of active, rather than passive behavior. She says that meaningful work provides pleasure through the opportunity to achieve something, to surpass oneself, to exercise one's imagination and intelligence, to feel competent and powerful, to be effective, and to transcend one's death by leaving traces of one's existence. According to Self-Determination Theory (SDT), humans have three basic psychological needs: competence or the ability to influence important outcomes; relatedness, the experience of having satisfying and supportive social relationships; and autonomy, the experience of acting with a sense of choice or volition and self-determination (Stone et al, 2009). The authors point out that autonomy is different from independence, because a person may be dependent on many other people to accomplish

his or her tasks. In fact, the task of building and launching satellites requires the involvement of hundreds of people working together.

Maslow (1987) described the deep need for self-actualization which emerges once physiological needs and those related to safety, love and self-esteem are met. Human beings, Maslow (1987) says, are designed to be all that they have the potential to be and that self-actualization is an elusive need which few people ever achieve, but that many seek. In the case of the employees at NASA, since they are highly educated and are likely well-paid, and it is reasonable to assume that many of their physiological needs and possibly safety needs have been met. It is difficult to make any assumptions about love needs, but many interviewees discussed the status their positions carry in society, and so self-esteem needs are probably met. It makes sense that the need for fulfill their individual potential is now a primary drive.

The desire for autonomy and achievement conflicts with bureaucracy

McClelland (1987) describes people who have a need for achievement as desiring tasks which are challenging, yet which provide them with control over their work, frequent and direct feedback in the form of their successes. These employees are characterized by their search for ways to do things better, yet are rarely allowed to act alone and are, instead, controlled by organizational forces which may counter their strive for achievement. For employees who are highly agentic, organizational bureaucracy is a constricting or stifling force, rather than a supporting or enabling one. Unlike knowledge-based organizations, industrial-age organizations were formal hierarchies that put all power in the hands of managers and assigned specific roles to employees. This design

allowed managers to govern employees by planning, organizing and controlling their work (McCrimmon, 2010). GSFC has succeeded in removing the most visible remnant of the industrial-age organization by moving from hierarchy to matrix organization, so that employees maintain an administrative supervisor, but may rotate through project supervisors based on their current work. However, upper management still controls resources and issues directives which impact how employees work.

Industrial-age management may be seen in the metaphor where the "head" thinks and the "hands" do, which is why employees were once called "hired hands" (McCrimmon, 2010). This supports the conventional view of management's task as organizing the elements of productive enterprise in order to meet the needs of the organization. Management's task is to get things done through other people. McGregor (1987) calls this approach "theory x". An alternate approach, he says is "theory y", which understands that direction and control are essentially useless in motivating people whose most important needs are social and egoistic. The essential task of management is to arrange organizational conditions and methods in such a way as to allow employees to direct their own efforts toward organizational objectives. For highly agentic employees, McGregor's theory y approach to management is particularly important because these employees want to think *and* do.

Many of the interviewees discussed procedures intended to add quality, but in reality removed ownership or diffused responsibility in such a way that they were no longer able to use the benefit of their knowledge and experience to fully accomplish their work autonomously. Deci and Ryan (2008), in their description of SDT, say that people will commit to and engage in otherwise uninteresting activities when their meaning and

value are understood. The authors describe the difference between autonomous motivation and controlled motivation. Autonomous motivation takes place when people have identified with an activity's value and have integrated it into their sense of self. Controlled motivation consists of external regulations motivated by reward or punishment.

Organizations and employees enter a "psychological contract", an unwritten agreement of implied beliefs about what each should offer the other (Rousseau, 1994). One type of contract, the transactional type, is primarily economic, is short-term, and is heavily focused on performance. The second type of contract is relational, and has primarily emotional terms, in that it has long-term commitments by both parties and does not have clearly-defined performance standards. The third type of contract is a hybrid of the two (Ho et al, 2006). In a study of psychological contracts between research scientists and their organizations, O'Donohue et al (2007) found that the scientists were concerned about the nature of scientific output and knowledge creation at the organization. Their interest was in receiving from their organization the opportunity and resources needed so that they could contribute to the larger body of knowledge in society. For them, this contribution transcends the organization, and is rooted in their professional autonomy and responsibility to society. In some ways, the authors conclude, the psychological contract for these workers was not merely transactional, relational or a hybrid of the two, but it tapped into ideological rewards, or the rewards associated with contributing to the greater good or with benefitting society. For many highly-skilled knowledge workers, their commitment is more to their career and less to their employer (Holland et al, 2002). O'Donohue et al (2007) conclude that knowledge workers often

focus their allegiance and career aspirations away from their organizations and onto their occupations to anchor their work identity and self-esteem.

In the current study, many interviewees described the importance of the NASA mission to them and to how they find meaning in their work. For many, the idea that their work contributes to world-wide knowledge, is not associated with security or defense, saves lives, is available to everyone free of charge, and will probably be documented long after they are gone is part of the ideology that gives their work meaning. As one scientist said in describing how future generations will be able to continue to analyze the data his group collects, "I'll be able to enable more science than any one person could ever do in a lifetime." The NASA mission contributes to immortality. There is also great status associated with the NASA name, and that one of the ways in which their work impacts their personal lives is the interest and respect they receive from others about working at NASA. And really, many interviewees pointed out, with such highly specialized work as most of the engineers and scientists do, if one's area of expertise is building satellites or planetary research, NASA is the place to be.

Bandura (2006) posits there are four core elements of human agency: intentionality (people form plans to achieve their goals); forethought (people bring their future into the present by anticipating and visualizing the outcomes related to their goals); self-reactiveness (people motivate and regulate the execution of the plans to achieve their goals); and self-reflectiveness (people examine their own functioning, the soundness and meanings of their thoughts and actions, and make adjustments accordingly). For this highly agentic workforce, the obstacles they face related to bureaucracy and long-term projects are most likely countered by their ability to focus on the ideology of what their

work means to them and make plans to accomplish their short-term and eventually long-term mission goals. This probably explains why most of the survey respondents rated their work as meaningful, despite having many complaints about the bureaucratic processes. They may not like it; but it has not impacted the psychological contract they have entered with society to do a good job.

In a deep analysis of the daily diaries of project members from several companies by the Harvard Business School, researchers came to the conclusion that what motivates people on a day to day basis is the sense that they are making progress in meaningful work, and the more frequently people experience that sense of progress, the more likely they are to be creatively productive in the long run (Amabile & Kramer, 2011). The researchers found that when they compared their participants' best and worst days, based on their overall mood, emotions and motivation levels, the most common event triggering what participants described as a "best day" was any progress in the work by the individual or the team. The authors then go on to point out that their findings support Frederick Herzberg's 1968 article, "One More Time: How Do You Motivate Employees?" in which he theorized that people are most satisfied with their jobs, and subsequently more motivated, when their jobs give them the opportunity to experience achievement. Amabile and Kramer (2011) say that most managers have not taken Herzberg's lesson to heart, and cited a recent survey they conducted, asking managers what motivates employees. 95% of managers cited "recognition for good work" as the most important factor in motivating workers and making them happy but the authors contend that in their review of workers' diaries, while recognition did boost workers'

inner work life, it was not nearly as important as making progress. Besides which, Amabile and Kramer assert, without work achievement, there is little to recognize.

The findings of the current study certainly support Amabile and Kramer's (2011) findings. While 50% of interviewees cited "recognition" or "feedback" as important to their sense of success at work, 85% of interviewees used phrases such as: "getting things done", "making contributions", "making progress", and "accomplishing [things]" to describe what makes them feel successful at work. Many of those who work on launches of spacecraft or satellites described how it can take 15-20 years for one project to go from planning to launch, and so celebrating the milestones along the way become important, because the launches are so far and few between.

The idea that recognition and feedback are important to an employee's feelings of success is not to be diminished. In a study of what motivates engineers at GSFC, Kea (2008) found that engineers are more motivated when they are receive feedback about how well they are performing in their jobs and in fact, in the current study, many interviewees discussed feeling least successful at work when they do not receive feedback for their accomplishments. Kea (2008) also found that awards and promotion were important to engineers' motivation. In the current study, although some scientists talked about wanting to be left alone to do their work, and not to be bothered with meaningless awards, the desire of those scientists is to complete their research so that they may become published and therefore receive the recognition of the larger scientific community. Kea (2008) cautions that scientists and engineers are not to be confused; they are very different, both in focus and function. The current study did not distinguish significantly between engineers and scientists beyond understanding each interviewee's

original training and their current function, however both scientists and engineers expressed the need to make progress to experience success at work.

The third point of the triangle: balance between work and life

In Chalofsky's (2003) framework, the third point in the triangle is the balance between work and personal life, and the tensions that need to be resolved in order for work to not overwhelm one's whole life. Unlike in traditional societies, when one's identity was primarily familial, post modern societies allow for fragmented identities, where individuals may see themselves as intentional actors, taking on many different roles (Dombrowski, 1998). Employees now must find some balance between their work roles and other chosen life roles, such as spouse, partner, parent, friend and community member. Côté (2006) says the exercise of agency, or the ability to effectively interpret one's environment and act on it accordingly will anchor goals values and beliefs.

Alternative work schedules, such as flextime and telework have been touted as a solution to work/life conflict. Employees are able to control their schedules, and work where and when they want, thereby allowing themselves the freedom to fulfill other life obligations (Julien et al, 2011). Results of research on alternative work schedules have been mixed, however. In a study of over 60 organizations Julien et al (2011) found that, while a compressed work week was found to be associated with reduce work/life conflict, telework was not. The authors concluded that telework allowed work boundaries to become permeable and employees ended up working more hours. Similarly, Maruyama et al (2009) found that teleworkers reported working much longer hours, although they reported greater work/life balance. The authors concluded that telework provided

employees with greater autonomy to decide where and when to work, and that even though they worked longer hours, that control contributed to greater work/life balance.

In the current study, some employees reported loving the flexibility telework allowed them, while others expressed concern that their colleagues expected them to be constantly accessible and responsive. One manager discussed a pledge his entire division made that no one would come to work when they were sick, in order to reduce the spread of illness in their organization. He frequently had to remind his employees of their pledge, and even found it difficult to keep himself. Another employee commented that, while it is assumed that employees are supposed to be able to work wherever and whenever they want, when her employees tell her that they plan to work from home it always comes with a "big bag of excuses". She goes on to say that there should be no need for excuses; either you can work from home or you can't. The fact that employees feel they must present excuses suggests they don't feel fully free to simply decide to telecommute on any particular day.

It is possible that some agentic employees who are highly engaged in their work, and focused on the ideology that drives them, feel some incongruence between focusing on the mission of their work and attending to the rest of their lives. In fact, some employees may focus more of their attention on their work than on the rest of their lives. Some interviewees mentioned that their commitment to their work created work/life conflict, and that they had to constantly work to maintain balance between work and home lives. Interviewees nearing retirement feared losing that engagement, reason to maintain a daily schedule and opportunities for social interaction.

Recommendations for further practice

The GSFC employees studied have high personal agency and report finding their work meaningful. They appear to be highly motivated to achieve NASA's mission and serve society. For most employees, the greatest reward is making incremental progress in meaningful work, some of which will lead to recognition. Many employees express frustration with bureaucratic processes which remove their ability to work autonomously and fully demonstrate their competence in their fields.

Management can have a significant impact on how employees experience their work by moving from industrial-type manager/director to a reinvented role as an investor, customer, coach and partner of engaged, self-managed knowledge workers, who are very different from the "hired hands" of previous ages. In this role, managers do less telling and more asking about what employees think, drawing solutions out of employees in the role of facilitator (McCrimmon, 2010).

Obviously, every process cannot disappear, and some regulations come from the larger federal government, and are outside of NASA's control, but an understanding that each employee who experiences incremental progress toward a meaningful goal is more motivated and feels successful will surely impact how managers make decisions and structure work. Managers can make sure employees know how much their work is contributing; ensure their ideas are heard and appreciated; allow employees to maintain ownership of their work; avoid suddenly shifting priorities or changing their minds about how work should be done; and ensure they inform employees quickly of changes which impact their work (Amabile and Kramer, 2011).

Management should take a critical look at processes and ask which are truly necessary to ensure fiscal responsibility, program accountability, safety or some other important reason, and which are theory x processes; based on an assumption that employees will not do what they are supposed to and that they must be externally controlled. Where processes infringe on employees' abilities to apply their expertise autonomously, and where there is no high risk assessed, the processes should be eliminated. Where processes are in place because they are truly necessary, affected employees should be engaged in discussions about why the processes are necessary and how they can be made less invasive.

By accounts of most interviewees, this is not an agency where many employees fill the role of the "stereotypical federal worker": lazy, unmotivated, and unengaged. To the contrary, most interviewees report that the larger number of NASA employees are highly engaged and want to take ownership of their work. In the same way that GSFC has become a matrixed organization in order to better align roles and functions, this should be the federal agency which experiments with significantly reducing unnecessary bureaucratic processes in order to better meet the needs of its highly motivated workforce.

NASA leadership should find encouragement in the fact that they have a highly motivated, highly engaged workforce. Clearly, the organization has paid attention to hiring employees with a true drive for achievement, and engaging them in the mission, allowing them to see their contributions to society and mankind as significant and long-lasting. However, the leaders of this organization should realize that with highly agentic, highly engaged employees comes a desire for autonomy and achievement which conflicts

significantly with a bureaucratic management model. Leadership must find new ways to allow employees the latitude to employ agency in their work, and allow rewards to be based on the exercise of agency in many different ways.

Implications for further study

The findings of this study suggest that personal agency plays a significant part in how employees find meaning in their work, and that it is that aspect of identity Chalofsky (2003) called "sense of self" which leads to employees finding their work meaningful. Where Chalofsky (2003) talks about how work and life need to be integrated, he was not working from a framework of an agentic individual, who most likely exercises agency in both work and home lives, potentially creating conflict via a drive for achievement in both areas. Further study should be conducted on agentic employees and whether their drive for achievement is equally strong at home as at work and how that drive impacts the balance in their lives.

While it appears that the personal agency score for this sample are high, there is currently no point of comparison, as the MAPS20 is an adaptation of a 94 item scale, and has not been used in its present form. It is currently being used in studies in Japan and Finland, however. Future studies should be performed with employees of additional federal agencies, especially agencies for whom engagement is not known to be high.

The employees who took part in this study were limited to GSFC, and did not come from all NASA facilities. Additionally, employees were only invited to participate from five directorates and, while these were the largest organizations at GSFC, the

invitation did not go out to the entire Center. The employees who responded self-selected, so it is possible that there is some bias inherent in the survey sample, in those who volunteered to be interviewed, and in those who followed up with the interview invitation. There was potential non-responder bias noted in that, of those who volunteered to be interviewed, the participants in the higher bins were less likely to follow through with arranging an interview. 60% of the invited participants in the lower agency bin were interviewed; 40% of the participants in the medium agency bin were interviewed; and only 27% of the participants in the higher agency bin were interviewed. It is unknown whether this pattern is meaningful in some way. It is possible that the potential interviewees in the higher bin shared some additional characteristic which would have impacted these findings had more of them been interviewed. Further research should be conducted with a larger sample of employees across the entire agency, at all Centers, and with a wider range of personal agency scores.

Additional issues for further exploration include:

1. Personal agency and meaningful work in non-governmental organizations
2. Meaningful work in more diverse populations. Do age, years of work experience and leadership status impact how employees find meaning in their work?
3. How do the four personality characteristics, self-esteem, purpose in life, internal locus of control, and ego strength (resilience) individually relate to employees' perceptions of their work as meaningful?

Reflections

This has been a journey of massive proportions for me: both academically and personally. I have learned the power of persistence, in that the very journey of completing a doctoral degree was a true exercise in personal agency for me. Setting a goal for completion of the degree and mapping a path toward that goal (purpose in life); believing that I could actually complete the work, and that I was smart enough to hold my own among all the other intellectuals in my cohort (self-esteem); knowing that my success or failure was completely my doing, being willing to put in the work required to succeed (internal locus of control); and being able to pick myself up and continue moving forward despite draft after draft of pointed criticism from my dissertation committee (resilience).

Through it all, I have been driven both by a strong desire to achieve this degree, and a deep curiosity about what motivates people who find their work meaningful. I'm not certain which was greater, however despite significant personal trials and setbacks throughout this journey, I learned that curiosity can be satisfied by no other means but by seeking and finding answers.

The process of seeking answers which led me to this place was not a direct one, and I was exposed to many theories and entertained many ideas along the way. Many of them did not make it into this study, in fact, many pages of writing and literature review have been removed, but not one moment was wasted. Many people shared with me what makes their work meaningful to them in ways that were thoughtful, open, and sometimes emotional. I am honored to have been entrusted with their thoughts.

References

(2010) Employee Tenure in 2010. U. S. Department of Labor, Bureau of Labor Statistics. Washington DC. Retieved from http://www.bls.gov/news.release/pdf/tenure.pdf

(2009) Federal employment statistics: Separations by type, branch, and selected agency, all areas, December 2008 and January 2009. US Office of Personnel Management. Washington DC. Retrieved from http://www.opm.gov/feddata/html/2008/november/index.asp

(2008) The power of federal employee engagement: A report to the President and the Congress of the United States by the U.S. Merit Systems Protection Board. Retrieved from http://www.mspb.gov/netsearch/viewdocs.aspx

Ahmad, Y. and M. Broussine (2008). "Pedagogic implications of anxiety and loss of agency in public services managers and leaders." The International Journal of Public Sector Management 21(4): 340-350.

Al-Naser, F. and M. A Sandman. (2000). Evaluating resiliency patterns using the ER89: A case study from Kuwait. Social Behavior and Personality, 28(5), 505

Amabile, T. M. and S. J. Kramer (2011). "The power of small wins." Harvard Business Review 89(5).

Arsenault, P. M. (2004). "Validating generational differences: A legitimate diversity and leadership issue." Leadership & Organization Development Journal 25(1/2): 124-141.

Badran, M. A. and J. H. Kafafy (2008). "The effect of job redesign on job satisfaction, resilience, commitment and flexibility: The case of an Egyptian public sector bank." International Journal of Business Research 8(3): 27-41.

Bandura, A. (1999). "Social cognitive theory: An agentic perspective." Asian Journal of Social Psychology 2(1).

Bandura, A. (2000). "Exercise of human agency through collective efficacy." Current Directions in Psychological Science 9(3): 75-78.

Bandura, A. (2001). "Social cognitive theory: An agentic perspective." Annual Review of Psychology 52(1): 1.

Bandura, A. (2002). "Selective moral disengagement in the exercise of moral agency." Journal of Moral Education 31(2): 101-119.

Bandura, A. (2002). "Social cognitive theory in cultural context." Applied Psychology: An International Review 51(2): 269.

Bandura, A. (2006). "Toward a psychology of human agency." Perspectives on Psychological Science 1(2): 164-180.

Baruch, Y. and D.T. Hall. (2004). The academic career: A model for future careers in other sectors? Journal of Vocational Behavior, 64(2), 241-262

Baumeister, R. F., J. D. Campbell, et al. (2005). "Exploding the self-esteem myth." Scientific American Mind 16(4): 50-57.

Baumeister, R. F., J. D. Campbell, et al. (2003). "Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles?" Psychological Science in the Public Interest 4(1): 1-44.

Baumeister, R. F., J. D. Campbell, et al. (2003). "Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles?" American Psychological Society 4(1): 1-44.
Beck, U. (1992). Risk society: Toward a new modernity. London, Sage Publications.
Beyer, J. (1999). Culture, meaning, and belonging at work. Chicago Academy of Management Meeting Proceedings, Chicago.
Biddle, B. J. (1986). "Recent development in role theory." Annual Review of Sociology 12: 67-92.
Bowie, N. E. (1998). "A Kantian Theory of meaningful work." Journal of Business Ethics 17(9/10): 1083-1092.
Brennen, B. (2005), "Lockouts, Protests, and Scabs: A Critical Assessment of the Los Angeles Herald Examiner Strike," *Critical Studies in Media Communication*, 22(1) 64-81.
Cable, D. M. and T. M. Welbourne (1994). Organizational change and the identity cycle: Understanding the effect of change on individual attitudes and behaviors through a combined social identity theory/identity theory perspective. Center for Advanced Human Resource Studies
CAHRS Working Paper Series. Ithaca, Cornell University: 1-31.
Carlson, D. S., K. M. Kacmar, et al. (1995). "An examination of two aspects of work-family conflict: Time and identity." Women in Management Review 10(2): 17-25.
Chalofsky, N. (2003). "An emerging construct for meaningful work." Human Resource Development International 6(1): 69-83.
Chalofsky, N. (2003). "Meaningful Work." T + D 57(12): 52-58.
Chalofsky, N. (2005). "Reshaping the way we view the world." T & D 59(11): 54-58.
Cocker, J., A. T. Brook, et al. (2006). "The pursuit of self-esteem: Contingencies of self-worth and self-regulation." Journal of Personality 76(6): 1749-1771.
Côté, J. E. (1997). "An empirical test of the identity capital model." Journal of Adolescence 20: 577-597.
Côté, J. E. (2002). "The role of identity capital in the transition to adulthood: The individualization thesis examined." Journal of Youth Studies 5(2): 117-134.
Côté, J. E. (2002). "The role of identity capital in the transition to adulthood: The individualization thesis examined." Journal of Youth Studies 5(2): 117-134.
Côté, J. E. (2006). "Acculturation and identity: The role of individualization theory." Human Development 49: 31-35.
Côté, J. E. (2006). "Identity studies: How close are we to developing a social science of identity?--An appraisal of the field." Identity: An International Journal of Theory and Research 6(1): 3-25.
Côté, J. E. and C. G. Levine (2002). Identity formation, agency and culture: A social psychological synthesis. N.J., Lawrence Erlbaum Associates.
Côté, J. E. and S. J. Schwartz (2002). "Comparing psychological and sociological approaches to identity: Identity status, identity capital, and the individualization process." Journal of Adolescence 25: 571-586.
Creswell, J. W., M. D. Fetters, et al. (2004). "Designing a mixed methods study in primary care." Annals of Family Medicine 2(1).
Creswell, J. W. and G. A. Miller (1997). "Research methodologies and the doctoral process." New Directions for Higher Education 99: 33-46.

Crocker, J. (2002). "The costs of seeking self-esteem." Journal of Social Issues 58(3): 597-615.
Crocker, J. and K. M. Knight (2005). "Contingencies of Self-Worth." American Psychological Society 14(4): 200-203.
Csikszentmihalyi, M. and J. LeFevre (1989). "Optimal experience in work and leisure." Journal of Personality and Social psychology 56(5): 815-822.
Davis, J. B., S. D. Pawlowski, et al. (2006). "Work commitments of baby boomers and gen-xers in the IT profession: Generational differences or myth?" The Journal of Computer Information Systems 46(3): 43-49.
Deci, E. L. and R. M. Ryan (2008). "Self-determination theory: A macrotheory of human motivation, development and health." Canadian Psychology 49(3): 182-185.
Dombrowski, P. (1998). "Fragmenting identities, shifting loyalties: The influence of individualisation on global transformations." Global Society 12(3): 363-388.
Donohoe, J. J. and D. R. Greene (2009). "Social relationships mediate the relation between emotional intelligence and meaning in life." Psi Chi Journal of Undergraduate Research
Psi Chi, The International Journal Honor Society in Psychology 14(2): 59-64.
Dormann, C., D. Fay, et al. (2006). "A state-trait analysis of job satisfaction: On the effect of core self-evaluations." Applied Psychology: An International Review 55(1): 27-51.
Dreher, D. E. (2006). "Renaissance lessons for today: A course to promote purpose and personal growth in later life." The LLI Review: 105-112.
Duchon, D. and D. A. Plowman (2005). "Nurturing the spirit at work: Impact on work unit performance." Leadership Quarterly 16(5): 807-833.
Duckworth, J. D. and P. M. Buzzanell (2009). "Constructing work-life balance and fatherhood: Men's framing of the meanings of both work and family." Communication Studies 60(5): 558-573.
Erikson, E. (1963) Childhood and Society. Stanford: Norton.
Erikson, E. (1956) Identity: Youth and Crisis. Stanford: Norton.
Erikson, E. (1968) The Eight Stages of Development. Stanford: Norton.
Ferris, D. L., D. J. Brown, et al. (2009). "Organizational supports and organizational deviance: The mediating role of organization-based self-esteem." Organizational Behavior & Human Decision Processes 108(2): 279-286.
Frame, P. and M. Hartog (2003). "From rhetoric to reality. Into the swamp of ethical practice: Implementing work-life balance." Business Ethics: A European Review 12(4): 358-368.
Furnham, A. and R. J. Drakely (1993). "Work locus of control and perceived organizational climate." European Work & Organizational Psychologist 3(1): 1.
Galinsky, E. (2007). "The changing landscape of work." Generations: 16-22.
Gallacher, J., B. Cossan, et al. (2002). "Learning careers and the social space: Exploring the fragile identities of adult returners in the new further education." International Journal of Lifelong Education 21(6): 493-509.
Gautam, T., R. Van Dick, et al. (2004). "Organizational identification and organizational commitment: Distinct aspects of two related concepts." Asian Journal of Social Psychology 7: 301-315.

Giacalone, R. A. and C. L. Jurkiewicz (2003). Toward a science of workplace spirituality. Handbook of Workplace Spirituality and Organizational Performance. R. A. Giacalone and C. L. Jurkiewicz. New York, Sharpe: 13.

Giddens, A. (1991). Modernity and self-identity:Self and society in the late modern age. Stanford, Stanford University Press.

Gockel, A. (2004). The trend towards spirituality in the workplace. Overview and implications for career counseling. Journal of Employment Counseling, 41(4), 156-167.

Gore, J. S., S. E. Cross, et al. (2009). "Acting in our interests: Relational self-construal and goal motivation across cultures." Motivation and Emotion 33: 75-87.

Gore, P. M. and J. B. Rotter (1962). "A personality correlate of social action." Conference Paper of the Midwestern Psychological Association Meeting: 58-64.

Grady, G. and A. M. McCarthy (2008). "Work-life integration: Experiences of mid-career professional working mothers." Journal of Managerial Psychology 23(5): 599-622.

Gustafsson, G., S. Eriksson, et al. (2010). "Burnout and perceptions of conscience among health care personnel: A pilot study." Nursing Ethics 17(1): 23-38.

Hall, D.T. (1976) Careers in organizations. Pacific Palisades: Goodyear Publications

Hattrup, K., M. S. O'Connell, et al. (2005). "Incremental validity of locus of control after controlling for cognitive ability and conscientiousness." Journal of Business & Psychology 19(4): 461-481.

Heatherton, T. F. and C. Wyland (2003). "Why do people have self-Esteem?" Psychological Inquiry 14(1): 38.

Herzberg, F. (1968). One more time: How do you motivate employees? Harvard Business Review: 86-96.

Herzberg, F. I. (1974). "New perspectives on the will to work." The American Society For Personnel Administration: 52-54.

Hitlin, S. and G. H. Elder Jr. (2007). "Time, self, and the curiously abstract concept of agency." Sociological Theory 25(2): 170-191.

Ho, V.T., D.M. Rousseau, et al. (2006) "Social networks and the psychological contract: Structural holes, cohesive ties, and beliefs regarding employer obligations." Human Relations 59(4): 459-481

Hodges, H. F., A. C. Keeley, et al. (2005). "Professional resilience, proactive longevity and Parse's theory for baccalaureate education." Journal of Nursing Education 44(12): 548-554.

Hoffman, M. F. and R. L. Cowan (2008). "The meaning of work/life: A corporate ideology of work/life balance." Communication Quarterly 56(3): 227-246.

Hogg, M. A., D. J. Terry, et al. (1995). "A tale of two theories: A critical comparison of identity theory with social identity theory." Social Psychology Quarterly 58(4): 255-269.

Holland, P. J., R. Hecker, et al. (2002). "Human resource strategies and organisational structures for managing gold-collar workers." Journal of European Industrial Training 26(2-4): 72-80.

Holland, P. J., R. Hecker, et al. (2002). "Human resource strategies and organisational strudctures for managing gold-collar workers." Journal of European Industrial Training 26(2-4): 72-80.

Hughes, M. (2006). "Affect, meaning and quality of life." Social Forces 85(2): 611-629.
Jacobs, KA and Manzi, T., “Performance indicators and social constructionism: Conflict and control in housing management”, Critical Social Policy: a journal of theory and practice in social welfare, 20 (1) pp. 85-103.
Johnson, J. A. and J. Lopes (2008). "The Intergenerational workforce, revisited." Organization Development Journal 26(1): 31-36.
Judge, T. A. (2003). "Core self-evaluations and work success." Association for Psychological Science 18(1): 58-62.
Julien, M., K. Somerville, et al. (2011). "Going beyond the work arrangement: The crucial role of supervisor support." Public Administration Quarterly 35(2): 167-204.
Kahn, W. A. (1990). "Psychological conditions of personal engagement and disengagement at work." Academy of Management Journal 33(4): 692-724.
Kea, H. (2008). How are NASA engineers motivated? An analysis of factors that influence NASA Goddard engineers' level of motivation. Doctor of Philosophy, Antioch University.
Kinijerski, P., V. and P. Skrypnek, B. (2008). "The promise of spirit at work." Journal of Gerontological Nursing 34(10): 17-27.
Kinjerski, V. and B. J. Skrypnek (2006). "A human ecological model of spirit at work." Journal of Management, Spiritually & Religion 3 (3): 232-239.
Kinjerski, V. and B. J. Skrypnek (2006). "Measuring the intangible: Development of the spirit at work scale." Paper presented at the Sixty-fifth Annual Meeting of the Academy of Management, Atlanta GA: 1-16.
Kinjerski, V. and B. J. Skrypnek (2008). "Four paths to spirit at work: Journeys of personal meaning, fulfillment, well-being, and transcendence through work." Career Development Quarterly 56(4): 319-329.
Kinjerski, V. and B. J. Skrypnek (2008). "The promise of spirit at work - Increasing job satisfaction and organizational commitment and reducing turnover and absenteeism in long-term care." Journal of Gerontological Nursing 34(10): 17-25.
Klun, S. (2008). "Work-life balance is a cross-generational concern-and a key to retaining high performers at Accenture." Global Business and Organizational Excellence 27(6): 14-20.
Kosine, NR.., Steger, M.F., Duncan, S. (2008). Purpose-centered career development: A strengths-based approach to finding meaning and purpose in careers. Professional School Counseling 12(2). 133-136
Krueger, J. (1997). Self-esteem and its discontents. Brown University Child & Adolescent Behavior Letter, John Wiley & Sons, Inc. / Newsletters. 13: 8.
Lair, D. J., S. Shenoy, et al. (2008). "The politics of meaningful work: Navigating the tensions of narcissism and condescension while finding meaning in work." Management Communication Quarterly 22(1): 172-180.
Langkamer, K. L. and K. S. Ervin (2008). "Psychological climate, organizational commitment and morale: Implications for army captains' career intent." Military Psychology 20: 219-236.
Lips-Wiersma, M. and L. Morris (2009). "Discriminating between 'meaningful work' and the 'management of meaning'." Journal of Business Ethics 88: 491-511.

Marcia, J. E. (1966). "Development and validation of ego-identity status." Journal of Personality and Social Psychology 3(5): 551-558.
Marques, J. (2008). "Spirituality at work." The Journal for Quality and Participation 31(3): 24-27.
Martin, B. and J. Wajcman (2004). "Markets, contingency and preferences: Contemporary managers' narrative identities." The Editorial Board of The Sociological Review: 241-264.
Martin, J. (2004). "Self-regulated learning, social cognitive theory, and agency." Educational Psychologist 39(2): 135-145.
Martin, R.Thomas, G., Charles, K., Epitropaki, O. and McNamara, R. (2005). The role of leader-member exchanges in mediating the relationship between locus of control and work reactions. Journal of Occupational and Organizational Psychology, 78: 141–147.
Maruyama, T., P. G. Hopkinson, et al. (2009). "A multivariate analysis of work–life balance outcomes from a large-scale telework programme." New Technology, Work & Employment 24(1): 76-88.
Maslow, A. H. (1987). A theory of human motivation. The great writings in mangement and organizational behavior. L. E. Boone and D. D. Bowen. Boston, McGraw-Hill: 106-122.
May, D. R., R. L. Gilson, et al. (2004). "The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work." Journal of Occupational & Organizational Psychology 77(1): 11-37.
McClelland, D. C. (1987). That urge to achieve. The great writings in mangement and organizational behavior. L. E. Boone and D. D. Bowen. Boston, McGraw-Hill: 126-137.
McCrimmon, M. (2010). "A new role for management in today's post-industrial organization." Leadership 74(4): 6-10.
McGregor, D. M. (1987). The human side of enterprise. The great writings in mangement and organizational behavior. L. E. Boone and D. D. Bowen. Boston, McGraw-Hill: 126-137.
McMurray, I., H. Connolly, et al. (2008). "Constructing resilience: Social workers' understandings and practice." Health and Social Care in the Community 16(3): 299-309.
Merriam, S. B. (2002). Qualitative research in practice: Examples for discussion and analysis. San Francisco, Jossey-Bass.
Moon, S. Y. and J. Roh (2010). "Balancing work and family in South Korea's public organizations: Focusing on family-friendly policies in elementary school organizations." Public Personnel Management 39(2): 117-131.
Morin, E. M. (2004). The meaning of work in modern times. 10th World Congress on Human Resources Management. Rio de Janeiro, Brazil: 1-12.
Newstrom, J., D. Gardner, et al. (2007). "A neglected supervisory role: Building self-esteem at work." Supervision 68(3): 9-12.
Njus, D., and D.R. Johnson (2008). Need for cognition as a predictor of psychosocial identity development. Journal of Psychology Nov;142(6):645-55.

Nordstrom, C. R. and D. J. Segrist (2009). "Predicting the likelihood of going to graduate school: The importance of locus of control." College Student Journal 43(1): 200-206.
Nurullah, A. S. (2010). "Predictors of job satisfaction among emerging adults." International Journal of Business and Management 5(3): 3-15.
O'Donohue, W., C. Sheehan, et al. (2007). "The psychological contract of knowledge workers." Journal of Knowledge Management 11(2): 73-82.
Onwuegbuzie, A. J. (2002).”Positivists, post-positivists, post-structuralists, and post-modernists: Why can't we all get along? Towards a framework for unifying research paradigms.” Education, 122 (3), 518-530.
Paulsen, N. (2003). "Who are we now?": Group identity, boundaries, and the (re)organizing process. In N. Paulsen & T. Hernes (Eds.), Managing boundaries in organizations: Multiple perspectives. Basingstoke, Hampshire, UK: Palgrave (Macmillan). 14-34.
Payne, W. (2009). "New approaches to promoting resilience at work." Occupational Health 61(11): 31.
Phares, E. J. and J. T. Lamiell (1975). "Internal-external control, interpersonal judgments of others in need, and attribution of responsibility." Journal of Personality 43(1): 23-38.
Pierce, J., D. G. Gardner, et al. (1989). "Organization-based self-esteem: Construct definition, measurement and validation." Academy of Management Journal 32(3): 622-648.
Pitt-Catsouphes, M., C. Matz-Costa, et al. (2009). Workplace flexibility: Findings from the age & generations study. Issue Brief 19: 1-21.
Rank, J., N. E. Nelson, et al. (2009). "Leadership predictors of innovation and task performance: Subordinates' self-esteem and self-presentation as moderators." Journal of Occupational and Organizational Psychology 82: 465-489.
Reybold, L. E. (2002). "Pragmatic epistemology: Ways of knowing as ways of being." International Journal of Lifelong Education 21(6): 537-550.
Royle, M.T. (2010). An empirical investigation of the mediating role of organization based self-esteem, International Journal of Management and Marketing Research, 3(2), 33-52
Ryff, C. D. (1995). "Psychological well-being in adult life." American Psychological Society 4(4): 99-104.
Ryff, C. D., C. L. Keyes, et al. (2003). "Status inequalities, perceived discrimination, and eudaimonic well-being: Do the challenges of minority life hone purpose and growth?" Journal of Health and Social Behavior 44(3): 275-291.
Saleh, S. D., & Hosek, J. (1976). Job involvement: Concepts and measurements.
Academy of Management Journal, 19, 213-223.
Schwartz, S. J. (2002). "Convergent validity in objective measures of identity status: Implications for identity status theory." Adolescence 37(147): 609-625.
Schwartz, S. J. (2007). "The structure of identity consolidation: Multiple correlated constructs or one superordinate construct?" Identity: An International Journal of Theory and Research 7(1): 27-49.

Schwartz, S. J., J. E. Côté, et al. (2005). "Identity and agency in emerging adulthood: Two developmental routes in the individualization process." Youth Society 37: 201-229.
Schwartz, S. J. and G. E. Finley (2010). "Trouble ruminations about parents: Conceptualization and validation with emerging adults." Journal of Counseling & Development 88: 80-91.
Scroggins, W. A. (2008). "Antecedents and outcomes of experienced meaningful work: A person-job fit perspective." Journal of Business Inquiry: 68-78.
Scroggins, W. A. (2008). "The relationship between employee fit perceptions, job performance, and retention: Implications of perceived fit." Employee Responsibilities and Rights Journal 20: 57-71.
Shamir, B. (1991). "Meaning, self and motivation in organizations." Organization Studies 12(3): 405-424.
Sidani, Y. M. and W. L. Gardner (2000). "Work values among Lebanese workers." Journal of Social Psychology 140(5): 597-607.
Spector, P. E., C. L. Cooper, et al. (2002). "A comparative study of perceived job stressor sources and job strain in American and Iranian managers." Applied Psychology: An International Review 51(3): 446-457.
Spector, P. E., C. L. Cooper, et al. (2002). "Locus of control and well-being at work: How generalizable are western findings?" Academy of Management Journal 45(2): 453-466.
Spector, P. E. and B. J. O'Connell (1994). "The contribution of personality traits, negative affectivity, locus of control and Type A to the subsequent reports of job stressors and job strains." Journal of Occupational and Organizational Psychology: 1-11.
Srivastava, S. (2009). "Locus of control as a moderator for relationship between organizational role stress and managerial effectiveness." Vision 13(4): 49-61.
Steger, M. F., S. Oishi, et al. (2009). "Meaning in life across the life span: Levels and correlates of meaning in life from emerging adulthood to older adulthood." The Journal of Positive Psychology 4(1): 43-52.
Stone, D. N., E. L. Deci, et al. (2009). "Beyong talk: Creating autonomous motivation through self-determination theory." Journal of General Management 34(3): 75-91.
Strauser, D. R., D. C. Lustig, et al. (2008). "Psychological well-being: Its relation to work personality, vocational identity, and career thoughts." The Journal of Psychology 142(1): 21-35.
Stryker, S. and P. J. Burke (2000). "The past, present, and future of an identity theory." Social Psychology Quarterly 63(4): 284-297.
Tang, T. L.-P. and L. Sarsfield-Baldwin (1991). "The Effects of Self-Esteem, Task Label, and Performance Feedback on Goal Setting, Certainty, and Attribution." Journal of Psychology 125(4): 413.
Thoits, P. A. (2003). Personal agency in the accumulation of multiple role-identities.
Thoits, P. A. (2006). "Personal agency in the stress process." Journal of Health and Social Behavior 47(4): 309-323.
Tian, K. and R. W. Belk (2005). "Extended self and possessions in the workplace." Journal of Consumer Research 32: 297-310.

Twenge, J. M. and S. M. Campbell (2008). "Generational differences in psychological traits and their impact on the workplace." Journal of Managerial Psychology 23(8): 862-877.
Wagnild, G. M. and J. A. Collins (2009). "Assessing resilience." Journal of Psychosocial Nursing 47(12): 28-33.
Wakefield, J. C. (1995). "When an irresistible epistemology meets an immovable ontology." Social Work Research 19(1): 9-17.
Walker, A. G., M. N. Jones, et al. (2008). "Sanctifying work: Effects on satisfaction, commitment, and intent to leave." The International Journal for the Psychology of Religion 18: 132-145.
Watts, J. H. (2009). "'Allowed in a man's world' meanings of work-life balance: Perspectives of women civil engineers as 'minority' workers in construction." Gender, Work and Organization 16(1): 37-57.
Wayne, J. H., A. E. Randel, et al. (2006). "The role of identity and work-family support in work-family enrichment and its work-related consequences." Journal of Vocational Behavior 69: 445-461.
Weigert, A. J., J. S. Teitge, et al. (1986). Society and identity: Toward a sociological psychology. Cambridge, Cambridge University Press.
Worden, J. W. and H. J. Sobel (1978). "Ego strength and psychosocial adaptation to cancer." Psychosomatic Medicine 40(8): 585-592.
Yrle, A. C., S. J. Hartman, et al. (2005). "Generation X: Acceptance of others and teamwork implications." Team Performance Management 11(5/6): 188-199.

APPENDIX A

Email Introduction from Goddard Space Flight Center

Dear Colleagues,

Goddard Space Flight Center is pleased to take part in a research study that is a part of a doctoral study at the Graduate School of Human Development at the George Washington University.
This study seeks to understand more about how employees find meaning in their work. The study includes a large number of participants taking part in a web-based instrument, which is expected to take approximately 15 minutes to complete, followed by a small number of participants taking part in a 45 minute to one-hour face to face interview.

In a short while you will receive an email from the researcher, Wendy Shaia, inviting you to take part in the study. Participation is voluntary, and your individual responses will not be shared with either the management or staff of GSFC. At the end of the survey you will be asked to indicate your interest in sitting down for a one-hour face-to-face interview. You may decide to take the online survey, but not participate in the interview.

GSFC has a long history of advancing the sciences through research. Please consider participation in this study. If you have any questions, please contact the researcher directly at 443-254-2699. Thank you for your time.

Sincerely,

Department Director

APPENDIX B

Dear Goddard Space Flight Center Staff,

A few days ago you received an email from *(department director)* introducing my dissertation research. I am a doctoral student in the Human and Organizational Learning program at the George Washington University. I am conducting research on the relationship between personal agency (that area of identity which most impacts ones self-determination) and employee perceptions of meaningful work.

I would like to invite you to take part in a short online survey by clicking on the link below. The survey should take approximately 15 minutes to complete. At the end of the survey, you will have the opportunity to indicate your interest in sitting down for a 45 minute to one-hour face-to-face interview about how you find meaning in your work. You may change your mind about participation in the interview at any time; even after the interview begins. Your individual responses will not be shared with management or staff of GSFC.

Please feel free to contact me by email or phone with questions or comments. I thank you, in advance, for taking the time to participate in this study. I look forward to working with you to advance knowledge in the field of human and organizational studies.

LINK…

Respectfully,

Wendy Shaia

APPENDIX C

Personal agency and meaningful work study

Please respond to the following questions. Management or staff of GSFC will at no point see your individual answers. Please answer all questions as candidly as possible. The survey should take approximately 15 minutes to complete.

Thank you for taking the time to participate in this study.

A. Instructions: *These statements are to help you describe yourself as you see yourself. Please respond to them as if you were describing yourself to yourself. Read each statement carefully; then select one of the five responses listed below. After choosing, check the box indicating the response you choose.*

	Completely false	Mainly false	Partly true and partly false	Mainly true	Completely true
1) I enjoy difficult and challenging situations.	1❑	2❑	3❑	4❑	5❑
2) I have a lot of will power.	1❑	2❑	3❑	4❑	5❑
3) I am able to concentrate better than most people under distracting conditions.	1❑	2❑	3❑	4❑	5❑
4) I can bear physical discomfort better than most.	1❑	2❑	3❑	4❑	5❑
5) When I have a job to do, I am not easily distracted.	1❑	2❑	3❑	4❑	5❑

Score: /25

B. Instructions: *Please place a checkmark in the box provided beside each statement according to how much you agree or disagree with it.*

	Strongly Agree	Agree	Slightly agree	Slightly disagree	Disagree	Strongly disagree
6) Becoming a success is a matter of hard work. Lucky breaks have little or nothing to do with it.	6❑	5❑	4❑	3❑	2❑	1❑
7) When I make plans, I am almost certain that I can make them work.	6❑	5❑	4❑	3❑	2❑	1❑
8) There is a direct connection between how hard I study and the grades I get	6❑	5❑	4❑	3❑	2❑	1❑
9) It is impossible for me to believe that chance or luck plays an important role in my life.	6❑	5❑	4❑	3❑	2❑	1❑
10) What happens to me is my own doing.	6❑	5❑	4❑	3❑	2❑	1❑

Score: /30

C. **Instructions**: *For each of the following statements, place a checkmark in the box that would be most nearly true for you. Always check "like me" if you think the statement adequately describes your present feelings/actions/situation and "unlike me" if you think the statement does not adequately describe your present feelings/actions/situation.*

	Unlike me	Like me
11) I'm a lot of fun to be with.	1❑	2❑
12) I'm popular with my colleagues.	1❑	2❑
13) People usually follow my ideas.	1❑	2❑
14) I'm not as nice looking as most people.*	2❑	1❑
15) Most people are better liked than I am. *	2❑	1❑

* Reverse scored

Score: /10

D. Instructions: *For each of the following statements, place a checkmark in the box that would be most nearly true for you. Note that the boxes always extend from one extreme feeling to its opposite kind of feeling. "Neutral" implies no judgment either way; try to use this rating as little as possible.*

16) *I am usually:*

1❑	2❑	3❑	4❑	5❑	6❑	7❑
completely bored			neutral			exuberant and enthusiast

17) *Life to me seems:*

7❑	6❑	5❑	4❑	3❑	2❑	1❑
always exciting			neutral			completely routine

18) Every day is:

7❑	6❑	5❑	4❑	3❑	2❑	1❑
constantly new and different			neutral			exactly the same

19) My life is:

1❑	2❑	3❑	4❑	5❑	6❑	7❑
empty, filled only with despair			neutral			running over with exciting, good things

20) I am a:

1❑	2❑	3❑	4❑	5❑	6❑	7❑
very irresponsible person			neutral			very responsible person

Score: /35

Total Score: /100

E. **Instructions:** *For each of the following statements, place a checkmark in the box that would most represent your thoughts and feelings about your work.*

21) I tried several different careers before choosing this one.

❑ very true ❑ somewhat true ❑ not at all true

22) If I could go back and do it again, I would still choose this career.

❑ very true ❑ somewhat true ❑ not at all true

23) Please rank (1 being the highest, 7 the lowest) the following work criteria in order of importance to you.

a) _____ Salary
b) _____ Challenging work
c) _____ Interesting work
d) _____ Autonomy, or freedom to shape my work (duties)
e) _____ Authority to make decisions
f) _____ Flexibility
g) _____ Knowing that my work has impact

24) The purpose of this study to examine the relationship between personal agency (that aspect of your identity which gives you a sense of responsibility for and control over your own life course) and employee perception of meaningful work. Meaningful work is defined as work which is interesting, satisfying, has a significant purpose and impact, and allows the employee to express him or herself through work. To what degree do you find your current work meaningful?

7❑ Very meaningful 6❑ 5❑ 4❑ neutral 3❑ 2❑ 1❑ Not at all meaningful

F. **Instructions:** *Please provide the following demographic data.*

(Drop down boxes)

Gender

Race

Age

Department

Education

Would you be interested in taking part (at your convenience) in a one-hour interview about meaningful work? A positive response does not indicate any commitment on your part; you may change your mind at any time. If you respond in the affirmative, you may or may not be contacted for an interview, depending on the response rate.

_____Yes _____No

If "yes", please provide your email address: _____

Thank you for taking the time to participate in this study. Once again, only the researcher will see your individual responses. In no way will employees or management of GSFC have access to your data.

If any of the questions in this survey caused you discomfort and you feel the need to speak to a professional counselor, please contact the NASA Employee Assistance Program 24-hour line at (800) 222-0364 for immediate assistance.

APPENDIX D

Reminder to complete online survey

Dear Goddard Space Flight Center Staff,

A few days ago you received an email from *(department director)* introducing my dissertation research. I am a doctoral student in the Human and Organizational Learning program at the George Washington University. I am conducting research on the relationship between personal agency (that area of identity which most impacts ones self-determination) and employee perception of meaningful work.

You were invited to take part in a 15 minute online survey. If you have not yet completed the survey, please take a moment and do so now. Your responses are important.

Please feel free to contact me by email or phone with questions or comments. I thank you, in advance, for taking the time to participate in this study. I look forward to working with you to advance the knowledge in the field of human and organizational studies.

LINK…

Respectfully,

Wendy Shaia

APPENDIX E

Email from researcher to schedule interview

Dear Colleague,

While completing an online survey about personal agency and meaningful work recently, you recently indicated interest in taking part in an hour-long face-to-face interview about meaningful work.

I would like to schedule a time to meet which is convenient to you. Please take a few minutes to respond to the questions below. You may do this by replying to this email and typing your answers directly beneath each question.

Name:

Telephone number at which you would like to be contacted:

Please place an X to indicate when you would prefer to be contacted at this number.
Day Evening

Please place an X to indicate when you would like to be interviewed
Day Evening

Please place an X to indicate where you would like to be interviewed
GSFC and immediate vicinity Another location (please specify)

I will contact you by phone to arrange a mutually convenient time. Meanwhile, please feel free to contact me by email or phone with questions and comments about the study. Thank you, in advance, for taking the time to participate in the next step of this research. I look forward to meeting you.

Between now and the time we meet, please reflect on the topic of our interview. Feel free to jot down some notes to discuss.

Meaningful work involves how a person brings his or her total self to work in such a way as to allow for autonomy, flexibility, empowerment, continuous learning, risk-taking and creativity.

- Has your work at GFSC been meaningful, as described above? How? How not?
- How could your work have been more meaningful?

Sincerely,

Wendy Shaia

APPENDIX F

Email confirmation of interview

Dear_____,

Thank you for your interest in taking part in an hour-long interview about meaningful work. Below please find the date, time, and location of your interview, as we discussed on the phone. If you need to make any changes to the interview arrangements, please feel free to contact me by email or phone.

As discussed, I have attached an Informed Consent Form. Please read the form, sign and date it. I will collect it at the time of the interview. If you have questions about the form, please do not hesitate to contact me right away.

I look forward to meeting you and gaining your insight and experience about the meaning of work in your life.

Sincerely,

Wendy E. Shaia

APPENDIX G
Social/Behavioral Consent Form

The Relationship Between Personal Agency and Employee Perception of Meaningful Work: An Exploratory Study

IRB# 031116

You are invited to participate in a research study under the direction of Dr. Neal Chalofsky of the Department of Education and Human Development, George Washington University (GWU). Taking part in this research is entirely voluntary. The status of your employment will not, in any way, be affected should you choose not to participate or if you decide to withdraw from the study at any time.

The purpose of this study is to learn about the relationship between *personal agency* and employee perception of *meaningful work*. Personal agency is a sense of responsibility for one's life course, the sense that one is in control of life's outcomes, and the confidence that one will be able to overcome obstacles. Meaningful work involves how a person brings his or her total self to work in such a way as to allow for autonomy, flexibility, empowerment, continuous learning, risk-taking and creativity.

If you choose to take part in this study, you will be asked to complete a short (approximately 15 minute) online survey. During the survey you will be asked if you would like to volunteer for an in-person interview of up to one hour. If you volunteer for the interview you may or may not be contacted. You may refuse to answer any of the questions in either the survey or the interview and you may stop your participation in this study at any time.

Possible risks or discomforts you could experience during this study include: minimal psychological stress. Participating in this study poses no risks that are not ordinarily encountered in daily life.

You will not benefit directly from your participation in the study. The benefits to science and humankind that might result from this study are: rich contextual data about the professional journey taken by employees who find their work meaningful, and may provide the organization with information about how to attract, develop, and retain employees who find their work meaningful and thus more engaging.

Every effort will be made to keep your information confidential, however, this cannot be guaranteed. The researcher will have access to survey and interview data, however individual responses will not be shared with management or staff of Goddard Space Flight Center (GSFC). Data will not be stored on GSFC computers or premises. If results of this research study are reported in journals or at scientific meetings, the people who participated in this study will not be named or identified.

The Office of Human Research of George Washington University, at telephone number (202) 994-2715, can provide further information about your rights as a research participant. Further information regarding this study may be obtained by contacting Wendy Shaia, Researcher, at telephone number (443) 254-0000, or Dr. Neal Chalofsky, supervisor, (202) 994-0000.

Documentation of Consent

Clicking on the link to take the survey indicates your consent to take part in the study. Your signature is not required.

APPENDIX H
Survey Tables

Table 4 – Personal Agency Score by Gender, Race, Age, Education and Department

Level	Number	Mean	Std. Dev	Std. Err Mean	95% Confidence Lower	95% Confidence Upper
Gender						
Female	127	76.8583	6.88998	0.61139	75.648	78.068
Male	185	76.3838	7.74518	0.56944	75.26	77.507
Race						
American Indian/Alaska Native	1	79				
Asian	15	76.5333	8.374	2.1622	71.896	81.171
Black/African American	23	75.5217	6.07431	1.2666	72.895	78.148
Hispanic/Latino	12	79	7.13506	2.0597	74.467	83.533
Native Hawaiian/Pacific Islander	1	66				
Two or More Races	10	72.8	7.3303	2.318	67.556	78.044
White	248	76.7742	7.32567	0.4652	75.858	77.69
Age						
Less Than 25 Years	16	76.875	7.44648	1.8616	72.907	80.843
26-35 Years	44	74.4318	6.57479	0.9912	72.433	76.431
36-45 Years	68	77	7.22971	0.8767	75.25	78.75
46-55 Years	108	77.3333	6.7713	0.6516	76.042	78.625
56-65 Years	64	76.0156	8.33713	1.0421	73.933	78.098
>66 Years	14	78.5	9.92084	2.6515	72.772	84.228
Education						
Doctorate	55	77.2909	7.35772	0.9921	75.302	79.28
Masters	129	75.9845	7.40459	0.6519	74.695	77.274
Some Graduate	27	77.037	5.64652	1.0867	74.803	79.271
Bachelors	75	77.6	7.89458	0.9116	75.784	79.416
Some College	20	76.1	8.1428	1.8208	72.289	79.911
Trade/Technical School	4	72.75	3.30404	1.652	67.493	78.007
High School	3	70.3333	6.4291	3.7118	54.363	86.304
Department						
Engineering	176	76.0568	7.3568	0.5545	74.962	77.151

Facilities	11	72.7273	5.93449	1.7893	68.74	76.714
Human Resources	3	85.3333	4.04145	2.3333	75.294	95.373
Other	41	78.7561	6.75937	1.0556	76.623	80.89
Projects	45	76.5778	7.64106	1.1391	74.282	78.873
Science	38	77.3684	7.70195	1.2494	74.837	79.9

Table 5- Personal Agency by Department ANOVA

Source	Sum of Squares	df	Mean Square	F Ratio	Prob > F
Department	658.711	5	131.742	2.467	0.0327*
Error	16447.661	308	53.401		
C. Total	17106.373	313			

p>.05

Table 6- Perception of Work as Meaningful and Personal Agency Score

Level	N	Mean	Std. Dev	Std. Err Mean	95% Confidence Lower	95% Confidence Upper
Very Meaningful	90	80.6222	7.89478	0.8322	78.969	82.28
6	118	76.5254	6.24118	0.5745	75.388	77.66
5	70	73.5143	5.49504	0.6568	72.204	74.82
Neutral	20	73.85	7.8892	1.7641	70.158	77.54
3	10	72.8	8.13497	2.5725	66.981	78.62
2	7	69.7143	9.77606	3.695	60.673	78.76
Not At All Meaningful	2	81	7.07107	5	17.469	144.53

Source	Sum of Squares	df	Mean Square	F Ratio	Prob > F
Meaningful Work	2789.404	6	464.901	9.8782	<.0001*
Error	14589.644	310	47.063		
C. Total	17379.047	316			

p>.05

Table 7 - Trying Different Careers and Personal Agency Score

Response	Number	Mean	Std. Err Mean	95% Confidence Lower	95% Confidence Upper
Not At All True	196	76.7194	0.5346	75.667	77.771
Somewhat True	91	76.5824	0.7846	75.039	78.126
Very True	31	75.4839	1.3443	72.839	78.129

Source	Sum of Squares	df	Mean Square	F Ratio	Prob > F
Different Careers	40.925	2	20.4623	0.3652	0.6943
Error	17647.44	315	56.0236		
C. Total	17688.365	317			

p>.05

Table 8 - Trying the Same Career Again and Personal Agency Score

Response	Number	Mean	Std. Err Mean	95% Confidence Lower	95% Confidence Upper
Not At All True	20	74.9	1.644	71.665	78.135
Somewhat True	115	74.8783	0.6856	73.529	76.227
Very True	183	77.7978	0.5435	76.728	78.867

Source	Sum of Squares	df	Mean Square	F Ratio	Prob > F
Choose Career Again	660.75	2	330.375	6.1117	0.0025*
Error	17027.615	315	54.056		
C. Total	17688.365	317			

p>.05