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Scoping Job Enlargement with the Cultural Dimension of Individualism: An Industrial

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Abstract

Job satisfaction and sustainable job performance require managers to find the right balance between job enlargement and the division of labor in designing the optimum scope of work toward a continuum of employee engagement. This dissertation explores the cultural dimension of "Individualism" and its' implication in this balance. If a manufacturing line is transferred from the United States (91 mean individualism score) to China (20 mean individualism score) does the scope of the work need to change to ensure that a greater population of workers is engaged and that they have work passion toward sustained performance (Hofstede, n.d.)? Does the statement of work need to increase in detail and prescriptiveness or conversely in autonomy and diversity of tasks to match the mean cultural dimension of individualism corresponding with the target culture of the workforce? This study builds on the theory of job enlargement, and considers a cultural implication of individualism in international business.

Keywords: division of labor, specialization, job enlargement, ennui, individualism, management, international business, collectivism, culture, employee satisfaction, employee engagement

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The dissertation process is considered by many to be the culmination of the learning journey, and a prerequisite to great accomplishments. Even the doctoral degree is known as a **"terminal" degree.** I have learned that the dissertation is just the completion of a test run, and an acknowledgement of readiness to go do small things well and hopefully make all those who invested into the learner proud.

"Wise men and women are always learning, always listening for fresh insights."
(Proverbs 18:15, MSG).

Speaking of those who invested in the learner:

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Some of my biggest fans!

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Chapter One – Introduction

There is a fable involving a man who was curious about three rock cutters engaged in the building of the Salisbury Cathedral in 1220 AD. The man approached the first rock cutter and asked what he was doing. With some indignation at being asked a question with a seemingly obvious answer, the man replied that he was cutting rock. The second rock cutter was asked the same question and responded that he was attempting to make a living for his family, and was cutting the rocks as a necessary means to a financial end. Finally, the third rock cutter was asked the same question and he responded with obvious pride, that he was helping to build the largest cathedral the country had ever seen. It is no mystery which worker was more engaged, had the best quality of work, and would go on to sustain performance in future months and years. This fable illustrates an important factor in management, as workers must have some degree of engagement and job satisfaction in order to sustain performance and excellence in their work.

A number of factors contribute to worker satisfaction and engagement and research has shown that satisfaction requires more than just monetary compensation (Locke, 1976). All three of the rock cutters in the fable presumably were paid the same or comparable wages, yet one of these men believed he was making a difference and had a vision of being part of a larger end result. This engaged rock cutter might have seen what he was doing as a vocation rather than a job. Embracing the task as part of a life's work instead of a mundane assignment can prevent burnout. Palmer purports that burnout suggests that a person is giving out something they do not have to give and, if a worker is engaged in their work as a vocation, they do not experience burnout in the way a worker might who has not embraced their work as a vocation (Palmer, 2000, p. 49-50).

Historically, many workers have embraced a trade as a vocation and have conducted this work for a life contribution as well as a livelihood. The introduction of assembly lines, the Industrial Revolution, and the scientific management theory almost mechanized human labor by breaking work down into small tasks and finding efficiencies. Some of these efficiencies were realized by less training, less movement, less interruption, and ultimately less waste. Some of the collateral issues associated with this progression are repetition, monotony, tedium, and a reduced signature or imprint on the finished result for the worker. A worker who creates a complete item (e.g., violin, car, pair of shoes, or a cathedral) potentially has a larger share of the end result to be proud of as his or her signature creation or a creation to which he or she has made a significant contribution. If a worker repetitively cuts rocks for a cathedral or puts a small rivet in each car passing down the assembly line, it is possible that the worker has little pride or stake in the end product. The worker may never have accepted this work as a vocational calling and thus may experience burnout and reduced performance. Management can have a role in the worker's perspective on work, and much of this can be accomplished through job design (Hackman & Oldham, 1980). The inspiration for this dissertation explains why some autonomy, which is a component of job design, is an important consideration in management responsibility.

The inspiration for this dissertation originates from over 20 years of quality and engineering management in the aerospace and automotive industries in both domestic and international business settings (personal experience). When a product(s) is made wrong or there is a defect discovered, a process of finding the root cause and taking corrective action is required. When materials or machines are found to be causal, the corrective

actions are typically robust, including preventive measures to ensure that the issue will not reoccur. When it is found that a person (human factor) is at fault, the corrective actions are considerably less effective (personal experience/assertion). In over 20 years of quality management in manufacturing, this researcher has catalogued five primary corrective action responses to errors resulting from human factors (personal experience/assertion):

1) We counseled the operator(s) and/or made them aware of the situation.

   The issue with this approach is that it provides only a temporary improvement and the issue will usually resurface in the future.

2) We trained the operator(s)/person(s) involved and can show a training record.

   The issue with this action is that often the operator/person involved can recite and demonstrate the correct process/technique involved when asked. They thus do not actually lack a technique or skill, so the training is actually reverting to the first solution – making them aware and/or counseling them.

3) We disciplined the person(s) involved (sometimes escalated to termination of employment).

   In most cases, the persons involved have not acted maliciously or with deviance. Even if the error is deliberate, the person believes they pursued the best course of action at the time for the circumstance involved. In many cases, the discipline only creates other issues, such as employee turnover and poor morale.

4) We added inspection to ensure that the defect does not escape detection in the future.

   This action admits defeat and produces the error (waste), then attempts to screen out the issue through secondary operations/processes. Sometimes this includes a supervisor sign-off, which only serves to suggest a lack of trust, and, is often only cursorily performed.

5) We automated the process and removed the operator from the equation.

   This action is typically effective but it can add cost and, sometimes it results in losing work to a competitor who employs manual operations. In addition, the automation will fix a single issue but the mechanized process will only perform as programmed because it lacks the human senses. A new defect could occur and go undetected due to this limitation.

Overall, the corrective action efforts to address causes involving human factors are not effective. It is apparent to the researcher, in reviewing years of personal experiences, that processes holding interest, importance, or significance that engage the worker usually experience fewer errors associated with the human factors. These personal experiences have created an interest in granting workers the appropriate amount of autonomy or job enlargement (Hulin & Blood, 1968) to enhance engagement and job satisfaction toward sustaining worker performance (Locke, 1976; Roznowski & Hulin, 1992).

Two more observations from over 20 years of quality management (personal experience/assertion) further define the area of interest and significance of this study but do not presuppose the research results.

1) Some of the production lines established in United States companies that were using the Toyota Production System had to include preventive measures (e.g., locks) to prevent the workers from deliberately by-passing the work design and increasing their work scope, either by working ahead into the next operation or by attempting rework or grading of defects thereby increasing their decision-making authority. Engineers consulting from Japan suggested that they did not have this issue in Japan and that "Japanese people were more disciplined."
2) When a production line or product manufacturing is moved from the United States to China, there is often work stoppage, because the China supplier(s) wait to obtain clarification on the process. It became apparent that the United States workers do not want to admit that certain steps are not entirely defined or prescribed and they do not want to risk embarrassment by asking. The United States worker will thus risk being wrong in the end and will figure out a way to get the work completed with only skeletal instruction. In some cases, workers will even pride themselves on their technique and take ownership of their ad-hoc solution(s) as an invention or contribution – seeming to enjoy the autonomy. When the same skeletal instructions are given to the China suppliers, they do not want to risk being wrong or embarrassed in the end, so they pursue explicit detail in the instructions until the instructions are fully prescriptive.

These experiences (personal experiences) inspired this researcher's interest in the relationship between cultural dimensions and job enlargement. For this study, only the

cultural dimension of individualism is considered. The personal experiences that led to the interest in the study occurred between groups that by country align with significant differences in Hofstede individualism scores: a) The United States – 91, b) China – 20, and c) Japan – 46 (Hofstede, n.d.). The personal experiences were instrumental in the interest and anticipated significance of this study but they do not presuppose the research results.

Purpose of This Research Study

The industrial purpose of this research is to determine whether there is a significant difference between groups (high individualism bias versus low individualism bias) in workers' responses to job enlargement/job satisfaction questions. A significant difference would suggest that management should consider this difference in the requisite work scope/design to keep employees engaged for sustainable performance and work outcomes. If participants in this study who score as more collectivistic are significantly different in their job enlargement/job satisfaction responses than participants who score more individualistic, then the industrial benefit is a potential application of this in respective work scopes specific (by extension) to cultures averaging differently on the individualism scale. As an example, the latest Hofstede studies show the United States average individualism score is 91, while China average individualism score is 20, suggesting that China is more of a collective society (Hofstede, n.d.). If this study finds a significant difference in optimum job enlargement for individualistic versus collectivistic individuals, a recommendation would include a different work scope for these countries that host a mean difference in the individualism/collectivism scores. This study is not

about specific countries, nor is the data collection or findings from or about these countries. This is a study of the implication of individualism in the job enlargement construct and participants may have a greater or lesser individualism bias irrespective of their demographics. The academic purpose of this study is to determine the cultural implication of individualism in the arguments for job enlargement and resulting job satisfaction.

Research Problem

This research involves international business and considers worker engagement and worker passion necessary to sustain productivity and quality performance in aerospace component manufacturing. This research is focused on determining whether the dimension of individualism (Hofstede, n.d.; Triandis & Gelfand, 1998) is a factor that should necessitate differences in work design to accomplish the engagement and passion, based on the culture's mean individualism score. The literature suggests that there is a balance required (to sustain engagement and passion) between job enlargements with prolific autonomy and jobs with prescriptive task assignments and significant division of labor (Hulin & Blood, 1968; Locke, 1976).

There are resulting differences found between work executed in house (vertically integrated) and outsourced work in "complexity, task variety, scope of duties, and other work demands" (Fisher, Wasserman, Wolf, & Wears, 2008, p. 508). Fisher et al. posit that in outsourcing and/or bringing work back in house (e.g., insourcing), the opportunity exists to evaluate the potential for increased autonomy and role discretion and suggest tools such as Hackman and Oldham's Job Characteristics Model for this purpose. Jones

(2009) claims that all of the Hofstede's cultural dimensions are particularly relevant in outsourcing to China from the United States (p. 191-192). Jones also suggests that culture is an "ambiguous, invisible force that people cannot see or fully explain, yet these invisible cultural factors exert a powerful influence on work-related values and attitudes and on how people attempt to communicate meaning" (p. 191). Wursten's research (expanding on the work of Geert Hofstede) shows that a large portion of the outsourcing flow is from countries such as the United States, Britain, and Germany to countries such as China and India (Wursten, 2008). Wursten (referencing Hofstede's work on cultural dimensions) refers to this as a cultural flow from individualist to collectivistic cultures (e.g., countries or regions with a mean score suggestive of more individualistic or more collectivistic), and suggests that this is an obstacle that requires knowledge and planning in effective outsourcing.

Hypothesis and Research Questions

Grounded in the research of Jones (2009) and Wursten (2008), and representing the researcher's personal experiences in outsourcing, the research hypothesis in this study (as noted in the research questions) is that there is a significant difference in the work scope and job enlargement responses associated with the respondent's cultural individualism bias. The research will either support this hypothesis, which is significant, or it will find that there is not a significant statistical difference. If a significant difference is not found, this also is a significant finding because it supports the ubiquity of many job enlargement and management theories irrespective of the mean individualistic bias of the country or culture.

1) Research Question/Hypothesis I (R1 or H1): There is a positive relationship between a worker's (e.g., respondent's) individualism score and their motivating potential score (MPS) such that those who are higher in individualism, will also have a higher MPS score.
2) Research Question/Hypothesis II (R2 or H2): There is a positive relationship between a worker's (e.g., respondent's) individualism score and their engagement (characterized by their job interest, pride in job accomplishment, and work orientation) such that those higher in individualism, will have a higher level of engagement.
3) Research Question/Hypothesis III (R3 or H3): There is a positive relationship between a worker's (e.g., respondent's) individualism score and their perceived job characteristics identified as ideal (characterized by their growth needs strength), such that those higher in individualism will have a higher overall growth needs strength.

Methodology

The data collected for this study, is obtained by means of administered surveys. The workers complete a survey with several parts (both for this study and to provide utility to future studies):

1) A section of the survey includes questions that lead to rankings on a cultural orientation (e.g., individualism vs. collectivism) scale (Triandis & Gelfand, 1998, table 2).

2) A section of the survey includes questions that lead to rankings on a social desirability scale that may be used in future research or as needed in this study as a covariate in the analysis to control for data skewed by concerns of social reprisal (Reynolds, 1982).

3) A section on job enlargement/job attitude (Susman, 1973).

4) A section designed for job diagnostics toward redesign (Hackman & Oldham, 1974).

5) A section that collects additional control factors (e.g., demographics).

In addition, the supervisors and/or managers of the represented workers complete a short survey to help identify the work design and employee feedback (Hackman & Oldham, 1974). All of the survey questions are answered by selecting a variable/scalar best fit. The Hackman & Oldham (1974/1980) survey sections are administered and analyzed under the instructions accompanying the instrument (Hackman & Oldham, 1980). These answers are then quantitatively analyzed with the results shown in Chapter 4. This is a quantitative research study.

The survey is presented to the participants in both English and Simplified Mandarin (Chinese) language options. The Mandarin options are translated using the procedures of Richard Brislin (Brislin, 1976; Brislin, 1986). The study serves to determine the validity of the hypothesis involving significant relationships and/or differences in the survey responses corresponding with individualism scores. This study is conducted in companies specific to the manufacturing (e.g., manufacturing sector) of aerospace components (aerospace industry) and performing actual manufacturing or assembly operations.

Limitations of This Study

A limitation of this study is that it only includes participants involved in component manufacturing supporting the aerospace industry. The companies studied have very formalized processes and the corporate culture is prescriptive and well organized. This may or may not represent all manufacturing or outsourcing/resourcing efforts in less structured corporate efforts (e.g., smaller and/or less culturally mature organizations).

Due to considerations of power distance and saving face (i.e., considerations of social desirability response patterns), it is possible that data could be skewed by concerns of reprisal. A social desirability scale is thus included in the survey as a covariate for analyses. This scale (Reynolds, 1982) assesses the degree to which responses may be subject to social bias. The analysis then controls for effects of social desirability, thereby showing mean differences above and beyond the potential bias. This helps to determine whether the employees have an option to leave a job and/or move to a situation that better suits their desired conditions or feel that they "must like" the status quo. In addition, the social desirability scale (coupled with assurances of anonymity) helps to determine if the employees have at least some degree of freedom of speech and can answer the survey questions honestly. In addition to the inclusion of a social desirability scale as a control factor of the research, when administering the survey, participants will be asked if this is true or if there are incentives or duress that could bias their responses. If the participants suggest that these conditions exist, the data subject to the influence of these types of management or conditions is excluded from the study. There is full disclosure within this

study (described in the method) for the motivation behind the participation (e.g., mandated, incentivized, or strictly voluntary).

Significance of This Study

The practical significance of this study concerns the prolific outsourcing or resourcing activities in globalization. If individualism is found to be an indicator that should influence decisions of prescriptiveness (division of labor) or autonomy (job enlargement), then there is the potential to utilize the Hofstede (Hofstede, n.d.) cultural dimension score to predetermine the need to adjust work scope (increased autonomy or conversely increased prescriptiveness) for the best performance in the target culture. If the results of this study determine that a difference in work scope/job enlargement is necessary to adjust for individualism, this will be a significant finding. If, on the other hand, this study finds that there is no difference in work scope/job enlargement adjustments required for individualism, but that the results are random and suggest only individual differences (Smith, 1955); then the same work scope would be appropriate in China (20 individualism mean score) and the United States (91 individualism mean score). The suggestion that the same work scope is acceptable for outsourcing (as far as individualism is concerned) will also be significant in practical application.

The academic significance of this study is the inclusion of this cultural implication in the research on job enlargement, division of labor, and job satisfaction. This study adds to the greater discipline of management, especially international business management. The Susman (1973) and the Hackman and Oldham (1974) survey instruments will be utilized in a new comparative study with different populations and analyzed for difference between respondents aligned with the low “individualism”

cultural dimension and those aligned with the high "individualism" cultural dimension. This research also presents multiple areas for future research utilizing the data from this study, and setting up further and expanded studies with other sample populations.

Definition of Constructs and Terms

Division of labor and specialization. In manufacturing, task design can range from being a craftsman (building the whole car yourself) to working on an assembly line (putting in the same rivet in each car). The division of labor and/or specialization refers to the dividing of work into very specific tasks to accomplish efficiencies. The history of specialization and the division of labor predates the Industrial Revolution and was accelerated through the scientific management theory and the introduction of the assembly line (Taylor, 1914/2012). Deming was very instrumental in popularizing explicit task design that was tried in Japan and then brought to the United States (Deming, 1986). The benefits of the division of labor are numerous but were elucidated by Adam Smith (the founder of capitalism) when he categorized the efficiencies paraphrased within this dissertation as specialization, continuation (or continuum), and mechanization (Evers, 1980; Foley, 1974; McNulty, 1975; Smith, 1776/1993).

Ennui. The counter indications or collateral issues that arise from extensive implementation of the division of labor include ennui. Ennui is a more holistic descriptor of the human factor "fatigue" because it includes the psychological attributes often described as boredom, enervation, lassitude, burnout, monotony, tedium, and fatigue. Ennui results in (and/or embodies) a lack of passion (job satisfaction) and is often causal to errors, attrition, and poor performance (Vodanovich, 2003). In this dissertation study,

the focus is limited to the psychosocial responses (ennui) to tedium, repetition, and monotony – and does not address (other than brief recognition in the literature review) physiological and ergonomic issues.

Work re-designs for job enlargement. There is an antidote to the experiences of ennui in workers called "job enlargement." Job enlargement was founded in the research of Hulin and Blood (1968), and it seeks to restore work passion, autonomy, and some increased work scope – incumbent on the managerial design of work and task (Hulin & Blood, 1968). There is significant research on both the benefits and collateral issues of the division of labor or specialization and the opposing theory of job enlargement and the need to redesign many jobs. Hackman and Oldham (1980) argue for job redesign for greater job enlargement and suggest that, without deliberate redesign of work for job enlargement/job satisfaction, there is often a disconnect between the work done by workers and their psychosocial health in their perspective and relationship with the work. "Lots of jobs are not so well designed. They demotivate people rather than turn them on. They undermine rather than encourage productivity and work quality. They aren't any fun." (Hackman & Oldham, 1980, p. ix). Hackman and Oldham's research is useful in assessing work responses before and after redesign and in planning these activities. Locke's (1976) research is useful in understanding how to design tasks and work for increased job enlargement, as he defines many of the requisite factors for experienced human satisfaction in response to work.

Cultural implication. There is little research found on the implication of culture (international culture) specifically on the appropriate balance of these opposing theories (i.e., division of labor versus job enlargement through work redesign). Hofstede (1984)

supports the need to include cultural considerations in international management and planning activities. Hofstede's research also includes literature on the cultural implication on perceived quality of life but this is more loosely associated with job satisfaction or enlargement (Hofstede, 1984). Susman's (1973) research built on Hulin and Blood's (1968) job enlargement research, and studied cultural implications on job enlargement across urban and rural settings in the United States (Susman, 1973). Wursten's (2008) research suggests that cultural dimensions are significant implications in outsourcing activities.

For this dissertation study, using one of Hofstede's six cultural dimensions, "individualism", operationalizes the limited "cultural" dynamic included in the study. This study compares worker's (participant's) responses to their personal individualism scores. If a significant difference appears between those with low individualism and high individualism scores, it would recommend a difference in the ideal amount of job enlargement and thus work scope for workers from the United States (91 mean individualism score) and workers from China (20 mean individualism score).

Job diagnostics. One of the surveys utilized for this research – the Job Diagnostics Survey (JDS), was designed as "part of a Yale University study of jobs and how people react to them. The questionnaire helps to determine how jobs can be better designed, by obtaining information about how people react to different kinds of jobs" (Hackman & Oldham, 1980, p. 276). The JDS instrument was designed to measure:

> 1) The objective characteristics of jobs, particularly the degree to which jobs are designed so that they enhance the internal work motivation and the job satisfaction of people who do them. 2) the personal affective reactions of

> individuals to their jobs and to the broader work setting. 3) the readiness of individuals to respond positively to "enriched" jobs – i.e., jobs which have high measured potential for generating internal work motivation (Hackman & Oldham, 1974, abstract).

Job diagnostics is thus a study of the work and worker relationship toward a consideration of redesigning the work for improved outcomes in motivation.

The Study

The aerospace industry has recognized human factors as contributing to errors and the inability to sustain performance. The literature supports employee or worker engagement as one countermeasure to a number of the human factors. The discipline of management continues to strive for increased performance. In achieving performance, the literature supports job satisfaction and engagement as important factors. To achieve worker engagement, there is a significant amount of literature to support arguments for a balance between work that is very prescriptive and specialized (i.e., division of labor) and work that is designed with autonomy and engagement of the worker (i.e., job enlargement). The literature review in this study supports a number of these basic assumptions in the area of management and industrial production. The research then studies the implication of individualism (i.e., individualism versus collectivism scalar ratings) on the ideal balance between the division of labor and job enlargement. The industrial objective of this study's outcome is to facilitate increased worker engagement through work designed for an organizational best fit based on the mean individualism scores. Academically, the inclusion of a cultural dimension (individualism) in the work

scope arguments contributes knowledge to the study and disciplines of management, organizational behavior, and international business.

Chapter Two – Literature Review

Introduction to the Literature Review

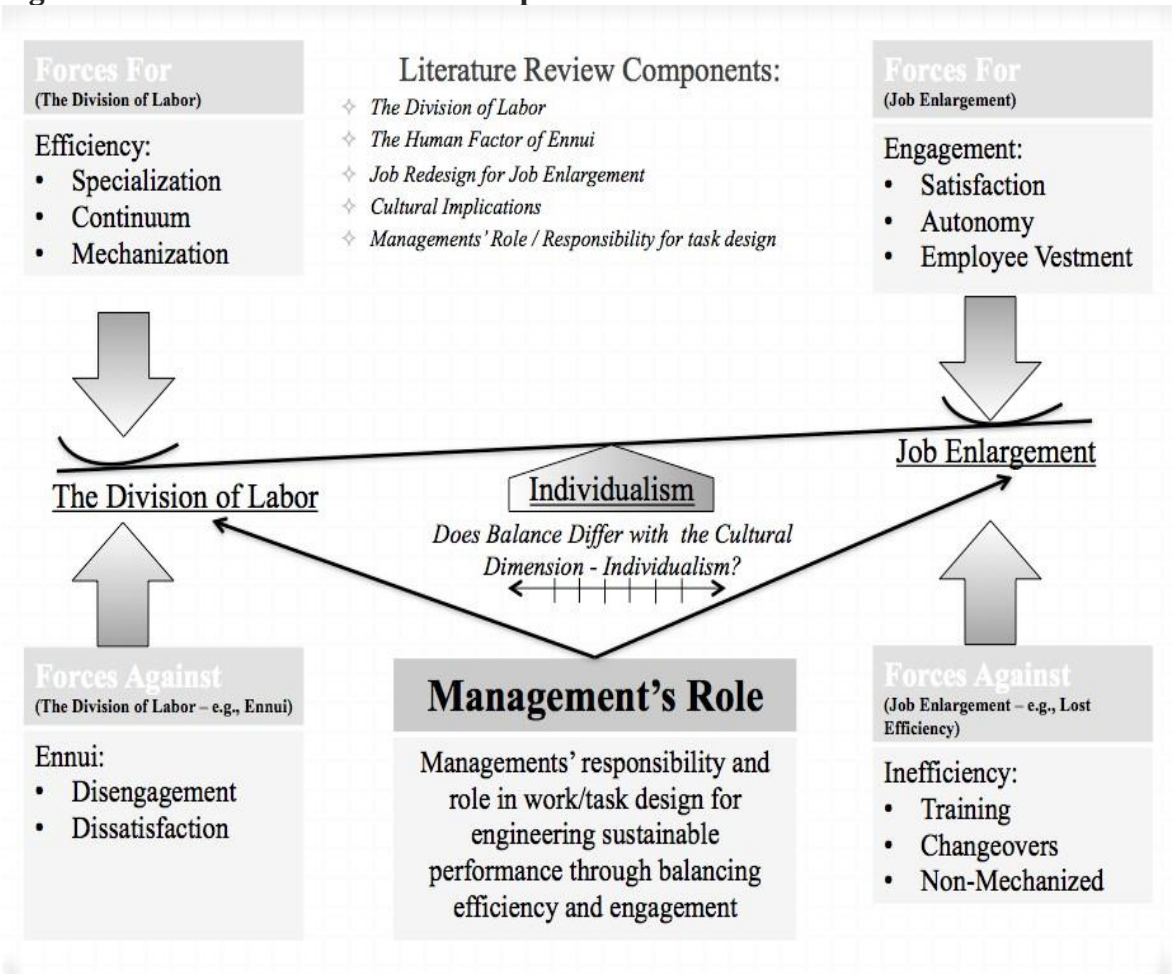
This research study originated from a desire to scope work and tasks appropriately to sustain worker engagement and realize sustainable performance, especially in industrial applications. The following literature review supports a correlation between employee engagement and resulting performance. In addition, the literature supports an increase in employee engagement in jobs with an appropriate degree of job enlargement and in which feedback is provided to the worker through either the job itself or through agents (e.g., supervisors or coworkers). There is a need for further research to determine if the existing research and literature on work scope and employee satisfaction/engagement are ubiquitous for workforces with a collectivistic bias as well as those with an individualistic bias. This study is set within the management discipline and considers the implication of the individualism/collectivism continuum (often generalized as "culture" within this study) on the balance between job enlargement and the division of labor. This study provides both an industrial and an academic application and is significant to the disciplines of management, organizational behavior, and international business.

The literature review explores the balance between the division of labor and job enlargement theories and the potential implication of individualism (a cultural dimension) in this balance. This balance and the potential need for the adjustments to respective cultures are considered as a responsibility of management. The literature review includes the management role or responsibility, as management designs and scopes work and tasks to facilitate the best balance between efficiency and engagement for sustainable job performance.

The literature review is divided into several sections that align with the constructs of the dissertation study, as depicted in Figure 1. The first section explores the division of labor and its benefits along with the associative contraindications that arise in repetitive work environments. The next section elucidates some of the collateral issues that persist in industries that have significantly deconstructed labor, including their effect on job satisfaction and engagement with resultant quality and performance sustainability issues. This section considers "human factors" and suggests that "fatigue" (a recognized human factor) should actually be "ennui" as a more holistic consideration of human endurance and performance. As a potential countermeasure, the third section of the literature review explores job enlargement as accomplished through altered task design. The fourth section reviews the cultural implications in the context of finding an optimized balance between the division of labor and job enlargement theories. The fifth and final section of the literature review considers management's responsibility in finding the balance in work scope, including cultural adjustments in international business including outsourcing and resourcing.

The literature review does not include consideration of the literature supporting the method/instrument utilized in this dissertational study, as a full background and support for the method are covered separately in "Section 3 – Methodology." Several specific references to the data collection instruments and administration and subsequent analysis are cited in this study, appropriately researched and credited, but are contained within the relevant sections of this study. The literature review is organized and executed as illustrated in Figure 1.

Figure 4. Dissertation Overview: Components of the Literature Review



This model illustrates the relationship of the various literature review sections as well as the overall purpose of this dissertation study.

The Division of Labor

The division of labor involves assigning tasks to different workers as they collectively accomplish a job or project in efforts of increased efficiencies. In the attempt to create efficiencies in the task division and assignments, some of the work is broken down into very minute tasks such as the standard work sheet process in lean manufacturing. The "standard work sheet" is a tool that illustrates the division of labor

and efficiency efforts. Norman Bodek is a consultant and author who has interpreted and documented a number of the Japanese "gurus" theories and results in the Toyota Production System and lean manufacturing. Bodek describes the standard work sheet as:

> Standard work sheets precisely show all of the tasks of a job including walking, and the time necessary for each task. They also show the sequence of tasks, jigs, and tools needed, and the location of stock….Standard work sheets detail the motion of the operator, the sequence of the operations, and how long it takes to do each task…(Bodek, 2004, p. 178).

The Toyota Production System and lean manufacturing principles in today's manufacturing environments exemplify the division of labor principle in action (Sugimori, Kusunoki, Cho, & Uchikawa, 1977). While popularized by some successful companies (e.g., Toyota and others who have implemented lean manufacturing) and by the lean manufacturing methodologies, the division or deconstruction of labor is a management theory that has been around for a long time.

The management concept of the division of labor predates Henry Ford, Frederick Taylor, Frank and Lillian Gilbreth (i.e., the scientific management theory), and other significant contributors to productivity achieved through the division of labor and motion and time studies. Schumpeter suggests that the division of labor and the resultant increase in productivity is so logical and obvious, that it is prescientific and "it is absurd to point to such sentiments in old writings as if they embodied discoveries" (Schumpeter, 1954, p. 9). This statement included references to Adam Smith, who wrote extensively on the subject of the division of labor [ca. 1776] in his works on economics (Smith, 1776/1993). Foley (1974) suggests that Adam Smith rooted his theories in the works of

the ancient Greeks (e.g., Plato and Xenophon), but McNulty (1975) details differences in the systems of Plato and Smith. Irrespective, the concept of the division of labor is suggested in Plato's writings. McNulty (1975) and Evers (1980, p. 46) note that the Platonic system is fundamentally societal economics, natural needs, stratification, and labor immobility; while Adam Smith conceptualizes capitalism and advocates productivity over worker well being. Adam Smith was not only the founder of capitalism but is also considered a primary research source on the division of labor. Foley's (1974) research is a viable source for understanding the contributions of Adam Smith and Plato and is an example of the age and evolution of the theory of division of labor and specialization. Foley also supports the idea that the division of labor predates the scientific management theories, because the theory is included in the research and writings of Adam Smith and the Greeks (e.g., Plato and Xenophon). Adam Smith (chronicled by Foley) was very instrumental in advocating, researching, and recording the idea of dividing work into small and specialized tasks. Adam Smith postulated three primary benefits of dividing work into smaller and more specialized tasks (Foley, 1974, p. 222; Gilbreth, 1912, p. 11; Smith, 1776/1993).

Smith's first principle or explanation is the increase in dexterity (e.g., experience, skill, and consequential rate of work) in specialized workers or "specialization." When workers or companies create specializations, they become more skilled and efficient at the reduced work scope and the aggregate result produces increased efficiencies. An example of this principle is seen in the research of Amin (2000, p. 158) as he relates experience in the leather tanning industry and notes that companies found great efficiencies in the division of labor by utilizing local leather tanners and skilled sub-

contractors in specializations as opposed to fully vertically integrated tanning companies. There are fewer training and increased skill levels involved if the worker has less to learn in specialization accomplished through the division of labor to specific tasks.

Smith's second explanation is the time saved by changing from one task to another, allowing work "continuation" or "continuum" (Foley, 1974, p. 222). By keeping workers focused on one task, the continuum of productivity realizes reduces the time involved in starting, stopping, and setting or cleaning up. Many companies still embrace the continuum of tasks as efficiency. The management at Toyota (utilizing the Toyota Production System) also considers the time between tasks as waste but Toyota has developed systems to shorten the set-up or down times between productions allowing lesser inventories (Sugimori, Kusunoki, Cho, & Uchikawa, 1977, p. 556). Even with the shorter setup/down times, Toyota still recognizes the break in the continuum as wasted potential, supporting Adam Smith's principle.

The third principle or explanation of Adam Smith in the division of labor is the invention of machinery or "mechanization" (Foley, 1974; Smith, 1776/1993). Church (1916, pp. 457-461) speaks of the purposeful use of equipment as "that of even, uniform service" and speaks of the division of tasks and time and motion studies as applicable to labor and machines. Adam Smith defines the useful qualities of machines as those that "facilitate and abridge labor" (Smith, 1776/1993). The division of labor facilitates mechanization by assuring that each job (i.e., multiple tasks involved) is understood to the smallest singular task, thereby allowing the mechanism of the discrete or singular task, singular motion, or energy required to perform that task.

Miroslav Volf, also credits Adam Smith and Plato with foundational theories involving the division of labor and credits Karl Marx with varying views on the human and social implications that result from the worker's lost autonomy (Volf, 2001, Chapter 2). Adam Smith sounds almost like theorists that came years later (e.g., Frank Gilbreth or lean manufacturing teaching of present day) as he famously describes the division of labor by detailing the work of a pin maker:

> To take an example, therefore, from a very trifling manufacture, but one in which the division of labor has been very often taken notice of: the trade of the pin maker. A workman… could scarce, perhaps, with his utmost industry make one pin in a day, and certainly could not make twenty. But in the way in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire, another straights it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on is a peculiar business, to whiten the pins is another; it is even a trade by itself to put them into the paper. And the important business of making a pin is, in this manner, divided into about eighteen distinct operations…(Smith, 1776/1993, Chapter 1).

In summary, the three explanations of Adam Smith are as follows: First, the division of labor allows specialization, assigning expertise and training efficiency to achieve maximized production outputs. Second, the division of labor allows a continuum of productive output that is not subject to delays in changing to a different task. Third,

the division of labor facilitates mechanization and thus improves efficiency (over the unaided human effort) in rate, capability, and continuum of production outputs.

Karl Marx differed from Adam Smith in the psychosocial impacts and wrote of the human element involved. Karl Marx believed machinery, when fully automatic rather than just a tool or aid, switched places with the worker and the worker began serving it as an alien power (Marx, 1939/1993 [authored in 1858], Notebook VI, p. 693). This can be illustrated by the need for workers to program machines and computers, and to enter data into a system – activities upon which industry has become fully dependent. Babbage (1835) suggests that mechanizing work requires tasks be defined and structured for machinery, as machinery is naturally very specialized. Some machines merely produce power while others convert power to a force and execute a very specific work or production (Babbage, 1835, p. 16).

Irrespective of the division of labor existing before Adam Smith (Schumpeter, 1954), and Adam Smith acknowledging the division of labor in the early Greeks (e.g., Plato and Xenophon), Adam Smith and Karl Marx left a legacy in their writings that provided a baseline for Henry Ford, Frederick Taylor, Frank and Lillian Gilbreth, and others. Church (1916) specifically credits Adam Smith for his contribution to the division of labor as foundational to subsequent theorists and theories including industrial systems, scientific management, and time and motion studies (Church, 1916, p. 467).

The scientific management theory was built on the foundation of Adam Smith. Taylor (1914) introduced scientific management and embraced the idea that workers are inherently prone to do less, even though there is a given that doing more would benefit both employer and employee. Taylor suggested the use of methods such as incentivized

piecework, lines pacing the worker, and records and quotas as means to motivate employees and increase production. The scientific management was also referred to as "task management," which was derived from a key principle. This task management concept included the idea that all work would be pre-planned and detailed in work instructions. Frederick Taylor improved efficiencies by conducting experimental research in the steel industry, defining further structure in management, which included responsibility for tasks, and conducting task specific time studies. Taylor specifically built upon the specialization and expertise (Adam Smith's first principle), and writes:

> …by a subdivision of labor; each act of each mechanic, for example, should be preceded by various preparatory acts done by other men. And all of this involves, as we have said, "an almost equal division of the responsibility and the work between the management and the workman."…Perhaps the most prominent single element in modern scientific management is the task idea. The work of every workman is fully planned out by the management at least one day in advance, and each man receives in most cases complete written instructions, describing in detail the task which he is to accomplish, as well as the means to be used in doing the work (Taylor, 1914/2012, p. 16).

Frank and Lillian Gilbreth were also significant researchers in the scientific management theory and found improved efficiencies through a slightly different approach of studying the motions involved. The Gilbreths believed that time studies served to increase a worker's pace but that the actual timesaving was accomplished through reduced motion within each task. Additionally, Frank and Lillian Gilbreth suggested machinery necessary to measure efficiencies (Gilbreth & Gilbreth, 1916). Closely aligned with

Adam Smith's second principle of continuum, Frank and Lillian Gilbreth eliminated unnecessary motions, interruptions, and multi-tasking and found the fastest and easiest means of conducting a task (Gilbreth, 1912).

Henry Ford empirically tested and employed the division of labor in the assembly line as a manufacturing and management methodology. Ford assigned each worker a defined place and specific (usually singular) task, resulting in increased efficiencies. Ford also utilized the division of labor to break larger work scopes into specific tasks to mechanize work (Adam Smith's third principle), and notes that a press operated by one man who does nothing else, produces five times the work of 12 men manually performing the task (Ford & Crowther, 1922, Kindle Location 1403). Ford describes the division of labor as, "dividing and subdividing operations, keeping the work in motion—those are the keynotes of production" (Kindle Location 1403).

Coriat (2000) proposes that the Toyota Production System or the "Ohno System" (named for Taiichi Ohno or Ono) and "Taylorism" (named for Frederick Winslow Taylor and sometimes used to identify the scientific management system) both include tasks carried out by the line workers that are "fragmented, highly repetitive, and carried out at a rapid pace" (p.220). Both systems also utilize time and motion studies for efficiencies but Coriat describes the differences in the systems:

> …the "American system" is based on fragmentation of tasks, with monitoring of line workers at their workstations and fixed-rhythm assembly lines. Conversely, as we shall see, the Toyota (or more broadly "Japanese") system is based on despecialization and on the attribution of multiple tasks to line workers organized in teams on the principle of "time sharing" (p.220).

Coriat (2000) postulates that the "Ohno System" defines and deconstructs work into known and prescriptive tasks but engages workers for quality and continuous improvement, thereby granting them some purpose and autonomy. Coriat is suggesting that the Taylor system (and its followers) use specialization to facilitate expert performance of a difficult task, while the Ohno System works to simplify each task so there is no expert needed and task rotation is possible. There is a difference between task rotation and job rotation. Frequent job rotation can imply insecurity and a lack of vestment of the employee and does not equate with psychological satisfaction (Isaksson, 1990). Drucker suggests that this is a popular but misguided effort, and does not create true cross-training (Drucker, 1954, p. 186). Instead of two persons who can be both engineer and accountant, the result is an engineer or accountant specialist with only a small understanding of another discipline. On the other hand, task rotation can help minimize the adverse effects of tasks with significant tedium (Herzberg, 1987). Ono (1988) declares that the Toyota Production System goes beyond the historical push for efficiency, as:

> …today a production system aimed at increasing lot sizes (for example, operating a die press to punch out as many units as possible within a given time period) is not practical. Besides creating all kinds of waste, such a production system is no longer appropriate for our needs (Ono, 1988, p. 2).

While the emphasis on efficiency inclusive of the division of labor and specific task identification and isolation has remained a viable part of management, the Toyota Production System and lean manufacturing systems have adapted to lower batch and inventory sizes. The concept of continuum has been adapted to quick changeovers,

facilitating short down times, but allowing diversity of product and function with efficiency. There is thus continued evolution in the theory of the division of labor within the management discipline.

Summarizing the history and entrenchment of the division of labor in production systems, the efficiencies that the scientific management system and the Toyota (or Ohno) Production System realized, were built on the three principles of Adam Smith: specialization, continuation, and mechanization. The result realized in management systems is in assembly lines and production environments and even extends into industries such as healthcare (Radnor, Holweg, & Waring, 2012). The historical interest in the division of labor with continued utility in present management speaks to the value of the principle, and the Toyota production system and lean manufacturing principles exemplify adaptations of a management theory of significant longevity.

The concept of unique individuals creating something as artisans without the division of labor is not practical in industrial and production applications. There is enough research and empirical evidence to support the many benefits of the division of labor, and Adam Smith's three explanations model supported mass production and were foundational to the Industrial Revolution. Today, some adaptation is evident as companies seek flexibility and low inventory levels versus a continuum of production, but the concept of divided labor is still viable.

Contraindications and Collateral Issues – Ennui

The aerospace industry has growing consideration of "human factors" as causative to errors and safety issues. Human factor considerations are explored in

aviation accident investigations and the aerospace manufacturing industry is also exploring how human factors can be involved in quality issues. Wiegmann and Shappell (2012) have researched aviation errors (accidents) related to human error, concluding that there is a need for more research and experts on human factor(s). GE Aviation (General Electric) now conducts training in manufacturing units and their supply chain in human factors (personal experience, 2014). There are 12 recognized or classic human factors: (1) lack of communication, (2) complacency, (3) lack of knowledge, (4) distraction, (5) lack of teamwork, (6) fatigue, (7) lack of resources, (8) pressure, (9) lack of assertiveness, (10) stress, (11) lack of awareness, and (12) norms (DuPont, 1997; Salas, Jentsch, & Maurino, 2010, p. 666). The literature on human factors includes fatigue as one of the currently designated "dirty dozen" human factors significantly discussed in aviation. Reiman and Pietikäinen (2012) studied human factors in safety; they begin by listing the dirty dozen human factors that have been attributed to error (including fatigue), and suggest that these contribute to safety issues and thus they counter each with a factor they believe addresses the safety issue (Reiman & Pietikäinen, 2012, Table 1, p.1995). For fatigue, the countermeasure they propose is "vigilance and energy," which suggests a continuum of physical engagement. Fatigue implies a physiological state and human endurance condition, limitation, or expiration. There is not currently much in the literature that addresses psychological or emotional fatigue among the human factor considerations. This seems to be a gap in the literature or perhaps a missing human factor/sub-factor, as the consideration of ennui implicates enervating stimuli as causal, and suggests actions focused beyond just physical rest remedies targeted at physiological fatigue as remedial. The implication of psychological fatigue and ennui is supported by

the literature but has not had due separate consideration within this study of human factors. Research does show mental fatigue as a collateral issue of the assembly line model or work with significant repetition (Wyatt & Frazer, 1929; Walker & Guest, 1952). There is opportunity for further research on the inclusion of ennui as a human factor.

Some issues, present in environments of divided labor and mechanized or repetitive work are, lack of job satisfaction or work passion, inadvertent or deliberate errors, and lack of creativity or invention. Several reasons for these issues occur with each of the Adam Smith categorical explanations. Associated with specialization is a lack of some autonomy because the end production result is a shared accomplishment and can have a less significant association with work passion and job satisfaction (Hulin & Blood, 1968). The division of labor can also potentially reduce creativity and invention, as within specialization the individual worker may not have knowledge of the full design and/or construction of the product.

Continuum of tasks (especially where very specialized and repetitive) presents other challenges of ennui (e.g., tedium, boredom, fatigue, enervation, lassitude, and monotony) associated with poor job satisfaction, work passion, and quality. Ennui is most likely to occur where the division of labor has reduced the worker's autonomy and work scope. Vodanovich (2003) illustrates the relationship between ennui and the division of labor (Adam Smith's specialization) and the repetition of tasks (Adam Smith's continuum) by listing a few traditional definitions of boredom:

> …unique psychophysical state that is somehow produced by prolonged exposure to monotonous stimulation (O'Hanlon, 1981, p.54 as cited in Vodanovich, 2003, p.569).

> …boredom occurs when stimuli is construed as subjectively monotonous (Hill and Perkins, 1985, p.237 as cited in Vodanovich, 2003, p.569)
>
> …a sense of inadequate stimulation from the environment (DeChanne and Moody, 1988, p.20 as cited in Vodanovich, 2003, p.570)

Vodanovich (2003) suggested that these and other attempts to explain boredom have some variation in their definitions. Whether concomitant or causal, jobs (like assembly lines) where the task is repetitive exhibit issues of monotony, tedium, and boredom (i.e., ennui). While the purpose of Vodanovich's research was to attempt a measurement model for proneness to boredom, his research is significant in showing some loss of job satisfaction and autonomy in jobs that have few stimuli to counteract the eventuality of ennui. Vodanovich's literature helps to support the fact that environments such as assembly lines can breed ennui. Linhart (1981) had a number of descriptions of the assembly line that illustrate the presence of lassitude and ennui. Describing the assembly line itself, and the mental fatigue or tedium of the overall assembly line, Linhart writes:

> Being caught up in the line, the imperturbable gliding of the cars, the repetition of identical gestures, the work that's never finished. If one car's done, the next one isn't, and it's always there, unsoldered at the precise spot that's just been done, rough at the spot that's just been polished. (Linhart, 1981, p. 16-17)

Linhart also describes the resulting toll of the repetitive task:

> I calculate. One hundred and fifty a day. Two hundred and twenty days a year. At this moment, at the end of July, he must be more or less at his thirty thousandth. Thirty-three thousand times a year he has made the same movements. While people went to the movies, chatted, made love, swam,…thirty-three

> thousand 2 CV car shells have moved by in front of Moulaud since September, so that he can solder thirty-three thousand times the same gap five centimeters long, and each time he's picked up his tin, his torch, his little stick. (Linhart, 1981, p. 139)

Smith (1981) suggests that there are stimulus factors (e.g., repetition, monotony, and lack of variety), that generate boredom, and then there are coping strategies that are symptomatic of boredom (e.g., daydreaming, withdrawal, exploration, and restlessness). Smith's research would also support the conclusion that monotonous and repetitious environments can be associated with undesirable implications. The symptoms (daydreaming, withdrawal, exploration, and restlessness) can have implications for job satisfaction, quality, productivity, longevity/turnover, and ultimately suggest a likely degradation of work performance.

One suspected manifestation of issues resulting from repetition is that of ergonomic and physical harm (Christmansson, Fridén, & Sollerman, 1999). In experimentation, design changes were implemented in tasks to aid in ergonomic considerations and provide autonomy and variety but the studies had mixed results. The significant finding was not substantial ergonomics and safety improvements but that there was an improvement in autonomy and job satisfaction. Because job dissatisfaction is often noted within the consideration and scope of ennui, the work by Christmansson et al. does support the idea that the task design changes that reduced repetition improved interest and satisfaction in the job.

Taylor and Bain (1999) researched call centers and likened the work to that of an assembly line. The calls were often about the same thing (repeating topic), and the

repetitiveness, monotony, and fatigue fostered ill moods and sometimes resulted in acting out (page 109-110). The tasks were simple and easy, and thus like an assembly line; a lot of the issue was the repetition without autonomy.

It is not just laborers that can suffer from ennui but educated and professional roles can also be affected. Culverhouse, Williams, Reguera, Herry, and Gonzalez-Gil (2003) studied discrimination accuracy in tedious and repetitious conditions by analysis of scientists' accuracy in repetitious micro-marine specimen visual identifications. Fatigue and boredom were determined to be causal in human performance errors (Culverhouse, Williams, Reguera, Herry, & Gonzlez-Gil, 2003, p. 18). Culverhouse et al. (2003) compared machine to human accuracies, in an attempt to move away from the human attentiveness dependence.

History also supports the presence of collateral issues of repetitive tasks and ennui. During the Industrial Revolution, the human element became a replaceable commodity and the workers were pushed for throughput and/or were replaced without much regard for job satisfaction or engagement. At some point in the worker's career, biological aging reduced their productivity through physical and psychological exhaustion and they no longer met the fixed capacity to work. The concept of retirement gained traction under the "wear and tear" theory (Atchley, 1982, p. 269).

Henry Ford built an assembly line that offered people higher-paying jobs and created a repeatable and economical product for the consumer (Ford & Crowther, 1922). Employees did not have to learn how to build an entire car, and each task had practice through repetition, reducing the learning curve. The early assembly lines delivered efficiencies but the efforts were plagued with quality issues (Buzacott, 1990). The

implementation and era of the "Taylor System" (i.e., scientific management theory) realized great productivity results but negatively impacted quality (Juran & Riley, 1999, p. 5.4).

Deming was instrumental in changing thinking to include rework and scrap as inefficiencies, and thus began a movement called Total Quality Management or TQM (Deming, 1986). The TQM model began to revolutionize the way of thinking about efficiency and then Toyota improved on significant portions of Henry Ford's vision as they found efficiencies and mistake-proofing in the Toyota Production System (Shingo, 1989). Juran and Riley (1999) explain the quality planning process that was coming into the industry. In this structure, flow-charting of sequential operations and control plans for processes were integral to the reduction of waste. Since the assembly line of Henry Ford, the design of tasks has improved in quality considerations but the tasks are still rife with opportunities for ennui because, there is repetition, monotony, and an overall lack of employee engagement. Quality and safety issues are often present in jobs that have specialization and continuum with resultant ennui. Juran and Riley (1999) suggested that there are both inadvertent and conscious types of errors.

Considering inadvertent (associated with disengagement and distraction) error, Juran and Riley (1999) posit that employees who experience monotony may mentally disengage from their work or be easily distracted, as the job seemingly no longer requires their full attention in execution. Juran and Riley suggest either reducing the dependence on human attention (e.g., error proofing, automation, and robots) or addressing the environment and task design (e.g., job rotation, sense multipliers, overlays, etc.). Shingo

(1989) also suggests reducing dependence on human attention through error proofing and that Toyota is evidence of this philosophy.

Bruursema, Kessler, and Spector (2011) and Goldthorpe (1966) studied the conscious errors or deliberate deviations from the defined process and drew direct correlations between boredom and counterproductive actions and behavior, including sabotage and product damage. Ambrose, Seabright, and Schminke (2002) addressed intentional errors and sabotage but as resulting from job dissatisfaction more than boredom. They theorized that employees accomplished a process of coping through deliberate and deviant actions to address an underlying dissatisfaction with a perceived alignment of justice. In many cases, deviation from process controls or errors may be deliberate but not deviant. Workers may try to add interest, creativity, or continual improvement into their jobs to mitigate psychological ennui. Fisher's (1993) research suggests that workers will seek additional stimulation when bored and they seek autonomy where they have no license in task design, work environment, and culture. Additionally, the workers may exert some creativity at the wrong times. For example, when repeatability is required in production quality/consistency – innovative workers may seek an outlet to an enervating situation and integrate unwanted variance. Kishida (1977, as cited in Fisher, 1993) refers to "subsidiary behaviors" (e.g., mental game playing, singing, and talking to others). It is of concern when the "subsidiary behavior" is a deliberate task alteration potentially resulting in errors. Overall, it is apparent that specialized labor in continuum is a stimulus for ennui, and can cause issues with job satisfaction and the quality of workmanship of the resulting production or service.

Mechanism of tasks (the third of Adam Smith's categorical benefits of the division of labor) aligns with several issues, including reduced job satisfaction or work passion and ennui, including the resulting issues associated with disengagement. Peter Drucker (as cited in Noble, 1979, p. 117) says, "What is today called automation is conceptually a logical extension of Taylor's scientific management." Noble (1979) suggests that Frederick Taylor attempted to transfer some responsibility or autonomy from the worker to management. Taylorism or scientific management theory took the need for significant thought and creativity away from the worker and management planned the work. Noble suggests that automation and mechanism help accomplish this. In metal cutting, machinists used to read a drawing, develop a plan, and then turn knobs and levers to translate a design or vision into a physical or tangible reality. Under computer-controlled automation, the worker merely serves or facilitates the machine that executes the work, much like Karl Marx predicted in "serving the alien power" (Marx, 1953/1993, Notebook VI, p. 693). Noble's (1979) research supports that the actual control and creativity in metal cutting machinists, moved from the worker to programmers (often a more technical position that influences multiple machines), leaving the worker without creativity or autonomy outlets. Rosenthal (1982) purports that machinists have been divided into levels of skill sets with workers that program and those that operate. The machines accomplish "management expectations: the use of 'tape time' to set rates, the deskilling of machine operators, and the elimination of pacing" (Rosenthal, 1982, p. 125). Frederick Taylor defines pacing throughout his work as "soldiering" (Taylor, 1914/2012). What has happened through mechanism, in reality, is that the deskilling of operators has not become fully possible (Noble, 1979, p.126;

Zicklin, 1987), but has changed the requirements or qualifications of workers (Bright, 1960; Jones, 2000, Chapter 46). The classification of machinists who only operate the machines may experience a dearth of autonomy and may not have as ready an outlet for creativity and innovation (Rosenthal, 1982). In addition to the work satisfaction and quality implications, mechanism presents social aspects that are opportunities for further research in order to assure that qualified workers are available and kept engaged for job satisfaction and idea creation.

In summary, there are a number of contraindications or collateral issues accompanying the division of labor that merit further study. Quality and other issues are often present in jobs that have specialization and continuum with resultant ennui. A few of these issues include: Poor quality (Juran & Riley 1999; Culverhouse, Williams, Reguera, Herry, & Gonzalez-Gil 2003), a loss of creativity and innovation including possible attrition (Rosenthal, 1982), safety and ergonomic issues (Christmansson, Fridén, & Sollerman, 1999), and various other "human factor" issues contributing to safety and error proneness (Wiegmann & Shappell, 2012; Reiman & Pietikäinen, 2012). Among the most significant areas meriting further research, are the need and methods for instilling autonomy, interest, and passion into tasks to reduce ennui, error, and other issues that may result.

Job Enlargement and Work Design

Job enlargement can be an antidote or countermeasure to the division of labor. The goal of job enlargement is to give the employee a larger work scope, more autonomy, and more visibility to the project in entirety versus just isolated tasks (Hulin & Blood, 1968). Hulin & Blood (1968) introduced job enlargement, as a balance or counter

to the labor division and specialization models. The added job enlargement counters some of the effects of ennui through increased autonomy, decision-making, and added scope into the creation of work and task design to facilitate passion, engagement, and satisfaction. Redesign of work scope can positively affect employee behaviors, morale/job satisfaction, and job performance (Griffin, 1991). Buzacott (1990) notes that psychologists stress advantages in increased task scope, specifically to counter boredom and monotony (page 826).

Gosline (2007) addresses means of countering boredom through work environment enrichment and new activities and suggests that boredom can become almost debilitating if not addressed. Oldham and Hackman's (2010) research suggests that the future of job design must consider social aspects and employees' ability to craft or influence their own work design. Gemmill and Oakley (1992) also suggest that work and task design can cause boredom (they also address the seriousness of boredom) but suggest more of a social and psychological intervention. Reiman and Pietikäinen (2012) list tools and examples that are controllable by management, and are both programmatic improvements and metrics to ascertain the effectiveness of countermeasures. A number of the suggested programs are recognizable antidotes for fatigue or boredom that engage employees in a meaningful way.

There is some difference among individuals in the extent of autonomy and job enlargement needed to provide satisfaction, engagement, and performance (Steers & Spencer, 1977). Fisher (1993, p. 9) suggests that the amount of influence of task design on ennui (specifically on boredom) will vary by individual. Suggested factors involved include intelligence, personality, and mental health. The implication is that some

personalities are influenced less by repetition and lack of autonomy than others are. Fisher indicated that the tedium to boredom rate varied from individual to individual, and that intelligence was one of the factors suggested to cause variation. There is also research to suggest that the employee response to enriched work correlates with the specific worker's need for growth or drive to grow in their career (Oldham, Hackman, & Pearce, 1976). As a counterpoint to Fisher (1993), in the case of Culverhouse et al. (2003) studies, scientists became victim to ennui in ways similar to those that affect assembly workers, as suggested by other literature. The Culverhouse et al. scenario suggests that educational level may not counter stimuli to ennui. Fisher (1993) does not suggest that individuals are not influenced by task design but rather that they will be influenced by greater or lesser stimuli and to differing extents. Fisher also conducted studies on task design and resultant boredom and found that there is another variable. Fisher concluded that not only simple and repetitive tasks were causal to boredom, but also workplace environments can cause boredom. Within management-controllable prevention or countermeasures, task design should thus also consider work environments and workplace culture. It is important to research task design within the appropriate organizational contexts (i.e., work environment and work place culture) (Roberts & Glick, 1981).

The scientific management movement seemingly chose either to power through or to ignore the human factors and collateral issues (e.g., ennui). Frank Gilbreth was asked and answered:

> Q. Does not the monotony of the highly specialized subdivision of work cause the men to become insane?

> A. No, he will not become insane, for if his brain is of such an order that his work does not stimulate it to its highest degree, then he will be promoted, for under Scientific Management each man is specially trained to occupy that place that is the highest that he is capable…(Gilbreth, 1912, p. 53)

In working to recommend how management can best design an appropriate work scope for worker engagement and job satisfaction, Locke (1976) approaches task design in a holistic manner toward realizing job enlargement. Locke defines work as more than just a task or accumulation of tasks but as a science that requires design for employee satisfaction and continued performance. Locke notes that job satisfaction factors directly include consideration of fatigue and monotony and his research includes an understanding of basic job dimensions. Instead of planning a repetitive task and expecting ongoing satisfaction, Locke outlines some cautions on the planning of work:

> A job is not an entity but a complex interrelationship of tasks, roles, responsibilities, interactions, incentives, and rewards. Thus a thorough understanding of job attitudes requires that the job be analyzed in terms of its constituent elements…The typical job dimensions that have been studied by previous investigators include…work, pay promotions, recognition, benefits, working conditions, supervision, coworkers, and company and management (Locke, 1976, pp. 1301-1302).

Each of these typical job dimensions has a definition, two of which are significant to this topic:

> Work: including intrinsic interest, variety, opportunity for learning, difficulty, amount of chances for success, control over pace and methods, etc.
>
> Working Conditions: such as hours, rest pauses, equipment, temperature, ventilation, humidity, location, physical layout, etc. (Locke, 1976, p. 1302).

In defining these job dimensions, Locke clearly countered the repetition and lack of autonomy of the assembly line. Ennui includes dis-satisfaction, and Locke outlined task or work design that assures autonomy as a key for job satisfaction. Ennui may not be holistically management-controllable, but task design, considerate of the dimensions that Locke presents, is within the area of influence for managers and leaders.

Cultural Implications

One of the significant factors involved in work passion/engagement is a worker's perspective on their work and the relationship of the work to their quality of life. There are cultural factors that affect how people may view the same task and/or vary this perspective. Hofstede (1984) studied work-related value patterns across cultures and found that there were differences among cultures in the definitions of the quality of life related to their work. Some cultures more strongly associate their career status or job level with job satisfaction than other cultures (Huang & Van de Vliert, 2004). Huang and Van de Vliert's research found that career status and job level more significantly correlated with job satisfaction in individualistic countries than in collectivistic countries. They even found that job level negatively correlated with job satisfaction in collectivistic countries in jobs that provided reduced opportunities for workers to utilize their skills and abilities. They suggest that Locke's work (e.g., Locke, 1976) may be less relevant (or not

relevant) in some collectivistic cultures as it builds on the requisite components of job satisfaction in individualistic cultures. There can be some other sub-culture or micro-cultural differences as well. Susman (1973) studied the cultural implication in job enlargement in different sub-groups within the United States, representing rural and urban workers, and found differences even among these samples from the same country. Oldham and Hackman's (2010) research suggests that organizational features relate to job characteristics. This is important to consider in international culture, as organizational features certainly differ by culture. Alexander's (1975) research addresses the issue of how certain cultures' authoritarian management styles affect job enlargement, job enrichment, and worker autonomy. The literature supports the idea that cultural differences affect how the worker perceives a task in relation to their well-being and job satisfaction.

There is not a lot of current research that compares employee responses to job dissatisfaction/negative stimuli between workers in China and the United States. There is support for the fact that globalization has actually accelerated the division of labor:

> In the last few decades, the world has witnessed a vast and accelerating increase in the fragmentation (also called decomposition, unbundling, or modularization) of production activities. This means the production of goods and services is no longer organized in vertically integrated hierarchical companies located in one country. Corporations increasingly break their activities into smaller, discrete modules and outsource or offshore them (Breznitz & Murphree, 2011, p. 14).

There is also research that supports that leadership and interpersonal relationships have differing effects on workers with respect to culture. Earley (1989) conducted a comparative study between American workers (managers) and Chinese workers (managers) working individually and in groups. He found that there was some "social loafing" or reduced efficiency per worker when the American managers were assigned to work in groups. Their efficiency decreased within group efforts compared to when the managers were working alone. The Chinese workers saw no negative effect when assigned to groups, and in most cases actually increased in productivity in the group setting. Lok and Crawford (2004) studied the effects of organizational culture and leadership styles on job satisfaction and commitment in samples of Australian and Hong Kong managers. This research found significant differences in responses respective to the culture, with the Australian sample having higher mean scores on all variables. The researchers had to adjust for some cultural/perspective differences and found that leadership styles had positive effects on both cultures, but with a greater effect on the Australian sample. They also found some other factors that aligned uniquely to one culture or the other in the effect on job satisfaction and organizational commitment. Tenure and age had a more significant correlation with job satisfaction on the Hong Kong manager sample than it did on the Australian sample. Overall, the Lok and Crawford (2004) research supports the idea that job satisfaction is potentially influenced by different factors (or at least at different levels per factor) in different cultures. Shanks et al. (2000) also compared Chinese and Australian samples in attentiveness to detail, and found that the Chinese had greater focus on technical issues and training than the Australian sample and the Chinese management wanted greater confidence going into

projects (ERP systems implementations) of outcomes – thus demonstrating less acceptance of uncertainty which corresponds with a Hofstede cultural dimension (Hofstede, n.d.).

There is some research that supports the effect of certain leadership exchanges and/or perceived choice/options effect on performance in Chinese workers. Additionally, negative influences are shown to have effect. Hui, Law, and Chen (1999) studied various employee responses relative to negative affectivity and performance outcomes in a Chinese sample / case. They studied leader member exchange (LMX) and its ability to affect in-role [job] performance. They defined in-role [job] performance as work behaviors within prescribed formal job roles. They defined extra-role [organizational] performance as behaviors beyond the formal job roles, and operationalized this behavior as organizational citizen behavior (OCB). They found that LMX had a significant effect on both OCB and in-role performance. They also found that employees who perceived favorable external job opportunities/climate had a lower tendency toward extra-role (OCB) behaviors but that this perception did not have significant effects on in-role performance (p. 14). They also found that negative affectivity had a negative effect on LMX, but a positive effect on the employees' perceived job mobility (favorable external job opportunities/climate) (p. 15).

Management's Role and Responsibility in Scoping Work

A couple of significant considerations in determining the management role in the balance between the division of labor and job enlargement toward improving job satisfaction are: (a) determining whether job satisfaction is related to sustainable job performance, and (b) determining whether management is responsible for work design in

the first place. If a manager/leader is responsible for insourcing, outsourcing, or cross-culture management, the scope of management responsibility necessarily includes the cultural considerations.

There is significant literature that considers the relationship (e.g., correlation and causality) between job satisfaction and job performance (Abdel-Halim, 1980; Iaffaldano & Muchinsky, 1985). Ronznowski and Hulin suggest that this literature is very comprehensive: "Job satisfaction…has been around in scientific psychology for so long that it gets treated by some researchers as a comfortable 'old shoe,' one that is unfashionable and unworthy of continued research…" (Roznowski & Hulin, 1992, p. 124). The literature supports arguments for job satisfaction as a major cause of job performance (Cherrington & Lynn England, 1980; Judge, Bono, Theresen, & Patton, 2001; Judge, Hulin, & Dalal, 2012; Porter, 1969) and against (Brayfield & Crockett, 1955; Iaffaldano & Muchinsky, 1985; Wright & Staw, 1999). Brayfield and Crockett (1955) conclude that job satisfaction does not imply motivation for performance, but also suggest that the worker motivation and company measures of performance are often not aligned. Hackman and Oldham's (1980) research supports the idea that a large reason that some research does not support the cause-and-effect relationship between satisfaction and performance, is the fact that the worker does not receive feedback on performance. Interestingly, the relationship between satisfaction and performance is reciprocal, and several models actually demonstrate that improved performance yields higher job satisfaction in non-stimulating jobs (Baird, 1976; Judge et al., 2001, Figure 2). Part of the explanation for this, is that good performance in a job can actually be an effective motivator or stimulus in otherwise non-stimulating jobs and job enlargement has a

positive influence on quality (Lawler, 1969). This suggests that the aspect of job enlargement that provides performance feedback to the worker is essential. Overall, job satisfaction does cause job performance, but satisfaction is also dependent on performance feedback. There are both mediators and moderators that are determinates in the effect that performance has on satisfaction and that satisfaction has on performance (Judge et al., 2001, Figure 2). This dependency (and the reason that some studies do not support the idea that job satisfaction affects job performance) is rooted in expectancy theory and the arousal of motives (Vroom, 1964). Motivation can be a management responsibility, because in addition to biological orientations; there are cultural and situational determinants (Maslow, 1943, p. 371). Management can create a culture that aligns expectations and provides feedback. Workers will experience less job satisfaction when they do not know how well they are performing (Hackman & Oldham, 1980). Management's role is thus less about making employees satisfied and more about assuring feedback and designing the work scope.

In determining if management has responsibility for job or task design, Frederick Winslow Taylor credits the scientific management theory with the idea of managers' design of work through the consideration of tasks (Taylor, 1914/2012, p. 39). Other research would suggest that Taylor designed tasks and performance standards but does not design in job satisfaction as the division of labor and specialization removed autonomy. Locke as well as Hackman and Oldham's research suggests that there are a number of management controllable factors involved in designing jobs (beyond just performance standards and feedback) that provide satisfaction (Hackman & Oldham,

1980; Locke, 1976). Performance motivation typically has more than one motivation (Maslow, 1943, p. 370).

Managers attempting work redesign are not without obstacles (Sirota & Wolfson, 1972; Campion, Mumford, Morgeson, & Nahrgang, 2005). A few of these obstacles elucidated by Campion et. al. (2005), include "complications from individual differences" (p. 377) and "job enlargement occurring without job enrichment" (p. 379). When a job is enlarged (i.e., job enlargement) and the scope of work is increased to grant autonomy and involvement, but motivation is not achieved – the "job enlargement occurring without job enrichment" can actually have a adverse effect on the workers' morale. Some job demands (e.g., enlargement) on the worker, grant autonomy and help the employee gain information and decisions to execute the job. Other demands can actually detract the employee from the job execution, as they are required to focus on the additional demands. The enlargement that helps execute the task is positively associated with employee engagement, while detracting demands are negatively associated (Crawford, LePine, & Rich, 2010). This suggests that work redesign requires monitoring after change to ensure that the desired effect is achieved.

In addition, managers must be cautious in their approach. Formal work measurement has been found to cause job dissatisfaction. When workers are monitored and measured to productivity standards and defined task performance as the division of labor and the scientific management theory would advocate, the employees may disengage and/or experience morale issues (Sirota & Wolfson, 1972). When management studies a worker to determine job satisfaction and the job enhancement

results from job enlargement, the actual observation and measurement can affect morale and performance.

Summarizing the Literature Review

In summary, the literature demonstrates a correlation between employee engagement and resulting performance. Employee engagement is linked to employee satisfaction and this satisfaction stems from a number of stimuli that are not necessarily limited to monetary compensation. The literature links employee satisfaction and engagement to involvement in decision making and receipt of feedback about the outcomes of the employees' work. This stimulus is defined as jobs with an appropriate degree of job enlargement and feedback provided to the worker. Careful design and feedback mechanisms are vital to the success of job enlargement, or it can result in increased frustrations due to worker experiences of increased work and required decision-making in ambiguous circumstances with little feedback on the outcomes. Overall, some degrees of direct feedback and involvement in decisions (autonomy or job enlargement) are shown to have a positive effect on morale and job satisfaction, with resulting performance (sustainable performance) benefits.

The research also supports the legacy and efficacy of effectively dividing work into specialized tasks that are both discreet and prescriptive, thereby gaining efficiency through specialization, continuum of productivity, and the propensity to mechanization. The Industrial Revolution and the scientific management theory are evidence of efficiencies realized through assembly lines and other forms of divided labor. The counter indications and collateral implications of this division of labor though, can be

work that is enervating and resulting in experienced ennui. This ennui phenomenon results in a lack of sustainability for some of the efficiencies that the division of labor provides.

The literature highlights the continual tension between the job enlargement and division of labor theories and suggests a necessary balance. Both of these theories continue to have significant research done through multiple disciplines of study (e.g., management and industrial/organizational psychology). The literature supports management's responsibility for designing work and task scopes for success and sustainability. Historically (e.g., Henry Ford's assembly line and others) workers were pushed through imperfect environments and realized expirations on the worker performance. To achieve sustainable performance (e.g., productivity, quality, and safety), management must address the work scope (environment) versus just addressing the worker's immediate behaviors and capabilities.

The Gap and Opportunity for Research Identified in the Literature Review

There is a need for further research to determine if the findings of existing research and literature on work scope and employee satisfaction/engagement are ubiquitous for workforces with a collectivistic cultural bias and those with an individualistic cultural bias. The literature identifies culture as significant in employee engagement and job enlargement endeavors, including all of the Hofstede cultural dimensions (Hofstede, 1984). This research study addresses one of these, the cultural dimension of individualism versus collectivism. Specifically, this research is the study

of this dimension's implication on workers' (discrete and collective) biases toward certain work scopes and job enlargement.

The academic contribution of this study is the inclusion of this cultural dynamic in the division of labor versus job enlargement research discussions. The results of this study will help to determine the ubiquity of the work scope research to countries and cultures defined with a high mean individualism bias and those with a low mean individualism bias (i.e., collectivism). If this research study proves the researcher's hypothesis that there is a significant difference, this will be a significant contribution and finding. Conversely, if this research study disproves the research hypothesis that significant differences are associated with a cultural bias toward individualism, then this finding extends ubiquity to the literature on work scope balances. This research study is thus significant to the disciplines of management, industrial / organizational psychology, organizational behavior, and international business, irrespective of the research outcomes.

The researcher's hypothesis is that there is a significant difference in ideal work scopes relative to cultural individualism bias. Accordingly, the industrial objective of this study's outcome is to facilitate increased worker engagement through work designed for an organizational best fit based on the mean individualism scores. If the hypothesis is proven, the industrial contribution of this study is a recommendation to adjust work scope to the mean individualism bias of the target workforce for optimally sustainable performance. If the hypothesis is disproven, the industrial contribution of this study is a resulting recommendation supporting an organization's ability to outsource, insource, or otherwise move work scopes irrespective of that country and culture's individualism bias.

Regardless of this research study's outcome, this study is a significant contribution to industry especially in international business.

Chapter Three – Methodology

Research Purpose

The industrial purpose of this research is to determine if there is a positive relationship and/or significant difference between participants aligned with a high individualism bias versus those with more bias toward collectivism, in the participants' (e.g., workers') responses to job enlargement/job satisfaction questions. A significant difference would suggest that management should consider this difference and adjust the requisite work scope and design (more or less prescriptive/more or less autonomy) to the target country or culture's mean individualism bias (score), to keep employees engaged for sustainable performance and work outcomes. As an example, Hofstede's research shows the United States mean individualism score is 91, while the China average individualism score is 20 (using Hofstede's 100-point scale), suggesting that China is more of a collective society while the United States is a more individualistic society (Hofstede, n.d.). In this example, a significant difference found in this study would suggest that the same work scope might not be optimal for industry in the United States and China.

The academic purpose of this study is to determine the cultural implication of individualism in the arguments for job enlargement and resulting job satisfaction and employee engagement. The importance of optimizing employee engagement is supported by the findings in the literature that suggest that increased employee engagement is associated with sustainable performance (e.g., productivity, quality, and safety).

The purpose of this study is to provide a practical contribution to industry, as well as to achieve an academic contribution to the literature on job enlargement and

management theories. This study utilizes quantitative methods to study the implication of the cultural dimension of individualism in the balance between job enlargement (e.g., autonomy) and the division of labor (e.g., prescriptive task detail) toward employee engagement and/or satisfaction. The quantitative methodology employed compares scalar survey responses for a significant difference. This study utilizes a new data sample – specifically, aerospace component manufacturing workers.

Research Questions/Hypotheses

There are three hypothesized research questions that this study answers through quantitative analysis of scalar responses to the survey questions administered to participants from aerospace component manufacturing workers. The research hypotheses in this study (as noted in the research questions) are that there is a significant difference in the responses about work scope and job enlargement associated with the respondent's cultural individualism bias. The research will either support this hypothesis, which is significant; or it will find that there is not a significant statistical difference. If no significant difference is found, this also is a significant finding because it supports ubiquity of many job enlargement and management theories irrespective of the mean individualistic bias of the country or culture.

4) Research Question/Hypothesis I (R1 or H1): There is a positive relationship between a worker's (e.g., respondent's) individualism score and their motivating potential score (MPS) such that those who are higher in individualism, will also have a higher MPS score.

5) Research Question/Hypothesis II (R2 or H2): There is a positive relationship between a worker's (e.g., respondent's) individualism score and their engagement (characterized by their job interest, pride in job accomplishment, and work orientation) such that those higher in individualism, will have a higher level of engagement.
6) Research Question/Hypothesis III (R3 or H3): There is a positive relationship between a worker's (e.g., respondent's) individualism score and their perceived job characteristics identified as ideal (characterized by their growth needs strength), such that those higher in individualism will have a higher overall growth needs strength.

Instrument Methods

A survey with scalar numeric choices is administered to participants in aerospace component manufacturing companies. The survey is a compilation of several accepted instruments. The workers complete a survey with several parts (both for this study and to provide utility to future studies):

1) A section of the survey is a series of questions that determine the participant's individualism (a cultural dimension) orientation or bias (Triandis & Gelfand, 1998, Table 2).
2) A section of the survey includes questions on a social desirability scale that may be used in future research, or as needed in this study as a covariate in the analysis to control for concerns of data skewed by the participant's fear of social reprisal (Reynolds, 1982).

3) A section of the survey includes measures of engagement, job enlargement, and job attitude (Susman, 1973).

4) A section of the survey is designed for job diagnostics toward redesign (Hackman & Oldham, 1974; Hackman & Oldham, 1980, Appendix A).

5) The only addition by the researcher is a section that collects additional control factors (e.g., demographics).

Data Collection and Participants – Selection and Sample

The data collection occurs within the year of 2017, and all surveys occur within a period not greater than one year (12 months) from each other. Hackman and Oldham procedures offer guidance for the administration of the surveys (Hackman & Oldham, 1980). Due to geographical distances, the administration is not all executed personally by the researcher, but the researcher personally trains the administrators. The individual responses are kept confidential, but the overall results/findings are shared with the participating corporation(s). The results of the survey may present other human resource or social opportunities to the participating corporations, and they may use the data for purposes quite different from the design of this research. For the purposes of this study, the researcher collects no funding or consulting monies. Additionally, the researcher assures confidentiality is maintained, and only provides the survey results to the corporations in exchange for a commitment of no retaliatory actions on the survey participants.

The targeted participants for this study are identified with the help of the local management at each company, based upon their primary job function's relevance to this

study. The companies (or divisions of the company) are selected based on association with work scopes relevant to this study. The selection of departments and workers within these companies is accomplished through relationships and permissions afforded to the researcher. In spite of this method of solicitation, the result is extended to the overall population of aerospace manufacturing industry workers as the companies are reputed to be typical. The survey is made available on a voluntary basis. A truly random selection process in the industry is not possible, because there is no unlimited access to the industry workers except through solicited company permissions.

The companies involved are asked to allow the employees to put their names in a drawing to incentivize the participants. The companies also receive a report (with circumspect protection of anonymity) of the survey results and consequently offer a lunch for those taking the survey to encourage participation. The researcher provided incentives are distributed by means of a drawing, and the prizes are listed as budgeted and planned in Table 1 to an extended cost to the researcher of US$1,840. To determine the winners, the researcher filters the survey responses for the "Yes" response to the participant's individual choice to be included in the drawing. All participants in the drawing have a random number assigned by MSExcel (=RAND()). The random numbers are sorted from highest to lowest, and prizes awarded with highest value prizes to the highest numbers. In total, 62 participants have prizes awarded out of the entire population.

Table 3

Participation Incentivization Schedule

Prize	Quantity	Price/Value	Extended Cost
iPads	2	$470	$940
Amazon Gift Cards	30	$20	$600
Amazon Gift Cards	30	$10	$300

Note. Each participate can choose to be entered for a chance to win a prize, with the number of prizes shown.

This study represents workers in companies specific to the manufacturing of aerospace components (aerospace industry), and performing actual manufacturing or assembly operations, or complementary support functions. In the sample, the workers may be assigned to work on or produce a product for new commercial aviation, new military aviation, spare parts production, or authorized repair / refurbishment of products. Two companies are participators in the study:

- Company A is from Wales (United Kingdom) and manufactures various parachute and cargo restraint components involving (among other things) netting and fabrics with machine work, sewing, assembly, manual labor, and other.
- Company B is from Washington State (United States) and manufactures various structural, lighting, and trim plastic components for the aircraft interiors with machine work, assembly, manual labor, and other.

A total of 144 workers are participants involved in the study. A filter applied to the results screens out surveys that were not complete or have data omissions. Additionally, any results with a job category selection, “I am a manager or from Human Resources testing the program” are omitted. The total of actual surveys used in the study is thus reduced to n=131.

This sample is represented as follows:

- Country/Company:
    - The company in Wales (*n*=31)
    - The company in the United States (*n*=100)
- Gender:
    - Male (*n*=73)
    - Female (*n*=58)
- Race:
    - Caucasian/White (*n*=59)
    - Black/African American (*n*=2)
    - Hispanic/Latino (*n*=21)
    - Asian (*n*=2)
    - Native American (*n*=1)
    - Not Defined or Apparent in the Answer (*n*=46)
- Age:
    - 22-29 (*n*=22)
    - 30-39 (*n*=28)
    - 40-49 (*n*=30)
    - 50-59 (*n*=39)
    - 60 and/or over (*n*=12)
- Education (highest achieved):
    - Less than High School (*n*=9)
    - Some High School (*n*=12)
    - High School Graduate (*n*=45)

  - Some College Not Related to Job (Not Business or Technical) (*n*=11)
  - Some College Related to Job (Business or Technical) (*n*=29)
  - Business or Technical Degree involving 2-year/associate (*n*=9)
  - Bachelor Degree, 4-year (*n*=11)
  - Professional or Advanced Degree, Masters or Higher (*n*=5)
- Tenure with Company:
  - 1 year or less (*n*=20)
  - 2-5 years (*n*=44)
  - 6-10 years (*n*=26)
  - 11-15 years (*n*=16)
  - 16-20 years (*n*=11)
  - 21-30 years (*n*=11)
  - >30 years (*n*=3)
- Responses to Stability at Company:
  - "My position is temporary per my employer, so I am looking elsewhere for employment presently" (*n*=5)
  - "I am looking elsewhere, as I am not currently satisfied that my current employer/position is the best situation for me" (*n*=8)
  - "I would like to stay with my current employer, but am looking at other positions currently as I am dissatisfied" (*n*=23)
  - "I am not currently looking to change roles or employers unless my employer has a better position they offer me" (*n*=95)
- Responses to "Why I took the Survey:"

    - "I asked to take it because I wanted to give feedback so my company continues to improve" (*n*=39)
    - "I took it for a free lunch and/or entry in a drawing" (*n*=40)
    - "My manager or company asked if I would voluntarily take it (*n*=51)
    - "My manager or company forced me to take it (mandatory) (*n*=1)
- Job Classification:
    - Advanced Operator (assist Engineering/Troubleshoot for Production) (*n*=2)
    - Assembler (assembly with or without power tools) (*n*=12)
    - Inspector (inspect, sort, or grade) (*n*=11)
    - Logistics (forklift or warehouse work) (*n*=2)
    - Manual Labor (handwork other than assembly) (*n*=19)
    - Operator (operate machinery to manufacture product) (*n*=45)
    - Other Support Role (*n*=28)
    - Programmer or Data Entry (repetitive computer work) (*n*=6)
    - Technician (use, setup, or repair equipment) (*n*=6)
    - HR/Manager testing the system (excluded, *n*=N/A)
- Language
    - Survey taken in English (*n*=144, reduced to *n*=131 after mortality)
    - Survey taken in Simplified Mandarin Chinese (*n*=0)

Research Design and Rationale

In this study, the research questions are answered through several employed instruments and scales. The instruments are not altered in a way that requires validating their collective use as a new or varied instrument; rather, they are used independently and are sequentially appended to become a single survey (as perceived by the research participants). The instruments are selected to support the variables and answer the research question(s) and in the analysis and findings the collective results support the overall research purpose.

The first instrument (Appendix 1) is a survey (questionnaire) developed for studying perceptual job enlargement as a dependent variable. This survey was developed by Gerald Susman and was originally used to study job enlargement differences between rural and urban workers (Susman, 1973). In this study, the same instrument is employed utilizing a different sample, and for a study of individualism implications.

The second survey (Appendix 2) assesses job satisfaction with intentional assessment toward the redesign of the scope of work as a dependent variable. Richard Hackman and Greg Oldham (Hackman & Oldham, 1974) developed this survey(s), and the survey as well as the survey purpose and instructions are published and fully explained in *Work Redesign* (Hackman & Oldham, 1980). This is a two-part survey design, with the first part administered to the workers (Appendix 2), and with the second part completed by the supervision or management of the same job descriptions/roles (Appendix 3). A section is added to collect some demographical and other information for control variables (e.g., race, age, indigenous culture, immigration, tenure). Note that the supervisor portion is not directly part of this study but some comparative references are included in the discussion.

Additionally, the survey includes a scale to identify the participant's individual bias toward either individualism or collectivism as the independent variable (Appendix 4). This survey is a Cultural Orientation Scale from the research of Triandis and Gelfand (Triandis & Gelfand, 1998, Table 2). This scale further aligns individual responses into categories of: vertical individualism (VI), horizontal individualism (HI), vertical collectivism (VC) and horizontal collectivism (HC). The 16 questions in the survey, are not titled (within the survey as administered) deliberately to mask the headings or categories, but during analysis, these are considered under the respective four categories.

Due to considerations of power distance and saving face (i.e., considerations of social desirability response patterns), it is possible that respondents could skew data due to concerns of reprisal. A social desirability scale is included in another/appended section of the survey as a covariate for analyses (Appendix 5). This scale (Reynolds, 1982) is used to assess the degree to which responses may be subject to social bias. The analysis then controls for effects of social desirability, thereby showing mean differences above and beyond the potential bias. This helps to determine whether the employees have an option to leave a job and/or move to a situation that better suits their desired conditions, or they feel that they "must like" the status quo. The social desirability scale (coupled with assurances of anonymity) works to determine if the employees have at least some degree of freedom of speech, and can answer honestly within the survey. In addition to the inclusion of a social desirability scale as a control factor of the research, when administering the survey, the participants are verbally asked if they can respond at liberty, or if there are incentives or duress that could bias their responses. If the participants suggest that these conditions exist, the data subject to influence of these

respective management/conditions are excluded from this study. There is full disclosure within this study for all motivations behind the participation (e.g., mandated, incentivized, or strictly voluntary).

The survey/questionnaire instruments used for the dependent variables in this study, involve the instruments of Susman (1973) and Hackman and Oldham (1974). The second research question is aligned with the Susman instrument, and the other two are aligned with the Hackman and Oldham instrument. The Triandis and Gelfand (1998) instrument appropriately categorizes the independent variable of individualism.

There is no portion of the Hofstede cultural dimensions study included in the survey; rather, Hofstede is utilized to operationalize "different cultures" in this study and/or illustrate between group (e.g., country/culture) differences. This study allows for the extension of the findings aligned to individualism versus collectivism (i.e., the Culture Orientation Scale [COS]) to the mean individualism score for the country/culture identified by Hofstede -- those geographically aligned with "high individualism" (example, United States – 91) versus those aligned with "low individualism" (example, China – 20) (Hofstede, n.d.).

The instruments utilized in this study, are done so with written permission from authors, Dr. Gerald Susman (obtained August 8, 2015) and Dr. Greg Oldham (obtained August 12, 2015) respectively. The Reynolds (1982) and the Triandis and Gelfand (1998) instruments are published and have precedent for use in other literature. Accordingly, no specific permissions are solicited to support the instrument use in this study.

The instructions for the administration of the Hackman and Oldham survey are included and fully explained in *Work Redesign* (Hackman & Oldham, 1980). To facilitate the geographical reach of the population studied, more than one person executes the administration of the surveys, but the primary researcher assumed the training responsibility for all administrators. The survey of workers is executed without the direct presence of their management, and anonymity is granted and assured to the respondents. The expected/average time commitment required for each participant to complete the survey is estimated in Table 2, and totals approximately 30 minutes per participant, and 10 minutes per participant for a smaller group of supervisors and/or managers.

Table 4

Estimated Participant Time Commitment

Instrument (Portion) of Survey	Time (minutes)	Target Participants
Job Enlargement Survey (Susman, 1973)	4	Workers engaged in the job
Job Diagnostic Survey (Hackman & Oldham, 1974/1980)	20	Workers engaged in the job
Job Rating Form (Hackman & Oldham, 1974/1980)	10	Supervisors and/or Managers of those performing the job
Culture Orientation Scale, (Triandis & Gelfand, 1998)	3	Workers engaged in the job
Social Desirability Scale, (Reynolds, 1982)	3	Workers engaged in the job

Note. In addition, an administrator's time is involved as instructed in *Work Redesign* (Hackman & Oldham, 1980).

The survey includes questions intended to help identify variables and/or moderators for this research and/or further research accomplished through analysis of the data from this survey. This includes ample descriptions (and/or control variables) from each participant (e.g., geographic location, tenure, gender, race/birthplace, etc.).

A significant consideration in planning the data collection involves the linguistic differences that could be present among the participants. The survey is translated from English into Simplified Mandarin (Chinese) as an additional option. The translation is validated in accordance with the Brislin translation procedures for multi-cultural surveys (Brislin, 1976; Brislin, 1986). An independent and qualified reviewer is employed to conduct an assessment of the translated wording to further prevent a language/translation influence on the data.

Method of Analysis

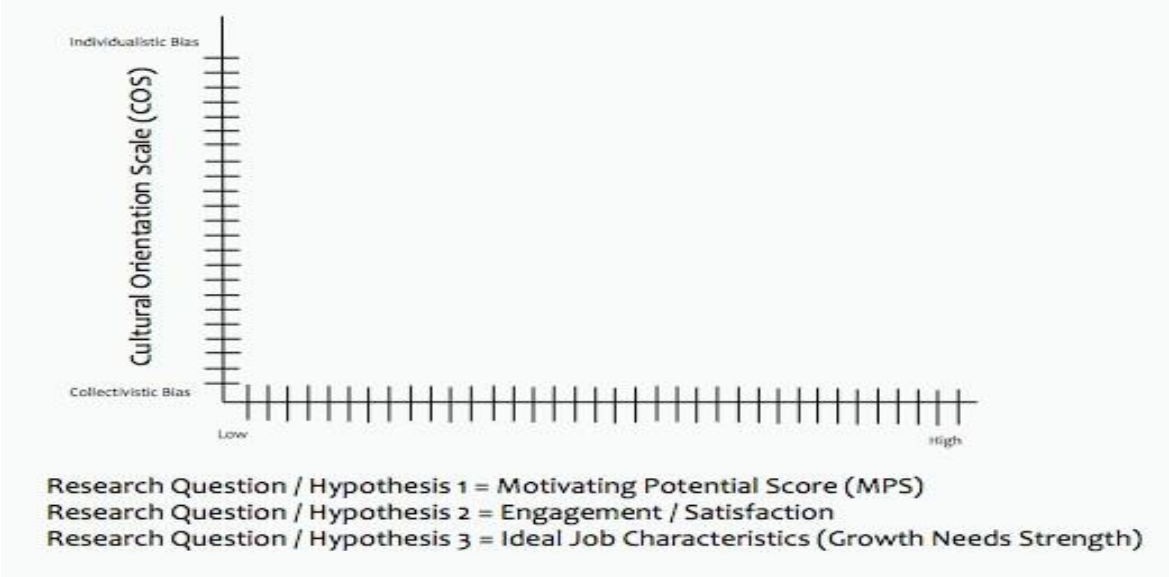
This is a quantitative study, and all of the survey questions are answered by selecting a scalar best-fit response. The survey is "forced responses" enabled to allow the participant only to move to the next question when a question is completed and has very few items designed as "write-in" responses that require interpretation and/or can be left with incomplete data.

To convert the responses to variables, in accordance with the instructions provided for the administration of the survey (Hackman & Oldham, 1980, pp. 303-306), variables are analyzed by combining questions by average, summation, or formulation to include multiple questions into a defined variable. Additionally, following these survey instructions, some questions require reverse score manipulation or conversion to different point scales to support statistical analysis.

The process for data analysis includes statistically testing for a positive relationship between the independent and dependent variables (using correlation analysis) such that a difference exists (using ANOVA) between the responses corresponding with the higher and lower individualism scores (e.g., independent variable). A depiction of the positive relationship assumed between the independent and dependent variables is shown in Figure 2. Statistical analysis is conducted separately for each research question. The independent variables (e.g., VC, VI, HC, HI individualism levels) hypothetically influence the dependent variables scores. A covariant of social desirability is employed with the second research question/hypothesis (R2 and/or H2) to control for considerations of undue influences on the participant. All scales used in the survey are analyzed for an acceptable ($\geq$.7) Cronbach's alpha score to test for reliability.

Figure 5

Model of Independent and Dependent Variables



Demonstration of hypothetical relationships between the independent and dependent variables.

A number of future research opportunities exist because of the data collected, but are not included in the scope of this study. A number of the demographic questions included in the survey, are collected as future variables for potential research. Analysis of the data includes some manual screening of the inputs. Surveys that have been completed incorrectly or incompletely to an extent that the inclusion would misrepresent the overall outcomes are excluded.

Ethical Research and Human Subject Safety Review

George Fox University's, Human Subject Review Committee is engaged throughout the research project to verify that the participants in the survey (and/or the hosting company) experience no harm resulting from the research or research participation. The researcher submitted an initial outline of the research, method, and participant's role to the committee for review (Appendix 5). All commitments to the purpose and use of data, the sharing of results, and participant anonymity are considered ethically binding on the researcher.

The access to survey participants is done through company/corporate permission. The process includes accessing the appropriate permissions obtained through a networking process, but also includes George Fox University and the Corporation's authorization.

In full disclosure, the researcher is employed by one of the participating companies. The researcher administers the surveys, and discloses to all participants that: A) the data is treated as anonymous, and the company management only sees the survey results and not individual data points, B) that the researcher is a manager in the company.

The survey is set up to be anonymous unless the person wants to participate in the drawing. If the participant wishes to participate in the drawing they include their name and contact information. The researcher could know who submitted the data in this case. To help minimize any issues with this, the participants are allowed to use only an alias and an address for where to send the prize (theirs or someone else's where they could receive it). The provision for prizes to be mailed to the alias at a viable address, assures they are not required to use a name for contact at the company. The researcher respects this confidence and utilizes the data as a whole, without any analysis of how specific individuals answered the questions. Due to the full disclosure, a few individuals may choose not to participate in the survey due to the researcher's employment at the company.

In full disclosure, the researcher assures (under the review of the dissertation committee) that no changes to the study are made to "fit the data." Multiple changes are made through the analysis process to clarify the process or better ask the research questions, but do not change the intention of the study. As an example, the hypothesis statement and research questions are combined for clarity, but this does not change the questions or the hypotheses.

Chapter Four – Analysis

Analysis of the Data

The individualism scale utilized is the Cultural Orientation Scale (COS), which is comprised of four categories: VI (vertical individualism), HI (horizontal individualism), VC (vertical collectivism), and HC (horizontal collectivism) (Triandis & Gelfand, 1998). For a total individualism score, the VC and HC responses are treated to reverse the scale, thus making the higher score the more individualist response. Once the scale adjustment is completed, the VI, HI, VC, and HC scores are added to make a total individualism score. Based on the nine-point scale, the highest score possible (most individualistic) is 144, and the lowest score possible (most collectivistic) is 16. Out of the entire sample size (n=131), the highest score is 91 and the lowest score is 31 with a 66.36 mean score

andard deviation). Some of the questions in the COS are measures of independent thought and desired autonomy, while others measure the self-centeredness of the individual in various work or family relationships. To better understand the individualism construct's implication in this study, seven different measures of individualism are included (Total score, VI, HI, VC, HC, VI+HI, and VC+HC) in answering the research questions/testing the hypotheses. The post-data discussion further elucidates the value in looking at these measures discretely in understanding the independent variable of individualism.

The part of the study most subject to considerations that respondents could skew data due to concerns of reprisal is the study of the second research question/hypothesis (H2), involving engagement and satisfaction (experienced psychological states). A social desirability scale is included in the survey as a covariate for analysis by multivariate analysis of covariance (MANCOVA).

The study of H1. The researcher's hypothesis is that there is a positive relationship between a worker's (e.g., respondent's) individualism score and their motivating potential score (MPS) such that those higher in individualism, will also have a higher MPS score.

The MPS is calculated by working the summations of certain questions in a formula (shown in Figure 3) in accordance with the instructions provided with the Job Diagnostic Survey (JDS) instrument (Hackman & Oldham, 1980, p. 306).

$$\text{MPS} = \left(\frac{\text{Questions about Skill Variety} + \text{Questions about Task Identity} + \text{Questions about Task Significance}}{3} \right) \times \text{Questions about Autonomy} \times \text{Questions about "Feedback from Job"}$$

Figure 6. Motivating potential score (MPS) adapted from Hackman & Oldham (1980, p. 306)

For this study, n=131 and a correlation study is tested to see if there is a positive relationship between individualism and MPS scores. Additionally, the study tests if there is a difference between "high individualism" and "low individualism." The following measures are included (as seen in the results and Table 3 and Table 4):

- Correlation of individualism total score (independent) and MPS (dependent) variables.
- ANOVA difference between group responses of individualism scores above the mean and those below the mean to MPS scores.
- Correlation of VI, HI, VC, and HC (independent) and MPS (dependent) variables.
- Correlation of only VI and HI (composite of individualism-biased questions) total (independent) and MPS (dependent) variables.

- Correlation of only VC and HC (composite of collectivism biased questions) total (independent) and MPS (dependent) variables.
- ANOVA difference calculated for the above and below mean groupings of any factor (total, individualistic only, collectivistic only, or VI, HI, VC, HC) that shows a significant positive relationship with the dependent variable.

The study of H2. The researcher's hypothesis is that there is a positive relationship between a worker's (e.g., respondent's) individualism score and their engagement (characterized by their job interest, pride in job accomplishment, and work orientation) such that those higher in individualism, will have a higher level of engagement.

A series of questions (the survey section shown in Appendix 1) by Susman (Susman, 1973) collected some information about job interest, pride in job accomplishment, and work orientation information. The study includes the results of the tests with the varied individualism independent variable factors and a covariant of analysis for social desirability bias, analyzed by multivariate analysis of covariance (MANCOVA). During the data analysis, the Susman questions does not pass a reliability test (should be $\alpha > .7$ and was $\alpha < .4$) using the Cronbach's alpha (α) test. Within the Job Diagnostic Survey (JDS) by Hackman & Oldham (Hackman & Oldham, 1974; Hackman & Oldham, 1980), there are defined questions that measure job satisfaction. The literature reviewed for this study support a strong correlation between job satisfaction and engagement. The mean scores of these job satisfaction questions (from the JDS) are thus included as a proxy study to answer the research question and validate the hypothesis. The JDS passed reliability tests with ($\alpha > .7$) using the Cronbach's alpha (α) test. A consideration for

social desirability (covariant) is included in the results of the study with individualism and job satisfaction using an analysis of covariance (ANCOVA).

For this study, n=131 and a correlation study is tested to see if there is a positive relationship between individualism and the dependent variables. Additionally, the study tests whether there is a difference between groups in the responses between the high individualism (above mean) and low individualism (below mean) in engagement/satisfaction. The measures included are (as seen in the results and Tables 5 and 6):

- Correlation of individualism total score (independent) and engagement (e.g., job interest, pride in job accomplishment, and work orientation) the (dependent) variables.
- ANCOVA difference between groups of Individualism scores above the mean and those below the mean to the dependent variable scores – with a covariant analysis for social desirability.
- Correlation of VI, HI, VC, and HC (independent) and the (dependent) variable scores.
- Correlation of only VI and HI (composite of individualism biased questions) total (independent) and the (dependent) variable scores.
- Correlation of only VC and HC (composite of collectivism biased questions) total (independent) and the (dependent) variable scores.
- ANCOVA difference calculated for the above and below mean grouping of any factor (total, individualistic only, collectivistic only, or VI, HI, VC,

HC) that shows a significant positive relationship with the dependent variable, with a covariant analysis of social desirability factor.

The study of H3. The researcher's hypothesis is that there is a positive relationship between a worker's (e.g., respondent's) individualism score and the job characteristics they perceived as ideal (characterized by their "combined growth needs strength), such that those higher in individualism will have a higher overall combined growth needs strength.

The "combined growth needs strength" (also referenced as "growth needs strength") is constructed of questions supporting both the "would like" and the "job choice" categories in the JDS survey. The combined growth needs strength score is calculated in accordance with the instructions included in the instrument (Hackman & Oldham, 1980, p. 306), using the data collected from this study. This data is the dependent variable, studied with individualism scores as the independent variable.

For this study, n=131 and a correlation study is tested to see if there is a positive relationship between individualism and the dependent variable (i.e., combined growth needs strength). Additionally, the study tests whether there is a difference between "high individualism" and "low individualism" in the answers included in the growth needs strength. The measures included are (as seen in the results and Table 9 and Table 10):

- Correlation of individualism total score (independent) and combined growth needs strength -- the (dependent) variable.
- ANOVA difference between groups of individualism scores above the mean and those below the mean to the combined growth needs strength (dependent variable) scores.

- Correlation of VI, HI, VC, and HC (independent) and the combined growth needs strength (dependent variable) scores.
- Correlation of only VI and HI (composite of individualism biased questions) total (independent) and the (dependent) variable scores.
- Correlation of only VC and HC (composite of collectivism biased questions) total (independent) and the (dependent) variable scores.
- ANOVA difference calculated for the above and below mean grouping of any factor (total, individualistic only, collectivistic only, or VI, HI, VC, HC) that shows a significant positive relationship with the dependent variable.

Results

The results of H1. In order to test this hypothesis, variables are subjected to bivariate correlation analysis to determine linear relationships as well as analysis of variance (ANOVA) to determine mean differences. Table 3 shows bivariate correlations and Table 4 depicts means and standard deviations of study variables for Hypothesis 1. As can be seen in Table 3, overall the relationship between individualism (independent variable) and MPS (dependent variable) is ($r = -.12$, $p = .18$), suggesting no support for the omnibus hypothesis test. In order to better understand this relationship, each dimension of the composite individualism instrument and the MPS instrument is examined at the dimensional level. As can also be seen in Table 3, this dimensional analysis yields mixed results. Specifically, MPS is positively correlated with horizontal collectivism ($r = .22$, $p < .05$) but not with any of the other individualism dimensions. It should be noted here that this correlation is not in the anticipated (e.g., hypothesized)

direction. The dimensional analysis of the MPS constitution also yielded mixed results as the significant linear relationships included the relationship between overall individualism and task identity ($r = -.24$, $p < .01$) and task significance ($r = -.22$, $p < .05$). It is important to note that these relationships are also not in the anticipated (i.e., hypothesized) direction. Finally, vertical collectivism is positively related to task significance ($r = .19$, $p < .05$) and horizontal collectivism is positively related to task identity ($r = .23$, $p < .01$) as well as task significance ($r = .27$, $p < .01$), again, not in the hypothesized direction.

In addition to linear relationships and in order to examine group level differences, the overall MPS and each dimension are subjected to an ANOVA analysis with two independent variable factors. The first factor is scores above the mean (more individualistic) and the second factor is scores below the mean (more collectivistic). Overall, results of the omnibus hypothesis test show no significant mean difference between those scoring higher (above the mean) in the individualism scores than those scoring lower (below the mean) ($M1 = 115.43$, $M2$ 129.76, $F = 1.62$, $p = .21$). However, the ANOVA with the collectivism composite (comprised of both vertical and horizontal collectivism) showed a meaningful mean difference, although not statistically significant by traditional cutoffs ($M1 = 111.06$, $M2$ 131.85, $F = 3.41$, $p = .07$). In addition to these tests it is also interesting to note a significant mean difference between those scoring higher/lower in the individualism composite on autonomy (an aspect of the MPS composite) ($M1 = 4.86$, $M2$ 5.28, $F = 4.44$, $p < .05$). Finally, there is a significant mean difference between those scoring higher/lower in the collectivism composite on task identity (an aspect of the MPS composite) ($M1 = 4.37$, $M2$ 5.04, $F = 11.04$, $p < .01$). In

reliability tests, both the MPS and the individualism scales are reliable with Cronbach's alpha (α) tests >.7.

Table 3 - Bivariate Correlations for Hypothesis 1

	1	2	3	4	5	6	7	8	9	10	11
1. Individualism											
2. HI	.54**										
3. VI	.55**	.44**									
4. VC	-.53**	.22*	.14								
5. HC	-.60**	.12	.07	.67**							
6. VI & HI	.67**	.84**	.85**	.21*	.11						
7. VC & HC	-.61**	.19*	.11	.92**	.90**	.18*					
8. MPS	-.12	-.07	.10	.11	.22*	.01	.17*				
9. Skill Variety	-.02	-.13	.11	-.02	.06	-.01	.02	.70**			
10. Task Identity	-.24**	-.15	-.01	.17	.23**	-.09	.22*	.53**	.41**		
11. Task Significance	-.22*	-.08	.02	.19*	.27**	-.03	.25**	.39**	.37**	.22*	
12. Autonomy	-.01	.01	.16	.09	.13	.10	.12	.80**	.56**	.46**	.33**
13. Feedback	-.06	-.12	.13	.05	.11	.01	.08	.78**	.46**	.27**	.14

* $p < .05$
** $p < .01$

Table 4 - Means and Standard Deviations for Hypothesis 1

	Mean	Std. Deviation
Individualism	66.36	14.14
HI	5.95	1.65
VI	4.58	1.69
VC	7.19	1.54
HC	6.74	1.38
VI&HI	5.27	1.42
VC&HC	6.97	1.34
MPS	122.65	64.62
Skill Variety	4.89	1.45
Task Identity	4.74	1.20
Task Significance	5.30	1.11
Autonomy	5.07	1.17
Feedback	4.52	1.27

N=131

The results of H2. In order to test this hypothesis, variables are subjected to bivariate correlation analysis to determine linear relationships as well as analysis of variance (ANOVA) to determine mean differences. Table 5 shows bivariate correlations and Table 6 shows means and standard deviations of study variables for Hypothesis 2.

As can be seen in Table 5, overall the relationship between individualism (independent variable) and engagement (dependent variable) is ($r = -.13$, $p = .14$), suggesting no support for the omnibus hypothesis test. In order to better understand this relationship each dimension of the composite individualism instrument and the engagement instrument is examined at the dimensional level. As can also be seen in Table 5, this dimensional analysis yielded mixed results. Specifically, engagement is positively correlated with vertical individualism (VI) ($r = .25$, $p < .01$) but not with any of the other individualism dimensions. The dimensional analysis of the engagement constitution also yielded mixed results as the significant linear relationships included the relationship between horizontal individualism and pride in job accomplishment ($r = -.18$, $p < .05$). It is important to note this relationship is not in the anticipated (i.e., hypothesized) direction.

In addition to linear relationships and in order to examine group level differences, the overall engagement and each dimension are subjected to several ANOVA analyses with two independent variable factors. On the first ANOVA analysis, the first factor is scores above the mean (more individualistic) on the composite of vertical (VI) and horizontal (HI) scores, and the second factor is scores below the mean (more collectivistic) on the composite of vertical (VI) and horizontal (HI) scores. Overall, results of the omnibus hypothesis test show no significant mean difference between those scoring higher (above the mean) in individualism scores than those scoring lower (below the mean) ($M1 = 4.21$, $M2$ 4.33, $F = 1.90$, $p = .17$). Also, the ANOVA with the collectivism composite (comprised of both vertical [VC] and horizontal [HC] collectivism) results of the omnibus hypothesis test show no significant mean difference

between those scoring higher (above the mean) in individualism scores than those scoring lower (below the mean) ($M1 = 4.27$, $M2$ 4.27, $F = .003$, $p = .96$).

In addition to these tests, multivariate analyses of covariance (MANCOVA) tests are conducted for between subject factors, and including a covariant of analysis for social desirability bias. On the first MANCOVA test, the independent factor is the composite of vertical (VI) and horizontal (HI) scores. Overall, results of the omnibus hypothesis test show no significant mean difference ($p = .85$) between those scoring higher (above the mean) in individualism scores than those scoring lower (below the mean). In the second MANCOVA test, the independent variable is the composite of the vertical (VC) and horizontal (HC) scores. Overall, results of the omnibus hypothesis test show no significant mean difference ($p = .20$) between those scoring higher (above the mean) in individualism scores than those scoring lower (below the mean).

Given the positive linear relationship between vertical individualism and overall engagement, this relationship is subjected to regression analysis controlling for the influence of social desirability to provide a more rigorous test of the relationship. Specifically, engagement is regressed on vertical individualism and social desirability and the results suggest that the hypothesized relationship remained significant [$R^2 = .06$, ($b = .25$), $p < .01$)]. In other words, vertical individualism predicts engagement while controlling for the effects of social desirability.

Table 5 - Bivariate Correlations for Hypothesis 2

	1	2	3	4	5	6	7	8	9	10	11
1. Individualism											
2. HI	.54**										
3. VI	.60**	.44**									
4. VC	-.53**	.22*	.14								
5. HC	-.60**	.12	.07	.67**							
6. VI & HI	.67**	.84**	.85**	.21*	.11						

7. VC & HC	-.61**	.19*	.11	.92**	.90**	.18*					
8. Engagement	.12	-.10	.25**	-.02	-.11	.01	-.07				
9. Job Interest	.04	-.11	.11	-.10	.00	-.00	-.06	.41**			
10. Pride in Job	-.01	-.18*	.12	.01	-.06	-.03	-.02	.61**	.39**		
11. Work Orientation	.14	.09	.15	.03	-.09	.14	-.03	.52**	-.38**	-.21*	
12. Social Desirability	.39**	.13	.20*	-.24**	-.33**	.19*	-.31**	.05	-.22*	-.11	.26**

* $p < .05$
** $p < .01$

Table 6 - Means and Standard Deviations for Hypothesis 2

	Mean	Std. Deviation
Individualism	66.36	14.14
HI	5.95	1.65
VI	4.58	1.69
VC	7.19	1.54
HC	6.74	1.38
VI & HI	5.27	1.42
VC & HC	6.97	1.34
Engagement	4.27	0.52
Job Interest	3.45	1.02
Pride in Job	4.47	1.23
Work Orientation	4.59	0.86
Social Desirability	2.91	0.84

N=131

In answering Hypothesis 2, the engagement scale utilized is from the Susman (Susman, 1973) questions as outlined in the survey instrument in Appendix 1. During the data analysis, the Susman questions does not pass a reliability test (should be $\alpha > .7$ and is $\alpha < .4$) using the Cronbach's alpha (α) test.

The literature reviewed for this study supports a significant correlation between job satisfaction and engagement. Due to the supporting literature, the mean scores from the job satisfaction questions included in the JDS (Hackman & Oldham, 1974; Hackman & Oldham, 1980), are included here as a proxy study to answer the research question and validate the hypothesis. The JDS passed reliability tests with ($\alpha = .71$) using the Cronbach's alpha (α) test. A covariant analysis consideration for social desirability is

included in the results of the study with individualism and job satisfaction using an analysis of covariance (ANCOVA).

In order to test the hypothesis by this proxy study, variables are subjected to bivariate correlation analysis to determine linear relationships as well as analysis of variance (ANOVA) with the additional covariant consideration (ANCOVA) to determine mean differences with/without the effect of social desirability. Table 7 includes bivariate correlations and Table 8 includes means and standard deviations of study variables for Hypothesis 2. As can be seen in Table 7, overall the relationship between individualism (independent variable) and the proxy job satisfaction (dependent) variable is (r = -.12, p = .17), suggesting no support for the omnibus hypothesis test. In order to better understand this relationship each dimension of the composite individualism instrument and the engagement instrument is examined at the dimensional level. As can also be seen in Table 7, this dimensional analysis yielded mixed results. Specifically, the proxy variable of job satisfaction is positively correlated with vertical collectivism (VC) (r = .21, p < .5), and with horizontal collectivism (HC) (r = .24, p < .01). It is important to note that this relationship is not in the hypothesized direction. The analysis of the covariant of social desirability is not significant in the individualism dimensions (VI and HI) but was negatively significant with vertical collectivism (VC) (r = -.24, p < .01), and with horizontal collectivism (HC) (r = -.33, p < .01).

In addition to linear relationships, and in order to examine group level differences, the overall job satisfaction and each dimension are subjected to several ANCOVA analyses with two independent variable factors, and with a covariant of social desirability. On the first ANCOVA analysis, the first factor is scores above the mean on

the composite of vertical (VI) and horizontal (HI) scores, and the second factor is scores below the mean on the composite of vertical (VI) and horizontal (HI) scores. Overall, results of the omnibus hypothesis test show significant mean difference between those scoring higher (above the mean) in individualism scores than those scoring lower (below the mean) (p=<.01). After controlling for the covariate consideration of social desirability, the result is still significant ($M1$ = 5.52, $M2$ 6.11, F = 11.55, p = .001).

The ANCOVA with the collectivism composite (comprised of both vertical [VC] and horizontal [HC] collectivism) results of the omnibus hypothesis test show significant mean difference between those scoring higher (above the mean) in individualism scores and those scoring lower (below the mean) (p=<.01). After controlling for the covariate consideration of social desirability, the result is no longer still significant ($M1$ = 5.59, $M2$ 6.00, F = 1.22, p = .27). In other words, individuals scoring higher in vertical (VC) and horizontal (HC) collectivism showed significant mean differences in job satisfaction but after controlling for social desirability, the mean differences became non-significant.

Table 7 - Bivariate Correlations for Hypothesis 2 (Proxy Test)

	1	2	3	4	5	6	7	8
1. Individualism								
2. HI	.54**							
3. VI	.55**	.44**						
4. VC	-.53**	.22*	.14					
5. HC	-.60**	.12	.07	.67**				
6. VI & HI	.67**	.84**	.85**	.21*	.11			
7. VC & HC	-.61**	.19*	.11	.92**	.90**	.18*		
8. Job Satisfaction	-.12	.02	.11	.21*	.24**	.08	.25**	
9. Social Desirability	.39**	.13	.20*	-.24**	-.33**	.19*	-.31**	-.39**

* $p < .05$
** $p < .01$

Table 8 - Means and Standard Deviations for Hypothesis 2 (Proxy Test)

	Mean	Std. Deviation
Individualism	66.36	14.14

HI	5.95	1.65
VI	4.58	1.69
VC	7.19	1.54
HC	6.74	1.38
VI&HI	5.27	1.42
VC&HC	6.97	1.34
Job Satisfaction	5.82	1.10
Social Desirability	2.91	0.84

N=131

The results of H3. In order to test this hypothesis, variables are subjected to bivariate correlation analysis to determine linear relationships as well as analysis of variance (ANOVA) to determine mean differences. Table 9 shows bivariate correlations and Table 10 depicts means and standard deviations of study variables for Hypothesis 3. As can be seen in Table 9, overall the relationship between individualism (independent variable) and growth needs strength (dependent variable) is (r = -.004, p = .96), suggesting no support for the omnibus hypothesis test. In order to better understand this relationship each dimension of the composite individualism instrument and the growth needs strength instrument is examined at the dimensional level. As can also be seen in Table 9, this dimensional analysis yields mixed results. Specifically, growth needs strength is positively correlated with horizontal individualism (HI) (r = .25, p < .01) as hypothesized, and horizontal collectivism (HC) (r = .18, p < .05), not in the hypothesized direction. There is not significant correlation with the other individualism dimensions.

The dimensional analysis of the growth needs strength constitution also yielded mixed results as the significant linear relationships included the relationship between horizontal individualism (HI) and "would like" (r = .19, p < .05) and job choice (r = .24, p < .01). "Would like" is positively correlated with horizontal collectivism (HC) (r = .26,

$p < .01$) and the collectivism grouping (VC and HC) ($r = .23$, $p < .01$), which is not in the hypothesized direction.

In addition to linear relationships, and in order to examine group level differences, the overall growth needs strength and each dimension are subjected to ANOVA analysis with two independent variable factors. The first factor is scores above the mean and the second factor is scores below the mean. The first ANOVA test utilized the collectivism grouping of results (VC and HC) as the independent variable. Overall, results of the omnibus hypothesis test show a meaningful mean difference between those scoring higher (above the mean) in the individualism scores than those scoring lower (below the mean), but not significant by traditional cutoffs ($M1 = 4.42$, $M2$ 4.70, $F = 3.12$, $p = .08$). In addition to this test, it is also interesting to note a significant mean difference between those scoring higher/lower in the individualism composite on "would like" (an aspect of the growth needs strength composite) ($M1 = 2.28$, $M2$ 2.84, $F = 8.39$, $p < .01$).

The second ANOVA test utilized the individualism grouping of results (VI and HI) as the independent variable. Overall, results of the omnibus hypothesis test show no significant mean difference between those scoring higher (above the mean) in the individualism scores than those scoring lower (below the mean) ($M1 = 4.49$, $M2$ 4.66, $F = 1.31$, $p = .25$). There are also no significant mean differences between those scoring higher (above the mean) in the individualism scores and those scoring lower (below the mean) in the aspects (i.e., would like and job choice) of growth needs strength.

Table 9 - Bivariate Correlations for Hypothesis 3

	1	2	3	4	5	6	7	8	9
1. Individualism									
2. HI	.54**								
3. VI	.60**	.44**							
4. VC	-.53**	.22*	0.14						
5. HC	-.60**	0.12	0.07	.67**					
6. VI & HI	.67**	.84**	.85**	.21*	0.11				
7. VC & HC	-.61**	.19*	0.12	.92**	.90**	.18*			
8. Growth Needs Strength	-0.00	.25**	-0.01	0.10	.18*	0.14	0.15		
9. Would Like	-0.01	.19*	-0.02	0.16	.26**	0.09	.23**	.91**	
10. Job Choice	0.16	.24**	0.02	-0.05	-0.04	0.15	-0.05	.68**	.31**

* $p < .05$
** $p < .01$

Table 10 - Means and Standard Deviations for Hypothesis 3

	Mean	Std. Deviation
Individualism	66.3	14.14
HI	6	1.65
VI	5.95	1.69
VC	4.58	1.54
HC	7.19	1.38
VI&HI	6.74	1.42
VC&HC	5.27	1.34
Growth Needs Strength	6.97	0.89
Would Like	4.58	1.14
Job Choice	2.59	0.77
N=131	3.84	

Chapter Five – Discussion

Discussion

The purpose of this research is to study the cultural dimension, "individualism," as a potential implication in the participants' (i.e., workers') responses to job enlargement/job satisfaction questions. A significant relationship between the variables or difference between groups (i.e., high/low on individualism scores) would suggest that management should consider this implication in work scope and design (more or less prescriptive/more or less autonomy) to improve employees' engagement in their work for sustainable performance and work outcomes. As an example, Hofstede's research shows the United States mean individualism score is 91, while the China average individualism score is 20 (using Hofstede's 100-point scale), suggesting that China is more of a collective society while the United States is a very individualistic society (Hofstede, n.d.). In this example, if this study would find significance of the individualism construct as an implication, it would suggest that the same work scope might not be optimal for industry in the United States and China, and should be adjusted with the mean individualism scores used as a predictor for a utilitarian (best for the greatest number) outcome.

The academic purpose of this research is to study the cultural implication of individualism in the arguments for job enlargement and resulting job satisfaction and employee engagement. The study outcomes add knowledge to the fields of: management, industrial and organizational psychology, organizational behavior, and international business. The importance of optimizing employee engagement is supported by the findings in the literature that suggest that increased employee engagement is associated with sustainable performance (e.g., productivity, quality, and safety).

A significant change that occurred during this research study is the origin of the sample. To provide the greatest intentional variance/assortment of the data, the targeted companies to study were in the United States (due to high likelihood of some individualistic data relative to the mean score of 91) and in China (due to high likelihood of some collectivistic data relative to the mean score of 20) (Hofstede, n.d.). The researcher received no participation from China, but observed a significant spread in the individualistic versus collectivistic scores from the data received. Because there is an individualism scale included in the study, and the study is not "China versus United States," it is possible to carry out the research with the data collected. Certifications for the translator, as well as professional credentials of independent reviewer, etc. are collected to support the translation accuracy for the Simplified Mandarin (Chinese) language option. Based on the fact that all of the responses for this study are executed in English, these items are not included in the appendices as planned.

The instruments. A scalar survey instrument is utilized to obtain variable data, enabling a quantitative analysis. The study includes participants from aerospace component manufacturing companies, and utilizes a scale to determine individualism. This survey is comprised of several components:

1. As seen in Appendix 1, Hypothesis 2 – DEPENDENT VARIABLE(S) – The engagement and enlargement measures in this scale are the aggregate of the aspects: job interest, pride in job accomplishment, and work orientation (Susman, 1973). The study utilizes these at both the constituent and aggregate levels of analysis.

2. As seen in Appendix 2, Hypothesis 1 and 2-proxy - DEPENDENT VARIABLE(S) - The Job Diagnostic Survey (JDS) is an instrument by Hackman and Oldham (1974 / 1980) that assesses the motivating potential score (MPS) as well as the various aspects in its constitution. These aspects include: task identity, task significance, task variety, autonomy, and feedback.
3. As seen in Appendix 3, PERSPECTIVE(s) – This scale is not requisite to any of the study objectives of answering the research hypothesis / questions, and therefore is not included. It is noted within this study as part of the process, but not included in the study calculations or outcomes. It is identified as part of the process because, to give the companies participating in the JDS study a full report, Hackman and Oldham (1980) include this Job Rating Form (JRF) as a complimentary tool in the JDS. This tool collects a perspective from the supervisors and managers of the employees involved in the study. As an example, in the JDS, a participant may state that the supervisor never gives them feedback, but the supervisor perspective may be that they regularly give employees feedback. Another example is that the supervisors may believe the worker is given ample autonomy, while the worker may feel they do not have autonomy in their job. This data will be useful to the companies that participated and potentially to future research opportunities, but it is not germane to the scope of this study.

4. As seen in Appendix 4, INDEPENDENT VARIABLE(S) -- The individualism scale utilized is the Cultural Orientation Scale (COS), which is comprised of four categories: VI (vertical individualism), HI (horizontal individualism), VC (vertical collectivism), and HC (horizontal collectivism) (Triandis & Gelfand, 1998). This scale is the independent variable in each of the hypothesis/research questions, either at the overall level or at the various aspects level.
5. As seen in Appendix 5, COVARIANT – The social desirability scale is included as a covariant of analysis in Hypothesis 2, to control for considerations of power distance and saving face (i.e., considerations of social desirability response patterns), because it is possible that respondents could skew data due to concern of social reprisal. This covariant is studied in hypothesis 2 through multivariate analysis of covariance (MANCOVA), and in the proxy study on Hypothesis 2 as analysis of covariance (ANCOVA).

Interpretation of the results. Throughout this study, various constructs, aspects, dimensions, and terminologies are explained. The interpretation of the results however, requires a clear understanding of a few of these terms, especially in alignment with the research questions/hypotheses. To assist in interpretation of the findings, and comprehension of the study, the research variable and terms are explored.

"Enlargement or job enlargement" often seemingly is interchanged with engagement, but actually is speaking of the increase of specific aspects in efforts to

stimulate sustainable engagement. When it appears that "enlargement" and "engagement" terms are used interchangeably, the actual intention is to measure engagement (effect) by measures of various perceived levels of enlargement (causes). In the first research question, the implication of individualism is studied in the measured considerations of enlargement (i.e., causes) of engagement. These enlargement aspects of the motivating potential score (MPS) include: skill variety, task identity, meaningfulness or significance of the task, feedback from the job, and autonomy.

In the second research question, the effect (engagement) is the targeted measurement through assessing the workers' realized/perceived job interest, pride in job accomplishment, and work orientation. Specifically, the implication of individualism is studied in the measured considerations of engagement (outcomes or effect). The literature review supports such a strong relationship between engagement and job satisfaction, that in many cases they are synonymous. Accordingly, the proxy study utilized in answering the second hypothesized research question is a measure of job satisfaction. This is intended to determine whether levels of enlargement are adequate (in the balance of divided/specialized labor and enlarged work/task scopes) to have realized a satisfied or engaged status as a measured outcome.

In the third hypothesized research question, the intention is to study the individualism implication in worker motivators by considering what the workers identify as ideal or desired. These motivators include enlargement (where questions of job choice support enlarged work over other motivators), as well as other motivations (e.g., reward, compensation, praise). The "combined growth needs strength" is an instrument that considers the aspects of "would like" and "job choice." If workers suggest that

meaningful work and the ability to make suggestions rank of greater importance in "job choice" or "would like" than money/rewards; a strong argument is made for enlargement. If, instead they suggest preference for money/rewards with accepted petty and repetitive work, they are suggesting a lesser need for enlarged work. This study considers the individualism implication in these outcomes.

It is important to discuss the independent variable calculations and treatments of the data to understand the outcomes. The Cultural Orientation Scale (COS) is utilized to measure the individualism (Triandis & Gelfand, 1998). There are four sections to the COS: HI (horizontal individualism = measures of self-reliance versus dependence), VI (vertical individualism = measures of differentiation and competition), HC (horizontal collectivism = measures of teamwork/team dynamics), and VC (vertical collectivism = measures of self-involvement versus group commitment). To get a composite individualism score, HC and VC scores are treated in reverse scale. This treatment allows the most individualistic answer for each question to be the highest score. Accordingly, on the 9-point and 16-question scale, the lowest (and most collectivistic) score possible is 16, and the highest (and most individualistic) score possible is 144. The participants returned total calculated scores between 31 (lowest) and 91 (highest) with a mean of 66.36. In correlation analysis, this scale is compared against the scalar dependent variables. In the between-group comparisons, one group is represented by those above this mean (more individualistic), while the other is those below this mean (more collectivistic). When the various aspects of individualism are studied however, they are studied without any reverse scale treatment. To support the hypothesis, higher individualism is positively correlated with higher scores on the dependent variable.

Accordingly, a positive relationship between the VI, HI, or VI + HI scores, indicates that the higher individualism is positively correlated with a positive increase in the dependent variable, and is thus directionally in agreement with the hypothesis. Conversely, the interpretation of VC or HC, or VC + HC scores in correlation or variance measurements, requires consideration of directionality of the finding. A positive relationship when studying the collectivistic (combinations of VC and/or HC) aspects actually means that higher collectivism is positively correlated with the variable outcome. After reversing this logic for directional continuity, the outcome is the opposite of the hypothesized result.

Discussion of the results – H1. The first research question is in the form of a hypothesis: that there is a positive relationship between a worker's (i.e., respondent's) individualism score and their motivating potential score (MPS) such that those higher in individualism, will also have a higher MPS score. The MPS formula (shown in Figure 3 and again in Figure 4) is executed in accordance with the instructions provided with the Job Diagnostic Survey (JDS) instrument (Hackman & Oldham, 1980, p. 306).

$$\text{MPS} = \left(\frac{\text{Questions about Skill Variety} + \text{Questions about Task Identity} + \text{Questions about Task Significance}}{3} \right) \times \text{Questions about Autonomy} \times \text{Questions about "Feedback from Job"}$$

Figure 4. Motivating potential score (MPS) adapted from Hackman & Oldham (1980, p. 306)

The study does not support the hypothesis, because there is not a significant relationship between individualism (independent variable) and the MPS (dependent variable). That said, there are a few factors worth discussion. Higher individualism (those scoring above the mean [more individualistic] versus those scoring below the mean [more collectivistic]) does have a significant difference in their desire for autonomy

and how much autonomy they thought that their job afforded them. Specifically, the individualistic-biased individuals wanted more autonomy. This finding is as hypothesized; however, it is not apparent that giving the individuals scoring higher in individualism more autonomy, would increase their motivation or overall engagement because they do not show significant differences in the overall MPS. Instead, MPS is positively correlated with horizontal collectivism. Horizontal collectivism includes the worker's values of relationships with coworkers and teamwork over individual outcomes. Surprisingly, the findings suggest that the group that scores the most horizontally collective (HC) would be motivated if work (i.e., the tasks) is redesigned to give them increased skill variety, job meaning, task identity, autonomy, and feedback.

The dimensional analysis of the MPS constitution found significant linear relationships between the overall individualism scores and two aspects of the MPS: task identity and task significance. These relationships are not as hypothesized though, because it is the more collectivistic persons (the lower individualism scores) that are more closely related to the work and its importance. Further research would be required to understand if there are psychosocial determinants of the individualistically biased workers, such that there could be intrinsic or egocentric goals that outweigh perceived job significance and concerns for work outcomes. Irrespective of the reason, the result of this study is that the individualism dynamic is not an implication that requires consideration when designing work and task for maximized work motivation.

In conclusion of the H1 research results, it is known (based on the literature) that Hackman and Oldham's (1980) JDS has been utilized successfully in improving motivation. The JDS approach and purpose is:

> "We assume that problems stemming from unsatisfactory relationships between people and their jobs can, in many instances, be remedied by restructuring the jobs that are performed, rather than by continued efforts to select, train, direct, and motivate people so that they fit better with the requirements of fixed jobs" (Hackman & Oldham, 1980, preface p. x).

This study has negated the implication of individualism (a cultural dimension) as significant in the re-engineering of work and task as outlined by the Hackman and Oldham (1980) process, thus suggesting no support for the hypothesis. In application, this means that measures of individualism are not predictors of MPS. As an example application, the results of these findings suggest that the difference in Hofstede's (Hofstede, n.d.) mean individualism score for the United States = 91 versus China = 20, is not a significant predictor in MPS outcomes between groups.

Discussion of the results – H2. The researcher's hypothesis is that there is a positive relationship between a worker's (i.e., respondent's) individualism score and their respective engagement (characterized by their job interest, pride in job accomplishment, and work orientation) such that those higher in individualism, will have a higher level of engagement. To answer this second research question (i.e., test the hypothesis), the Susman (1973) questions are employed. During the data analysis, it was discovered that these questions (scale) does not demonstrate reliability (should be $\alpha > .7$ and was $\alpha < .4$) using the Cronbach's alpha (α) test. The statistical analysis and commentary is included in this study, but because of this reliability consideration, the outcomes are not discussed further here, because they are not accepted as empirical findings.

The literature reviewed for this study supported a strong correlation between engagement and job satisfaction. Accordingly, the job satisfaction aspect, as outlined by Hackman and Oldham (1980) from the JDS, is included as a proxy study of the research question/hypothesis and, is discussed here as both germane and integral to this study.

This research question is also considered susceptible to the influence of the social desirability effect on the data. Due to considerations of power distance and saving face (i.e., considerations of social desirability response patterns), it is considered possible that respondents could skew data due to concerns of reprisal. Accordingly, a covariant for social desirability is considered in this study.

The individualism scores associated with horizontal individualism (HI) and vertical individualism (VI) collectively, showed a significant difference between the group with above mean individualism scores and those below mean individualism scores in measuring job satisfaction. The analysis of the covariant does not negate this difference, as it is still significant.

The individualism scores associated with the aggregated horizontal collectivism (HC) and vertical collectivism (VC) showed a significant difference between the group with above mean individualism scores, and those with below mean individualism scores in measuring job satisfaction. The analysis of the covariant, however, negated this significance. In other words, there is evidence that “the right answers” are given, as opposed to the real answers, and therefore negated the significance of the job satisfaction data and findings.

The conclusion of the study for this hypothesis is that individualism is a predictor of job satisfaction for VI and HI. The data is inconclusive however for VC and HC due to

evidence of social desirability effects on the data. Further research would be required to understand this further; it may discover satisfaction drivers other than enlargement such as that workers scoring lower in individualism (i.e., more collectivistic) have values more closely associated with family and other social considerations outside of the work environment. This value system could suggest a lower prioritization of work in the work and life balance, resulting in a lower level of job satisfaction. The overall reasons (other than job enlargement) for higher individualism to predict higher job satisfaction is an opportunity for further research to understand the underlying causes.

Discussion of the results – H3. The researcher hypothesized that there is a positive relationship between a worker's (i.e., respondent's) individualism score (e.g., Cultural Orientation Scale [COS]) and their perceived job characteristics identified as ideal (characterized by their combined growth needs strength), such that those higher in individualism will have a higher overall combined growth needs strength. The growth needs strength is a construct outlined in the Job Diagnostic Survey (JDS). The constituents of the combined growth needs strength are "would like," and "job choice," related scenarios rated by the participants in the study. The questions, instructions, and formulas for this measure are included in the JDS (Hackman and Oldham, 1980).

The hypothesis is not supported, as there is not an overall significant relationship between the overall individualism scores and the growth needs strength. Growth needs strength is significantly correlated with both horizontal dimensions of individualism (i.e., horizontal individualism and horizontal collectivism), but neither vertical dimension (i.e., vertical individualism nor vertical collectivism). The horizontal elements are: Horizontal

individualism = degree of self-reliance versus dependency on others, horizontal collectivism = degree of cooperation and team dynamics. Based on directionality of the correlations, this suggests that self-reliance and team cooperation/relations are important in growth needs strength outcomes.

In conclusion of the research for the third hypothesized research question, the results suggest that some workers would prioritize enlarged work while others would prioritize relationships or monetary rewards; but overall, individualism is not a predictor of these outcomes. In other words, the results do not significantly support the hypothesis that workers with a higher individualism bias would chose enlarged work as a key motivator in the "would like" or "job choice."

Implications

Industrial implications. It was anticipated that the outcomes of this study would have significant implications for industry/business management regardless of the results. If individualism was determined to be a predictor of the need for job enlargement to realize engagement/satisfaction as a means of improving production outcomes (sustained productivity, quality, safety, and/or tenure), it could be of significant utility to industry. In the situation where individualism was a predictor, these findings could be extended to the individualism mean score for a target culture or country to assure that necessary adaptations are made toward utilitarianism (best for greatest number of workers). If individualism was determined not to be a significant predictor in outcomes, this factor would not need to be considered, suggesting some ubiquity to work and task scope when production is moved or outsourced/insourced.

The results of this study do not support the hypothesis that individualism is a predictor of the need for job enlargement in optimizing performance outcomes, thus suggesting some ubiquity of work scopes. Several interesting findings from the study do have further implications for industry. The findings suggest that those higher in individualism scores are less motivated by the task identity and task significance (outcomes of the work) and are more motivated by opportunities for autonomy and self-reliance. While the alignment of autonomy and self-reliance with individualism is not surprising, an interesting finding is that it is actually the more collectivistic workers who cared more about what they are making and the importance or significance of their outcomes. The introduction to this study included an illustrative fable of three rock cutters. Using this fable as an illustration of the implication of this finding, the results suggest that the collectivistic workers would be motivated by knowing they are building a particular part (task identity) of a great cathedral (task significance). The individualistic worker might be motivated by having inputs in how that part is made and possibly by having their name inscribed in the work as a legacy. While this study noted significant differences in the mean scores in individualism based on country/culture, it is also important to realize that, while the mean score changes between groups, there are individualistic and collectivistic-biased workers in most industries, cultures, and companies. A takeaway from this finding (for management in industries) is that motivators should be provided to both groups of individuals. This might suggest specific efforts to assure that the employees know what their work's end-result and significance are, as well as assuring they have voice and recognition in the production and outcomes.

Additionally, in preparing reports for the companies that participated in the study, another variable (not statistically included in this study) is feedback from agents (i.e., management feedback or feedback from next operations, coworkers, or inspections). Both agent feedback and feedback from the job are perceived by the workers as inconsistent and below expectations. The supervisors and managers that took the Job Rating Form (JRF) (not statistically included in this study), rated the feedback from the job low as well, but rated the agent feedback much higher than rated by the workers. Again, using the included fable as means of illustration, it is difficult to motivate rock cutters if they do not receive feedback from their leadership on how well they are performing, and they do not know if the rocks they cut actually fit or are utilized in the final/end-use product.

A final note for industry is the significance of the studied covariant of social desirability. It is surprising that the fear of reprisal or other factors of self-preservation significantly influenced the feedback that workers give in measures of job satisfaction in the more collectivistic-biased employees. While this is only a covariant included in this study, this realization should be an implication to management in industries. The "voice" of the workers may not be congruent with the outcomes (e.g., engagement, behaviors, attrition). Companies should be aware of the social desirability factor.

Academic implications. The literature demonstrates that significant research has been done on the relationships between job satisfaction and engagement. This correlation is supported almost to the point that these constructs are synonymous. In addition, there is a well-researched paradigm involving the tension existing between

divided labor/specialization, and job enlargement. Finding equilibrium or balance in the continuum of divided labor and job enlargement can maximize sustainable performance. The division of labor and specialization is the root to efficiencies, but is also attributed to a number of collateral issues such as ennui with its resultant performance, quality, safety, and tenure declines. This study deliberately adds individualism (a cultural dimension/aspect) as an independent research variable. The implications of this study, suggest some ubiquity to the literature across individualistic and collectivistic-biased populations. This study purports that the variable of individualism, is not of significance in the management studies of the division of labor (example, scientific management theory), and/or the studies of job enlargement (example, Hulin & Blood, 1968). The study outcomes add knowledge to the fields of (at a minimum): management, industrial and organizational psychology, organizational behavior, and international business.

Limitations

The first limitation is realizing that individualism is only one cultural dimension. This study does not include other variables related to culture (e.g., power/distance, masculinity, uncertainty avoidance, long-term orientation, indulgence) that could have an implication in determining differences required or ubiquity in the variables included in this study. This study does not scope "culture" as a variable, but rather studied just one of the dimensions or aspects of culture – individualism. In suggesting the significance/non-significance of individualism, it is important to avoid the use of "culture" or suggest that individualism is the sole cultural consideration involved in considering work and task across countries, cultures, and groups.

Another limitation of this study is that it is limited to aerospace component manufacturing, and while sufficient in statistical power, it used a reasonably small sample (n=131). Extending the findings of this study to other workforces, industries, or groups, would necessitate further sampling. The companies involved in the study are believed/reputed to be typical, but may not represent extreme situations of: 1) Very small workforces with higher degrees of autonomy and enlargement by nature of the size of the company, 2) Very large companies with significant investment in industrial and organizational psychology and optimized work and task scopes.

Finally, a limitation of this study is that all of the participants had at least some degree of free will and options in their employment. The employees surveyed have the option to quit, go elsewhere, or potentially bid/apply to other roles. The findings of this study should not be extended to situations where the workers have no options or alternatives in their employment.

Opportunities for Future Research

A number of control variables (e.g., demographical information) collected are not included in the statistical analysis or scope of this study. Further research for the effects of various control factors could solicit new findings from the data collected. This research study raises a number of questions and/or opportunities for further research. A few of these include:

- Understanding further, the reasons why collectivistic-biased individuals respond to task identity and task significance more than individualistic-biased individuals.

- Exploring the other dimensions (discretely and collectively) of the effect of culture (e.g., power/distance, individualism, masculinity, uncertainty avoidance, long-term orientation, indulgence) on work scope.
- Identification of significant motivators or combinations of motivators of engagement.
- Outside of individualism, other implications as predictors (positive linear relationships to MPS) for identification of populations that would respond (via increased engagement) to the re-engineering of work and task.
- Understanding further the role of social desirability in company communications and its effect.

Conclusion

In conclusion, this research study is designed to determine if individualism is significant as an implication or predictor in the managerial balance between divided labor/specialization, and job enlargement. Specifically, does the balance need to change to optimize engagement (and therefore sustainable performance) between those workers with an individualistic bias and those with a collectivistic bias? As outlined in the discussion, there are both industrial and academic findings that resulted from this study that have implications in practice and theory. The overall results do not support the primary hypotheses of the research; thus, individualism is determined to not be a predictor of the outcomes of motivating potential score (MPS), job satisfaction/engagement, or combined growth needs scores. The lack of support for the hypotheses is in itself a significant finding, and further identifies many opportunities for research.

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Appendices

Appendix 1 – Susman's Job Enlargement Survey

Subject: Request for Permission to Utilize Your Model.

Mark Cawman <mcawman12@georgefox.edu> 5/28/15

Dr. Susman,

I am a doctoral (DBA) student at George Fox University, and I am currently creating my dissertation proposal. My topic considers the balance between the division of labor (Adam Smith and Scientific Management Theory), and job enlargement (Hulin & Blood, 1968). I am planning to study the implication of culture on this balance. As an example, do collective societies have a greater comfort with the division of labor and repetitive and prescriptive work, versus individualistic societies potentially needing more autonomy and job enlargement for sustained performance/work passion. To this end, I am planning to study China versus the United States.

I ran into your publication (1973) on culture and job enlargement, although your study was on domestic (USA) cultures (e.g., urban versus rural).

1.) In considering potential models for my study (international), would you potentially allow me to utilize your questionnaires?
2.) Would you be willing to share these questionnaires with me?
3.) Can you speak to how you validated these surveys/questionnaires as a model for your study?
4.) Would I have permission to adapt/translate these to fit international context?

I look forward to your response!

--
Reference:

Hulin, C. L., & Blood, M. R. (1968). Job enlargement, individual differences, and worker responses. *Psychological Bulletin, 69*(1), 41 - 55.

Susman, G. I. (1973). Job enlargement: Effects of culture on worker responses. *Industrial Relations: A Journal of Economy and Society*, *12*(1), 1-15.

Respectfully:

Mark Wm. Cawman

Gerry Susman <gis1@psu.edu> 5/29/15

Dear Mr. Cawman,

You are welcome to use the questionnaire, provided that I can find it. I throw away very little so it may be in a file cabinet. However, I developed that questionnaire over 40 years ago. I will see what I have for you after I return to PA in about 10 days, and answer the other questions that you posed..

Gerald I. Susman, Ph.D.
Emeritus Klein Professor of Management
Director Emeritus, Smeal Sustainability Council
Director Emeritus, Center for the Management of Technological and Organizational Change
382A Business Building
The Pennsylvania State University 814-863-
2382 (voice)
814- 865-7064 (fax)

Mark Cawman <mcawman12@georgefox.edu> 8/4/15

Thank you Again Dr. Susman, for permission to utilize your survey. Is the survey / questionnaire included within the body / appendix of the Susman (1973) article as published complete, or is this a truncated portion of the full survey you used? Is it possible to obtain the full survey / questionnaire that you used for this research? I am using this as part of a study on cultural implications on job enlargement (international culture). I hope to not only accomplish my dissertation in this area, but to also publish from the research findings.

Thank you --

Gerry Susman <gis1@psu.edu> 8/8/15

Mr. Cawman,

I recently cleaned out many files in my office, which I am using less frequently. I remembered your request, but did not see anything that related to that study. This study was done after all more than 40 years ago. I admit to being an incurable hoarder of almost everything, but even for me your request is a tall order. I have copies of the 1973 article, but I assume that you have seen it so would know if there is an appendix and what is in it. **I haven't re**-read it in many years. You are welcome to a copy of the article,

which I will retrieve the next time I go to my office. Also, you have my permission to use any questions from the survey that may be available.

Sincerely, Gerald Susman

Job Enlargement Survey | Section I – General Job Interest

In this part of the survey, answer the questions by choosing the alternative that best describes your attitude. To do this, write the rating number 1-5 (or Zero if it is given as an option) that matches your choice next to the question.

Answer	#	Question
	1	On most days on your job, how often does time seem to drag for you?
		(1) About half the day or more
		(2) About one-third of the day
		(3) About one-quarter of the day
		(4) About one-eighth of the day
		(5) Time never seems to drag
	2	Some people are completely involved in their job—they are absorbed in it night and day. For other people, their job is simply one of several interests. How involved do you feel in your job?
		(1) Very little involved; my other interests are more absorbing
		(2) Slightly involved
		(3) Moderately involved; my job and my other interests are equally absorbing to me
		(4) Strongly involved
		(5) Very strongly involved; my work is the most absorbing interest in my life

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Job Enlargement Survey | Section II – Pride in Job Accomplishment

In this part of the survey, answer the questions by choosing the alternative that best describes your attitude. To do this, write the rating number 1-5 (or Zero if it is given as an option) that matches your choice next to the question.

Answer	#	Question
	1	How often do you feel really proud of something you've done on the job?
		(5) Almost every day
		(4) Once every few days
		(3) About once a week
		(2) Once every few weeks
		(1) About once a month or less
	2	How often do you tell your significant other or other family members about something you've accomplished on the job?
		(5) Almost every day
		(4) Several times a week
		(3) About once a week
		(2) About once a month
		(1) Rarely or never
		(0) I have no family members to talk to

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Job Enlargement Survey | Section III – Instrumental Work Orientation

In this part of the survey, answer the questions by choosing the alternative that best describes your attitude. To do this, write the rating number 1-5 (or Zero if it is given as an option) that matches your choice next to the question.

Answer	#	Question
	1	Your job is something you have to do to earn a living; most of your real interests are centered outside your job.
		(5) Strongly Agree
		(4) Agree
		(3) Undecided
		(2) Disagree
		(1) Strongly Disagree
	2	Money is the most rewarding reason for working.
		(5) Strongly Agree
		(4) Agree
		(3) Undecided
		(2) Disagree
		(1) Strongly Disagree
	3	Working is a necessary evil to provide the means for the things your family and you want.
		(5) Strongly Agree
		(4) Agree
		(3) Undecided
		(2) Disagree
		(1) Strongly Disagree
	4	You are living for the day when you can collect your retirement and do the things that are important to you.
		(5) Strongly Agree
		(4) Agree
		(3) Undecided
		(2) Disagree
		(1) Strongly Disagree

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Appendix 2 – Hackman and Oldham's Job Diagnostic Survey

Subject: Request to use your JDS instrument in a DBA dissertation

Mark Cawman <mcawman12@georgefox.edu> 8/11/15

Dr. Greg Oldham --

My name is Mark Cawman, and I am framing my dissertation proposal (DBA student at George Fox University), and I am studying the differences in employee responses to Job Enlargement (Hulin & Blood, 1968) in China and the United States. I may also study other countries in this or later research. I am looking for a survey instrument to measure employee responses that would correlate with Job Satisfaction especially related to task design/autonomy.

I came across two research articles (see references) that list you as an author along with the late J. Richard Hackman. I was wondering:

1. Would I have permission to use your Job Diagnostic Survey as an instrument in my dissertation?
2. Is the entire instrument (survey) contained within the Hackman & Oldham (1974) article, or are the questions listed in their truncated or a partial version of the whole survey--if possible, could I borrow/obtain the whole survey for use?
3. I am a great admirer of your work as it closely aligns with my interests, and you have conducted a lot of research since 1975. Do you have other instruments you would recommend I consider in this process?

Thank you in advance for your time, and I would be honored by your response.

References:

Hackman, J. R., & Oldham, G. R. (1974). *The job diagnostic survey: An instrument for the diagnosis of jobs and evaluation of job redesign projects* (Manpower Administration (DOL), Washington, D.C.; Office of Naval Research, Organizational Effectiveness Research Program. Report No TR-4). New Haven, CT: Yale University Department of Administrative Sciences.

Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, 60(2), 159-170.

Hulin, C. L., & Blood, M. R. (1968). Job enlargement, individual differences, and worker responses. *Psychological Bulletin*, *69*(1), 41-55

Respectfully:

Mark Wm. Cawman

Oldham, Greg R <goldham@tulane.edu> 8/12/15

Mark,

Thanks for your message. You have my permission to use the Job Diagnostic Survey (JDS).

The latest version of the JDS is available in the following book: Hackman, J. R., & Oldham, G. R. (1980). Work redesign. Reading, MA: Addison Wesley (A division of Pearson Education). The book includes the long form of the JDS, instructions for its use, and the scoring key.

You may order a copy of Work Redesign (ISBN: 0-201-02779-8) by contacting Pearson Education at the address below:

Direct Mail Processing
111 Tenth St.
Des Moines, Iowa 50395
Phone: 800-282-0693

You also might want to take a look at the attached for some other ideas and instruments.

Good luck with your work.

Regards,
Greg Oldham

Job Diagnostic Survey | Section I

This part of the survey asks you to describe (as objectively as you can) your job. Do not use this section to express "like" or "dislike" for your job (that occurs in a different section).

Sample To what extent does your job require you to use mechanical equipment?

1	2	3	4	5	⑥	7

Very Little: The job requires almost no contact with mechanical equipment.

Moderately:

Very Much: The job requires almost constant work with mechanical equipment.

You are to circle the answer that best represents your job. If for an example, your job requires significant work with mechanical equipment, but also has time involved in paperwork or other functions, you might select a "6" as was done in the example. If you do not understand the instructions, please ask before beginning.

START

1 To what extent does your job require you to work closely with other people (either clients or people in related jobs in your own organization)?

1	2	3	4	5	6	7

Very Little: Dealing with other people is not at all necessary in doing the job.

Moderately: Some dealing with others is necessary.

Very Much: Dealing with other people is an absolutely essential and crucial part of doing the job.

2 How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?

1	2	3	4	5	6	7

Very Little: The job gives me almost no personal say about how and when the work is done.	Moderate autonomy: many things are standardized and not under my control, but I can make some decisions about the work.	Very Much: the job gives me almost complete responsibility for deciding how and when the work is done.

3 To what extent does your job involve doing a whole and identifiable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small part of the overall piece of work, which is finalized by other people or by automatic machines?

1	2	3	4	5	6	7

My job is only a tiny part of the overall piece of work: the results of my activities cannot be seen in the final product or service	My job is a moderate-sized chunk of the overall piece of work: my own contribution can be seen in the final outcome.	My job involves doing the whole piece of work from start to finish: the results of my activities are easily seen in the final product or outcome.

4 How much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1	2	3	4	5	6	7

Very Little: The job requires me to do the same routine things over and over again.	Moderately variety.	Very Much: The job requires me to do many different things, using a number of different skills and talents.

5 In general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1	2	3	4	5	6	7

Not very significant; the outcomes of my work are not likely to have important effects on other people.	Moderately significant.	Highly significant; the outcomes of my work can affect other people in very important ways.

6

To what extent do managers or co-workers let you know how well you are doing on your job?

1	2	3	4	5	6	7

Very Little: people almost never let me know how well I am doing.

Moderately: Sometimes people may give me feedback; other times they may not.

Very Much: Managers or co-workers provide me with almost constant feedback about how well I am doing.

7

To what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing--aside from any feedback co-workers or supervisors may provide?

1	2	3	4	5	6	7

Very Little: The job itself is set up so I could work forever without finding out how well I am doing.

Moderately: Sometimes doing the job provides feedback to me; sometimes it does not.

Very Much: The job is set up so that I get almost constant feedback as I work about how well I am doing.

Job Diagnostic Survey | Section II

Listed below are a number of statements, which could be used to describe a job. You are to indicate whether each statement is an accurate or an inaccurate description of your job. Please try to be as objective as you can in deciding how accurately each statement describes your job regardless of whether you like or dislike your job.

Write a number in the blank beside each statement, based on the following scale:

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate	Very Accurate

Answer	Question
	1. The job requires me to use a number of complex or high-level skills
	2. The job requires a lot of cooperative work with other people.
	3. The job is arranged so that I do NOT have the chance to do an entire piece of work from beginning to end.
	4. Just doing the work required by the job provides many chances for me to figure out how well I am doing.
	5. The job is quite simple and repetitive.
	6. The job can be done adequately by a person working alone -- without talking or checking with other people.
	7. The supervisors and co-workers on this job almost never give me any feedback about how well I am doing in my work.
	8. This job is one where a lot of other people can be affected by how well the work gets done.
	9. The job denies me any chance to use my personal initiative or judgment in carrying out the work.
	10. Supervisors often let me know how well they think I am performing the job.
	11. The job provides me the chance to completely finish the pieces of work I begin.
	12. The job itself provides very few clues about whether or not I am performing well.
	13. The job gives me considerable opportunity for independence and freedom in how I do the work.
	14. The job itself is not very significant or important in the broader scheme of things.

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diagnostic survey: *An instrument for the diagnosis of jobs and evaluation of job redesign projects* (Manpower Administration (DOL), Washington, D.C.; Office of Naval Research, Organizational Effectiveness Research Program. Report No TR-4). New Haven, CT: Yale University Department of Administrative Sciences.; Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley

Job Diagnostic Survey | Section III

Now please indicate how you personally feel about your job. Each of the statements below is something that a person might say about his or her job. You are to indicate your own personal feelings about your job by marking how much you agree with each of the statements.

Write a number in the blank beside each statement, based on the following scale:

1	2	3	4	5	6	7
Disagree Strongly	Disagree	Disagree Slightly	Neutral	Agree Slightly	Agree	Agree Strongly

Answer	Question
	1. It's hard, on this job, for me to care very much about whether or not the work gets done right.
	2. My opinion of myself goes up when I do this job well.
	3. Generally speaking, I am very satisfied with this job.
	4. Most of the things I have to do on this job seem useless or trivial.
	5. I usually know whether or not my work is satisfactory on this job.
	6. I feel a great deal of personal satisfaction when I do this job well.
	7. The work I do on this job is very meaningful to me.
	8. I feel a very high degree of personal responsibility for the work I do on this job.
	9. I frequently think of quitting this job.
	10. I feel bad and unhappy when I discover I have performed poorly on this job.
	11. I often have trouble figuring out whether I am doing well or poorly on this job.
	12. I feel I should personally take the credit or blame for the results of my work on this job.
	13. I am generally satisfied with the kind of work I do in this job.
	14. My own feelings generally are not affected much one-way or the other by how well I do on this job.
	15. Whether or not this job gets done right is clearly my responsibility.

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Job Diagnostic Survey | Section IV

Now please indicate how satisfied you are with each aspect of your job listed below. Write the appropriate number in the blank beside each statement.

Write a number in the blank beside each statement, based on the following scale:

1	2	3	4	5	6	7
Extremely Dissatisfied	Dissatisfied	Slightly Satisfied	Neutral	Slightly Satisfied	Satisfied	Extremely Satisfied

Answer	Question
	1. The amount of job security I have.
	2. The amount of pay and fringe benefits I receive.
	3. The amount of personal growth and development I get in doing my job.
	4. The people I talk to and work with on my job.
	5. The degree of respect and fair treatment I receive from my boss.
	6. The feeling of worthwhile accomplishment I get from doing my job.
	7. The chance to get to know other people while on the job.
	8. The amount of support and guidance I receive from my supervisor.
	9. The degree to which I am fairly paid for what I contribute to this organization.
	10. The amount of independent thought and action I can exercise in my job.
	11. How secure things look for me in the future of this organization.
	12. The chance to help other people while at work.
	13. The amount of challenge in my job.
	14. The overall quality of the supervision I receive in my work.

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Haven, CT: Yale University Department of Administrative Sciences.; Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley

Job Diagnostic Survey | Section V

Now please think of the other people in your organization who hold the same job you do. If no one has exactly the same job as you, think of the job, which is most similar to yours. Please think about how accurately each of the statements describes the feelings of those people about the job. It is quite all right if your answers here are different from when you described your own reactions to the job. Often different people feel quite differently about the same job.

Write a number in the blank beside each statement, based on the following scale:

1	2	3	4	5	6	7
Disagree Strongly	Disagree	Disagree Slightly	Neutral	Agree Slightly	Agree	Agree Strongly

Answer	Question
	1. Most people on this job feel a great sense of personal satisfaction when they do the job well.
	2. Most people on this job are very satisfied with the job.
	3. Most people on this job feel that the work is useless or trivial.
	4. Most people on this job feel a great deal of personal responsibility for the work they do.
	5. Most people on this job have a pretty good idea of how well they are performing their work.
	6. Most people on this job find the work very meaningful.
	7. Most people on this job feel that whether or not the job gets done right is clearly their own responsibility.
	8. People on this job often think of quitting.
	9. Most people on this job feel bad or unhappy when they find that they have performed the work poorly.
	10. Most people on this job have trouble figuring out whether they are doing a good or a bad job.

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Job Diagnostic Survey | Section VI

Listed below are a number of characteristics, which COULD be present on any job. People differ about how much they would like to have each one present in their own jobs. We are interested in learning how much you personally would like to have each one present in your job. Write the appropriate number in the blank beside each statement.

Using the scale below, please indicate the degree to which you would like to have each characteristic present in your job.

NOTE: This Scale is different than previous scales.

4	5	6	7	8	9	10
Would like having this only a moderate amount (or less)			Would like having this very much			Would like having this extremely much

Answer	Question
	1. High respect and fair treatment from my supervisor.
	2. Stimulating and challenging work.
	3. Chances to exercise independent thought and action in my job.
	4. Great Job Security.
	5. Very friendly co-workers.
	6. Opportunities to learn new things from my work.
	7. High salary and good fringe benefits.
	8. Opportunities to be creative and imaginative in my work.
	9. Quick Promotions.
	10. Opportunities for personal growth and development in my job.
	11. A sense of worthwhile accomplishment in my work.

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Job Diagnostic Survey | Section VII

People differ in the kinds of jobs they would most like to hold. The questions in this section give you a chance to say just what it is about a job that is most important to you. For each question - two different kinds of jobs are briefly described. You are to indicate which of the jobs you personally would prefer if you had to make a choice between them. In answer each question; assume everything else about the job is the same. Pay attention ONLY to the characteristics actually listed.

TWO EXAMPLES ARE GIVEN below:

Job A: A job requiring work with mechanical equipment most of the day.		Sample						Job B: A job requiring work with other people most of the day.
1		2		③		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B
If you like working with people and working with equipment equally well, you would circle the number 3, as it has been done in the example.								

Job A: A job requiring you to expose yourself to considerable physical danger.		Sample						Job B: A job located 200 miles from your home and family.
1		②		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B
This example asks for a harder choice -- between two jobs which both have some undesirable features. If you would slightly prefer risking physical danger than working far from home, you would circle number 2, as it has been done in the example.								

START

Please ask for assistance if you do not understand exactly how to do these questions.

Job A: A job where the pay is very good.			Question #1				Job B: A job where there is considerable opportunity to be creative and innovative.	
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A job where you are often required to make important decisions.			Question #2				Job B: A job with many pleasant people to work with.	
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A job in which greater responsibility is given to those who do the best work.			Question #3				Job B: A job in which greater responsibility is given to loyal employee with the most seniority.	
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A job in an organization which is in financial trouble - and might have to close down within the year.			Question #4				Job B: A job in which you are not allowed to have any say whatever in how your work is scheduled, or in the procedures to be used in carrying it out.	
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A very routine job.		Question #5						Job B: A job where your co-workers are not very friendly.
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A job with a supervisor who is often very critical of you and your work in front of other people.		Question #6						Job B: A job which prevents you from using a number of skills that you worked hard to develop.
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A job with a supervisor who respects you and treats you fairly.		Question #7						Job B: A job which provides constant opportunities for you to learn new and interestin things.
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A job where there is a real chance you could be laid off.		Question #8						Job B: A job with very little chance to do challenging work.
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A job in which there is a real chance for you to develop new skills and advance in the organization.	Question #9	Job B: A job which provides lots of vacation time and an excellent fringe benefit package.

1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A job with little freedom and independence to do your work in the way you think best.		Question #10				Job B: A job where the working conditions are poor.		
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A job with very satisfying teamwork.		Question #11				Job B: A job which allows you to use your skills and abilities to the fullest extent.		
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

Job A: A job which offers little or no challenge.		Question #12				Job B: A job which requires you to be completely isolated fro m co-workers.		
1		2		3		4		5
Strongly Prefer A		Slightly Prefer A		Neutral		Slightly Prefer B		Strongly Prefer B

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Job Diagnostic Survey | Section VIII

The following information is utilized in categorizing the survey answers and understanding some social and cultural differences in responses. All participant confidentiality is maintained, and none of the information provided is used in a manner to discriminate against any individual or group of individuals. Please answer the following questions completely and honestly.

Biological Background

1.) Sex (Check One)	
Male _____	Female ____

2.) Age (Check One)		
_____Under 20	_____20 - 29	_____30 - 39
_____40 - 49	_____50 - 59	_____60 or Over

3.) Industry Exposure (Check One)		
_____I have worked in this industry for several, similar companies in similar roles.	_____I have worked in several industries in similar roles.	_____I have worked in this industry for several companies in different roles.
_____I have worked in a different industry in different roles.	_____I have for only this company, but have worked in more than one role.	_____I have worked for only this company in only this role.

4.) Education (Check One)	
_____Grade School (eight years)	_____Some Business or Technical School
_____Some High School (more than eight years)	_____Some College Experience (other than Business or Technical)
_____High School Graduate	_____Business College or Technical Degree (2 year/Associate)
_____College Degree (4 Year/Bachelors)	_____**Advanced Degree (Master's or** Higher)

5.) What is your Job Title?

6.) Please Describe your Job Duties in Less that two (2) Sentences

7.) Demographics (Fill in the Blanks)	
_____Country of Birth	_____State or Province where I was Born
Nationality / Race	Immigrant or Ex-Patriot
_____Country I Live and Work In	_____State or Province I live and Work In

8.) Tenure (Fill in the Blanks)
I have been employed with my current company for _____ years

9.) Current Position (Check One)	
_____My position is temporary per my employer, so I am looking elsewhere for employment presently.	_____I am looking elsewhere, as I am not currently satisfied that my current employer / position is the best situation for me.
_____I would like to stay with my current employer, but am looking at other positions currently as I am dissatisfied.	_____I am not currently looking to change roles or employers unless my employer has a better position they offer me.

Appendix 3 – Hackman and Oldham's Job Rating Form

All of Appendix 3 is a survey that accompanies that of Appendix 2, but is a portion administered to managers and supervisors of the participants that completed the survey in Appendix 2. All author permissions for using the instruments of Appendix 2 included this Job Rating Form for supervisors and managers.

Job Rating Form (JRF) – Section I

You are asked to rate the characteristics of the following Job: _____

Please keep in mind that in this section, you will answer the questions in reference to the job listed above, and NOT to your own job (if different). The following are several different kinds of questions about the job listed above. Each section has instructions. It should take no more than 10 minutes to complete the entire job rating form questionnaire. Please move through it quickly.

Sample To what extent does your job require you to use mechanical equipment?

1	2	3	4	5	⑥	7

Very Little: The job requires almost no contact with mechanical equipment.

Moderately:

Very Much: The job requires almost constant work with mechanical equipment.

You are to circle the answer that best represents the job listed above. If for an example, the job requires significant work with mechanical equipment, but also has time involved in paperwork or other functions, you might select a "6" as was done in the example. If you do not understand the instructions, please ask before beginning.

START

1 To what extent does the job require you to work closely with other people (either clients or other people in related jobs in the organization)?

1	2	3	4	5	6	7

Very Little: Dealing with other people is not at all necessary in doing the job.

Moderately: Some dealing with others is necessary.

Very Much: Dealing with other people is an absolutely essential and crucial part of doing the job.

2 How much autonomy is there in the job? That is, to what extent does the job permit a person to decide on how his or her own how to go about doing the work?

1	2	3	4	5	6	7

Very Little: The job gives me almost no personal say about how and when the work is done.

Moderate autonomy: many things are standardized and not under the control of the person, but he or she can make some decisions about the work.

Very Much: the job gives the person almost complete responsibility for deciding how and when the work is done.

3 To what extent does the job involve doing a whole and identifiable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small part of the overall piece of work, which is finalized by other people or by automatic machines?

1	2	3	4	5	6	7

The job is only a tiny part of the overall piece of work: the results of the person's activities cannot be seen in the final product or service

The job is a moderate-sized chunk of the overall piece of work: the person's contribution can be seen in the final outcome..

The job involves doing the whole piece of work from start to finish: the results of the person's activities are easily seen in the final product or outcome..

4

How much variety is there in the job? That is, to what extent does the job require the person to do many different things at work, using a variety of his or her skills and talents?

1	2	3	4	5	6	7

Very Little: The job requires the person to do the same routine things over and over again.

Moderately variety.

Very Much: The job requires the person to do many different things, using a number of different skills and talents.

5

In general, how significant or important is the job? That is, are the results of the person's work likely to significantly affect the lives or well-being of other people?

1	2	3	4	5	6	7

Not very significant; the outcomes of the person's work are not likely to have importan effects on other people

Moderately significant.

Highly significant; the outcomes of the person's can affect other people in very important ways.

6

To what extent do managers or co-workers let the person know how well he or she is doing on the job?

1	2	3	4	5	6	7

Very Little: people almost never let the person know how well he or she is doing.

Moderately: Sometimes people may give the person feedback; other times they may not.

Very Much: Managers or co-workers provide the person with almost constant feedback about how well he or she is doing.

7

To what extent does doing the job itself provide the person with information about his or her work performance? That is, does the actual work itself provide clues about how well he or she is doing--aside from any feedback co-workers or supervisors may provide?

1	2	3	4	5	6	7

Very Little: The job itself is set up so the person could work forever without finding out how well he or she is doing.	Moderately: Sometimes doing the job provides feedback to the person; sometimes it does not.	Very Much: The job is set up so that the person gets almost constant feedback as he or she work about how well they are doing.

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Job Rating Form – Section II

Listed below are a number of statements, which could be used to describe a job. You are to indicate whether each statement is an accurate or an inaccurate description of the job you are rating. Please try to be as objective as you can in deciding how accurately each statement describes the job regardless of your own feelings about that job.

Write a number in the blank beside each statement, based on the following scale:

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate	Very Accurate

	1. The job requires a person to use a number of complex or high-level skills
	2. The job requires a lot of cooperative work with other people.
	3. The job is arranged so that the person performing it does NOT have the chance to do an entire piece of work from beginning to end.
	4. Just doing the work required by the job provides many chances for the person to figure out how well he or she is doing.
	5. The job is quite simple and repetitive.
	6. The job can be done adequately by a person working alone -- without talking or checking with other people.
	7. The supervisors and co-workers on this job almost never give any feedback about how well the persons is doing in their work.
	8. This job is one where a lot of other people can be affected by how well the work gets done.
	9. The job denies the person any chance to use personal initiative or judgment in carrying out the work.
	10. Supervisors often let the person know how well they think he or she is performing the job.
	11. The job provides the person the chance to completely finish the pieces of work he or she begins.
	12. The job itself provides very few clues about whether or not the person is performing well.
	13. The job gives considerable opportunity for independence and freedom in how the person does the work.
	14. The job itself is not very significant or important in the broader scheme of things.

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An instrument for the diagnosis of jobs and evaluation of job redesign projects (Manpower Administration (DOL), Washington, D.C.; Office of Naval Research, Organizational Effectiveness Research Program. Report No TR-4). New Haven, CT: Yale University Department of Administrative Sciences. Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley

Appendix 4 – Triandis & Gelfand's Culture Orientation Scale

All of Appendix 4 is a series of questions that are designed to identify respondent's bias toward horizontal or vertical individualism or collectivism (Triandis & Gelfand, 1998, table 2). Note, that within this appendix, the questions are aligned with the category they represent. In administration of these questions, the order is scrambled to mask a grouping that could lead a participant toward a deliberate identification.

Horizontal and Vertical Individualism and Collectivism

You are asked to honestly respond to each question below, using a number from the scale, and writing it in. Select the number that best describes your reaction to each statement.

1	2	3	4	5	6	7	8	9
This never describes me and actually offends me.	This rarely describes me.	This usually does not describe me	Sometimes this describes me, but I try not to let it.	This May or may not describe me – totally depends on circumstances	Sometimes this does not describe me, but I work on myself so it will more.	This often describes me.	This usually describes me.	This almost always describes me, and I identify with this strongly.

Horizontal Individualism:

____I'd rather depend on myself than others.

____I rely on myself most of the time; I rarely rely on others.

____I often do "my own thing."

____ My personal identity, independent of others, is very important to me.

Vertical Individualism:

____It is important that I do my job better than others.

____ Winning is everything.

____ Competition is the law of nature.

____ When another person does better than I do, I get tense and aroused.

Horizontal Collectivism:

____If a coworker gets a prize, I would feel proud.

____The well-being of my coworkers is important to me.

____ To me, pleasure is spending time with others.

____I feel good when I cooperate with others.

Vertical Collectivism:

____ Parents and children must stay together as much as possible.

____It is my duty to take care of my family, even when I have to sacrifice what I want.

____ Family members should stick together, no matter what sacrifices are required.

____It is important to me that I respect the decisions made by my groups.

Adapted from (Triandis & Gelfand, 1998, table 2).

Appendix 5 – The Social Desirability Scale

Appendix 5, is a data collection instrument serving as a social desirability scale as a covariate for analyses. Due to considerations of power distance and saving face (e.g., considerations of social desirability response patterns), it is possible that data could be skewed for concern of social reprisal. This scale (Reynold 1982) serves to assess the degree to which responses may be subject to social bias.

Social Desirability

You are asked to honestly respond to each question below, using a number from the scale, and writing it in. Select the number that best describes your reaction to each statement.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

___ 1.) It is sometimes hard for me to go on with my work if I am not encouraged.

___ 2.) I sometimes feel resentful when I don't get my way.

___ 3.) No matter whom I'm talking to, I am always a good listener.

___ 4.) There have been occasions when I took advantage of someone.

___ 5.) I'm always willing to admit it when I make a mistake.

___ 6.) I sometimes try to get even rather than forgive and forget.

___ 7.) I am always courteous, even to people who are disagreeable.

___ 8.) I have never been irked, even when people expressed ideas very different from my own.

___ 9.) There have been times when I was quite jealous of the good fortunes of others.

___ 10.) I am sometimes irritated by people who ask favors of me.

___ 11.) I have never deliberately said something that hurt someone's feelings.

Note: items # 1, 2, 4, 6, 9, & 10 are reverse-coded.

Adapted from Reynolds, 1982

Appendix 6 – Human Subjects Review Committee – IRB Approval

GEORGE FOX
SCHOOL OF BUSINESS
HSRC INITIAL REVIEW QUESTIONNAIRE

HUMAN SUBJECTS REVIEW COMMITTEE
PROTECTION OF HUMAN SUBJECTS
INITIAL REVIEW QUESTIONNAIRE

Note: Dissertation, or other formal research proposal, need not be submitted with this form. However, relevant section(s) may need to be attached in some cases, in addition to filling out this form completely, but only when it is not possible to answer these questions adequately in this format. Do not submit a proposal in lieu of filling out this form. In addition, review carefully the full text of the Human Subjects Research Committee Policies and Procedures on page 4 of the Research Manual.

APPLICATION DATA

Date Submitted: 23November-2016
Date Received: 07April-2017

Title of Proposed Research:

Scoping Job Enlargement with the Cultural Dimension of Individualism: An Industrial Study

Principal Researcher(s): Mark Wm Cawman

Degree Program: Doctorate Business Administration | Management

Rank/Academic Standing: Student | Full Time

Other Responsible Parties (If a student, include faculty sponsor; list other involved parties and their role. **Please include identifying information on page 3 also.):
Dr. Dirk Barram – Dissertation Chair.

NOTE – I plan to approach my past employment (as a entry point) as the first plan. I will continue to shop until I have company(s) willing to participate, but will stay with "component manufacturing for Aerospace."

QUESTIONNAIRE

Characteristics of subjects (including age range, status, how obtained, etc.):

The subjects surveyed will be the labor force in aerospace component manufacturing companies (machinists, assemblers, and supporting roles) that are currently employed by (Company TBD) and/or (Company TBD's) suppliers. The surveys would be through the management of these firms but potentially with the assistance of the Company'(s) buyer(s) and/or Quality Engineers to access the suppliers or assist in administration of the surveys.

Describe any risks to the subjects (physical, psychological, social, economic, or discomfort/inconvenience).

The survey will be designed to take between 10 and 30 minutes to complete. Some general information will be collected for the purpose of the study, but the anonymity of the subjects will be protected.

Are the risks to subjects minimized (a) by using procedures which are consistent with sound research design and which do not unnecessarily expose subjects to risk, and (b) whenever appropriate, by using procedures already being performed on the subjects for diagnostic or treatment purposes?

Degree of risk (check one):

Low						High
1	2	3	4	5	6	7
☐	x	☐	☐	☐	☐	☐

Note - #2 was selected over #1 due to a slight risk of undisclosed managerial displeasure in the China culture toward workers involved as participants.

Briefly describe the objectives, methods, and procedures used.

A survey will be utilized for the subjects to rank their job satisfaction and attitude about the amount of autonomy and information given to them, and their satisfaction toward continued performance. The objectives include:

Practical Application -- If a manufacturing line is transferred from the USA to China, or China to the USA – does the work scope need to change to assure the worker is engaged and is passionate toward sustained performance?

Academic Application -- In the balance between the division of labor and job enlargement, this study adds a cultural consideration to the literature academically.

Briefly describe any instruments used in the study (attach a copy of each).

The surveys include a survey on job enlargement (Susman, 1973) and a job diagnostic survey (Hackman & Oldham, 1974 / 1980). They are not combined, but are appended to present as a single survey to the participants. The survey(s) are attached as an appendix to the dissertation proposal.

How does the research plan make adequate provision for monitoring the data collected so as to ensure the safety, privacy, and confidentiality of subjects?

The surveys will be uniquely numbered to accurately categorize the data by where the survey was administered. The companies will be given an overall result of the study, but will not see the individual responses, and the confidentiality will not be compromised in the publishing of the data.

Briefly describe the benefits that may be reasonably expected from the proposed study – both to the subject and to the advancement of scientific knowledge. Are the risks to subjects reasonable in relation to anticipated benefits?

The objectives include:

Practical Application -- If a manufacturing line is transferred from the USA to China, or China to the USA – does the work scope need to change to assure the worker is engaged and is passionate toward sustained performance? Additionally, this study can help companies appropriately find the balance between the division of labor and job enlargement in their work design across culture. The data collected will also be utlized in future studies.

Academic Application -- In the balance between the division of labor and job enlargement, this study adds a cultural consideration to the literature academically.

The overall risk is minimal, and the benefit could make many individuals and companies more successful as they design work scope to the target cultures. Academically, this research helps to determine the ubiquitous-ness of job enlargement to individualistic and collective societies / cultures.

Where some or all of the subjects are likely to be vulnerable to coercion or undue influence (such as children, persons with acute or severe physical or mental illness, or persons who are economically or educationally disadvantaged), what appropriate additional safeguards are included in the study to protect the rights and welfare of these individuals?

N/A – these are hired individuals of age, and not in a sheltered workshop.

Does the research place participants "at risk"? NO

If so, describe the procedures employed for obtaining informed consent. (In every case, attach copy of informed consent form; if none, explain).

N/A – participant subjects are not at risk.