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Prepotency of extrinsic and intrinsic factors on Job satisfaction: A structural equation model

David Bruce Galloway

PREPOTENCY OF EXTRINSIC AND INTRINSIC FACTORS ON JOB SATISFACTION: A STRUCTURAL EQUATION MODEL

A Thesis

Presented to the

Faculty of

California State University,

San Bernardino

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

in

Psychology

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ABSTRACT

In this study, the taxonomic adequacy, relationships between variables, and a test of the underlying structure of job satisfaction is explored. The study is conducted from the vantage point of job satisfaction as a secondary outcome of work that is motivated through both extrinsic and intrinsic sources. Through the logical combination of the two factors in a prepotent hierarchical arrangement, derived primarily from Maslow' Hierarchy of needs, the extrinsic job satisfaction factor is theorized to be prepotent over the intrinsic job satisfaction factor. The central hypothesis is that due to the hierarchical arrangement, the relationship between extrinsic job satisfaction and overall job satisfaction is mediated by intrinsic job satisfaction. Using the Minnesota Satisfaction Questionnaire (MSQ), a cross-sectional approach, and Structural Equation Modeling, support was obtained for the mediated relationship. Model modifications that made good theoretical sense were performed to arrive at an adequate fit to the data. Although the basic factor structure supported both extrinsic and intrinsic job satisfaction factors, the variable loadings differed slightly from that suggested in the manual for the MSQ. Specifically, the security

variable loaded on the extrinsic factor versus the intrinsic factor and the social status variable loaded on both. This alternate loading pattern was consistent with previous research on the MSQ. The significant mediation of the relationship between the extrinsic job satisfaction factor and overall job satisfaction by the intrinsic job satisfaction factor provides some evidence of prepotency. Specifically, extrinsic job satisfaction variables need to be sufficiently attended to before the higher intrinsic factor variables can exert motivating potential. This finding is consistent with several motivation theories, both content, such as Maslow's Hierarchy of needs and Herzberg's two-factor, as well as process, such as Valence-Instrumentality-Expectancy. A direct relationship between extrinsic job satisfaction and overall job satisfaction was also evidenced in the data. Although not specifically investigated, this finding is consistent with individual differences theories as well as theories pertaining to the environmental effects on job satisfaction. The resulting support for the underlying structure of job satisfaction has implications to organizations that desire to attain high levels of work motivation from their employees.

ACKNOWLEDGMENTS

The completion of this manuscript was no doubt a journey. I'm first and foremost thankful to God for providing me with the capabilities and interests that I possess, for without these, this project would not have come to fruition. I am also forever thankful for the Naval Warfare Assessment Station's unrelenting tolerance and acceptance of my idiosyncratic interest in this subject matter. From their support in the actual survey process, to empowering me to teach principles of organizational and individual effectiveness to the workforce, to introducing me to material by such giants as Edwards Deming, Stephen Covey, and Abraham Maslow, the support offered through my many years of employ with them has been unparalleled. A special debt of gratitude is extended to Roberta Spieler in the TQ office at Corona. Without her mentoring I may never have come to understand and fully appreciate the necessity of making projects like this accessible, understandable, and useful to the organization at large. And finally, I owe a special thank you to my thesis chairperson, Jodie Ullman. It was through her suggestion that this study evolved into a thesis. That suggestion, from a professor who not only presented to me my first formal introduction to research statistics but also provided unending praise and encouragement, planted the seed that grew into this final project. I can only hope and anticipate that further harvests will be reaped from this initial small crop. Thank you all. "The reason I can see so far is because I stand on the shoulders of giants" like you all.

DEDICATION

To my Dad, for without his shower of support for all of my educational pursuits, I never would have gotten half this far. You were right Dad; it was a "piece of cake."

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CHAPTER ONE

INTRODUCTION

Understanding human needs is one of the foundational pursuits of psychologists and philosophers. With the psychologist desiring to understand behavior comes an inherent desire to understand the motivation behind the behavior. To understand what the needs of people are is one way of approaching the understanding of motivation.

Need theories tend to be largely in their descriptions of the needs, however they are not completely devoid of either relationships between the elements or explanations of the cognitive processes involved. Another general class of motivation theories tends to focus on the processes involved and attempts to describe those processes in mathematical models. Both general classes add to our understanding of human needs and the means that people use to go about the satisfaction of those needs.

In this thesis, two prominent theories of motivation as they pertain to job satisfaction will be brought together. Each will be initially presented as the authors originally conceived them. Following the introduction of the theories, a compendium of replications, and empirical tests for each theory will be provided. Through a logical connection of the original theories and evidence suggested in the compendia, a way by which the two theories may be combined will be presented as a model that represents the connection. The fit of the model to a collection of data gathered in a job satisfaction survey will be assessed through Structural Equation Modeling (SEM). Implications of the results will be discussed as they pertain to the understanding of human motivation, particularly when viewed from the perspective of jobs and work.

The Theories

Maslow's Hierarchy of Needs

In Abraham Maslow's hierarchy of needs (Maslow, 1954), human motivation is said to come from a desire to satisfy a need. Once a particular need is satisfied, it no longer provides motivating potential and higher order needs emerge. The individual is now driven on to satisfy these other needs. These needs are arranged in a particular hierarchy with the emergence of higher needs only occurring after lower level needs are satisfied. There is a prepotency of the needs specified in the theory.

At the bottom of the need hierarchy are the physiological needs. These needs are predominantly biological in nature and are tied directly to the individual's survival. These are the basic needs for food, water, warmth, and shelter. In Maslow's (1954) view, these needs are instinctoid, but the instinct is largely overwhelmed by the individual's experiences and learning. Further, "If all the needs are unsatisfied, and the organism is then dominated by the physiological needs, all other needs may become simply nonexistent or be pushed into the background" (Maslow, 1954, p. 37). Here, Maslow makes clear the prepotency of the needs.

Once the physiological needs are satisfied, the next set of needs to emerge are for safety and security. These are the needs for stability, protection, order, structure, and freedom from fear of chaos. These needs are also tied to basic survival but are not as immediate as the physiological needs. While the influence is the same as the physiological needs, it is in a lesser degree (Maslow, 1954). For example, a man will surely starve to death without food, but may not necessarily face a life threatening situation if not provided protection from any number of threats to security. As a specific example, while it may be desirable from a security standpoint to have some food stockpiled, the lack of such a plan does not necessarily pose an immediate threat to the individual.

After the safety and security needs are satisfied, the need for belongingness emerges. This suggests that man is a social creature. If an individual's basic physiological needs are attended to and there is no immediate threat to survival, then the need to belong with other humans emerges. Individuals seek out other people with whom to relate, communicate, live, and work together with.

Once belongingness needs are satisfied, the need to be loved and esteemed emerges. It is here that the needs begin to take on an emergence from being satisfied by external means, to needs that may be satisfied by internal means. For example, the need for food, while biologically driven from the physiology of the individual, requires gratification from an external source, namely food. While safety may come from the individual's own physical prowess, i.e. being physically strong, overall gratification of this need still may require some external source such as a shelter from the environment. Belongingness needs also require external gratification by the fact that it takes other people with whom to belong. The transition takes place when the love and esteem needs emerge at the individual level. While the need for esteem and love from others is necessary to affirm the individual, there has to be a welcome recipient of such a bestowal. The receptiveness of these external confirmations come from the individuals own self love and self esteem. With basic physiological and safety needs attended to, coupled with other individuals to belong with who also provide affirmation and esteem, comes the ability for one's self to feel worthy. It is through the gratification of all these external needs, that the internal needs emerge.

Once the individual has received gratification of all the external needs, self love and self-esteem can grow. Along with this growth comes an increased confidence in the individual's competence. It is now, with all the lower needs satisfied, that the individual feels the low grumble of the highest of Maslow's needs, the need for self-actualization. This need is concerned with achieving the individual's highest potential. It is a unique, individualistic, and idiosyncratic need intrinsic to the individual. The need for accomplishment, achievement, and growth fit into this category. The source of the satisfaction is not foodstuff, the environment, or other people, but rather it is with the self. Enough of all the basic external needs have been provided so that they are satisfied to the degree that the individual now feels armed to reach his best. Maslow's primary interest in the development of this theory was with the self-actuactualizer's whom he studied and it was these individuals whom he described as being fully human.

Herzberg's Motivation Hygiene Theory

Other theories of motivation have evolved through the study of what motivates people on their jobs. One prominent theory comes from Frederick Herzberg's Motivation to Work (Herzberg, Mausner, & Snyderman, 1959). Prior to Herzberg et al.'s study, there was interest in industrial situations regarding job redesign in manufacturing environments. It was generally thought that making the working conditions better or paying the workers more would lead to satisfaction on the job. Herzberg et al.'s studies cast a serious shadow of doubt on this assumption.

To explore what motivates people to work, Herzberg et al. used the critical incident technique. Through the use of semi-structured interviews, he asked participants to think of a time when they felt exceptionally good or bad about their job. The interview then probed into the incident or sequence of events that led to that feeling. A content analysis was performed on the results to see if there were differences between what led to the different extremes of feelings about one's job.

There were several reasons Herzberg et al. cite for using this technique. First, by using an interview method whereby the fundamental question is open ended, the responses to the question come exclusively from the participant. This is in contrast to traditional job satisfaction studies where the primary measurement instrument is the questionnaire in which the facets comprising job satisfaction are supplied by the researcher. Secondly, by asking the respondents to think of a time when they felt exceptionally good or bad about their job, Herzberg believed that what he was taping into were incidents or situations that "caused" the change in attitude. He was following a basic Factor-Attitude-Effects model whereby the incident was the factor, the feeling was the attitude, and the effects were determined through probing into what the event meant to the individual.

What Herzberg et al. found was that the incidents that led to good feelings about the job were consistently different from those that led to bad feelings about the job. The bad feelings were consistently attributed to factors that were external to the job itself, such as working conditions, supervision, coworkers, and pay. The good feelings were consistently attributed to factors that had to do with the work itself, such as achievement, growth, work itself, and responsibility. While his initial study was conducted using engineers and accountants in the United States, by 1971 Herzberg published a compilation of over a dozen replications which studied various occupations in varying cultures (Herzberg, 1971). The overall results were consistent with his original findings.

Herzberg et al.'s basic theory is called the motivation-hygiene or, two-factor theory. It states that job dissatisfaction comes through the neglect of the external factors or hygienes and that job satisfaction comes through the internal factors or motivators that have to do with the nature of the job itself. Because of the consistent contrast observed using the critical incident technique, Herzberg et al. theorized that the motivators and hygienes were on separate continua and therefore independent.

Other Research Related to the Two Theories

Empirical Evidence Relating to Maslow's Hierarchy of Needs Theory

Maslow's theory arose out of his own observations of self actualizing people. In Motivation and Personality (Maslow, 1954), Maslow himself makes it clear that the theory "appears to have a direct, personal, subjective plausibility" but it "lacks experimental evidence and support" (p. xii). While in many respects that statement is still true, there is empirical support for some aspects of the theory.

In subsequent work by Maslow, it is suggested that the overall hierarchy can be viewed as consisting of two major categories, that of deficiency needs and growth needs (Maslow, 1962). In this way, the physiological, safety, belongingness, and esteem (from others) may be considered as deficiency needs with self-esteem and self-actualization being considered as growth needs. Deficiency needs, at the lower end of the hierarchy, require gratification from a source external to the individual while the growth needs are part of the individual's internal desires and require gratification through the individual's own initiative.

This dichotomizing of the needs was a major tenant of Douglas McGregor's Theory X Theory Y proposition (McGregor, 1960). In this view, the Maslow hierarchy is put to use in an organizational setting, a source of validation that even Maslow (1954) himself recognized as necessary. McGregor challenges the views that management places on it's workers. In Theory X, workers are seen as distrustful, lazy, unambitious, uncreative, and, therefore, motivated only at the physiological and safety levels. Organizational systems based on this assumption of the workforce require that people must be closely controlled and often coerced to achieve organizational objectives. In Theory Y, work is not seen as distasteful, but rather as natural as play. Workers are seen as possessing self-control and a capacity for creativity. Motivation occurs at the belongingness, esteem, and self-actualization levels, as well as the physiological and security levels. Organizational systems based on this assumption of the workforce require that most people can be self directed and creative at work if properly motivated. The theories are related back to Herzberg et al. (1959) where it is interpreted that,

> Wants of employees divide into two groups. One group revolves around the need to develop one's occupation as a source of personal growth. The

> second group operates as an essential base to the first and is associated with fair treatment in compensation, supervision, working conditions, and administrative practices. The fulfillment of the needs of the second group does not motivate the individual to high levels of job satisfaction. (McGregor, 1960, p. 55)

The contention here is that the lower level needs operate as an essential base for the higher needs with a prepotency of the lower needs over the higher. McGregor also posits that the social needs are broken into two kinds. One set consists of needs that can be satisfied only by external means such as reputation, status, and appreciation. The other set represents needs that can be best satisfied through the individuals own self-initiative such as autonomy, achievement, and self esteem.

The idea of self-actualization as the highest of all human motivations has had considerable influence on the work of Chris Argyris's systems thinking (Argyris, 1964). As a basic tenant, tension, or the striving for satisfaction, are seen as part of mental health. This idea is consistent with Maslow in that satisfactions are seen as episodic, so that satisfaction is only a temporary state (Maslow, 1954). The emergence of new needs provides the necessary tension to drive the individual to seek new, higher satisfactions.

In Argyris's work, an attempt is made to define ways in which the individual's needs and those of the organization can be brought together in mutually satisfying ways (Argyris, 1964). As the fundamental hypothesis, Argyris draws on the idea of self-actualization of the individual as playing a central role in that integration. The incongruence between the individual and the organization can provide a basis for a continued challenge which, as it is fulfilled will tend to help man to enhance his own growth and to develop organizations that will tend to be viable and effective. This is systems thinking whereby an organizational effectiveness model is created. The model attempts to define a pattern of interrelationships among the elements of the system which would make it most effective in the service of a given goal. In essence, high individual self-esteem and self-actualization will lead to high organizational performance. Additionally, from this systems perspective, individuals with high emphasis on self-actualization would not be motivated by extrinsic factors, while those individuals with low emphasis on self-actualization would be.

There are other works where a hierarchy is proposed. For example, Barnes (as cited in Alderfer, 1972) proposed a two step hierarchy consisting of physiological needs at the base and a higher level made up of self-esteem, esteem of others, and belongingness. Harrison (as cited in Alderfer, 1972) also conceptualized a two-step hierarchy model consisting of physiological-economic needs at the base, whereby satisfaction of these needs would result in the emergence of a higher level of social or ego needs. Porter (1962, 1963) cites numerous references whereby a need hierarchy is suggested.

Empirical Evidence Relating to Herzberg et al.'s Motivation-Hygiene Theory

Herzberg et al.'s Motivation-Hygiene theory has generated a lot of research over the last 40 years. While the results vary across studies and methods used, there are a number of continuities to be noted in the body of research related to the original theory.

Of the most common and often times the most damning criticism of the theory is that it is method bound (Hackman & Oldham, 1976; House & Wigdor, 1967; Locke & Latham, 1990; Vroom, 1964). While there is a good deal of explanation by Herzberg et al. (1959) of the method chosen and the reasons for rejecting several alternatives, the researchers felt that the best way to get at the Factors-Attitudes-Effects was to let the respondents speak directly from their own experience. At the time the pre-existing scales were felt to be inadequate because they "are based on the psychometrics of a generation ago" (Herzberg et al., 1959, p. 17). Even though the researchers made note that a halo effect was possible when using a procedure that calls for the ranking of factors predetermined by the researchers, no such possibility is mentioned in the selection of the critical incident technique. Vroom (1964) criticizes that the results are driven from the respondents engaging in a social desirability response bias in that they respond in a way that makes them look good. Specifically, respondents take credit for their good feelings and blame external forces for their bad feelings. Whether the deception comes from either a self deceptive positivity, where the participant is giving an honest but overly positive self-impression, or from impression management, where participant's behavior is specifically tailored to fit the audience (Paulhus, 1991), the criticisms of Herzberg et al.'s methods may be warranted. However, to say the findings are strictly a methodological artifact is an overly severe criticism. The researchers contended that a qualitative investigation of the Factors-Attitudes-Effects was a prerequisite to quantification of both attitudes and criteria and therefore was considered to be exploratory vice hypothetical-deductive in nature.

Although there have been substantiated criticisms of the 2 Factor theory being method bound, Haim (1986) used the Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, & Lofquist, 1967) and open ended questions regarding critical incidences on the job and supported the theory. This finding lends support for arguing that Herzberg et al.'s results are not method bound. In another study whereby the primary data gathering method was a questionnaire, job satisfaction for college teachers was found to come from the work itself while dissatisfaction was attributed to the working conditions (Diener, 1985). In addition, a study that compared private and public sector employees using a questionnaire-based method not only supported the Motivator-Hygiene theory, but also found no difference between the two segments of the working population sampled (Maidani, 1991). Although the results of the many tests of the theory are mixed, there is a consistent difference between intrinsic aspects of work, those areas that have to do with the work itself, and the extrinsic aspects of work, those areas that have to do with the working conditions. Specifically, the extrinsic aspects of work tend to contribute less to overall job satisfaction than the intrinsic aspects of work.

From Herzberg et al.'s original findings, the theory states that job satisfaction and job dissatisfaction are on separate continua, i.e. that they are independent constructs. However, where the methodological arguments posed above appear to be leading is in the direction of casting doubt on the independence of the two continua as originally proposed by Herzberg et al. As cited in House and Wigdor's criticism, inadequate operational definitions to identify satisfiers and dissatisfiers are blamed for leading to the lack of mutual exclusiveness of the two dimensions (Burke, 1966; Dunnette, 1965; Ewen, 1964; Malinovsky & Barry, 1965).

The argument that posits a lack of reliability of the study (House & Wigdor, 1967) is refuted by reporting on at least 15 replications where the findings are reproduced (Whitsett & Winslow, 1967). Included are 9 replications whereby 17 diverse populations and two cultures are represented (Herzberg, 1971), resulting in a 97 percent agreement rate. At the time, the study was reported to be the most replicated study in the field (Whitsett & Winslow, 1967).

If all the evidence in the literature review presented is considered together, it may be concluded that (a) there are differences between intrinsic factors and extrinsic factors on job satisfaction and that (b) the factors are not completely independent of each other. It can also be concluded that the extrinsic factors will not provide as high a degree of job satisfaction when measured on the same scale as the intrinsic factors and that these results can be obtained through means other than the critical incidents technique.

Combining Maslow's Hierarchy Theory with Herzberg et al.'s Two Factor Theory

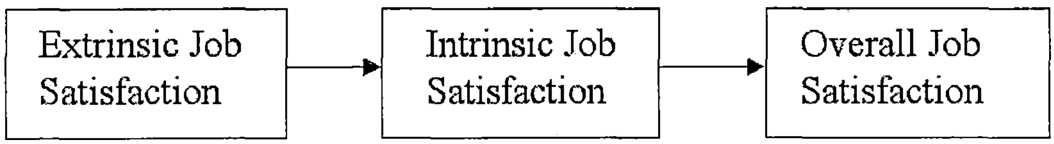
If the two theories are considered together, what emerges is a prepotency of extrinsic and intrinsic satisfiers on overall job satisfaction. Extrinsic factors alone will not contribute to high levels of job satisfaction. Rather the best they can do, through total satisfaction of these needs, is to obtain a neutral affective response from an individual. It is the intrinsic aspects of work that lead to greater overall job satisfaction. One study states that intrinsic factors account for 43 percent of the variance in overall job satisfaction but that extrinsic factors accounted for only

16 percent of the variance (Halpern, 1965, as cited in Herzberg, 1971). But, with the incorporation of Maslow's requirement of prepotency comes a temporal precedence, where the extrinsic factors of the job must be sufficiently satisfied before the need for the intrinsic factor elements can emerge.

The extrinsic factors of work are of the physiological, safety, and belongingness type where the intrinsic factors are of the self-esteem and self-actualizing type. That is, the extrinsic factors are lower on the hierarchy and therefore must be attended to before the need for self-actualization has a chance to emerge. Low extrinsic factor satisfaction therefore results in low overall satisfaction, regardless of what the level of intrinsic factor satisfaction is. High extrinsic factor satisfaction alone can only lead to a neither satisfied nor dissatisfied state, but in combination with high intrinsic factor satisfaction, the two together can lead to high overall satisfaction. What results from this hierarchy is that the relationship between extrinsic job satisfaction and overall job satisfaction is mediated by intrinsic job satisfaction. It is this combination of the two theories that leads to the path relationship presented in figure 1.

Figure 1.

Basic Path Diagram of Prepotency Model



Environmental Influences and Individual Differences on Job Satisfaction

Environmental factors of jobs have been found to interact with job satisfaction (Orpen, 1974). In general, greater need fulfilling environments result in stronger relationships between overall job satisfaction and content factors than between overall job satisfaction and context factors. Low need fulfilling environments produce stronger relationships between overall job satisfaction and context factors than between overall job satisfaction and content factors. Environments assessed to be neutral in need fulfillment resulted in no difference between correlations of overall job satisfaction and either content or context factors. Not only is this finding consistent with Maslow's theory, but the findings also support the contentions as summarized in the Herzberg literature that (a) the content factors are more powerful determinants of job satisfaction and (b) that the same elements in the work situation are related to both job satisfaction and dissatisfaction i.e., that the two factors are not necessarily independent. These primary propositions can be simplified by saying that the environment mediates the relationship between the satisfaction of each need and overall job satisfaction (Soliman, 1970). When the environment is characterized as non-need satisfying, hygiene needs become more dominant than motivator needs, and vice versa. The rationale behind the speculation is that the non-need satisfying environment represents a threat to the individual which makes the hygiene needs more dominant, while the removal of such a threat reverses the situation. This hypothesis was fully supported by Soliman, thereby lending additional empirical support to the prepotency of needs as suggested by Maslow.

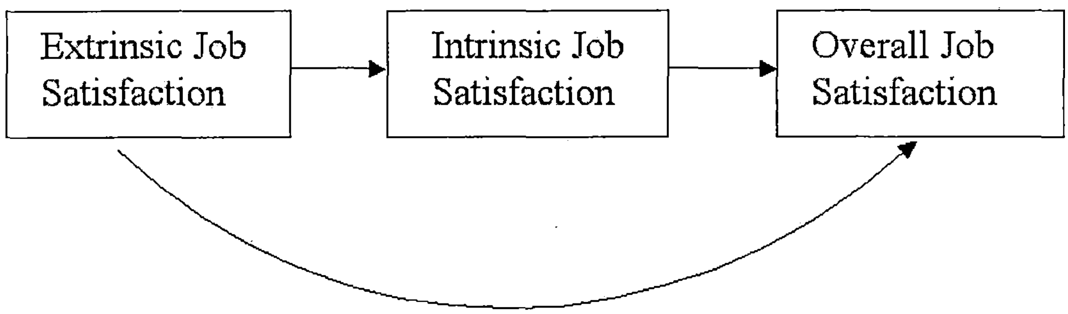
Where the motivation and satisfaction of workers at the managerial level have been studied, Porter found that the vertical level of position within management had a strong relationship to degree of perceived satisfaction of the three higher order needs of self-actualization, autonomy, and esteem (Porter, 1962, 1963). Simultaneously, no systematic changes in position with security and social satisfaction were noted. These results have been generalized to state that employees at higher levels within the organization have greater opportunities for experiencing personal growth on the job (Porter, 1962, 1963). A study which looked at teachers found similar results between autonomy in work and the level of education attained (Haim, 1986).

Not only does the environment interact with perceived overall job satisfaction, individual differences are believed to interact as well (Hackman & Oldham, 1976). These individual differences are believed to moderate the relationship between intrinsic and extrinsic aspects of jobs and overall job satisfaction (Robey, 1974, Wanous, 1974) and have been termed growth need strength (Brief & Aldag, 1975).

The inclusion of these environmental and individual factors as mitigating circumstances suggest the need for an additional path in the diagram. Since the environmental factors provide mediation and the individual differences provide moderation in the relationship between extrinsic satisfaction, intrinsic satisfaction, and overall satisfaction, then the model may be better conceptualized with the additional path between the extrinsic factor and overall job satisfaction as shown in figure 2. The test of whether this model provides a better fit to the data may suggest that either (a) the job environment is not need satisfying, (b) the individuals that comprise the sample have some common individual characteristics that represent low growth need strength, or (c) both.

Figure 2.

Modified Path Diagram of Prepotency Model



CHAPTER TWO

METHOD

Participants

Participants were members of a public sector defense analysis agency comprised mainly of engineers and associated administration (N = 706). While some demographic questions were asked regarding the department of the organization that a participant worked in and weather or not they were in a supervisory position, no other information differentiating engineers from the clerical, technicians, and mathematicians that comprise the population at the organization was obtained.

Survey Instrument

The Minnesota Satisfaction Questionnaire-Long form (MSQ-L) was used in its entirety. The instrument contains 100 items that form 20 scales that are intended to cover most aspects of people's jobs. Each scale has five items that are repeated throughout the survey every 20 questions. The items ask the same question with slightly different wording each time. All items are measured on a 5 point Likert scale with 1 = Not Satisfied, 2 = Only Slightly Satisfied, 3 = Satisfied, 4 = Very Satisfied, and 5 = Extremely Satisfied. Demographic questions regarding gender, age, department, ethnicity, supervisor/non-supervisor, and work site (there were members of the organization whose work site was remote from the primary site) were also included. Several questions regarding participants perceptions and attitudes toward the organization's Equal Employment Opportunity (EEO) policies and practices were included. There were two open ended questions regarding the most and least satisfying aspects of work. None of the demographic, EEO, or open ended data were used in this study. The instrument was professionally prepared in a scanable format with the organization's logo on the cover.

Survey Administration

The survey was conducted as part of the organization's strategic plan to assess the employees affective response to their jobs. The survey was discussed in general assembly meetings between the executive staff and all members of the organization. It was explained as completely anonymous and voluntary although highly encouraged. The instrument was provided to each member of the organization through the internal mail system. The instrument was accompanied by a cover letter from the organization's Commanding Officer explaining the purpose and reinforcing the anonymity and voluntary participation. Also included was a postage paid envelope addressed to an independent research center for returning the completed surveys. A reminder card was sent to each member of the organization 10 days after the initial delivery of the instruments.

Analysis Strategy

In the Manual for the Minnesota Satisfaction Questionnaire (Weiss et al., 1967), there is information regarding how to score the MSQ-L. The 100 items represent 20 scales that are designed to cover most aspects of people's jobs. Weiss et al. also provide information for computing extrinsic and intrinsic satisfaction subscales as well as general satisfaction. The intrinsic satisfaction scale consists of the following 12 items: Achievement (ACH), Creativity (CRE), Variety (VAR), Social Service (SS), Activity (ACT), Responsibility (RES), Ability Utilization (AU), Independence (IND), Authority (AUT), Moral Values (MV), Social Status (SST), and Security (SEC). The extrinsic satisfaction scale consists of the following six items: Advancement (ADV), Company Policies and Practices (CPP), Compensation (CMP), Recognition (REC), Supervision Human Relations (SHR), and

Supervision Technical (ST). The overall satisfaction scale consists of all the above items plus Co-Workers (CW) and Working Conditions (WC). With these items as specified combined with the basic path diagram, the model to be tested using Structural Equation Modeling is presented as figure 3.

As a preliminary step, the data gathered was subjected to exploratory factor analysis (Galloway & Mendoza-King, 1999). Even though SEM provides a confirmatory factor analysis, this step was undertaken to assess the viability of the MSQ-L to provide sufficient measures of extrinsic and intrinsic satisfaction scales. Two factors were clearly present which faithfully reproduced the above-suggested scales with two exceptions. Security, while providing loading on both scales, did load more strongly on the extrinsic scale. Social Status was a complex variable that loads on both the extrinsic as well as intrinsic factors.

Figure 3.

Model Tested at Step One: Basic Mediational Model with Factor Structure per Minnesota Satisfaction Questionnaire Manual

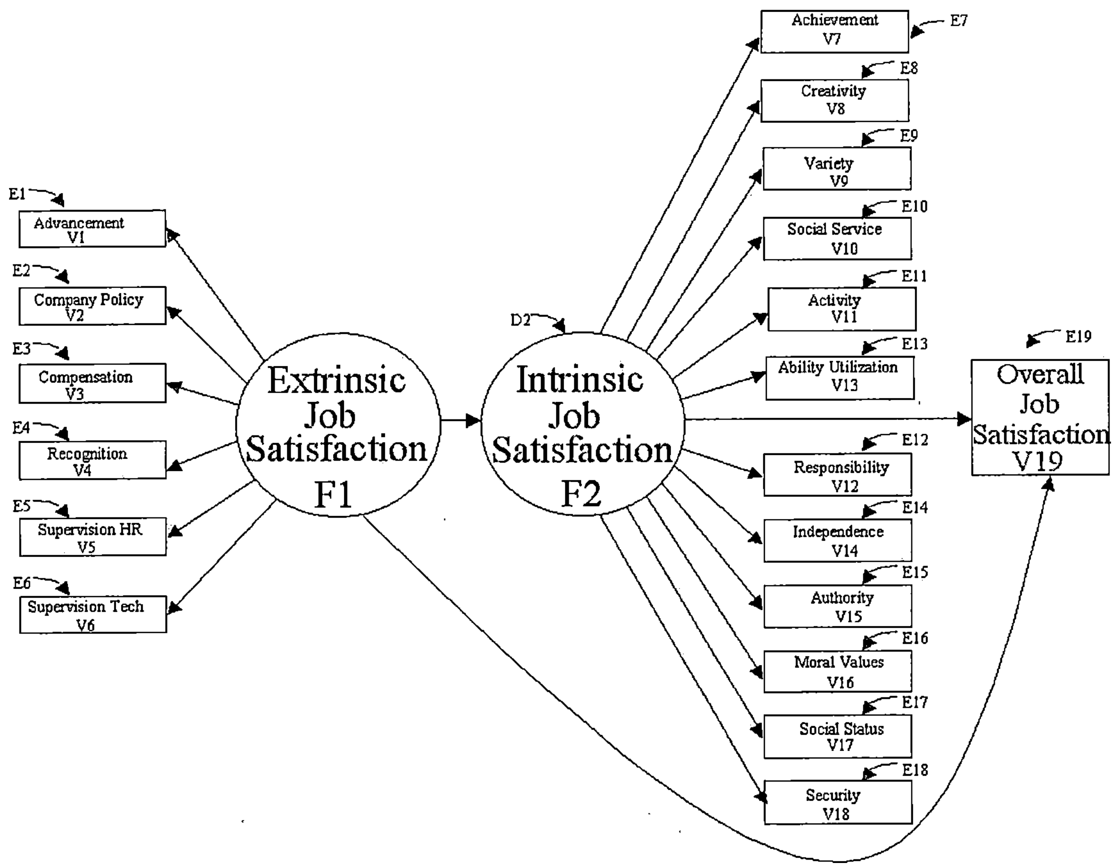
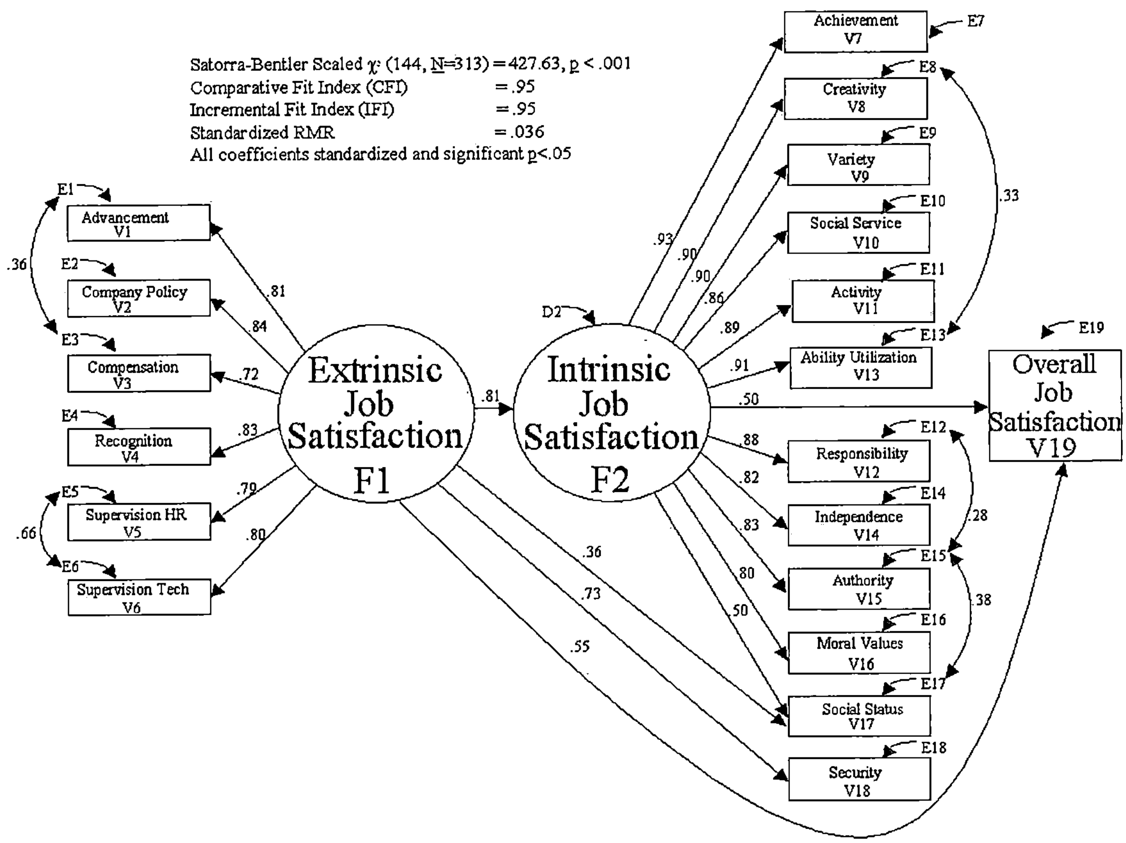


Figure 4.

Final Job Satisfaction

Model



CHAPTER THREE

RESULTS

Using EQS version 5.7, relationships between Extrinsic Job Satisfaction, a latent variable with six indicators (advancement, company policies and practices, compensation, recognition, supervision human relations, and supervision technical), Intrinsic Job Satisfaction, a latent variable with twelve indicators (achievement, creativity, variety, social service, activity, ability utilization, responsibility, independence, authority, moral values, social status, and security), and overall job satisfaction, a measured variable, were assessed. The hypothesized model is presented in Figure 3. Circles represent latent variables and rectangles represent measured variables. Absence of a line connecting variables implies lack of a hypothesized direct effect.

Figure 3 illustrates that both Extrinsic and Intrinsic Job Satisfaction directly affect overall job satisfaction. In addition, the relationship between Extrinsic Job Satisfaction and overall job satisfaction is mediated by Intrinsic Job Satisfaction.

Data Screening and Assumptions

A total of 359 surveys were returned representing a return rate of 51% (359/706). Prior to analysis, the data were screened for missing values, normality, and outliers using SPSS 6.1. There were two cases which had no data at all that were deleted from the analysis. There were a total of 296 cases that had data for all 100 of the items. Thirty-four cases were missing data on only one item. Since the MSQ-L uses five items per variable, the remaining four scores on the variable for the case were used to estimate the missing values. The remaining 27 cases had missing data that ranged from 2 to 75 items. Since there was no pattern to the missing data on the remaining 27 cases, all were deleted from the analysis leaving 330 cases.

The remaining data were subjected to examination of histograms and skewness statistics. The advancement variable exhibited a significant positive skewness in excess of a conservative .001 level of significance. However, examination of the histogram did not reveal a severe departure from normality. The skewness statistic itself was not in excess of 0.5. Examination of the remainder of the histograms revealed no serious departures from normality. Additionally, there were no univariate outliers. These findings prompted no transformation of any of the variables.

There were 17 cases that were determined to be multivariate outliers using Mahalonabis distance evaluated as chi-square with 18 degrees of freedom. A discriminant function analysis was performed with the outlying cases dummy coded against the remainder of the sample as the discriminant variable with all other variables as IV's in an attempt to determine which variables were responsible. None of the variables were found to be significant predictors of the multivariate outlying cases. In addition, examination of the individual multivariate outlying cases revealed that the probable cause was a result of the participant giving extreme scores in one direction on a few of the variables. All 17 cases were deleted from the analysis. The result of all data screening activities was a total of 313 valid cases for analysis.

Descriptive Statistics

The correlation matrix is presented in table 1. The overall job satisfaction scale score was computed as the sum of the one item from each of the 20 individual scales that comprise the MSQ short form. These items were found

Table 1.

Correlation Matrix of Minnesota Satisfaction Questionnaire Scales

	AU	Ach	Act	Adv	Aut	CPP	Cmp	CW	Cre	In	MV	Rec	Res	Sec	SS	SSt	SHR	ST	Var	WC	Gen
AU																					
Ach	85																				
Act	78	82																			
Adv	59	56	50																		
Aut	71	73	71	62																	
CPP	60	61	56	74	55																
Cmp	54	50	49	73	50	57															
CW	51	62	53	47	60	55	38														
Cre	86	84	80	57	75	62	47	55													
Ind	68	74	71	44	67	54	43	58	70												
MV	65	75	71	45	61	54	40	57	67	67											
Rec	69	69	59	72	63	72	60	54	65	54	56										
Res	81	84	80	61	82	63	51	67	84	78	68	68									
Sec	54	55	48	59	55	59	57	51	53	48	47	54	61								
SS	73	83	75	45	71	56	42	59	78	73	71	57	76	51							
SSt	69	73	69	65	78	64	58	53	71	62	59	68	76	53	48						
SHR	60	63	57	59	55	65	45	55	62	52	57	74	66	48	29	60					
ST	59	61	56	63	57	64	49	55	60	51	55	70	65	50	34	57	88				
Var	84	82	81	58	75	57	50	57	86	72	66	64	81	53	60	71	55	54			
WC	41	47	47	42	33	57	47	42	45	44	41	40	44	45	37	46	36	34	45		
Gen	84	87	83	75	80	79	67	69	85	77	77	80	88	70	80	81	77	77	84	60	

Note. Decimal points omitted for clarity

* All correlations statistically significant, $p < .05$.

to have the highest correlation with scale score for a group of 1,793 employed individuals (Weiss, Dawis, England, & Lofquist, 1967). The remaining four items for each of the 20 scales were then summed to form the individual scale scores. The rather high correlations between the overall job satisfaction scale and the individual scale scores suggest that common method variance may have inflated the correlations. However, the overall job satisfaction scale includes two items not in either the extrinsic or intrinsic sub scales (Co-Workers and Working Conditions) further reducing the effect of common method variance.

Table 2 provides the mean and standard deviation for all 20 scales and the overall job satisfaction scale.

Table 3 provides the unstandardized alpha reliability for each of the scale scores and the overall job satisfaction scale.. The average reliability was .91 with the individual reliabilities ranging from .87 for the Co-Workers scale to .95 for the Ability Utilization, Advancement, and overall job satisfaction scales.

Table 2.

Means and Standard Deviations of Minnesota Satisfaction Questionnaire Scales

Facet	Mean	Std. Dev
Cmp	9.64	3.88
Adv	8.73	3.90
Rec	10.49	3.95
CPP	9.48	3.52
SSt	11.21	3.10
Aut	11.95	3.09
AU	11.99	4.10
ST	11.31	3.85
WC	11.49	3.89
SHR	11.64	4.19
Ind	13.10	3.16
Cre	12.20	3.89
Res	12.75	3.20
Ach	12.66	3.48
Var	12.09	3.60
SS	13.06	3.53
CW	12.83	3.16
Act	12.85	3.45
Sec	11.39	4.03
MV	13.97	3.33
Overall	58.94	14.59

Note. Individual facet mean and standard deviation computed using the four items from the MSQ long form not used in the overall scale computation. Overall scale mean and standard deviation computed using the single item from each facet that comprises the MSQ short form.

Table 3.

Alpha Reliability of Minnesota Satisfaction Questionnaire Scales

Facet	Alpha Reliability
AU	0.97
Ach	0.93
Act	0.95
Adv	0.96
Aut	0.88
CPP	0.93
Cmp	0.94
CW	0.90
Cre	0.93
Ind	0.92
MV	0.90
Rec	0.95
Res	0.89
Sec	0.92
SSe	0.95
SSt	0.90
SHR	0.94
ST	0.92
Var	0.92
WC	0.94
Overall	0.95

Notes. Individual facet reliability computed using the 4 items from the MSQ long form not used in the overall scale computation.

Overall scale reliability computed using the single item from each facet that comprises the MSQ short form.

Reliabilities are unstandardized.

Model Estimation

The independence model that tests the hypothesis that the variables are uncorrelated with one another was easily rejected, $\chi^2(171, N = 313) = 7379.48$, $p < .001$. The hypothesized model was tested next. A chi-square difference test indicated a significant improvement in fit between the independence model and the hypothesized model, $\chi^2(21, N = 313) = 6523.13$, $p < .001$. However, the normalized Mardia's coefficient was 20.34 suggesting that the measured variables are not distributed normally. Only marginal support was found for the hypothesized model using the comparative fit index (CFI) and the Satorra-Bentler scaled χ^2 test statistic to take the nonnormality into account, $\chi^2(150, N = 313) = 763.85$, $p < .001$, CFI = .88.

Post hoc model modifications were performed in an attempt to develop a better fitting model. On the basis of the Lagrange multiplier test, the Wald test and theoretical relevance, seven paths were added and one deleted. The final model, presented in figure 4, fit the data well, $\chi^2(144, N = 313) = 427.63$, $p < .001$, CFI = .95. The bivariate correlation between common loadings from both the hypothesized model and the modified model suggest that the modifications had little effect on the remainder of the model (r (41) = .96).

Direct Effects

Extrinsic Job Satisfaction was strongly predictive of Intrinsic Job Satisfaction (standardized coefficient = .81). Overall job satisfaction increased as both Extrinsic Job Satisfaction and Intrinsic Job Satisfaction increased (standardized coefficients = .55 and .50 respectively).

Indirect Effect

The relationship between overall job satisfaction and Extrinsic Job Satisfaction was mediated by Intrinsic Job Satisfaction (standardized coefficient for indirect effect = .41, $p < .01$).

CHAPTER FOUR

DISCUSSION

> In view of the large number of studies in which measures of job satisfaction have played an important part, it is surprising to find that so little attention has been devoted to its basic structure. The information that is available suggests that a hierarchical picture might fit the current data best. That is, the overall judgment about the "job" is made up of two sub-general factors corresponding roughly to the intrinsic versus extrinsic breakdown originally identified by Herzberg. Each of the two sub-general factors can be broken down further into more specific factors such as those measured by the Minnesota Satisfaction Questionnaire [MSQ]. (Campbel & Pritchard, 1974, p 103)

The findings in this study have added some compelling evidence that the structure is indeed hierarchical with the two sub-general extrinsic and intrinsic factors being the primary components. An expanded discussion on need theories and job satisfaction theories will be provided to give a broader framework from which to place the findings of this study. However, before this is presented, some discussion on the measures and methods used is in order.

Correctness of the Minnesota Satisfaction Questionnaire for Testing a Motivation Hypothesis

The opening paragraph of the discussion section not withstanding, the MSQ is a job satisfaction measurement instrument and the theory tested is of a motivation variety. Can the results of using this instrument for testing this theory be trusted? The strong connections between motivation and need theory with satisfaction measures suggest that the answer is yes.

Motivation as it appears in the literature is often used synonymously with satisfaction. Perhaps Maslow has fueled this potential confusion by stating that, "If we are interested in what actually motivates us, and not what has, will, or might motivate us, then a satisfied need is not a motivator" (Maslow, 1959, p. 57). From this statement we could infer that the degree to which action driven through the motivation to gratify a certain need has accomplished it's objective can be assessed through the measurement of satisfaction. Granted there is a certain implication of this measure being of past motivations that have been gratified and this issue will be discussed in the next section on the adequacy of the cross sectional method of data acquisition.

Lewin's process theory of human behavior (Lewin, 1951) has, in its most elemental form, an individual need structure. At any given time, Lewin theorizes that individuals possess certain physiological and psychological needs. As a logical consequence of this state, these needs create a state of tension which the individual attempts to relieve through appropriate action. One outcome of this action, should it be successful at relieving the tension, would be satisfaction.

In the Organizational Psychology literature pertinent to motivation theory, one of the areas has to do with job related outcomes. There is a distinction between a class of outcomes that are directly contingent on the task accomplishment, that are referred to as first level outcomes, and those that are more distant, referred to as second level outcomes. While the former may provide better objectivity in the measurement of job related outcomes (i.e., pay), it is the latter that have been used to tap into the psychological dynamics of work outcomes. "These more "distant" outcomes have to do with the satisfaction of somewhat more basic individual needs" (Campbell and Pritchard, 1974, p. 81). Although the field could benefit from more objective measures of the psychological outcomes of workers, the current state of the art appears to be the use of the subjective self report of satisfaction with certain aspects of the job and work environment.

With the aim of providing linkage between more observable outcomes of work and their relationship with cognitive processes, Valence-Instrumentality-Expectancy

(VIE) theory (Graen, 1969; Porter & Lawler, 1968; Vroom, 1965) provides us with a push in that direction. Within the theory there is the prediction that if we think of job satisfaction as the extent to which important needs are satisfied by rewards, then satisfaction is a result of performance. Here again we can see that satisfaction is a more distant outcome of the task, but at least there is a proposed direct link between the first level outcome (performance) and the second level outcome (satisfaction).

The High Performance Cycle behind the theory of goal setting and task performance (Locke & Latham, 1990) is consistent with the notion of satisfaction being a more distant outcome of task performance. Specifically, this theory proposes that the performance-satisfaction relationship is mediated by contingent rewards, both internal as well as external, and is simultaneously moderated by non-contingent rewards. Further Locke and Latham regard job satisfaction as a result of the person in relation to the job. Here, their view of job satisfaction is consistent with the theory of work adjustment (Weiss, Dawis, England, & Lofquist, 1967) from which the MSQ evolved. In the Weiss et al. model, work adjustment (as measured by job satisfaction) is predicted by matching an individuals work personality with work environments. Stated another way, work adjustment depends on how well an individual's abilities correspond to the ability requirements in work, and how well his needs correspond to the reinforcers available in the work environment. Satisfaction is a function of the correspondence between the individual's needs and the reinforcer system of the job. Here the developers of the MSQ themselves, recognize the utility of satisfaction as a measure need fulfillment.

This section was intended to provide sufficient justification for the use of a job satisfaction instrument to test a motivation theory. In an attempt to clear the air surrounding the synonymous use of the term satisfaction with motivation, Campbell and Pritchard (1974) provide this remark on the issue: "Motivation has meaning if we take it as a summary label that identifies a class of independent-dependent variable relationships." It is from this line of reasoning that the central thesis emerged in the first place. The Herzberg theory is a theory about job satisfaction, not behavior. Maslow's work is a taxonomy about needs with an explicit hierarchical relationship between the needs. Combining the Herzberg two factors with the basic prepotency of needs stipulation of Maslow and then conducting a study with a satisfaction instrument flowed directly from the reasoning presented above.

Adequacy of the Cross-Sectional Method of Data Acquisition

Within the context of motivation theory lies an implied cause and effect sequence: The motivation causes the behavior, and the behavior in turn causes the outcome. While experiments carefully designed can make stronger arguments about cause and effect relationships than can studies that employ the correlational approach, there are tradeoffs involved. Also, one of the conditions necessary in making an argument of cause and effect is that the cause occur before the effect. Longitudinal experimental research designs do, on the surface, appear to be the most effective approach for determining the relationships between motivation, behavior, and outcomes (Steers & Porter, 1987). However, the considerable threat to the generalizability of the experimental method raises questions regarding the applicability of the results of such studies in the organizational realm. Additionally, the use of longitudinal methods run the risks of attrition, test sensitization, test reactivity, and history effects. Further, to get at the underlying structure of need theories would require a great many experiments to be conducted.

The use of the cross sectional approach to the gathering of the data was chosen primarily for it's efficiency. In this design, some of the effectiveness was traded off for efficiency, but it is felt that there is still adequate internal validity in the design to test the theory. With the nature of the theory, potential cohort effects are small. Differences due to time of birth are not theorized to have any effect on where people are on the two level hierarchy, viz., this is a global theory pertaining to all people.

The Model and Modifications

The results of the structural equation model test supported the central hypothesis that intrinsic job satisfaction mediates the relationship between extrinsic job satisfaction and overall job satisfaction. There was also significant evidence that there is a direct relationship between extrinsic job satisfaction and overall job satisfaction as well as between intrinsic job satisfaction and overall job satisfaction. However, to arrive at a reasonable fit between the hypothesized model and the data, several modifications were required. The most dramatic was the loading of the security variable on the extrinsic job satisfaction latent variable vice the intrinsic job satisfaction latent variable. The original sub scales developed by Weiss et al (1967) were based on factor analysis of employed individuals in 1967. With recent changes in organizational life, particularly in the public defense sector from which this sample was drawn, the downsizing and outsourcing activities suggest that indeed job security is largely justifiably perceived as an extrinsic factor. The complex loading of Social Status on both the extrinsic and intrinsic scales may be due to the wording of the individual items. Inspection of the individual items in this scale revealed that there are wordings that appear to tap into both intrinsic satisfaction (i.e., "The chance to have a definite place in the community") and extrinsic satisfaction (i.e., The chance to "rub elbows" with important people").

Both of these model modifications were consistent with an alternative scoring suggested by a study where the MSQ items were rated as to whether they were intrinsic or extrinsic and a Q-Sort performed (Schriesheim, Powers, Scandura, Gardiner, & Lankau, 1993). Factor analysis performed on this same sample provided additional support for the alternative scoring proposed by Schreisheim, et. al (Galloway & Mendoza-King, 1999).

In addition to the model modifications between the factors and the individual scales discussed above, several correlated errors were added. First, the correlation between the residuals of the supervision human relations and the supervision technical variables were added resulting in a significantly better fitting model. Not surprising, the correlation between these two scales is the highest among all of the intercorrelations in table 1 at .88. Also, in initial runs of the factor analysis, a third factor emerged that resulted in high loadings by these two variables (Galloway & Mendoza-King, 1999). These results along with evidence in the MSQ manual (Weiss, et. al, 1967) suggest that these two variables may be tapping into the same construct and that the addition of the correlated errors is therefore justified.

The addition of the correlated errors between authority and social status is also justifiable. In the working environment where this sample was taken, there exists a strict chain of command. Those in authority are not to be challenged and consequently, they are also paid more. This places them higher in socio economic status. To no surprise, the correlation between the two variables was high at .78 (see table 1). Commensurate with this situation, there exists a relationship between authority and responsibility. Empirically the relationship between these two variables was strong with the correlation between them being .82 (see table 1). The correlation of the errors of these two variables therefore was also justifiably added. The relationship between advancement and compensation is intuitively obvious: as one advances, one tends to earn more. The correlation between these two variables is also high at .73. The addition of the correlated errors between creativity and ability utilization also has intuitive appeal. The majority of the population sampled were engineers whose primary function is to solve complex problems. To the extent that these individuals are satisfied with their ability to exercise their creative judgment, there is a corresponding satisfaction in their feeling that their abilities are being utilized. The correlation between these two scales is .86. Additional paths were suggested during the analysis and while still within the allowable margin for control of Type I error, made little theoretical sense and were therefore not added.

Theoretical Relevance

One way of categorizing the various need, satisfaction, and motivation theories is to divide them into either process or content related categories. In the process group of theories, there is an attempt to postulate a formal explanation for the direction, amplitude, and persistence of behavior (Birch & Veroff, 1968; Madsen, 1965). Content theories, while not entirely devoid of propositions between the variables, are primarily concerned with the taxonomy of the phenomenon under study. If the field is to mature sufficiently, both exhaustive lists of facets, factors, and variables in the specific domains will be necessary as well as the understanding of the formal explanations and relationships between them. While this study was derived primarily from two content theories, a discussion of a few process theories will be provided along with suggestions of how the results of this study are consistent with their propositions.

Process Theories of Motivation

One of the earlier works in this domain is Thorndike's Law of Effect (Thorndike, 1898, as cited in Campbell & Pritchard, 1974). In this model, behavior is theorized to be a function of the product between habit strength and motivation. In related work, Miller (1948) was concerned with motivation using an operationalization of the term drive. In this view, a drive is defined as the discrepancy between the current level of stimulation and the optimal level. While the term drive has given way to more contemporary notions of motivation, the issue still remains as the discrepancy between what stimuli exist in the environment and what the individual perceives as the optimal level.

The idea of habit strength was explored in depth by Skinner (1971). In this cornerstone work, behavior is viewed as learned and can be developed or changed through the use of reinforcement. Much research has evolved since this early work on reinforcement. An area of research relevant to this study has to do with the schedule of the reinforcers. In work by Helson (1959), the relation between the behavior and the stimulus is thought to be curvilinear. Helson argues that as the reinforcer level is raised, the behavior being reinforced is raised as well but only to a point. At some level, an adaptation level is reached whereby any further increase in reinforcement leads to a falling off of the behavior. The reinforcer ceases to be an important factor in influencing behavior in the desired direction.

Berlyne (1967) speaks of motivation being activated or aroused. If indeed many physiological and psychological needs are present as Lewin has suggested (Lewin, 1951), then perhaps it is the activation of those needs that directs the choice of behavior to be followed. The central hypothesis under investigation in this study proposed that the extrinsic factors must be sufficiently satisfied before the intrinsic factors can emerge. That is, there exists a minimum level of extrinsic satisfaction that must be present in order to activate the intrinsic factor needs: The extrinsic factor needs are prepotent over the intrinsic factor needs. The evidence that the intrinsic factor mediates the relationship between the extrinsic factor and overall job satisfaction lends support for the proposition that the prepotency exists. Unfortunately, there is not a lot of data in organizational settings on how behavior is motivated over a long period of time. Some form of a longitudinal experimental test may provide a more direct test of the activation of the intrinsic factor needs.

Building on the early process theories, cognitive psychology has made advancements to the basic multiplicative relationship presented in the previous section. Vroom's expectancy-valence theory (Vroom, 1965) postulates that the force exerted is a product of the probability of the desired outcome (expectancy) times the desired outcome's utility (valence). This model is very similar to the Thorndike model but speaks not of basic habit strength, but of a probability that an outcome will occur. It also addresses not motivation or drive in general terms, but in the utility that an outcome has for the individual. Here, the theory is attempting to explain the behavior from a cognitive process perspective rather than from learned behavior and basic needs. Graen (1969) broadens Vroom's theory to consider the full spectrum of job behavior in a system of multiple employment roles and considers all possible outcomes of meeting or not meeting the standards for a particular role. Here he is trying to predict the probability of superior effort expenditure through the additive relationship of three categories of work standards, each of which are themselves products of utility, goal attraction, and efficacy. With the multiplicative relationship involving goal attraction (like Vroom's valence) comes the implication that if there is no perceived valence there is no probability that effort will be expended. What good would it be to pursue a study in something like poetry if one is simply fighting hunger just to survive? The multiplicative relationship proposed in this model is in concert with the prepotency of the lower order needs over the higher as well as the idea of activation.

Porter and Lawler (1968) take this expectancy concept a step further. In their model, the probability of a reward is broken down into two additive components. The components themselves are multiplicative relationships between (a) the perceived contingency between effort and performance and (b) the perceived contingency between performance and rewards. The theory is often referred to as Valence-Instrumentality-Expectancy (VIE) and provides a model whereby both the first level outcomes (performance) in addition to the second level outcomes (rewards) combine to produce the overall probability of rewards. The multiplicative relationship between this overall probability and the valence of the outcome results in the predicted level of effort expended. In much the same way as the Graen model uses the instrumentality as a multiplicative component of expected level of effort, without a need being activated or aroused, there would be no predicted effort.

There have been reports of difficulty regarding the association between acquiring performance contingent outcomes and need satisfaction (Campbell, Dunnette, Lawler, & Weick, 1970). In this instance, it is believed that as the magnitude or amount of the outcome increases, the needs on which it operates may change. Even though this study used a cross sectional design, it is precisely this dynamic that has been tapped. It is the individuals who have sufficiently satiated their extrinsic job needs that have now moved up the hierarchy to strive to satisfy the intrinsic job needs. Within the population sampled it is implicitly hypothesized that individuals are all at different places on the need hierarchy. Within the aggregate of a representative sample of a work population, the distribution of the individuals across the differing levels of the hierarchy create the covariance structure that the model predicted.

The conformance of the results of this thesis with the process theories presented suggests that the structure tested may indeed underlie the processes involved. Vroom suggests that there are clusters of interrelated outcomes that represent a need (Vroom, 1965). These clusters of interrelated outcomes are precisely what the factor analytic approaches to deriving the elements of the content theories have attempted to provide.

Content Theories of Motivation and Job Satisfaction

In our quest to understand the complex domain of motivated behavior in organizations, it is necessary not only to formulate formal relationships between variables, but also to determine the taxonomies of the variables. This has been done primarily through the work of the content theories, although they are not necessarily devoid of propositions between the variables. Content theories tend to give the identity of variables in general terms which are in turn used by the process models. Within the literature, tests are mainly correlational, tests of the hierarchy or prepotency of need structures, and tests of the taxonomic adequacy. This study, while in no way exhaustive in it's effort, essentially entails all three types of test.

In the early work of Murrey (1938, as cited in Campbell & Pritchard, 1974), a comprehensive list of human needs was derived primarily through clinical observation. Interestingly, almost every need appearing in twentieth century organizational psychology literature is contained in his original list. Drawing from Murrey's early work and his own clinical experience, Maslow developed the 5-step hierarchy (Maslow, 1959). Within the five levels is contained a taxonomy of human needs. For example, the physiological need is comprised of needs for food, water, warmth, and shelter. The security need contains needs for stability, protection, order, structure, and freedom from fear and chaos. Taxonomies are lists of all the variables within the domain. In the case of Maslow, an attempt is made to provide a complete list of all human needs. Aside from the taxonometric aspects of the theory, there is a process element in that the lower needs are prepotent of the higher. That is, consistent with the process theory of activation, the need is latent unless stimulated. In Maslow's theory, the latent need is activated throughout the satisfaction of the adjacent lower need. Direct tests of both the taxonometric adequacy of the theory as well as the prepotency have been somewhat disappointing given the general intuitive appeal of the theory. Hall and Nougiam (1968) designed a longitudinal study to test key propositions in the Maslow theory. They attempted to develop operational definitions from interviews and put the propositions to a test using both static and change analysis. While the results provide almost no support for the theory, there was some support for later formulations concerning the potential satisfaction of self-actualization (Alderfer, 1972; Maslow 1962). Hall and Nougiam themselves reported that they had trouble developing operational definitions and reliable coding procedures in their study (Hall & Nougiam, 1968). It would be inappropriate to invalidate the underlying theory in the face of such severe self-reported methodological difficulty. In another study of the Maslow theory, Goodman (as cited in Alderfer, 1969) attempted to investigate the relative dominance the security, social, and ego needs. His study concluded that the security needs were between the social and ego needs which is inconsistent with the Maslow hierarcy. The study further suggests that the Maslow hierarchy should not be considered a hierarchy at all. However, Goodmans's study faces similar methodological problems as Hall and Nougiam but are of a considerably more severe nature because they showed no empirical data for the validity of their measures (Goodman, 1968, as cited in Alderfer, 1969).

Perhaps the best empirical test of the Maslow hierarchy has been accomplished by Alderfer in his formulation of the Existence-Relatedness-Growth (ERG) theory (Alderfer, 1972). The ERG theory essentially takes the five Maslow levels and collapses them into three levels. The existence level consists of the safety and security needs. These are the needs necessary for survival, or existence. The relatedness level consists of the love, belongingness, and esteem from others needs. These are the social needs, the needs to relate with others. The growth needs concern self-esteem and self-actualization. These needs concern the individual desires to become what one is capable of, that is, to grow.

Where ERG theory differs substantially from Maslow's hierarchy is in the proposition of frustration-regression. Both Alderfer and Maslow allow for satisfaction-progression whereby the satisfaction of a lower need results in the progression of needs emerging (or being aroused or activated) at the next level. However, ERG theory also postulates that continued frustration with the satisfaction of a need results in the regression of the potency of the next lower need, or frustration-regression. While Maslow's hierarchy does allow for the movement in the activation of specific needs, there is no postulation of the emergence of a lower need due to the frustration of a higher need. In Maslow's view, the regression from say self-actualization to safety would be explained by the prepotency of the lower need over the higher. For example, if a threat to one's security emerges during an activity of self-actualization, such as an earthquake occurring during a classroom activity, then the need for safety becomes activated because of it's prepotency over the higher need. The higher needs have little to do with survival which Maslow explores in some detail (Maslow, 1959). However, no provision for the emergence of lower needs due to frustration is made.

In the development of ERG theory, Alderfer tried to test the prepotency notion empirically (Alderfer, 1969). Questionnaires and interviews were used to measure the level of satisfaction and importance of each of the existence, relatedness, and growth needs. If prepotency exists, then the correlation between the satisfaction of a lower need with the importance of the next higher need should be positive. That is, as the lower order need is attended to, the importance of the next higher need increases. Similarly, the correlation between the satisfaction of a need with the importance of that same need should be negative. In other words, as a need is satisfied, it's relative importance should decrease. Using a cross-sectional approach, the correlations did not support the prepotency predictions but were in the opposite direction. Instruments used by Alderfer were adapted from Porter's national survey on job attitudes (Porter, 1962; 1963) which were originally designed to study the relationship of need fulfillment, dissatisfaction, and importance to various organizational variables. However, the items on the questionnaire were precoded according to the needs based on Maslow's theory.

So, while both the Alderfer ERG (Alderfer, 1972) and Maslow hierarchy (Maslow, 1959) models are taxonomies of needs, the factor analysis of these taxonomies is not conclusive. Items generated by the Maslow classification have not been able to reproduce the expected factors or clusters with any degree of clarity (Herman & Hulin, 1973; Payne, 1970; Roberts, Walter, & Miles, as cited in Campbell & Pritchard, 1974). However, the collapsed Alderfer items were shown to possess considerable convergent and predictive validity (Alderfer, 1972).

While the empirical evidence of the Maslow hierarchy is lacking, the support for the more simplified categories of Alderfer's ERG theory appears to suggest at least some organized categorization. Also, the tests of the satisfaction-progression propositions of ERG theory are directly supportive of the prepotency requirement in the Maslow hierarchy. It is the frustration-regression propositions that cast some doubt on the prepotency supposition. Also, simplified two-level hierarchies may also provide considerable utility in the development of our understanding of motivation in organizations (Barnes, 1960; Harrison. 1966; Maslow, 1962; McGregor, 1960; Porter, 1962, 1963).

There is a second class of content models where attempts are made to specify taxonomies of the job outcomes, or rewards, that are important for explaining job behavior. However, there have been few systematic attempts to identify these taxonomies of job related outcomes. As such the source of most of the job performance related taxonomies has been the job satisfaction literature whereby some form of the factor analytic approach has been employed.

A study which took one step in the direction of determining important job related outcomes was the study of satisfiers and dissatisfiers by Herzberg, Mausner, and Snyderman (Herzberg, Mausner, & Snydrman, 1959). Using a critical incidents technique, people were asked to think of a time when they felt exceptionally good about their jobs. They were also asked to think about a time when they felt exceptionally bad about their jobs. What was done was to essentially determine a taxonomy of what contributes to good feelings about the job and a similar taxonomy of what contributes to bad feelings about the job. The list of items that contribute to the bad feelings about the job are the basic elements of the extrinsic factor, those elements that have little to do with the job itself such as compensation, supervision, and policies. The list of items contributing to the good feelings about the job form the basic intrinsic factor, those elements that have to do with the job itself such as achievement, responsibility, ability utilization, and creativity. Even though Herzberg et al. proposed that the extrinsic and intrinsic factors were independent, a proposition that has received considerable criticism (House & Wigdor, 1967), the result is at least a step in the direction of identifying important job related outcomes. Not only does this provide us with that first step, but it also suggests that there are different aspects of the outcomes that may be the result of different behaviors or incidents. The basic extrinsic/intrinsic factor structure has been employed here but is more a direct result of the factor analytic approach mentioned earlier.

Imbedded in a theory of job satisfaction where an attempt to determine the satisfactoriness of a job to an individual's needs, comes another taxonomy of job related outcomes. From the Minnesota Studies on Vocational Rehabilitation (Dawis, Lofquist, & Weiss, 1968) comes the Minnesota Satisfaction Questionnaire (MSQ). Using a series of factor analytic approaches, one of the most comprehensive taxonomies of job satisfaction related outcomes emerged. Factor analyses of the twenty scales tend to produce two factors which look very much like Herzberg's intrinsic versus extrinsic dichotomy (Campbell & Pritchard, 1974; Galloway & Mendoza-King, 1999). It is this very quality that dictated the use of the MSQ in this study. However there is one interesting difference to be noted in the nature of the scale of the 1967 version used in this study. While the Herzberg dichotomy has to do with the distinction between satisfaction and dissatisfaction, the 1967 scale is only measuring degrees of satisfaction. The lowest end of the scale is "Not Satisfied" while the remainder of the scale represents increasing levels of satisfaction. No mention of dissatisfaction is ever made although the data still factors in prediction with the intrinsic and extrinsic dichotomy. This particular finding is perhaps one of the more significant to the field. The finding in no way can refute the independence of the extrinsic and intrinsic factors, in fact the correlation between them is quite high at .78 using the MSQ manual factor structure, a finding that is not at all uncommon (Schmitt, Coyle, White, & Rauchenberger, 1978; Wexley, Alexander, Greenwalt, & Couch, 1980). However what is novel is the fact that when varying levels of satisfaction alone are examined, the dichotomy emerges just as it does when the difference between satisfaction and dissatisfaction is studied. What this finding seems to suggest is that the Herzberg et. al. two factor theory may not be as washed up as many have been ready to state it is (Hackman & Oldham, 1976; House & Wigdor, 1967; Locke & Latham, 1990; Vroom, 1964). It also suggests that the prepotency of these two factors on overall job satisfaction has merit as well. Perhaps this notion can be extended to life satisfaction. Studies where locus of control are examined in combination with life satisfaction might provide evidence of this proposition.

Direct Effects, Environmental Influences, and Individual Differences

What people find satisfying about their jobs is a function of the correspondence between the individual's needs and the reinforcer system of the job (Dawis, Lofquist, & Weiss, 1968). It is the individual's needs that are believed to be responsible for the relationships found between various individual differences and job satisfaction while it is the nature of the reinforcer system that is believed to be responsible for the relationships found between various job environments and job satisfaction.

With the large direct effect of the extrinsic job satisfaction relationship to overall job satisfaction (standardized coefficient = .55) there is evidence that there are other strong effects on overall job satisfaction besides the mediational component of intrinsic job satisfaction. Although the MSQ makes it possible to obtain a more individualized picture of the worker satisfaction, the instrument also provides for the aggregation of results from which reinforcer systems of the overall group can be inferred. There are clearly other influences on overall job satisfaction occurring whose nature was not particularly of interest in this study. As a refinement to the study, items pertaining to the individual's growth need strength, locus of control, or other personality variables could be included and their effects as mediators or moderators between extrinsic job satisfaction, intrinsic job satisfaction, and overall job satisfaction could be assessed. Additionally, measures of the environment's need fulfillment capability, in combination with the job satisfaction measures would provide insight into this relationship. Further, the relationship between extrinsic job satisfaction and overall job satisfaction is positive. From this, it can be inferred that not only does an increase in extrinsic job satisfaction correspond with an increase in overall job satisfaction, but also that a decrease in extrinsic job satisfaction corresponds with a decrease in overall job satisfaction as well. Given the limitations of this study, the influences on the direct relationship between extrinsic job satisfaction and overall job satisfaction can only be speculated upon.

Implications of the Study

The results of this research have provided some evidence that there exists at least a two level structure underlying job satisfaction. The significant mediational property of the intrinsic job satisfaction latent variable on the relationship between the extrinsic job satisfaction latent variable and overall job satisfaction suggest that the two may operate in a hierarchical prepotent manner. Although the Maslow hierarchy (Maslow, 1959) has a widespread intuitive appeal, difficulties with operationalizing the variables and testing the propositions have prevented a successful test of the overall theory. However, this study and others have provided considerable evidence that a two level hierarchy is tenable (Barnes, as cited in Alderfer, 1972; Harrison, as cited in Alderfer, 1972; Porter, 1964, 1965).

There is no doubt that the nature of work is changing as a result of many driving forces (Howard, 1995). Most of the changes are involving the need for workers with greater intrinsic motivation. With the evidence provided in this research comes the suggestion that in order to unleash all the motivating potential within individuals, organizations will need to pay due attention to the extrinsic motivators as well as the intrinsic motivators. In fact, it is the gratification of the extrinsic needs that allows for the unleashing of the intrinsic motivating potential. It is this finding that suggests that as the nature of work changes to forms that will require greater intrinsic motivation of the workers themselves, organizations need to be keenly aware of all the resources available to them for unleashing this motivation potential.

One of the more prominent changes in the nature of work has to do with technology and its impact on the work environment. Much of the manufacturing work is becoming increasingly automated causing increased demand for workers to be programmers and diagnostitions of the automated machinery. This change in the focus of the worker places increasing cognitive demands on them and requires the use of increased creativity and abilities. Technology has also changed the way people communicate in organizations. Workers using telecommuting as an optional mode of working will be required to exercise an increase in individual responsibility. With the use of networking and electronic mail, workers correspond with each other in a virtual environment where the position of a person in the hierarchy has less impact on the communication than the actual substance of the communication itself (Sproull & Kiesler, 1991; McGuire, Kiesler, & Seigel, 1987; Zuboff, 1988). Moral authority provides greater influence than does positional authority in this situation (Covey, 2001; Mohrman, & Cohen, 1995).

The condition of moral authority taking on greater importance than positional authority provide the prerequisite for the lateral or boundaryless organization. While there are templates for the organization of work in this environment, the main goal is to instill flexibility to sense and respond to rapid change. These environments provide for increases in variety of work, opportunities for personal growth, skill development, and connectedness to others, all higher order needs (Mohrman, & Cohen, 1995).

Within these flexible work environments resides the self empowered work group where teamwork and involvement are the norm. Acceptance of responsibility by the work group is emphasized as the organizational decision making processes are decentralized to these work teams. It is within these autonomous work groups where workers have the opportunity for massive personal growth and skills development (Buchanan, 1989). In order for the organization to respond to a turbulent ever changing external environment, this decentralization of decision making processes require that the group members be self-managing and responsible with security resulting from the possession of core competencies.

In order for workers to maintain their employability and value to the organization, there is a need for the worker to view their career as lifelong learning. Workers may age over several employment cycles requiring them to learn new skills. Hall (1976) referred to this situation as a protean career that is shaped largely by the individual's intrinsic motivation, not the organizations extrinsic rewards. While this may eventually become the norm, until it does, workers should savor the intrinsic rewards of challenging new assignments. With this will come an emphasis on varied work experiences and the need for explicit experience in other skills relating to learning how to learn, or what Hall and Associates (1986) have identified as the meta-skills of adaptability and identity. Organizations as a whole will have to become learning organizations where value is placed on personal growth. Clearly high intrinsic motivation will be required of the individual members who strive to better themselves.

In the boundaryless learning organization, leadership takes on a new form. The leaders themselves will need high commitment that comes through finding personal meaning in their role. This meaningfulness combined with responsibility predict internal work motivation (Hackman & Oldham, 1976). Since most work will be non-routine, workers will need to possess initiative, motivation, and take responsibility for task accomplishment. The leader will therefore need to instill internalized commitment from the followers through expressing a developmental orientation that emphasizes follower competence. Leaders can tap into the followers unconscious motives of affiliation, power, and achievement through the articulation of ideological goals and values thereby providing an opportunity for moral involvement. Again, higher order motivation will be necessary for organizations to provide effective leadership in this environment.

Charismatic leadership will not be as effective in the new organization where the environment does not favor extrinsic rewards (Mischel, 1973). In order to counter act the conflict between providing contingent extrinsic compensation and value oriented leadership, the leader will be required to stress organizational goals that are under the influence of the individual members. The leaders may also reward extra organizational behaviors like membership in teams to counteract the conflict. As an additional motivator, leaders will need to provide intellectual stimulation in order to tap into workers independent initiative, autonomous judgment, analyzing and thinking. In summary, leadership in the new work environments will be more about coaching and less about providing direct orders. This will be necessary to provide the catalyst for the intrinsic motivation that will be necessary for organizations to compete successfully in an increasingly global marketplace.

The time may actually be near where there is a merging of social and economic needs. The new initiatives provide the context for enriched, autonomous, and responsible jobs, all higher order needs of individuals. But there are individual differences in peoples need for achievement. People with high need for achievement crave high challenge, growth, and development whereby people with low need for achievement desire steady income, good benefits, and pleasant working conditions. In the adaptable organization the matching of the individuals with jobs that meet their needs will be necessary.

There are still many aspects of worker motivation in the changing nature of work that will need to be explored. Of primary interest is the definition and rewarding of collective performance. At what level of analysis does the reward come from? Perhaps the answer lies partially in a collection of rewards coming from individual performance, collective performance, and the integration of the work into the larger whole. The idea of the learning organization combined with lateral and boundaryless organizations where work is performed largely by autonomous self directed work teams adds the necessity for all members of the organization to be actively engaged in systems thinking (Senge, 1990). Technology allows for the sharing of information widely across the organization further enabling the systems thinking of the individual members. All this adds an increase in cognitive demands on the worker and no doubt increased use of their abilities, creativity, and responsibility. Again the need for intrinsic motivation has never been so great.

Undoubtedly extrinsic rewards can be aligned to reinforce the desired behaviors on the job. For example, participation in cross-functional work teams could be rewarded as could the learning of a new needed skill. However, it is the gratification of the lower needs that allows the unleashing of the highest motivating potential of the intrinsic needs. The ultimate goal might be to get organizational members to obtain personal mastery of their duties (Senge, 1990). Personal mastery shares some of the qualities of the optimal state called flow (Csikszentmihalyi & Csikszentmihalyi, 1988). The feeling of flow is so gratifying that people will often pursue the activity that produces the state simply for it's own sake without regard to any contingent rewards. Since flow requires a state of concentration that leads to such complete absorption that no mental attention is left over for other activities, this state cannot be obtained unless the lower needs are completely satisfied.

All the changes in the nature of work bring exciting new freedom and opportunity for the individual worker but it also comes with responsibility. The workers themselves need to take control of their careers and be prepared for the lifelong learning journey. The organization as the dominant institution of out time (Herzberg, 1971) also has the responsibility to provide enough of the extrinsic rewards to unleash the intrinsic needs of people so that they can effectively grow. Indeed there will be a need for new psychological contracts between the individuals and the organization so that each may truly work cooperatively toward the mutually gratifying higher purposes of both.

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