

## Maslow Reconsidered: A Review of Research on the Need Hierarchy Theory

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The uncritical acceptance of Maslow's need hierarchy theory despite the lack of empirical evidence is discussed and the need for a review of recent empirical evidence is emphasized. A review of ten factor-analytic and three ranking studies testing Maslow's theory showed only partial support for the concept of need hierarchy. A large number of cross-sectional studies showed no clear evidence for Maslow's deprivation/dominance proposition except with regard to self-actualization. Longitudinal studies testing Maslow's gratification/activation proposition showed no support, and the limited support received from cross-sectional studies is questionable due to numerous measurement problems. The difficulties with testing the theory are discussed and the conceptual, methodological, and measurement problems of the studies reviewed are detailed. The implications of the findings and future directions for research are outlined.

### I. PURPOSE AND BACKGROUND

Maslow's need hierarchy theory (1943, 1954, 1970) presents the student of work motivation with an interesting paradox: The theory is widely accepted, but there is little research evidence to support it.<sup>1</sup> Since Maslow first published his theory 30 years ago, it has become one of the most popular theories of motivation in the management and organizational behavior literature. The theory has influenced the writings of many prominent authors in the field of management and organizational behavior (e.g., Davis, 1946; Viteles, 1953; Leavitt, 1964; McGregor, 1960; Argyris, 1964; Schein, 1965). Furthermore, the theory has provided an a priori conceptual framework to explain diverse research findings (Miner & Dachler, 1973). Such widespread acceptance of the Need Hierarchy Theory is rather surprising in light of the fact that until the mid-sixties (Blai, 1964; Hall & Nougaim, 1966; Alderfer, Note 1) little empirical evidence existed that would support the predictions of the theory especially in the field of industrial and organizational psychology. It has almost become a tradition for writers to point out the discrepancy between the popularity of the theory and the lack of clear and consistent empirical evidence to support it (Clark, 1960; Cofer & Appley, 1964; Vroom, 1964; Berkowitz, 1969; Hill, 1969). However, in spite of this lack of evidence, many writers continued to use parts of the theory or Maslow's need classification in their recent writings, e.g., Clark's (1960) theory of motivation in work group and Lawler's (1971) model of the importance of pay.

Recently, the interest in Maslow's Need Hierarchy Theory has been revived due to the publication of a number of empirical studies testing some predictions of the theory. As yet, however, no known review of literature compares and integrates the findings of these studies. The purpose of this paper is to review and evaluate the empirical research related to Maslow's Need Hierarchy Theory, thereby assessing the empirical validity of the theory itself.

Several constraints were imposed on this review: First, the review will deal only with the test of Maslow's Theory in the work situation. For a review of the empirical evidence in other situations see Cofer and Appley (1964). Second, this review will include only studies that used statistical rather than clinical methodology (after Meehl, 1954). Third, this review will deal only with what is considered to be the core or the main elements of Maslow's Theory as it relates to work motivation.

## II. MASLOW'S NEED HIERARCHY THEORY: A BRIEF DESCRIPTION

Part of the appeal of Maslow's Need Hierarchy Theory is that it provides both a theory of human *motives* by classifying basic human needs in a hierarchy, and a theory of human *motivation* that relates these needs to general behavior. As a theory of motives or needs, Maslow, like other writers (Langer, 1937; Murray, 1938; Centers, 1948; McClelland *et al.*, 1953; and Schaffer, 1953) proposed that human needs can be classified into different categories. Unlike others, however, Maslow proposed that his need categories are structured in a hierarchy of prepotency and probability of appearance. The hierarchy of needs is as follows<sup>1</sup> (in ascending order of prepotency): the physiological needs, the safety needs, the belongingness or love needs, the esteem needs, and the need for self-actualization (Maslow, 1970, pp. 35-47). Maslow argued that the five basic needs are instinctoid (Maslow, 1970, ch. 6). Consequently, Maslow postulated that his needs are "more universal" for all cultures than other superficial desires or behaviors (Maslow, 1970, p. 54).

Maslow also distinguished his five categories by referring to some of the needs as deficiency needs and others as growth needs. "Needs for safety, the feeling of belonging, love and respect (from others) are all clearly deficits" (Maslow, 1955; p. 10). The growth needs incorporate self-respect, achievement, and self-actualization. In this paper, we will refer to autonomy, achievement, and self-actualization as growth needs, and the needs below them in the hierarchy as deficiency needs.

As a theory of motivation, Maslow used the two concepts of deprivation and gratification to provide the dynamic forces that linked needs to behavior. Maslow utilized the deprivation concept to establish

<sup>1</sup> Maslow (1970) also discusses two additional need systems, the "aesthetic" needs and the desire to know and understand.

"dominance" within his hierarchy of needs. As stated by Maslow (1970, p. 59), the chief dynamic principle animating this organization (of human needs) is the emergence in the healthy person of less potent needs upon gratification of the more potent ones. The physiological needs, when unsatisfied, dominate the organism, pushing all capacities into their service and organizing these capacities so that they may be most efficient in this service. Maslow postulated that deprivation or dissatisfaction of a need of high prepotency will lead to the domination of this need over the organism's personality.

Following the satisfaction of a dominating need, the second element of the dynamic force in Maslow's Theory will then take place. Relative gratification of a given need submerges it and "activates" the next higher need in the hierarchy. As stated by Maslow (1970, p. 59), relative gratification submerges them [potent needs] and allows the next higher set of needs in the hierarchy to emerge, dominate, and organize the personality, so that instead of being, e.g., hunger obsessed, it now becomes safety obsessed, and the principle is the same for the other sets of needs in the hierarchy, i.e., love, esteem, and self-actualization.

This dynamic cycle over time of deprivation→domination→gratification→activation continues until the physiological, safety, social, and esteem needs have all been gratified and the self-actualization need has been activated. In a later work (1965), Maslow modified the gratification/activation idea by proposing that in a growth-motivated, self-actualizing individual, gratification of the self-actualization needs causes an increase in its importance rather than a decrease. Maslow also acknowledged numerous other exceptions to this theory. Notably, he pointed out that long deprivation of a given need may create a fixation for that need. Also, higher needs may emerge not after gratification, but rather after long deprivation, renunciation, or suppression of lower needs. Maslow emphasized again and again that behavior is multidetermined and multimotivated. From this general approach Maslow dealt with a wide range of consequences to his theory. It should be pointed out, however, that Maslow's theory did not deal with some traditional issues of motivation in work such as persistence in behavior, the role of learning, perception, and environment of human action (see Atkinson, 1964, for details). In fact, Maslow's theory is a theory of human behavior in general rather than work behavior in particular.

The present paper will review the research literature that attempted in the work situation to test Maslow's theory or parts of it. The review will be divided into three related sections, each section dealing with one main element of Maslow's Need Hierarchy Theory. These elements are: (1) Maslow's need classification scheme; (2) the deprivation/domination proposition; (3) the gratification/activation proposition.

### MASLOW'S NEED CLASSIFICATION SCHEME

Most of the research dealing with Maslow's need classification scheme has used factor analytic techniques. In the literature, ten factor-analytic studies attempted explicitly to test Maslow's need classification scheme (see Table 1). These studies raise three related questions: (1) Does the factor analysis yield five factors that can be interpreted conceptually in terms of Maslow's need categories?; (2) Are Maslow's need categories independent from each other or do they overlap? What is the pattern of overlapping? Is the overlapping between adjacent or non-adjacent categories?; (3) Are Maslow's need categories independent from supposedly unrelated items or factors? Table 1 summarizes the results of the ten factor-analytic studies in terms of the above three questions. (The results were factor analyzed for twelve samples, because two studies included two different samples each.) As shown in Table 1, the samples in these studies were composed of various groups (professionals, nonprofessionals, students, managers, males, and females). The measuring scales for these studies also varied. Four different scales were utilized in these studies: four of the studies used a modified Porter (1962) Need Satisfaction Questionnaire (NSQ); and the remaining four studies utilized three different questionnaires. A comparative evaluation of these four scales and two additional scales (to be discussed later) is presented in Table 2.

The NSQ was designed to reflect Maslow's need classification scheme with two exceptions. First, the NSQ did not contain any items relating to the most prepotent needs—physiological needs. Second, the NSQ included an autonomy need as an independent category which was inserted between the esteem and self-actualization need categories. Maslow included autonomy in his esteem category. The NSQ format is designed such that for each item which specifies a particular motivational characteristic, subjects are asked: (a) how much is there now?; (b) how much should there be?; and (c) how important is this to me? The responses are usually marked on a seven-point scale ranging from minimum to maximum amounts. This format generates four types of scores for each item: (1) "How much is there now" score; (2) "How much should there be" score, (3) Need importance score, and (4) Need deficiency score, which is calculated by subtracting the "is now" score from the "should be" score. Table 1 shows the results of the factor analysis performed on the four scores.

As a device for testing Maslow, the NSQ has several weaknesses. First, it contains only 13 to 15 items mostly dealing with Maslow's two highest need categories. Second, the NSQ originally included no reliability or validity figures; later Porter and Lawler (1968) provided some data showing discriminant validation of the NSQ. Third, the NSQ suffers from a number of methodological problems particularly due to response bias.

TABLE I  
FACTOR ANALYTIC STUDIES TESTING MASLOW NEED CLASSIFICATION SCHEME

Study and year	Sample	Scale
1. Alderfer, 1966	329 Factory and supervisory employees	Alderfer (Note 1) explicit to existence, relatedness, growth (ERG)
2. Beer, 1966	129 Clerical workers in an insurance company	A preference ranking inventory (Beer, Note 3)
3. Schneider, 1968	150 Nurses	Schneider's Questionnaire (1968) explicit after Maslow
4. Huizinga, 1970	262 University employees in various occupations other than faculty (in Holland)	Huizinga (1970) explicit to Maslow
5. Payne, 1970	81 Unskilled female operators 106 Management students in various occupations	Selected 8 of 13 Porter (1961) items and modified wording
6. Roberts <i>et al.</i> , 1971	380 Managers at five levels in high technology firm	Porter (1961) scale plus additional items
7. Alderfer, 1972	217 Bank employees	Modified Schneider Questionnaire (1968) explicit after Maslow
8. Herman and Hulin, 1973	174 Managers	Porter (1961) explicit after Maslow
9. Wahba and Clemence, Note 9	72 Male librarians 124 Female librarians	Porter (1961) explicit after Maslow
10. Waters and Roach, 1973	101 Insurance company managers	Porter (1961) explicit after Maslow

Subjects filling the instrument give the fulfillment and importance ranking almost simultaneously. Such procedure produces a response error by showing a high correlation between fulfillment and importance because subjects tend to assign the same value to fulfillment and importance (Alderfer, 1972). Fourth, Lawler and Suttle (1972) pointed out that the correlations among the NSQ items in the same category were not high

TABLE 1 (Continued)

Questionnaire orientation	Factor-analytic model	Is now					
		Phy	Sec.	Soc.	Est.	Aut.	Self-Act.
Specific to job	Principal component						
General work motivation	Centroid model with iterations						
General							
General work motivation	Principal component						
Specific to job	Principal component						
Specific to job	Principal component	No	No	No	No	No	No
General work motivation		Overlap with soc. and est.	Loaded twice on different items	Yes	Overlap with soc.	Overlap with est. and aut.	
Specific to job	Principal component						
Specific to job		No	No	No	No	No	No
Specific to job	Principal component	No	No	No	No	No	No

(Continued on next page)

and that all items correlated with each other. As a result the NSQ may not accurately reflect Maslow's need classification scheme. Fifth, Wall and Payne (1970) identified and empirically tested the effects of two limitations of deficiencies scores. Logically, a fulfillment rating of 5 permits a deficiency score range of -4 to 2 and arithmetically increases

TABLE 1 (Continued)

Study and year	Should Be						Deficiency	
	Phy.	Sec.	Soc.	Est.	Aut.	Self-Act.	Phy.	Sec.
1. Alderfer, 1966	—	—	Overlap with est.	—	—	Yes		
2. Beer, 1966								
3. Schneider, 1968								Overlap with soc.
4. Huizinga, 1970	Overlap with sec.	Overlap with phy.	Overlap with aut.	Overlap with aut.	No	Overlap with aut.		
5. Payne, 1970								No No
6. Roberts <i>et al.</i> , 1971	—	No	No	No	No	No	—	No
7. Alderfer, 1972								
8. Herman and Hulin, 1973								No
9. Wahba and Clemence, Note 9		No No	No No	No No	No No	No No	— —	No No
10. Waters and Roach, 1973							—	No.

the range by 3 to -1 to 5. Psychologically, respondents were quick to report job deficiencies but rarely reported excess satisfaction.

Three researchers (Alderfer, 1972; Huizinga, 1970; and Beer, Note 3) utilized different scales. Alderfer (1972) utilized a questionnaire designed by Schneider (1968; Alderfer, 1972) including eight sets of five items. The five items were designed to reflect Maslow's needs. The scale forced subjects to discriminate among kinds of satisfaction. Again, Schneider's

TABLE I(Continued)

Deficiency—Continued				Importance					
Soc.	Est.	Aut.	Self-Act.	Phy.	Sec.	Est.	Aut.	Self-Act.	
Yes									
					Yes	Yes	Yes	Overlap on un-related scheme	Yes
No	Yes	No	Overlap with aut.		No	No			
No	No	No	No		No	No	No	No	
No	No	No	No		No	No	No	No	
No	Overlap with soc. & aut.	No	Yes	—	No	No	Overlap with soc.	No	Yes
					No	No	No	Overlap with self-act.	No
No	No	No	No						
No	No	No	No	—	No	No	No	No	No
No	No	No	No	—	No	No	No	No	No
Overlap with sec.	Yes	No	Overlap with est. and aut.						

scale showed some weaknesses, particularly a low convergence among items intended to measure the same concepts.

Huizinga's questionnaire used 24 items which were divided among Maslow's five categories. The questions were placed in the context of how important each of the items would be in the respondent's evaluation of any job. Huizinga's scale is noteworthy for several reasons. One, it reflects Maslow's categories including the physiological needs. Two, the



questionnaire is oriented to work motivation or satisfaction in general rather than being specific to the employee's present job. Three, it contains both positive and negative items to reflect the concepts of gratification and deprivation. Fourth, the scale showed high discriminant validation. However, no reliability figures were reported.

Beer (Note 3) used six sets of five job items, each item reflecting a different need category. The respondents were asked to rank the items of each set in importance from 1 to 5. The six sets were ranked twice; one ranking measured what aspects of a job were important to the respondent. The second ranking measured the extent to which the basic needs were satisfied by the particular job the respondent held at the moment. Beer's scale showed high correlations among items measuring the same need. Beer developed subscale total scores by adding the rank assigned to the items in each category. This scoring procedure has the weakness of forcing negative correlations within the need scale (Alderfer, 1972). As such, this procedure does not provide a methodologically independent measure of the different need fulfillment and preference.

The following conclusions can be drawn from the results of the factor-analytic studies testing Maslow's need classification scheme as shown in Table 1:

(1) None of the studies has shown all of Maslow's five need categories as independent factors. Only Beer's study showed four independent factors reflecting four needs; the fifth need overlapped with an unrelated factor.

(2) In some studies, deficiency needs (particularly social and esteem) and growth needs (particularly self-actualization and autonomy) clustered independently from each (note that deficiency in needs seems to be equated regardless of the degree of deficiency).

(3) Self-actualization needs emerged as independent factor in some studies, and in other studies, it overlapped with other need categories.

(4) Two studies using two samples each showed no support for Maslow's need categories.

Overall, the results in Table 1 are clearly not supportive of Maslow's need classification scheme. The two studies that provided partial support (Beer and Huizinga) employed different interpretations of Maslow's need classification. Beer assumed that Maslow's need categories should emerge as independent factors, while Huizinga assumed that Maslow's need categories should be overlapping. If either explanation is accepted, one of these two studies would be considered as rejecting Maslow's classification. We interpret Maslow's ideas as suggesting overlapping needs. Maslow proposed that his need categories are not mutually exclusive, rather they are interdependent. If this interpretation is accurate, it should follow that need categories should show greater overlap between adjacent

rather than nonadjacent need categories. The results show clearly that both adjacent and nonadjacent categories overlap. There are also some indications that both deficiency and growth needs cluster independently from each other. Self-actualization needs often emerge as independent factors. Although it is necessary to point out the numerous problems with most of the scales used in these studies as shown in Table 2, two points should be emphasized. First, one should be careful in making inferences from factor-analytic results since these are mostly a function of the data collected rather than the theoretical construct itself. Also, in the case of the NSQ, the lack of support may be due to a methodological artifact because it may be impossible to obtain five independent factors utilizing only 13 items. Also, it can be argued that factor analysis should not yield five independent factors due to the hierarchical nature of the theory. If Maslow's theory was not hierarchical in nature, then it would seem logical that factor analysis should produce results supporting five clear factors. In some sense, the failure of the factor analytic studies to produce five independent needs can be interpreted as indirect evidence to support rather than negate Maslow's hierarchical proposition. Second, it can be said that the "is now" scale and the "deficiency scores" may not reflect Maslow's ideas as accurately as the "should be" or the need importance scale. Regardless of the scale used, the factor analysis of any of the four scales does not yield clear support for Maslow's need classification scheme.

The general conclusion from the factor-analytic studies is consistent with the findings of another group of studies explicitly testing Maslow's need classification scheme by utilizing a rank order technique. Typically, these studies asked subjects to rank Maslow's needs in the order of their importance and/or desirability. The results of the rank order studies are shown in Table 3.

As shown in the table, the rank-order studies utilized various types of samples. Also, each of these studies utilized a specially designed scale. Beer's scale has been described earlier. Goodman's scale was designed to determine the dominance among three of Maslow's needs (security, social, and ego needs). The subjects were asked to indicate in four sets of questions the importance to them of the set and their desirability for each factor in the set (each factor represents one of the three needs). The desirability and the importance of each factor were multiplied to determine the dominance of the need. No reliability or validity data were reported. Blai's questionnaire used a ranking system. Respondents were asked to rank the three most important factors out of fourteen items which reflected a combination of the Maslow categories and a selection of needs from other authors. Again, no reliability or validity data were reported.

In interpreting the results in Table 3, the main interest is focused upon

TABLE 2  
ANALYSIS OF SCALES OPERATIONALIZING MASLOW'S PROPOSITIONS

	NSQ	Schneider	Huizinga	Beer	Goodman	Blai
Designed originally to explicitly test Maslow	No	Yes	Yes	Yes	Yes	No
Number of Maslow's five needs represented	Four	Four	Five	Four	Three	Four
Extent to which number of items are evenly distributed among Maslow needs	Three items for security & social, ten items for esteem and self-actualization	Well-balanced	Well-balanced	Well-balanced	Three questions only	Well-balanced
Method used to select items reflecting Maslow	Author's opinion	Item agreement by panel of eight graduate students	Author's opinion who carefully used Maslow's own words in designing items	Item agreement by panel of seven graduate students	Author's opinion	Author's opinion
Orientation of questionnaire—specific job at the moment or general work motivation	Specific job	Specific job	General motivation	Both	Specific job	Both
Ranking or rating	Rating	Both	Rating	Ranking	Ranking	Ranking
Reliability-test-retest	None	None	None	None	None	None
Intercorrelation of items within categories	Low	Low	Not given	High	Not applicable	Not given
Validity: predictive	No external criteria	No external criteria	No external criteria	Not given	Not given	Not given
Discriminant, Not given	Moderate	Not given	High	Not given	Not given	Not given

TABLE 3  
RANK-ORDER STUDIES TESTING MASLOW'S NEED CLASSIFICATION SCHEME

Study and year	Sample	Method	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
(1) Blai, 1964	80 Trade workers	Rank three out of 14 needs including the five Maslow needs	Security	Esteem	Congentiality	Interesting du- ties	Independence
	47 Service work- ers		Security	Independence	Interesting du- ties	Congentiality	Respect
	150 Clerical work- ers		Interesting du- ties	Security	Self-actualiza- tion	Congentiality	Advancement
	104 Manager-offi- cials		Self-actualiza- tion	Interesting duties	Advancement	Security	Congentiality
	89 Professionals		Self-actualiza- tion and inter- esting duties	—	Advancement	Independence	Congentiality
(2) Beer, Note 3	129 Insurance clerks	Rank method for needs	Self-actualiza- tion	Autonomy	Social	Esteem	Security
(3) Goodman, 1968	24 Supervisors and 7 workers from an electronic firm	Rank both desira- bility and impor- tance of three needs	Social	Security	Esteem		

the rank order of the five basic needs to determine whether it follows the same rank order proposed by Maslow. The results in the table indicate that, generally, there is no consistent support for the hierarchy proposed by Maslow. Only one study (Beer) showed that three needs are ranked as proposed by Maslow and the remaining two needs exchanged ranks. It should be noted that according to Maslow, rank order of importance is dependent upon the dominant need for the individual, and as such it may only reflect the deprivation of certain needs (at least in the first rank) rather than the categorization of needs. In other words, it can be argued that the results of the rank order studies are not a valid test of Maslow's Need Hierarchy, since rank ordering is not a Maslow concept. A better test of the theory may be inferred from the relationship between the most dominant need and the assumed level of deprivation of the subject (e.g., factory workers may be more deprived from security and should report it as occupying the first rank of importance while managers are expected to report self-actualization as the most important). This argument, however, cannot be tested in the data in Table 3 since the studies were not designed to measure such inferences. It is the authors' belief that rank ordering studies are a poor test of Maslow's ideas and the conclusions from them should be carefully weighted.

A third type of evidence related to the test of Maslow's need classification scheme comes from studies that attempted to classify human needs empirically by factor analysis techniques without an a priori theoretical framework (for example, Centers, 1948; Schaffer, 1953; Friedlander, 1963). These studies do not show similar need categories as those proposed by Maslow. Alderfer (1972, p. 4) reviewed nine factor-analytic studies of employee attitudes and concluded that they are consistent with one need that he labeled "growth need" rather than the five needs postulated by Maslow.

Taken together, the results of the factor analytic studies and the ranking studies provide no consistent support for Maslow's need classification as a whole. There is no clear evidence that human needs are classified in five distinct categories, or that these categories are structured in a special hierarchy. There is some evidence for the existence of possibly two types of needs, deficiency and growth needs, although this categorization is not always operative. Self-actualization needs emerge sometimes as an independent category.

#### THE DEPRIVATION/DOMINATION PROPOSITION

The deprivation/activation proposition is closely related to the gratification activation proposition. Consequently, some studies have provided a test of both propositions at the same time. However, to allow for careful examination of both propositions, each proposition is reviewed independently.

The deprivation/domination proposition can be interpreted as follows: the higher the deprivation or deficiency of a given need, the higher its importance, strength, or desirability. This proposition is not unique to Maslow, in fact, it is common to all need theories. Deficiency is usually measured as the difference between what "should be" and "what is attained." The evidence to test this proposition is derived from two groups of studies. The first group of studies are those utilizing the Porter NSQ in the measurement of job satisfaction, and the second group of studies are those investigating the relationship between satisfaction and the judged importance of environmental and job characteristics.

Table 4 shows the first group of studies. As shown in the table, the samples for those studies consisted of mostly managers. These studies utilized the Porter NSQ or a modified variation of it. Although these studies were not originally designed to test Maslow's ideas, they provide some data for testing the deprivation/domination proposition. In particular, these studies present a measure of need deficiency and a measure of need importance. According to Maslow's theory, the most deficient need should be the most dominant or important need. Consequently, the rank in order of both need deficiency and need importance should correspond to each other if and only if lower order needs are not deprived. In particular, the most deficient need should be ranked as the most important need. Table 4 shows the rank order of need importance in relation to the rank order of need deficiency. The results generally showed that the deprivation/domination proposition is partially supported with regard to self-actualization and autonomy needs; but the results do not support the proposition with regard to security, social, and esteem needs. Findings of other studies utilizing different scales or methodologies are generally consistent with the Porter type studies (Huizinga, 1970; Hall & Nougaim, 1966; Alderfer, 1966, 1969, 1972; Trexler & Schuh, 1969; Lawler & Suttle, 1972). These studies show directly or indirectly that the proposition of deprivation/domination is not always supported. These findings should be interpreted carefully, however, since it is based upon group rather than individual data and due to some scaling assumptions that are necessary if one is to compare scales which are formed on the basis of assumed interval data rather than ranking procedure. The lack of support, however, is consistent with the findings. It is also possible to argue that the deprivation/domination proposition does not apply to self-actualization. Maslow pointed out in later writings that fulfillment of self-actualization usually leads to attachment of greater importance to them than other needs. Consequently one should expect that need fulfillment of self-actualization and its importance should be highly correlated. Table 4 shows that this proposition is not supported.

It is difficult to assess whether the higher order needs (autonomy and self-actualization) are ranked more important in the Porter type studies

TABLE 4  
DEPRIVATION/DOMINANCE TESTS

		Whether rank of deficiency scores agrees with rank of need importance				
Study and Year	Sample	Security	Social	Esteem	Autonomy	Self-actualization
1. Porter, 1961	64 Lower managers	No	No	No	No	Yes
	75 Middle managers	No	No	No	No	Yes
2. Porter, 1962 and 1963	725 Presidents and vice presidents	No	No	No	Yes	Yes
	1090 Middle managers	No	No	No	Yes	Yes
	101 Lower managers	Yes	No	No	Yes	Yes
3. Haire, Ghiselli, and Porter, 1966	1268 Managers from Nordic-European countries	Yes	Yes	Yes	Yes	Yes
	902 Managers from Latin American countries	No	No	Yes	No	Yes
	703 Managers from Anglo-American countries	No	Yes	No	Yes	Yes
	461 Managers from developing countries	No	No	No	No	Yes
	165 Managers from Japan	No	No	No	No	No
4. Cummings and El Salmi, 1970	83 Top managers	Yes	Yes	Yes	Yes	Yes
	260 Middle managers	Yes	Yes	Yes	Yes	Yes
	82 Lower managers	No	Yes	No	No	No
5. Payne, 1970	81 Female tobacco packers	Yes	No	No	Yes	Yes
	106 Management students	No	No	No	Yes	Yes
6. Slocum <i>et al.</i> , 1971	83 U. S. factory workers	Yes	No	Yes	No	Yes
	94 Mexican workers	Yes	No	No	No	No
7. Clark and McCabe, 1972	1339 Australian managers	No	No	No	Yes	Yes
8. Lawler and Suttle, 1972	187 Lower managers	No	Yes	No	Yes	Yes
9. Simpson and Peterson, 1972	164 Union officials	No	—	—	—	No
10. Wahba and Clemence, Note 9	61 Male librarians	No	No	No	No	Yes
	129 Female librarians	No	No	No	No	Yes

because they are deficient, or reported deficient because they are important. Some writings (e.g., Locke, Note 5, and Friedlander, 1965) argue that there is a V-curve relationship between satisfaction and judged importance. That is, the higher the satisfaction or the dissatisfaction, the higher the ranked importance. Dachler and Hulin (1969) showed that high job satisfaction rather than deprivation is correlated to the judged importance (the opposite of Maslow's hypothesis). Later, Mobley and Locke (1970) pointed out that extreme satisfaction and dissatisfaction is a function of importance, not vice-versa (again, the opposite of Maslow's hypothesis). That is, it is unlikely that a characteristic which is unimportant to someone will generate strong feelings of satisfaction or dissatisfaction. Alderfer (1972) pointed out that artificial explanation for curvilinear forms is less likely to occur in the case of certain scales of measurement. He showed that curvilinearity did not apply to all needs, in particular they existed with regard to what Alderfer called relatedness and growth need but not for existence needs.

It should be pointed out that this last group of studies has dealt with satisfaction with regard to some environmental and job characteristics rather than satisfaction with various needs. However, these studies indicate that the issue of need deprivation and the domination of behavior is not as simple as suggested by Maslow.

#### THE GRATIFICATION/ACTIVATION PROPOSITION

The gratification/activation proposition has been mostly operationalized in two ways as follows: (1) Need satisfaction should be generally decreasing going up in the Maslow need hierarchy; and (2) the higher the satisfaction with a given need (a) the lower the importance of the need, and (b) the higher the importance of the need at the next level of the hierarchy.

Table 5 presents studies that provide a test of the idea that need satisfaction should decrease going up in Maslow's need hierarchy.

The table shows the rank order of need satisfaction in Maslow's five need categories for a number of studies. The studies in the table utilized the original or a modified version of the NSQ. The samples consisted mostly of managers, and also included professionals and workers. The table also indicates that either self-actualization or security are the least satisfied needs, and social needs are the most satisfied. The degree of satisfaction of other needs varies widely; and it is difficult to determine their general pattern. These trends are not in agreement with those proposed by Maslow as far as the progression of satisfaction. Maslow, however, did not suggest which need should be the most or the least satisfied since this depends upon the environment. Accordingly, studies that attempt to test Maslow's theory by measuring the least or the most satisfied needs are in no way an accurate test of his theory.



TABLE 5  
RANK ORDER OF NEED SATISFACTION <sup>a</sup>

Study and year	Sample	Most satisfied					Least satisfied		
		5	4	3	2	1			
1. Porter, 1962	725 Top managers 1090 Middle managers 101 Lower managers	Soc.	Sec.	Est.	Aut.	Self-Act.			
2. Edel, 1966	121 Lower government managers	Soc.	Sec.	Est.	Aut.	Self-Act.			
3. Miller, 1966	171 Union officials	Soc.	Est.	Aut.	Self-Act.	Sec.			
4. Paine <i>et al.</i> , 1966	95 Managers of new government agency	Soc.	Est.	Aut.	Self-Act.	Sec.			
5. Porter and Mitchell, 1967	22 Top military managers 681 Middle military managers	Soc.	Sec.	Aut.	Est.	Self-Act.			
6. Ivancevich and Baker, 1969	49 Overseas middle managers 78 Overseas top managers	Est.	Soc.	Aut.	Sec.	Self-Act.			
7. Ivancevich and Strawser, 1969	268 Industrial managers 60 Accountants	Sec.	Soc.	Est.	Aut.	Self-Act.			
8. Rhinehart <i>et al.</i> , 1969	128 Top government managers 1259 Middle government managers 639 Low government managers	Soc.	Est.	Sec.	Aut.	Self-Act.			
9. Strawser <i>et al.</i> , 1969	235 CPA's	Est.	Aut.	Soc.	Sec.	Self-Act.			
10. Cummings and El Salmi, 1970	83 Top managers 260 Middle managers 82 Lower managers	Est.	Sec. <sup>b</sup> Est. Soc.	Soc. <sup>b</sup> Sec. <sup>b</sup> Soc.	Aut. <sup>b</sup> Aut. <sup>b</sup> Self-Act.	Self-Act. Self-Act. Aut.			
11. Francina <i>et al.</i> , 1970	160 Accountants	Soc.	Aut.	Est.	Self-Act.	Sec.			



There are a number of studies testing the proposition that the higher the satisfaction with a given need, the lower the importance of this need *and* the higher the importance of the need at the next level in the hierarchy.

On the assumption that a deprived group will differ from a privileged group in terms of their needs, some studies attempted to utilize the amount of deprivation of the subjects to test Maslow's ideas. Most of these studies are reviewed and interpreted in terms of Maslow's theory by Vroom (1964). Davis (1946) reported that underprivileged workers lacked ambition or concern for the nature of their work. Pellegrin and Coates (1957) found that executives are likely to define success as career accomplishment, while first level supervisors (whose achievement needs are less satisfied) tend to view success in terms of security and income. In line with these findings, some Porter-type studies found consistent results that top executives are more concerned with higher ordered needs than managers at lower levels in the organizational hierarchy. For example, Porter (1961, 1962), Porter and Mitchell (1970), Centers (1948), Morse and Weiss (1955), and Lyman (1955) found the rating of the importance of accomplishment as positively related to job level. Also, Veroff, Atkinson, Feld, and Gavin (1960) reported that need achievement scores are possibly related to occupational level. Gourevich and Feffer (1962) found a significant difference between the motivational scores of higher order needs for older than younger children.

As pointed out by Hall and Nougaim (1966) the problem with inferring the existence of a need hierarchy from a supposedly deprived and satisfied group is that selection, situational, and cultural factors, not personality, may affect the results. Also, the problem with inferring the existence of the gratification/activation proposition from the correspondence between the organizational hierarchy and the need hierarchy is that the need may be the cause, not the consequence of moving to the higher level in the organizational hierarchy (Vroom, 1964). Further, with the exception of the Porter-type studies, the cross-sectional studies contained no direct measures of both need importance and satisfaction, which meant that they inferred the importance level from the level on the organizational hierarchy. Also none of these studies were designed explicitly to test Maslow's theory. Further, Hall and Nougaim (1966) and Cummings and El Salmi (1968) failed to replicate the conclusions reached by Porter-type studies.

There are four cross-sectional studies in Table 6 that provide an explicit test of Maslow's gratification/activation propositions. The studies conducted by Trexler and Schuh (Note 7) and Wofford (1971) were designed to test Maslow's theory in particular. Alderfer studies (1969, 1972) were designed to compare the prediction of Maslow's theory against Alderfer's own theory (existence, relatedness and growth—ERG theory). As shown

in Table 6, Wofford's (1971) and Trexler and Smith studies provide only limited support for Maslow's gratification/activation proposition. Significantly, Trexler and Smith (1969) showed that in a deprived environment, subjects regress to the lowest level in the hierarchy. This finding is consistent with Porter-type studies findings discussed earlier and the finding of the studies reviewed by Cofer and Apply (1964). The implication of this finding is that the Deprivation/Domination proposition may be only operative in the case of the deprivation of the lower order needs especially physiological needs. Alderfer studies (1969, 1972), on the other hand, showed no support for Maslow's theory but supported Alderfer's ERG theory. The significance of the series of studies conducted by Alderfer is due to the use of the cross-lagged correlational techniques. This technique provides a possible inference of the direction of the relationship between variables and permits the inference of causality. Maslow's need hierarchy theory is based upon causal logic, particularly the deprivation/domination and the gratification/activation propositions. Once these two propositions are supported, it may be possible to assume that the hierarchical notion is supported by extension. Accordingly, the ideal methodology to test Maslow's theory is one that establishes causal or quasicausal relationship. Unfortunately, experimental studies and quasiexperimental studies are rather difficult to conduct to verify Maslow's notions. One alternative to the experimental methodology is that of the longitudinal approach. Table 6 shows the findings of two longitudinal studies (Hall & Nougaim, 1966; Lawler & Suttle, 1972). These two longitudinal studies are based on the assumption that changes in need satisfaction and need strength or importance can only be studied over time using longitudinal data. The proposition tested is that the satisfaction of needs in one category should correlate negatively with the importance of these same needs *and* positively with the importance of needs in the next higher level of the hierarchy. The longitudinal studies used a cross-lagged correlational analysis in addition to static correlational analysis. As mentioned earlier, the former technique makes it possible to infer with some confidence the strength and direction of causal relationships by using longitudinal data and correlational analysis.

As shown in Table 6, Hall and Nougaim (1968), using interviewing technique of a sample of managers, found no strong evidence for either Maslow's hierarchy or a revised two-level hierarchy. However, as managers advance, their need for safety decreases and their need for growth increases. The writers interpreted their findings in light of a model of sequential career stages rather than need hierarchy. This interpretation is yet to be tested, but it points to the time dimension required for the unfolding of the need hierarchy. Clearly, Hall and Nougaim presume that Maslow's hierarchy requires the length of life time to be totally operative.

TABLE 6  
GRATIFICATION/ACTIVATION STUDIES

Study and year	Sample	Method	Findings
Hall and Nougaim, 1966	49 Managers in A & T data collected for five years (longitudinal)	Interview following Maslow's need hierarchy	No correlation between satisfaction of a given need and the strength of next higher need (both in static and dynamic analysis). No difference in need hierarchy in successful group. No support for alternative two-level hierarchy.
Alderfer, 1969	110 Employees from a bank	Combination of Porter (1962) and Beer (1968) scales	No support for belongingness satisfaction and status desire. No support for belongingness satisfaction and belongingness desire. Some support for status satisfaction and status desire.
Trexler and Smith, 1969	Three groups of nonvolunteers — 103 Military males — 65 Undergraduate students male — 32 Undergraduate students female	Specially designed questionnaire showing contact and face validity	In a deprived environment, subjects regress to lowest level in hierarchy. No difference between men and women in a nondeprived environment. As age increases, total average satisfaction increases. Age and operating level in the hierarchy were not positively correlated as predicted. The predicted trend of decreasing satisfaction from lowest to highest need level was not supported.
Wofford, 1971	207 Nonmanagerial employees in four companies	Specially designed questionnaire including job satisfaction and need gratification	Results are nonsupportive of Maslow; each of the upper level need categories are associated with job satisfaction for employees whose lower level needs are ungratified.
Alderfer, 1972	Various samples from seven organizations	Schneider's Questionnaire (not all studies)	Little consistent support for the prepotency assumption for both higher and lower order needs.
Lawler and Suttle, 1972	187 Lower level managers from two organizations data collected twice one year apart	NSQ	Reject the hypothesis that the satisfaction of needs in a category should correlate negatively with its importance and positively with next higher need in the hierarchy.

Lawler and Suttle (1973), on the other hand, used the NSQ as their measuring device to test the gratification/activation proposition. They concluded that the data offered little support for Maslow's theory. In addition to the lack of support shown by cross-lagged analysis, both the studies by Hall and Nougaim (1968) and Lawler and Suttle (1972) showed no support for Maslow's theory utilizing static correlational techniques. This finding was also supported by Alderfer (1972). Alderfer showed in a series of longitudinal studies that his own three-stage theory is generally supported especially when compared to that of Maslow's.

The longitudinal studies reviewed here provide the best test of Maslow's theories at this point. However, in spite of superior methodologies of these studies, they still lack the ability to render Maslow's theory completely unoperative. As pointed out, it may be that a life time is required for the need hierarchy to unfold. Consequently, the appropriateness of the time interval in the longitudinal approach may be questioned. Further, the hypothesis tested in these studies only dealt with any two need stages without the examination of gratification of the needs at the lowest stages since the gratification of lower order need constitute an *a priori* requirement for the function of higher order needs. Finally, the two studies suffer from some measurement problem, particularly with regard to the measuring scales. It is clearly evident that future tests of Maslow's theory should attempt to replicate the longitudinal studies as well as improve the measurement and the design of these studies.

#### GENERAL EVALUATION AND CONCLUSION

This literature review shows that Maslow's Need Hierarchy Theory has received little clear or consistent support from the available research findings. Some of Maslow's propositions are totally rejected, while others receive mixed and questionable support at best. The validity of Maslow's Need Classification scheme is not established, although deficiency and growth needs may form some kind of hierarchy. Again, this two-level hierarchy is not always operative, nor is it based upon the domination or gratification concepts. There is no strong evidence to support the deprivation domination proposition except with regard to self-actualization. Self-actualization, however, may not be a basic need, rather as pointed out by Berkowitz (1969), it may be based more on wishes of what man should be rather than what he actually is. Furthermore, as pointed out by Cofer and Apply (1964, p. 692), theories of self-actualization, particularly that of Maslow, suffer from vagueness in concept, looseness in language, and lack of adequate empirical evidence. Longitudinal data does not support Maslow's gratification/activation proposition, and the limited support received from cross-sectional studies is questionable due to numerous measurement and control problems. These conclusions are

consistent with those reported by Cofer and Apply (1964) in other areas of human motivation. They concluded that "the support [of Maslow's hierarchy] is partial because the evidence concerns only the needs of the two lower levels of his hierarchy, the physiological and anxiety (security) needs" (p. 684).

Do these findings invalidate Maslow's Need Hierarchy Theory? The answer to this question is rather difficult, partly because of the nature of the theory which defies empirical testing, and partly because of the conceptual, methodological, and measurement problems of the research reviewed. Maslow's Need Hierarchy Theory is almost a nontestable theory. The difficulties of testing the theory may be partly due to Maslow's own concept of theory construction and research method. Maslow (1970) criticized what he called the newer methods of research in psychology. He suggested a more "humane" science. Accordingly, he did not attempt to provide rigor in his writing or standard definitions of constructs. Further, he did not discuss any guides for empirical verification of his theory. In fact, his defense of his theory consisted of logical as well as clinical insight rather than well-developed research findings. This is evident by the relatively limited research that has sought to test it, and the difficulty of interpreting and operationalizing its concepts. For example, what behavior should or should not be included in each need category? How can a need be gratified out of existence? What does dominance of a given need mean? What are the conditions under which the theory is operative? How does the shift from one need to another take place? Do people also go down the hierarchy as they go up in it? Is there an independent hierarchy for each situation or do people develop a general hierarchy for all situations? What is the time span for the unfolding of the hierarchy? These and similar questions are not answered by Maslow and are open for many interpretations.

The most problematic aspect of Maslow's theory, however, is that dealing with the concept of need itself. It is not clear what is meant by the concept of need. Does need have a psychological and/or physiological base? Does a need come to existence because of deficiency only or does need always exist even if it is gratified? How can we identify, isolate and measure different needs? There is ample evidence that people seek objects and engage in behavior that are in no way related to the satisfaction of needs. In a discussion of this point, Cofer and Apply (1964) concluded that this is probably also true for animals. Vroom (1964) does not use the concept of needs in his discussion of motivation. Lawler (1971) argued that concept of valence is related to that of need, e.g., objects acquire valence because of their instrumentality for meeting the basic needs of people. Lawler, however, (1971) limits the use of the term to certain stimuli (or outcomes) that can be grouped together because they are

sought by people. Even if we accept such a limited view of needs, the remaining question should be, why should needs be structured in a fixed hierarchy? Does this hierarchy vary for different people? What happens to the hierarchy over time? How can we have a fixed hierarchy when behavior is multidetermined?

These and other logical arguments have been raised about Maslow's theory by many writers (e.g., Berkowitz, 1969). However, as pointed out by Miner and Dachler (1973), Maslow's need hierarchy theory has proven to be a useful theory in generating ideas, and as an a priori logical framework to explain diverse research findings. As such, the theory can only be discarded by consensus or be replaced by a better theory. Furthermore, the research reviewed in this paper is not free of weakness. In particular, there are three drawbacks in most of the research reviewed; the interpretation and operationalization of the theory; the methodology utilized in testing the theory; and the measurement problems.

Maslow's theory has been interpreted variously by many writers. This is evident by the hypotheses studied by different authors and the operational definitions attached to Maslow's main concepts. Maslow's theory is a clinically derived theory and its unit of analysis is the individual. Most of the research used the group as the unit of analysis. The theory is a dynamic theory, while most of the research except the two longitudinal studies, dealt with the theory as a static theory. Maslow's theory is based upon a causal logic, while most of the studies were correlational (again except for the dynamic correlations used by the two longitudinal studies). The dependent variables in most of the research varied and were measured usually by self-reporting techniques, but none of the studies included observable behavior. Although there are six different scales designed especially to reflect Maslow's ideas, there are many measurement problems associated with these scales. Some of the scales do not show acceptable reliability coefficients and their construct validity is questionable.

A number of writers have attempted to reformulate Maslow's need hierarchy theory (e.g., Barnes, Note 2; Harrison, Note 4; Alderfer, Note 1; 1969, 1972). Most notable of these reformulations is that of Alderfer who proposed a theory based upon three related needs in the organizational setting; existence, relatedness, and growth. Alderfer (Note 1, 1969, 1972) provides impressive evidence in support of his theory, especially in contrast with that of Maslow. Some evidence cited in this paper can be interpreted as providing indirect evidence for Alderfer's theory. A complete review of Alderfer studies is beyond the scope of this paper and should await the accumulation of additional studies.

The authors believe that a dual-level hierarchy of need may provide a viable alternative to Maslow's multilevel need hierarchy. It is suggested



that human needs can be categorized as either maintenance or growth needs. The maintenance needs include physiological and security needs; e.g., they are necessary for the survival of the organism. Growth needs on the other hand, include what Maslow considers as belongingness, esteem needs, and self-actualization. The evidence reviewed in this paper as well as those reviewed by Cofer and Apply (1964) seems to indicate that the deprivation/ domination proposition may be only relevant in the case of the deprivation of maintenance need *and* in the case of the decline of the present level of the gratification of any need whether it is maintenance or growth need. The gratification/activation proposition is also applicable only to the maintenance needs but not in the case of growth needs. It follows from this conceptualization that the idea of hierarchy may or may not be operative according to the situation.

The dual-need notion is not new in the literature. In fact, Maslow himself seems to have leaned toward the dual-need notion in his later writings by proposing deficiency/growth need categorization. A number of writers have suggested such ideas with or without the hierarchical configuration. Cofer and Apply (1964) pointed out that the contrast between growth and deficiency needs characterized the views of many prominent psychologists such as Rogers, Allport, and Fromm as well as Maslow's. Recently, Lawler and Suttle (1972) have also recommended a dual-level theory based upon their findings in the subject.

Future research in this area may follow a number of directions:

First: Further work is needed to operationalize the basic constructs of the theory, especially as it applies to the work situation. Efforts should be directed to testing alternative models such as the Alderfer ERG theory and the dual-level notion.

Second: Future research should examine the deprivation/ domination and the gratification/activation propositions independent of Maslow's classification. The longitudinal studies should be replicated, cross-validated, as well as improved in methodology and measurement. Clearly, experiments should be designed when feasible, particularly field experiments in the work place.

Third: The predictions of the theory should be subjected to competitive testing through the use of the critical experiments techniques. There are a number of other theories of motivation that may or may not compete with Maslow's theory. An attempt should be made to reconcile and/or integrate the related propositions of these theories.

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