Role Ambiguity, Role Conflict, Type A-B Behavior, Job Performance, and Psychosomatic Dysfunction

Summer 1980

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ROLE AMBIGUITY, ROLE CONFLICT, TYPE A-B BEHAVIOR, JOB PERFORMANCE, AND PSYCHOSOMATIC DYSFUNCTION

BY

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THESIS

Submitted in partial fulfillment of the requirements for the degree of Master of Science: Industrial Psychology in the Graduate Studies Program of the College of Social Sciences at the University of Central Florida; Orlando, Florida

Summer Quarter
1980
ABSTRACT

The main purpose of the present study was to determine empirically whether differences in perceived role conflict, role ambiguity, and Type A proclivities are associated with differences in perceived psychosomatic dysfunction. Moreover, an ancillary purpose of the present study was to determine whether differences in perceived job performance were associated with Type A-B tendencies and perceived role conflict and ambiguity.

Data for 72 workers from all levels of two types of organizations (i.e., citizen protection and health) were obtained. All workers completed a role conflict and ambiguity measure, a 15-item self-report index of psychosomatic dysfunction, a 7-point measure of job performance, and the Jenkins Activity Survey (Form C) which was designed to tap the Type A behavior pattern. On the basis of their health reports, workers were classified into one of the following two groups: (a) psychosomatic, and (2) "no" psychosomatic.

In order to identify whether differences in vectors, comprised of measures of role conflict, role ambiguity, and Type A-B behavior, existed among the two health groups, a discriminant function analysis was used. The only function extracted resulted in a Wilks' lambda of .8625 (p<.01). Moreover, Type A-B behavior and role conflict were found to contribute .798 and .201 to unit variance, respectively.

In order to determine whether differences in perceived job performance were associated with Type A-B tendencies and perceived role conflict and ambiguity, two 3 x 2 fixed effects ANOVAs were performed. Significant main effects were found for role conflict (p<.005) and Type A-B behavior (p<.05) and for role ambiguity (p<.001) and Type A-B behavior (p<.05). Neither interaction term proved significant.

In sum, the results indicate that differences in perceived stress, as defined by role conflict, and Type A proclivities are associated with differences in perceived psychosomatic dysfunction. Moreover, Type B persons' perceptions concerning their own job performance are more favorable than Type A persons' perceptions concerning their own job performance, and this holds regardless of the perceived intensity of the stressor. Finally, persons under perceived "moderate" levels of stressor intensity were found to have significantly more favorable perceptions concerning their own job performance, than those who were under either perceived "low" or "high" levels of stressor intensity. This relationship held regardless of Type A or Type B proclivities.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>v</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Problem</td>
<td>1</td>
</tr>
<tr>
<td>Role Conflict and Health</td>
<td>6</td>
</tr>
<tr>
<td>Role Ambiguity and Health</td>
<td>11</td>
</tr>
<tr>
<td>Type A-B Behavior and Health</td>
<td>15</td>
</tr>
<tr>
<td>Purpose</td>
<td>19</td>
</tr>
<tr>
<td>METHOD</td>
<td>22</td>
</tr>
<tr>
<td>Sample</td>
<td>22</td>
</tr>
<tr>
<td>Questionnaire</td>
<td>22</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>26</td>
</tr>
<tr>
<td>RESULTS</td>
<td>30</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>42</td>
</tr>
<tr>
<td>CONCLUSIONS</td>
<td>47</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>49</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>57</td>
</tr>
</tbody>
</table>

iii
LIST OF TABLES

Table | Page
--- | ---
1. Frequency of Respondents Answering the Question: "To What Extent Do You Have Each of These Problems?" | 24
2. Wilks' Lambda and Percentage of Trace: Discriminant Function | 30
4. Intercorrelational Matrix | 32
5. Univariate F Tests | 32
6. Standardized Weights (b), Correlations, and Contributions to Unit Variance on Discriminant Function | 33
7. Group Centroids | 33
8. Positions in One-dimensional Discriminant Space | 34
9. "Hit-Miss" Results | 34
10. 3 x 2 Fixed Effects ANOVA, with Role Ambiguity, Type A, and Performance | 35
11. 3 x 2 Fixed Effects ANOVA, with Role Conflict, Type A, and Performance | 36
12. Cell Means on Performance for Role Ambiguity and Type A Factors | 37
13. Cell Means on Performance for Role Conflict and Type A Factors | 37
14. Mean Differences for Levels of Role Ambiguity | 40
15. Mean Differences for Levels of Role Conflict | 41
LIST OF FIGURES

Figure                                                                                         Page

1a. Plotted Results of Table 10: Type A-B and Role Ambiguity Levels with Performance .............. 38
1b. Plotted Results of Table 10: Role Ambiguity and Type A-B Levels with Performance .............. 38
2a. Plotted Results of Table 11: Type A-B and Role Conflict Levels with Performance ............... 39
2b. Plotted Results of Table 11: Role Conflict and Type A-B Levels with Performance ............... 39
INTRODUCTION

Problem

A wealth of literature exists which examines the bivariate relationship between stress and such responses as performance, perceptual-cognitive functioning, coping, and physiological arousal. For example, stress impairs higher level intellectual performance, where such performance is assessed by conventional intelligence measures (Hutt, 1947; Lantz, 1945; Lazarus & Erickson, 1952; Seashore & Bavelas, 1942). An increase in rigidity of behavior under stress has also been observed; in stress situations there is an increased tendency to adhere to a previously learned method of problem-solving behavior, even if it no longer represents the most direct and economical path to a goal (Ainsworth, 1958; Cowan, 1952; Parkes, 1963). Moreover, the effects of stress on performance have been found to be dependent upon the activity being performed. For example, lack of performance decrement has been found when stimuli remain unchanged (Palermo, 1957); when the appropriate responses have already been learned (Toby, 1952); when the correct response is dominant and incorrect responses weak (Palermo, 1957); and when performance is measured in terms of speed (Kurz, 1964). In sum, the literature which exists on the effects of stress on performance represents generalizations based almost exclusively upon data obtained in laboratory
experiments, and thus provide little insight into stress as a response-inferred variable.

Perception under stress produces serious disruption as the major dimensions of perceptual function are affected: selection of percepts from a complex field becomes less adequate and sense is less well differentiated from nonsense; there is maladaptive accentuation in the direction of aggression and escape; and untested hypotheses are fixated recklessly (Postman & Brunner, 1948). In stressful situations, the individual's intolerance of ambiguity is heightened and is considered adaptive for the organism when it engenders a search for new information (Smock, 1955). On the other hand, Lanzetta and Driscoll (1966) have shown that intolerance is heightened under stress even when additional information is of no practical use.

Tactics for coping with stress are distinguishable in terms of whether the coping is directed at the environmental stressor or the resultant affect it produces. Among the latter are, for example: reducing the perceived importance of failure; underestimating the power of relevant role senders; denying responsibility; maintaining high levels of self-esteem; and using fantasy. Other coping responses are directed at removing the source of stress rather than the affect associated with it. Jahoda (1958) distinguishes two such varieties of coping, "passive" adaptation (changes in the self or one's behavior to conform with the demand characteristics of the event), and "environmental mastery" (active attempts to change the environment in conformity with one's expectations or needs). There is a paucity of
research which examines various coping responses thereby qualifying this domain as a potentially lucrative source of stress data for the inquiring researcher.

Research concerning physiological responses to stress has generally proceeded along two relatively independent tracks with little convergence immediately in sight. One track are studies dealing with short-term physiological arousal to various stress situations, generally those which have been created in an experimental laboratory. The other track is comprised of less numerous studies (Smith, 1956; Hinkle, Lawrence, Plummer, Norton, & Whitney, 1965; Zalkind, 1973) which have examined sustained physiological disorder rather than immediate physiological responsivity.

In designs which transcend the more simplistic bivariate analyses, some property of the situation, such as, a person's prior experience in the same stimulus situation (McGrath, Vidmar, & Weideman, 1967; Smock, 1955) and group support (Janis, 1963; Torrance, 1954) have been found to be important mediators of stress responses. Some studies report the mediating effects of such personality variables as cognition (Arnold, 1960; Lazarus, 1966) and motivation (Katz, 1964; Gurin, Veroff, & Feld, 1960) on stress responses. In fact available research upon personality variables mediating stress responses has for the most part avoided searching for a general stress tolerance syndrome in favor of concentrating upon single personality variables. Evidently, the rationale underlying much of this research parallels the notion that just as individuals differ in the conditions
which produce strain for them, there are individual differences in the experience and expression of strain; hence, no benefit would seem to accrue from advancing a general stress tolerance syndrome. This approach is unfortunate since it is intuitively appealing to attempt to hypothesize a taxonomy of behavior patterns or personality patterns which seek to make common, perceptions of similar stressor stimuli and the experience and expression of strain. This notion of stress tolerance is consistent with that provided by Selye (1956), who asserts that, although stressors are compositionally different, they all elicit essentially the same biological response. Thus one theoretical orientation of stress tolerance presumes that a uniformly existent set of stressors gives rise to a variety of stress responses, each of which is largely dependent on the precipitating event and predisposing personality factors. The latter theoretical orientation, in contrast, invokes the notion that when stress response-inferred physiological arousal is employed as the dependent variable, all stressors are considered germane precipitators. In effect, any response to a stressor, whether it be a perceptual-cognitive response, a functional or dysfunctional performance response, a coping response specifically directed at the environmental stressor or exclusively directed at affective states (tension, anxiety, anger, etc.), are all accompanied or preceded by elevated levels of physiological arousal. If this notion is accepted, then it is justifiably correct to make the assertion that physiological arousal underpins all stress responses.
Selye (1956) postulates a syndrome produced by various noxious agents, commonly referred to as the General Adaptation Syndrome, of which physiological arousal (alarm reaction) is posited as the first stage. After the initial alarm reaction, the body becomes adapted and begins to resist, the length of resistance depending on the body's innate adaptability and the intensity of the stressor. Hence, just as there appears to be a general reaction to various stressors, there is evidence lending credence to the notion of a general resistance reaction, whose deployment varies directly with personality type. It would make sense, then, to advocate a general stress tolerance syndrome which utilizes a stress response-inferred variable which is common to all subjects, such as, physiological arousal, as the ultimate measure of how well a person mediated various stressors.

The use of short-term physiological arousal, however, despite its being synonymous with dysfunctional reactions to various stressors, contributes little to current stress knowledge and has few, if any, implications for the manager and worker. There is simply no justification for implicating short-term physiological arousal in the development of psychosomatic disorders (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). As a result, it is more beneficial to conceptualize a stressor as an entity which seeks to encumber the resistance stage of the General Adaptation Syndrome such that sustained exposure to the stressor ultimately precipitates a dysfunctional reaction, such as, psychosomatic dysfunction.
Two variables which have evolved from role theory and represent salient precipitators of dysfunctional stress responses, are role conflict and role ambiguity. A comprehensive literature review (presented below) provides evidence that role conflict and role ambiguity are both dysfunctional outcomes of role behavior and, thus, create highly stressful states. However, role ambiguity and conflict must be defined in response-inferred terms if the current "black box" treatment of stress is to be avoided. Furthermore, predisposing personality factors hypothesized to be of importance in mediating physiological responses must also be considered. The promulgation of the type A-B behavior patterns by Friedman and Rosenman (1974) uniquely affords the opportunity to clearly demarcate the likes of a general resistance syndrome. Moreover, since type A-B behavior patterns have predominantly been utilized to predict coronary heart disease, a stress linked disorder, more justification is posited for utilizing response-inferred psychosomatic disorders as the dependent variable.

The purpose of the present study was to determine empirically whether differences in perceived stress, as measured by role conflict and role ambiguity, and type A proclivities are associated with differences in incidents of psychosomatic disorders.

Role Conflict and Health

Role conflict represents a fundamental violation of classical organizational theory, in that, principles of chain of command and unity of command are severely compromised (Rizzo, House, & Lirtzman,
1970). Specifically, role conflict is the simultaneous occurrence of two or more expectations, such that satisfying one expectation makes satisfying the other expectation nearly impossible (McGrath, 1976). It has been postulated by Kahn et al. (1964) that incongruities among organizational members' expectational sets concerning particular role occupants behavior are multifaceted in nature, and can take on the following forms: (a) person-role conflict (i.e., conflict between focal persons internal standards and defined role behavior); (b) intra-sender conflict (i.e., the extent to which two or more role expectations from a single role sender are mutually incompatible); (c) "man-in-the-middle" or inter-sender conflict (i.e., contradictory expectations in the form of conflicting requests, incompatible policies, and incompatible standards of evaluation); and (d) inter-role conflict (i.e., conflict between several roles for the focal person which require incompatible behaviors).

The literature examining role conflict is convergent in its finding that the role conflict state is highly stressful and often encumbers the body's innate capacity to resist the concomitant physiological arousal associated with the state. For instance, Kahn, Wolfe, Quinn, Snoek, & Rosenthal (1964) have studied the relationships between role conflict and its consequences, of which job-related tension was invoked as the physiological dependent variable. Kahn et al. deemed it appropriate to divide focal persons' responses to a composite index of role conflict at the median. The mean intensity of experienced
conflict among those placed above the median was significantly higher 
(p < .03) than those placed below the median.

Sales (1970) has studied the effects of role overload and under­
load among 73 underclassmen in a university setting. Role overload 
and underload conditions were experimentally induced by presenting to 
those placed in each condition, differential quantities of anagrams 
which required decoding. Specifically, in the overload condition, an 
attempt was made to give the subject 35% more anagrams than he could 
decode in each five minute presentation period, while in the underload 
condition, an attempt was made to keep the subject waiting for 
approximately 30% of the time. The physiological variable used by 
Sales, consisted of a single item measure designed to tap the 
respondents' relative feeling of tension and anger. Sales found that 
those persons who experienced the overload condition were signifi­
cantly (p < .05) more tense and angry than those persons who experienced 
the underload condition. Interestingly, Sales also found, upon 
examining the mediating effects of test anxiety on the relationship 
between heart rate and objective work load, that anxious subjects 
reacted to overload with slight increases in heart rate and to under­
load with strong decreases in heart rate, while less anxious subjects 
responded to both conditions with moderate decreases in heart rate 
(p < .01). Sales concluded that subjects who are most fearful of 
failure tend to react to failure with the greatest physiological 
arousal and that they react to success with the least physiological 
arousal.
Brief and Aldag (1976) examined the relationship between role conflict and anxiety-stress and tension among 152 nursing aides and assistants. Role conflict was measured by a 30-item instrument developed by Rizzo, House, and Lirtzman (1970). Anxiety-stress was gauged by a modified 18 item measure of the version developed by House and Rizzo (1972). Brief and Aldag found a significant relationship between role conflict and anxiety-stress ($r = .41, p<.001$) and between role conflict and tension ($r = .48, p<.001$).

In a study designed to ascertain the relative instrumentality of role conflict and role ambiguity in a model of organizational behavior, House and Rizzo (1972) reported significant relationships between somatic tension and role conflict ($r = .14, p<.05$) and between general fatigue and uneasiness and role conflict ($r = .24, p<.01$). House and Rizzo conclude that, although a significant correlation was found to exist between role conflict and anxiety, little support can be advanced for implicating role conflict as a mediating variable linking formal organizational practices to anxiety, especially when compared with other mediating processes (e.g., role ambiguity).

In another study whose purpose was to determine the nature of the relationship between role conflict and health, Kraut (1966) examined 800 salesmen across two organizational levels. Two measures of role conflict were used: (a) objective role conflict—the discrepancy between the salesman's expectations for himself and the expectations the manager holds for him; and (b) subjective role conflict—the discrepancy between the salesman's expectations and
those he thinks his manager holds for him. The dependent variable
included, among other elements, self-report indices of perceived
tension experienced on the job. Kraut found positive relationships
between role conflict and measures of mental health symptoms, job
tensions, and especially job-related stress ($r = .39$). Further, the
magnitude of the above relationships were all enhanced when the
measure of role conflict was subjective rather than objective.

The studies discussed thus far have all attempted to determine
the extent of covariance between a measure of role conflict and a
measure of stress. Except for the Brief and Aldag (1976) and House
and Rizzo (1972) studies, which invoked a dependent physiological
variable as a measure of prolonged exposure to the role conflict
stressor, all have used either single item measures (Kahn, Wolfe,
Quinn, Snoek, & Rosenthal, 1964; Sales, 1970) and/or, ambiguous short-
term measures of physiological arousal (Kahn, Wolfe, Quinn, Snoek,
& Rosenthal, 1964; Kraut, 1966; Sales, 1970). Surely, the use of
ambiguously defined single item measures of physiological arousal does
not represent a cogent means for establishing any definitive con-
nexions between role conflict and health. Furthermore, the use of
short-term measures of physiological arousal must remain suspect until
such time that a clear and convincing association can be identified
between short-term physiological arousal and the manifestation of
psychosomatic dysfunction.

Given these limitations, there exists a need to examine
empirically, profound stressor elements, such as role conflict, in
relation to long-term physiological disruption, such as psychosomatic dysfunction.

**Role Ambiguity and Health**

Role ambiguity is often the result of inadequate information, either incomplete or non-existent, which is subject to more than one interpretation (McGrath, 1976). Not unlike the concept of role conflict, the concept of role ambiguity has implications for classical organizational theory. For example, Rizzo, House, and Lirtzman (1970) suggest that according to classical organizational theory, every position in a formal organizational structure should have a specified set of tasks and responsibilities. Furthermore, such specification of duties allows management to hold employees accountable for specific performance and to provide guidance for employees. They go on to state that an employee, who is not sure of the parameters of authority within which he is expected to work, not sure of what he is expected to accomplish, and confused about how he is to be judged, will tend to hesitate making decisions and rely on trial and error in meeting the expectations of his superior.

Much of the literature examining role ambiguity as a stressor element, has found it to be positively related to incidences of elevated physiological arousal and, much more inimically, to incidences of psychosomatic dysfunction. For example, Lyons (1971) has studied the effects of role clarity on perceived tension among 158 registered nurses employed by a community general hospital. Lyons postulated that greater role clarity is significantly related to lower
perceived tension. In order to measure perceived tension, Lyons employed the Tension Index, which was comprised of nine items specifically designed to tap relative tension associated with various work-related factors. The nine items represented a short-version scale of the original measure developed by Kahn et al. (1964). The Role Clarity Index consisted of four questions, each with five alternative items. All intercorrelations among the items were positive with a median correlation of .36, and the estimated split-half reliability coefficient was .70. The results firmly supported Lyons' hypothesis that greater role clarity is associated with lower perceived tension. For the entire sample, greater role clarity was associated with less tension ($r = -.59$, $p<.001$). Moreover, those persons who were found to have a low need for clarity, associated greater role clarity with less perceived tension ($r = -.40$, $p<.001$), and those high in need for clarity, likewise, associated greater role clarity with less perceived tension ($r = -.69$, $p<.001$).

Wispe and Thayer (1957) have examined the relationship between role ambiguity and anxiety among 50 upper level personnel employed in the insurance industry. Of the 50, 43 were classified as agents, 6 were classified as assistant managers, and 1 was labeled district manager. Each person was interviewed by a trained interviewer in order to obtain empirically the role expectations for the three principal line positions in the organization. Analysis of the data showed that for the positions of district manager and agent, the respondents were able to indicate two mandatory and one ancillary
function. For the position of assistant manager, however, no such consensus existed. This indicated that a great deal of role ambiguity was associated with the assistant manager's job as opposed to either of the other two jobs. An index of anxiety was obtained by examining each interviewee's protocol for incidences of threat orientation, which was operationalized as any statement, embedded in the protocol, which indicated the respondent felt, thought, or imagined any attempt or desire to do physical or social harm either to himself or to any other member of the group. Wispe and Thayer found, not unexpectedly, that the assistant managers' protocols contained significantly greater amounts of threat oriented material \( p < .001 \) than the agents' protocols.

Flora (1977) has studied the relationship between role ambiguity and anxiety utilizing 120 school principals employed by the state school system of Indiana. Flora used a mailed questionnaire form in order to gather responses relevant to role ambiguity, anxiety, and various demographics. The major finding was that role ambiguity correlated significantly with perceived anxiety. Further, role ambiguity was not found to diminish as principals gained in age, amount of training, length of experience, and breadth of experience.

Hamner and Tosi (1974) have examined the relationship between role ambiguity and perceived threat and tension among 61 high level managers. Hamner and Tosi hypothesized that high levels of role ambiguity are related to high levels of perceived threat and tension. In order to measure role ambiguity, a 10-item instrument developed by
Rizzo et al. (1970) was used. Perceived threat and anxiety were gauged by a measure developed by Tosi (1971). The findings firmly supported Hamner and Tosi's proposition, as role ambiguity was found to correlate positively with perceived threat and tension ($r = .33, p<.001$).

In a study conducted by Beehr (1974), role ambiguity was found not to be related to somatic complaints. This finding constitutes a diametrical contradiction of the results so far discussed and, thus, warrants closer inspection. Beehr hypothesized that high role ambiguity is associated with greater incidences of somatic complaints. Interviews were conducted with 651 employees at all levels of five organizations and correlations were computed in order to determine the degree of relationship between role ambiguity and somatic complaints. Aside from the aforementioned contradictory result, Beehr found somatic complaints to be significantly correlated with role ambiguity for people who were intolerant of ambiguity.

Beehr's findings are provocative, in that they support Sales (1970) and Lyons (1971) contention that persons who are less anxious or more tolerant of ambiguity respond less divergently from their homeostatic reactivity levels, than those persons who are less tolerant of ambiguity. Evidently, the reactive person is more likely to engage his general adaptation mechanism in direct proportion to the intensity of the perceived stressor, while the less reactive person tends to maintain his equanimity under a variety of stressor intensities.
Given the relative equivocality of the above findings, there exists a need to firmly establish the relationship between role ambiguity and psychosomatic dysfunction. Evidence proffered in this section supports the notion that role ambiguity is linked with short-term measures of physiological arousal (Flora, 1977; Hamner & Tosi, 1977; Lyons, 1971; Wispe & Thayer, 1959), however, little support has been advanced in favor of the association between role ambiguity and psychosomatic dysfunction.

**Type A-B Behavior and Health**

According to Friedman and Rosenman (1974): "the Type A behavior is an action-emotion complex that can be observed in any person who is aggressively involved in a chronic, incessant struggle to achieve more and more in less and less time" (p. 84). They go on to say specifically that the Type A pattern is characterized by excessive aggression, competitiveness, a sense of time urgency, insecurity of status, and polyphasic thought and action. As Friedman and Rosenman suggest, the pattern is neither a psychotic nor neurotic reaction but, rather, a socially acceptable and often reinforced means of behaving. Moreover, the pattern represents the reaction that takes place when any environmental stressor threatens the body's homeostatic level.

The logical importance of this behavioral pattern lies in its inveterate association with the manifestation of coronary heart disease. Evidence that coronary heart disease is a stress-linked disorder is posited by Rahe, Ruben, and Arthur (1974) and Friedman (1969) who found elevated serum cholesterol levels and elevated catecholamine
activity among those under considerable stress and those stricken with coronary heart disease, respectively. Selye (1956) asserts that increased levels of serum cholesterol and catecholamines (i.e., epinephrine and norepinephrine) are both integral components of the General Adaptation Syndrome. For example, in the body’s attempt to deal with a perceived stressor, the adrenal medulla, the neural section of the adrenal gland, is activated by the splanchnic nerve to secrete both adrenalin and noradrenalin. Both hormones seek to equip the body for emergency action by constricting arterial blood flow, increasing the proportion of blood clotting elements (platelets), increasing the white blood count, and speeding up metabolism. Further, they stimulate the liver and muscles to release sugar into the blood. As far as serum cholesterol is concerned, Selye asserts that under stress an increase in the number of intestinally-produced chylomicrons, which are globules composed of cholesterol, fat, and minimal amounts of protein, is observed. Unlike the cholesterol packaged by the liver, chylomicrons are not securely bound to any soluble protein and, as a result, are infinitely more inimical to the coronary arteries, especially if embedded in an arterial wall.

It has also been discovered that those persons classified as Type A have significantly higher serum cholesterol levels than those classified as Type B (Rosenman & Friedman, 1961) and that those classified as Type A experience enhanced plasma norepinephrine levels in response to stress, whereas those classified as Type B fail to exhibit this kind of response (Friedman et al., 1975). Moreover,
there exists a ubiquity of evidence in support of the notion that Type A persons are twice as likely to incur coronary heart disease than Type B persons (Jenkins et al., 1974); that 82% of all persons with at least 75% narrowing of one coronary artery are classified as Type A (Blumenthal, Williams, Kong, Thompson, Jenkins, & Rosenman, 1975); and that Type A is strongly associated with coronary heart disease even after the effects of traditional risk factors are statistically partialled (Rosenman, Freidman, Straus, Wurm, Jenkins, & Messinger, 1966).

Given the tenability of the above literature, it would be justifiably correct to assert that the Type A person engages his innate adaptation mechanism more consistently and, to a greater extent, than the Type B person; and this interpretation is nearly synonymous with that provided in the latter part of the Role Ambiguity and Health section. More often than not, the General Adaptation Syndrome is erroneously (no physical threat exists) called upon by the perceiver of the stressor stimuli and results in the activation of harmful bodily chemicals which serve no useful purpose. If this condition sustains itself, the body's innate mechanism for resistance is likely to lose its effectiveness (Selye, 1956) and the onset of psychosomatic dysfunction is heightened (McQuade & Aikman, 1974). Given these findings, the promulgation of Type B behavior as a potential mediator of harmful stress responses appears to represent a most convincing means for establishing the likes of a general resistance syndrome.
Finally, Caplan and Jones (1975) have conducted a social psychological study examining the effects of work load, role ambiguity, and Type A personality on health among 73 male students. Caplan and Jones deemed it appropriate to obtain measures on perceived work load and role ambiguity, Type A personality, and perceived anxiety, both, prior to, and subsequent (five months later) to a 23 day shutdown of a university computer system. The shutdown took place at the end of an academic term and at the beginning of the two-week final examination period, thus creating a highly stressful situation for those who had course deadlines to meet. Caplan and Jones hypothesized that Type A persons would show stronger relationships between changes in stress and changes in strain, as measured by perceived anxiety and heart rate, than Type B persons. The findings clearly supported Caplan and Jones' hypothesis, as the correlation between changes in subjective work load and changes in anxiety was \(0.54(p<0.001)\) for those persons classified as Type A and only \(0.27(p<0.10)\) for those persons classified as Type B.

These findings are consistent with those posited by Beehr (1974), Sales (1970), and Lyons (1971) and further lends support to the notion that Type A persons or reactive types engage their general adaptation mechanisms in direct proportion to the intensity of the perceived stressor, while Type B persons or less reactive types, in contrast, tend to maintain their equanimity under a variety of stressor intensities.
It is without question that Caplan and Jones' findings are provocative, however, the tenability of their findings are severely compromised when the following shortcomings, inherent in their research, are advanced: the use of three-item indices of subjective work load and role ambiguity; the use of a four-item measure to tap Type A personality; the use of ambiguously defined measures of physiological arousal; the failure to examine the moderator effects of Type A personality on the relationship between changes in perceived role ambiguity and changes in perceived anxiety; the failure to establish convergent validity for the moderating effects of Type A personality on the relationship between the changes in subjective work load and changes in perceived anxiety, because of the failure to examine the latter; the failure to establish whether Type A persons differed significantly from Type B persons on measures of role ambiguity, work load, and anxiety, thereby rendering it impossible to determine whether differences in cognitive appraisal of the stressor stimuli and/or differences in reactivity to the stressor stimuli are associated with differences in perceived anxiety. Given these limitations, the exact nature of Type A behavior as a mediator of psychosomatic dysfunction, much less, physiological arousal, has never been clearly established.

**Purpose**

On the basis of the literature presented thus far, the main purpose of the present study was to determine whether differences in perceived role conflict, role ambiguity, and Type A proclivities are
associated with differences in perceived psychosomatic dysfunction. Moreover, an ancillary purpose of the present study was to determine whether overall differences in perceived job performance were associated with Type A-B tendencies and perceived role conflict and ambiguity. Specifically, the following hypotheses were tested:

Ia. A statistically significant overall difference (p<.05) between vectors comprised of role conflict, role ambiguity, and Type A scores, will be found among two health groups: (a) psychosomatic dysfunction, and (b) "no" psychosomatic dysfunction.

b. Further, the workers classified in the "no" psychosomatic group will be significantly (p<.10) less subject to role ambiguity and role conflict and significantly (p<.10) lower on the Type A scale than those classified in the psychosomatic dysfunction group.

IIa. A statistically significant overall difference in perceived job performance will be found among the three groups with different levels of perceived role conflict intensity and also among two groups with different levels of behavioral response (Type A and B). Both main effects will be statistically significant at p<.05.

b. Further, the workers classified in the "moderate" role conflict intensity cell will have significantly higher (p<.10) job performance scores than those classified in either the "low" or "high" role conflict intensity cells.
IIIa. A statistically significant overall difference in perceived job performance will be found among the three groups with different levels of perceived role ambiguity intensity and also among two groups with different levels of behavioral response (Type A and B). Both main effects will be statistically significant at $p<.05$.

b. Further, the workers classified in the "moderate" role ambiguity intensity cell will have significantly higher ($p<.10$) job performance scores than those classified in either the "low" or "high" role ambiguity intensity cells.
METHOD

Sample

Data for 72 employees employed at all organizational levels by two types of organizations (i.e., health and citizen protection) was obtained. Sampled were only those employees who voluntarily cooperated to partake in the study; however, this compromise on external validity was somewhat minimized since all respondents were oblivious to the purpose of the study. Questionnaires were administered to all respondents in a controlled environment and complete anonymity was guaranteed. Means were computed for age, length of experience on present job, and number of employees supervised and found to be 30, 1.77 years, and 5.2, respectively. Of the respondents, 62.5% were male and 37.5% were female.

Questionnaire

The questionnaire used in this study consisted of four principle parts (see appendix). Part I of the questionnaire was composed of a measure designed to tap perceived role ambiguity and role conflict (Rizzo, House, & Lirtzman, 1970). The measure includes eight items designed to tap role conflict and six items designed to tap role ambiguity. These items represented the most factorially pure from among an original 30-item set. Each was chosen based on a factor
loading which exceeded .30 as well as respectable evidenced parsimony. Rizzo, House, and Lirtzman report internal consistency coefficients ranging from .816 to .820 and .780 to .808 for the role conflict and role ambiguity scales, respectively. Further, they report the intercorrelation between the two role measures for one sample ($r = .25$, $p < .05$), comprised of 200 subjects and for another sample ($r = .01$), comprised of 400 subjects. Specifically, subjects were requested to respond to each role item, indicating the degree to which that particular condition existed for him, on a seven-point scale ranging from very true to very false. Scores were obtained, on each scale, for each person, simply by summing the scale values corresponding to the degree to which each condition existed for each person.

Part II of the questionnaire was comprised of a 15-item self-report health inventory. Each item represented a physiological disorder whose development has been found to be induced by high levels of stress (McQuade & Aikman, 1975; Selye, 1956; Solomon & Patch, 1971). For each disorder, the respondent was requested to indicate the degree to which that particular condition existed for him, on a five-point scale ranging from "no problem exists" to "severe problem exists." Scores were obtained for each person, by summing the scale values associated with the respondent's indicated degree of difficulty with each disorder. Moreover, arbitrary weights of two were assigned to each scale value of the following disorders: backache, headache, ulcer, digestion, heart, hypertension, and migraine, whose development has been proven to be inextricably bound to stressor events (Solomon &
Patch, 1971). The distribution of scores on the psychosomatic dysfunction index was then dichotomized at the median in order to yield a group composed of persons who evidenced minimal psychosomatic dysfunction (below median) and a group whose membership also was homogeneous, but with respect to greater incidences of psychosomatic dysfunction (above median). Table 1 presents the proportion of respondents falling at each scale value for each of the psychosomatic dysfunctions.

Table 1

Frequency of Respondents Answering the Question: "To What Extent Do You Have Each of These Problems?"
(Please respond to each problem listed)

<table>
<thead>
<tr>
<th></th>
<th>No Trouble</th>
<th>Slight</th>
<th>Moderate</th>
<th>Terrible</th>
<th>Serious Trouble</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infections</td>
<td>54</td>
<td>15</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Allergies</td>
<td>56</td>
<td>11</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Arthritis</td>
<td>63</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Backache</td>
<td>46</td>
<td>18</td>
<td>6</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Headache</td>
<td>37</td>
<td>20</td>
<td>9</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Ulcer</td>
<td>65</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Digestion</td>
<td>54</td>
<td>9</td>
<td>2</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Diabetes</td>
<td>72</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Heart</td>
<td>72</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thyroid</td>
<td>71</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Skin</td>
<td>66</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Hypertension</td>
<td>65</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Obesity</td>
<td>60</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Thinness</td>
<td>67</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Migraine</td>
<td>63</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Part III of the questionnaire consisted of an overall job performance measure designed to tap each respondent's perception concerning his own relative contribution to organizational goal attainment. Also, each respondent was requested to indicate his length of experience on his present job, his age, and the number of employees he directly supervised.

Part IV of the questionnaire consisted of the Jenkins Activity Survey (Form C), which was developed by Jenkins, Zyzanski, and Rosenman (1979). The survey was constructed in order to principally measure the Type A behavior pattern. Also measured, however, are speed and impatience, job involvement, and competitive striving. Form C of the Jenkins Activity Survey represents the fifth edition and consists of 52 items, each of which has been found to have profound discriminant validity. In effect, all items included in the final 52 item composite were found to have response alternatives which maximally differentiated between interview-identified Type A and B persons. After each response alternative had been optimally scaled according to the above criterion, each item was then entered into a discriminant function program. This procedure assigned weights to individual items such that strings of significant items were combined to yield the best discrimination between Type A and B persons. Jenkins et al. report internal consistency reliability coefficients of .85 and .83 for the Type A scale based, respectively, upon the squared multiple correlation approach and a modified coefficient alpha approach. Validity of the Jenkins Activity Survey has been
established by its 73% agreement rate with the classification procedures proffered by trained interviewers. Of course, this rate increased to 90% for those scoring one standard deviation from the mean on the Survey.

Specifically, each person's score on the Type A scale was derived from summing over 21 items, the product of the item regression weight and the optimal scaling weight for that response. Persons scoring in the negative values tend toward the Type B end of the continuum, while persons scoring in the positive values have Type A proclivities. It should be asserted that the norms for this Survey were derived from a sample of 2,538 males in middle and upper level jobs who were employed by 10 large corporations in the State of California. Normative data for a variety of job levels and positions is also available, however, they are based on sample sizes much too small for reasonable generalizations to be made.

Data Analysis

The main objective of the present study was to determine whether differences in perceived role ambiguity, role conflict, and Type A proclivities are associated with perceived psychosomatic dysfunction. Specifically, on the basis of their health reports, workers were classified or assigned to either one of two groups: (a) psychosomatic dysfunction (above median), and (b) "no" psychosomatic dysfunction (below median).

This hypothesis was tested according to the principles of discriminant function analysis. Specifically, this procedure attempts to
maximally discriminate among groups by optimally weighting each of the independent variables entered into the analysis. The weights for each of the independent variables were derived in such a manner that the ratio of variance between means on the categorical variable to the variance within groups on the categorical variable, was maximal (Nunnally, 1967). A multivariate analysis of variance was performed in order to determine whether there were any overall differences in "reactivity" or role ambiguity, role conflict, and Type A behavior taken simultaneously among the two health groups. When a significant difference was found, according to the Wilks' lambda criterion, at the $p < .05$ level, the analysis proceeded. Given significant discriminating power for the discriminant function, whose appearance was based on the number of variables or one less than the number of groups, whichever was less, an analysis of the variables defining that function was undertaken. Specifically, each variable's unstandardized weight was multiplied by its respective standard deviation in order to obtain standardized weights. These weights were then multiplied by the correlation of the raw scores on each of the variables with the scores on the discriminant function. This resulted in a comparison of each variable's relative contribution to unit variance. Group centroids on the discriminant function were then computed and displayed in one-dimensional discriminant space (Cooley & Lohnes, 1971). At this point, each individual's discriminant score was compared to the centroids associated with each criterion group. Each person was then classified as a predicted member of that criterion group whose
whose centroid was closest to his discriminant function score. Finally, predicted classifications were related to actual group membership, which resulted in a "hit-miss" table of predictive efficiency (Kerlinger & Pedhazur, 1973).

The ancillary purpose of the study was to determine if differences in perceived job performance were associated with Type A-B tendencies and perceived role conflict and role ambiguity. Specifically, on the basis of their self-reports, respondents were placed into one of the following six cells: (a) Type A--"high" role conflict; (b) Type A--"moderate" role conflict; (c) Type A--"low" role conflict; (d) Type B--"high" role conflict; (e) Type B--"moderate" role conflict; and (f) Type B--"low" role conflict. The same rationale guided placement into the six cells determined by the role ambiguity factor and behavioral response factor. This resulted in two 3 x 2 factorial designs, each of which had behavioral response (Type A-B) as one factor and role conflict or role ambiguity as the other factor, along with perceived job performance serving as the dependent variable.

The data were analyzed using a 3 x 2 fixed effects analysis of variance, which partitioned variance into behavioral response main effects, role conflict or role ambiguity main effects, and a behavioral response-role conflict or role ambiguity interaction effect. Each variance estimate was tested over the within-cells variance estimate, in this case, the error term. Furthermore, in order to determine whether "moderate" levels of role ambiguity and
role conflict resulted in significantly higher job performance than either the "low" or "high" levels of role ambiguity and role conflict, the Scheffe post-hoc procedure was employed. This procedure attempted to account for the role ambiguity or role conflict main effect by determining which pairs of means among the three were so significantly different that they were unlikely to have occurred because of chance.
RESULTS

That a significant overall relationship would be found between an index of psychosomatic dysfunction and perceived role ambiguity, role conflict, and Type A-B behavior, was supported. Only one discriminant function was extracted since it was found to account for 100% of between group variance. The Wilks' lambda was .8625, which resulted in an F-ratio of 5.49 (p<.01) (see Table 2).

Table 2

<table>
<thead>
<tr>
<th>Discriminant Function</th>
<th>Percent Trace</th>
<th>Wilks' Lambda</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>100.00</td>
<td>.8625</td>
</tr>
</tbody>
</table>

F-Ratio = 5.49 (df = 2,69), p<.01

Table 3 presents for the psychosomatic and "no" psychosomatic groups, their respective means and standard deviations on the measures of role ambiguity, role conflict, Type A-B behavior, and performance. Table 4 presents the intercorrelational matrix comprised of all the aforementioned variables. The results of the univariate F-tests for role conflict, role ambiguity, and Type A-B behavior (Table 5) in conjunction with the table of means and standard deviations, lends support to the postulation that persons plagued with greater incidences
of psychosomatic dysfunction are significantly more stressed, as defined by role conflict, and tend more toward the Type A end of the continuum, than those persons who are less plagued with psychosomatic dysfunction. The results of the F-test for role ambiguity, however, was not significant (p<.10).

Table 3
Means and Standard Deviations: Psychosomatic and "No" Psychosomatic Groups

<table>
<thead>
<tr>
<th></th>
<th>Psychosomatic (N = 36)</th>
<th>&quot;No&quot; Psychosomatic (N = 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Ambiguity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>19.33</td>
<td>18.27</td>
</tr>
<tr>
<td>S.D.</td>
<td>6.15</td>
<td>4.93</td>
</tr>
<tr>
<td>Role Conflict</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>32.66</td>
<td>29.33</td>
</tr>
<tr>
<td>S.D.</td>
<td>8.32</td>
<td>7.36</td>
</tr>
<tr>
<td>Type A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>3.425</td>
<td>-2.667</td>
</tr>
<tr>
<td>S.D.</td>
<td>1.70</td>
<td>1.73</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>5.36</td>
<td>5.58</td>
</tr>
<tr>
<td>S.D.</td>
<td>1.49</td>
<td>1.48</td>
</tr>
</tbody>
</table>
Table 4
Intercorrelational Matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>RC</th>
<th>RA</th>
<th>Type A</th>
<th>Perf.</th>
<th>Psychos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Conflict</td>
<td>--</td>
<td>.260*</td>
<td>.248*</td>
<td>-.078</td>
<td>.210</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>--</td>
<td>-.017</td>
<td>.043</td>
<td></td>
<td>.095</td>
</tr>
<tr>
<td>Type A</td>
<td>--</td>
<td>--</td>
<td>-.162</td>
<td></td>
<td>.348**</td>
</tr>
<tr>
<td>Performance</td>
<td>--</td>
<td>--</td>
<td></td>
<td>-.075</td>
<td></td>
</tr>
<tr>
<td>Psychosomatic</td>
<td>--</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
**p < .001

Table 5
Univariate F Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Wilks' Lambda</th>
<th>F Ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Conflict</td>
<td>.955</td>
<td>3.238</td>
<td>&lt;.10</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>.990</td>
<td>.644</td>
<td>--</td>
</tr>
<tr>
<td>Type A Behavior</td>
<td>.878</td>
<td>9.645</td>
<td>&lt;.005</td>
</tr>
</tbody>
</table>
The standardized weights and the correlations of the raw scores on the role conflict, role ambiguity, and Type A measures with scores on the discriminant function, and the resulting contributions to unit variance, are presented in Table 6.

Table 6

<table>
<thead>
<tr>
<th>Variable</th>
<th>b</th>
<th>r</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Conflict</td>
<td>.374</td>
<td>.538</td>
<td>.201</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>.000</td>
<td>.045</td>
<td>.000</td>
</tr>
<tr>
<td>Type A Behavior</td>
<td>.858</td>
<td>.929</td>
<td>.798</td>
</tr>
</tbody>
</table>

Table 7 presents each group's centroid or mean on the discriminant function and Table 8 displays these centroids as positions in one-dimensional discriminant space.

Table 7

<table>
<thead>
<tr>
<th>Group</th>
<th>Centroid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychosomatic Dysfunction</td>
<td>.393</td>
</tr>
<tr>
<td>&quot;No&quot; Psychosomatic Dysfunction</td>
<td>−.393</td>
</tr>
</tbody>
</table>
Table 8
Positions in One-dimensional Discriminant Space

<table>
<thead>
<tr>
<th></th>
<th>-3.00</th>
<th>-1.50</th>
<th>0</th>
<th>+1.50</th>
<th>+3.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* = Psychosomatic Group
% = "No" Psychosomatic Group

Finally, Table 9 presents the relative efficiency of prediction associated with the regression equation. Specifically, the proportion of individuals correctly or incorrectly classified as predicted members of either the psychosomatic or "no" psychosomatic groups is presented.

Table 9
"Hit-Miss" Results

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>No. of Cases</th>
<th>Predicted Group Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Group 1</td>
</tr>
<tr>
<td>Group 1</td>
<td>36</td>
<td>69.4%</td>
</tr>
<tr>
<td>Group 2</td>
<td>36</td>
<td>30.6%</td>
</tr>
</tbody>
</table>

Code:
Group 1 = Psychosomatic
Group 2 = "No" Psychosomatic

The hypothesis that differences in perceived job performance are associated with role ambiguity and Type A behavior, was supported. The role ambiguity main effect resulted in an F-ratio of 8.92 (p<.001) and the Type A-B main effect resulted in an F-ratio of 5.77 (p<.05).
The interaction was not statistically significant resulting in an F-ratio of .583 (p<.05) (see Table 10).

Table 10

3 x 2 Fixed Effects ANOVA, with Role Ambiguity, Type A, and Performance

<table>
<thead>
<tr>
<th>Source</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A-B</td>
<td>9.79</td>
<td>1</td>
<td>9.79</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>30.29</td>
<td>2</td>
<td>15.14</td>
</tr>
<tr>
<td>Type A by Role Ambiguity</td>
<td>1.97</td>
<td>2</td>
<td>.98</td>
</tr>
<tr>
<td>Within Cells</td>
<td>112.04</td>
<td>66</td>
<td>1.69</td>
</tr>
<tr>
<td>Total</td>
<td>154.09</td>
<td>71</td>
<td></td>
</tr>
</tbody>
</table>

\[
F_{rc} = \frac{s_{rc}^2}{s_{w}^2} = .583; \quad F_r = \frac{s_r^2}{s_w^2} = 5.77*; \quad F_c = \frac{s_c^2}{s_w^2} = 8.92**
\]

*p<.05

**p<.001

Further, the postulation that differences in perceived job performance are associated with role conflict and Type A-B behavior was, likewise, supported. The role conflict and Type A-B behavior main effects resulted in F-ratios of 6.67 (p<.005) and 6.08 (p<.05), respectively. Also, the interaction proved insignificant resulting in an F-ratio of .13 (p<.05) (see Table 11).
Table 11

3 x 2 Fixed Effects ANOVA, with Role Conflict, Type A, and Performance

<table>
<thead>
<tr>
<th>Source</th>
<th>Sums of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A-B</td>
<td>11.03</td>
<td>1</td>
<td>11.03</td>
</tr>
<tr>
<td>Role Conflict</td>
<td>24.20</td>
<td>2</td>
<td>12.10</td>
</tr>
<tr>
<td>Type A by Role Conflict</td>
<td>.47</td>
<td>2</td>
<td>.235</td>
</tr>
<tr>
<td>Within Cells</td>
<td>119.64</td>
<td>66</td>
<td>1.81</td>
</tr>
<tr>
<td>Total</td>
<td>155.34</td>
<td>71</td>
<td></td>
</tr>
</tbody>
</table>

\[
F_{RC} = \frac{s_{RC}^2}{s_{W}^2} = .13; \quad F_{r} = \frac{s_{r}^2}{s_{W}^2} = 6.08*; \quad F_{c} = \frac{s_{c}^2}{s_{W}^2} = 6.67**
\]

*p<.05

**p<.005

Tables 12 and 13 present the cell means on performance for the role ambiguity and behavioral response factors and the role conflict and behavioral response factors, respectively. Figures 1a and lb present graphic representations of the cell means for each independent variable across each level of the other factor. For instance, Figure 1a presents the plotted means of the Type A and Type B persons across the "low," "moderate," and "high" levels of the role ambiguity factor, while Figure 1b, in contrast, presents the plotted means of those persons falling in the "low," "moderate," and "high" role ambiguity levels across the Type A and Type B levels. Similarly, Figures 2a and 2b present the plotted means for each level of the role conflict and behavioral response factors.
### Table 12
**Cell Means on Performance for Role Ambiguity and Type A Factors**

<table>
<thead>
<tr>
<th>Cell</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A--High Role Ambiguity</td>
<td>2.40</td>
</tr>
<tr>
<td>Type A--Moderate Role Ambiguity</td>
<td>6.00</td>
</tr>
<tr>
<td>Type A--Low Role Ambiguity</td>
<td>4.53</td>
</tr>
<tr>
<td>Type B--High Role Ambiguity</td>
<td>5.50</td>
</tr>
<tr>
<td>Type B--Moderate Role Ambiguity</td>
<td>6.47</td>
</tr>
<tr>
<td>Type B--Low Role Ambiguity</td>
<td>5.43</td>
</tr>
<tr>
<td>Total</td>
<td>5.05</td>
</tr>
</tbody>
</table>

### Table 13
**Cell Means on Performance for Role Conflict and Type A Factors**

<table>
<thead>
<tr>
<th>Cell</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A--High Role Conflict</td>
<td>4.80</td>
</tr>
<tr>
<td>Type A--Moderate Role Conflict</td>
<td>5.91</td>
</tr>
<tr>
<td>Type A--Low Role Conflict</td>
<td>3.42</td>
</tr>
<tr>
<td>Type B--High Role Conflict</td>
<td>5.66</td>
</tr>
<tr>
<td>Type B--Moderate Role Conflict</td>
<td>6.72</td>
</tr>
<tr>
<td>Type B--Low Role Conflict</td>
<td>5.38</td>
</tr>
<tr>
<td>Total</td>
<td>5.31</td>
</tr>
</tbody>
</table>
Figure 1a. Plotted results of Table 10: Type A-B and role ambiguity levels with performance.

Figure 1b. Plotted results of Table 10: Role ambiguity and Type A-B levels with performance.
Figure 2a. Plotted results of Table 11: Type A-B and role conflict levels with performance.

Figure 2b. Plotted results of Table 11: Role conflict and Type A-B levels with performance.
Finally, the hypothesis that persons faced with perceived "moderate" levels of role ambiguity would have more favorable perceptions concerning their own job performance than those persons faced with perceived "low" or "high" role ambiguity, was supported (see Tables 12 and 14). The results showed that only two comparisons, among the three, were so different that they were considered unlikely given the tenability of the null hypothesis. Specifically, the comparisons were "moderate" role ambiguity from "low" role ambiguity \((p<.10)\) and "moderate" role ambiguity from "high" role ambiguity \((p<.01)\). Likewise, the hypothesis that persons faced with perceived "moderate" levels of role conflict would have more favorable perceptions concerning their own job performance than those persons faced with perceived "low" or "high" role conflict, was supported (see Tables 13 and 15). Again, the only comparisons proving significant were "moderate" role conflict from "low" role conflict \((p<.01)\) and "moderate" role conflict from "high" role conflict \((p<.10)\).

<table>
<thead>
<tr>
<th>Table 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Differences for Levels of Role Ambiguity</td>
</tr>
<tr>
<td>Levels</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Low</td>
</tr>
<tr>
<td>Moderate</td>
</tr>
<tr>
<td>High</td>
</tr>
</tbody>
</table>

*\(p<.10\)  
**\(p<.01\)
Table 15

Mean Differences for Levels of Role Conflict

<table>
<thead>
<tr>
<th>Levels</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>--</td>
<td>1.915**</td>
<td>.83</td>
</tr>
<tr>
<td>Moderate</td>
<td>--</td>
<td>--</td>
<td>1.085*</td>
</tr>
<tr>
<td>High</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

*p<.10

**p<.01
DISCUSSION

The hypothesis that differences in perceived psychosomatic dysfunction would be associated with differences in perceived role ambiguity, role conflict, and Type A proclivities, was supported. The results indicated, moreover, that those persons who were classified in the psychosomatic group were significantly more stressed, as measured by role conflict, and tended more toward the Type A end of the continuum, than those persons classified in the "no" psychosomatic group. Alternatively, it could be advanced that persons who respond to perceived stressful situations using a Type A, as opposed to Type B mode, are significantly under more role conflict and are more likely to incur psychosomatic dysfunctions as a result. The latter interpretation gains support in light of the findings that Type A-B, or the behavioral response variable, contributed .798 to unit variance while role ambiguity and role conflict contributed .000 and .201 to unit variance, respectively. Evidently, it is justifiably correct to consider role conflict as a germane precipitator of psychosomatic dysfunction, however, the ultimate determinant of the actual magnitude of the dysfunction depends upon the perceiver's "reactivity" to the stressor event. It appears, then, according to the multivariate
F-test, that evidenced minimal psychosomatic dysfunction is precipitated not only by responding to stressful situations in Type B modes but, also, by the cognitive restructuring or lessening of the actual significance of the role conflict event in which the Type B person engages.

Interestingly, the stressor event composed of role ambiguity proved to be entirely inconsequential to the onset of psychosomatic dysfunction. Evidently, persons who were classified in either the "no" psychosomatic or psychosomatic groups were equally proficient in their cognitive restructuring of the role ambiguity event and/or, had similar perceptions of the intensity of the same stressor event. Alternatively, it could be advanced that Type A and Type B persons' perceptions of the intensity of the role ambiguity event and/or cognitive restructuring of the same event proved similar.

The evidence that role conflict is a highly stressful state, in that, it helps contribute to the manifestation of psychosomatic dysfunction is generally consistent with the results reported by Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964), Sales (1970), Brief and Aldag (1976), House and Rizzo (1972), and Kraut (1966), preserve the fact that all these studies invoked short-term physiological arousal as the dependent variable. However, the evidence that role ambiguity proved trivial in inducing dysfunctional physiological responses is inconsistent with previous findings (Flora, 1977; Hamner & Tosi, 1974; Lyons, 1971; Wispe & Thayer, 1957) again, saving the fact that these
studies also invoked short-term physiological arousal as the dependent variable.

Evidence that persons responding to stressful situations in Type A modes, or who respond more "reactively," tend to engage their general adaptation mechanisms in direct proportion to the intensity of the perceived stressor, as defined by role conflict, while, in contrast, persons responding to the same stressor stimulus in Type B ways, tend to maintain their equanimity due to effective efforts at cognitive restructuring as well as general lowered "reactivity," is somewhat consistent with those findings advanced by Beehr (1974), Sales (1970), Lyons (1971), and Caplan and Jones (1975). Their true consistency extends only as far as the degree of interchangeability existing between short-term physiological arousal and the development of psychosomatic disorders. Since little support can be advanced in favor of this kind of parallelism, this particular study represents a relatively unique contribution to current knowledge of organizational stress and its effects.

Specifically, the findings herein reported support the notion of a general resistance syndrome, whose deployment not only reduces the intensity of the perceived stressor stimulus (i.e., role conflict), but also lowers the "reactivity" with which the person responds to the stressor. The results clearly indicate that persons possessing this quality tend to have more Type B than Type A characteristics.

The hypothesis that overall differences in perceived job performance would be found among three groups with different levels of
perceived role conflict and role ambiguity intensity and among two groups with different levels of behavioral response, was supported. These findings indicate that persons' perceptions concerning their own job performance tend to vary under three different levels of perceived role conflict and role ambiguity intensity and that this is true regardless of Type A or Type B characteristics. Moreover, the results indicate that Type B persons' perceptions concerning their own job performance were more favorable than Type A persons' perceptions about their job performance, and this is true regardless of the perceived intensity of the stressor.

Direct support for the above finding that Type A persons' perceptions concerning their own job performance is less favorable than Type B persons' perceptions, simply is not documented in the literature. However, Friedman and Rosenman (1974) report anecdotal evidence in support of such a finding.

Evidence that persons under perceived "moderate" levels of role conflict and role ambiguity have significantly more favorable perceptions concerning their own job performance, than those persons' perceptions about their job performance, who were either under perceived "low" or "high" levels of role ambiguity and role conflict, was advanced in this study. These findings are consistent with those posited in support of activation theory (Hebb, 1955; Schlosberg, 1954). Specifically, it is clear that moderate levels of stressor intensity seem to be optimal in terms of behavioral efficiency and that deviations from that level result in decreased performance.
efficiency. These findings taken in assemblage with the finding suggesting that Type B persons perceive that they perform better than Type A persons perceive they themselves perform, irrespective of the perceived intensities of the stressor, results in profound implications for both the manager and worker.
CONCLUSIONS

It is clear that Type B persons are less susceptible to psychosomatic dysfunction than are Type A persons; this results from the Type B person's ability to cognitively restructure the perceived intensity of the stressor stimulus (i.e., role conflict) as well as his relatively low "reactivity" level. Also, it was found that Type B persons' perception concerning their own job performance was significantly more favorable than their counterparts', the Type A persons, perceptions concerning their own job performance, and this interpretation applied irrespective of the perceived intensity of the stressor stimuli. Moreover, perceived optimal performance efficiency occurred when respondents' perceived that they were under "moderate," as opposed to either "low" or "high," levels of stressor stimuli.

These findings indicate that organizations need to take steps to identify and discriminate Type A persons from Type B persons and, moreover, seek to facilitate the imparting to its employees, the skills and abilities needed to identify their own homeostatic levels of "reactivity" so that maximal performance efficiency can accrue. This suggests that organizations need not compromise performance efficiency or its employees' health in favor of satisfying the counter objective. It will behoove organizations to modify selection
procedures to ensure selection of those predicted to exhibit minimal physical distress (Type B persons); it will introduce stress-reduction training aimed at identifying each individual's "equilibrium" level of stress thereby maximizing each individual's potential for effective performance while simultaneously minimizing the accompanying physical distress; and it will introduce behavior modification programs aimed at selectively reinforcing any behaviors characteristically identified as being Type B while simultaneously extinguishing any behaviors identified as Type A.

Finally, it is without equivocation that these steps, specifically designed for the realization of organizational effectiveness, if, faithfully adhered to, will result in organizational effectiveness, at least, to the extent that maximal performance will accrue devoid of physical distress.
FOR EACH ITEM STATEMENT PRESENTED BELOW, PLEASE INDICATE THE DEGREE TO WHICH THE STATEMENT DESCRIBES YOUR PRESENT CONDITIONS AS AN EMPLOYEE. (Please circle appropriate number.)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very True</th>
<th>True</th>
<th>Partly True</th>
<th>Not Sure</th>
<th>Partly False</th>
<th>False</th>
<th>Very False</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have to do things that should be done differently.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. I receive an assignment without the manpower to complete it.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3. I have to buck a rule or policy in order to carry out an assignment.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4. I work with two or more groups who operate quite differently.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5. I receive incompatible requests from two or more people.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>6. I do things that are apt to be accepted by one person and not accepted by others.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>7. I receive an assignment without adequate resources and materials to execute it.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Statement</td>
<td>Very True</td>
<td>True</td>
<td>Partly True</td>
<td>Not Sure</td>
<td>Partly False</td>
<td>False</td>
<td>Very False</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
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<td>----------</td>
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</tr>
<tr>
<td>3. I work on unnecessary things.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>9. I feel certain about how much authority I have.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10. Clear, planned goals and objectives for my job.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>11. I know that I have divided my time properly.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>12. I know what my responsibilities are.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>13. Explanation is clear of what has to be done.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>14. I know exactly what is expected of me.</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
"To what extent do you have each of these problems?"

(Please respond to each problem listed)

<table>
<thead>
<tr>
<th>Condition</th>
<th>No Trouble</th>
<th>Slight</th>
<th>Moderate</th>
<th>Terrible</th>
<th>Serious Trouble</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infections</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Allergies</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Arthritis</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Backache</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Headache</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Ulcer</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Digestion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Heart</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Thyroid</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Skin</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Obesity</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Thinness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Migraine</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
III.

I. How well do you perform on your job? (choose one)

Scale
1--Perform very poorly
2--Perform poorly
3--Perform inadequately
4--Not sure
5--Perform adequately
6--Perform well
7--Perform very well

II. How long have you been employed in your present position? (choose one)

Scale
1--0 to 3 years
2--4 to 10 years
3--Over 10 years

III. How many employees do you directly supervise? (choose one)

Scale
1--None
2--0 to 5
3--6 to 10
4--Over 10

IV. How old are you?

Scale
1--18-25
2--26-33
3--34-41
4--42-49
5--50-57
6--58-65
7--Over 65
JENKINS ACTIVITY SURVEY

C. David Jenkins, Ph.D.  Stephen J. Zyzanski, Ph.D.  Ray H. Rosenman, M.D.

FORM C

Name (last name first) ___ Age ___

Male Female

The Jenkins Activity Survey asks questions about aspects of behavior that have been found helpful in medical diagnosis. Each person is different, so there are no "right" or "wrong" answers.

For each question, choose the answer that is true for you, and fill in the space in front of that answer. Use a black lead pencil, and make your marks heavy and dark. Mark only one answer for each question. If you change your mind, erase the old mark completely.

Do not make any stray marks.

1. Is your everyday life filled mostly by
   A problems needing a solution?
   B challenges needing to be met?
   C a rather predictable routine of events?
   D not enough things to keep me interested or busy?

2. When you are under pressure or stress, what do you usually do?
   A Do something about it immediately
   B Plan carefully before taking any action

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3. Ordinarily, how rapidly do you eat?
   A I'm usually the first one finished.
   B I eat a little faster than average.
   C I eat at about the same speed as most people.
   D I eat more slowly than most people.

4. Has your spouse or a friend ever told you that you eat too fast?
   A Yes, often
   B Yes, once or twice
   C No, never

5. When you listen to someone talking, and this person takes too long to come to the point, how often do you feel like hurrying the person along?
   A Frequently
   B Occasionally
   C Almost never

6. How often do you actually "put words in the person's mouth" in order to speed things up?
   A Frequently
   B Occasionally
   C Almost never

7. If you tell your spouse or a friend that you will meet somewhere at a definite time, how often do you arrive late?
   A Once in a while
   B Rarely
   C I am never late.

8. When you were younger, did most people consider you to be
   A definitely hard-driving and competitive?
   B probably hard-driving and competitive?
   C probably more relaxed and easygoing?
   D definitely more relaxed and easygoing?

9. Nowadays, do you consider yourself to be
   A definitely hard-driving and competitive?
   B probably hard-driving and competitive?
   C probably more relaxed and easygoing?
   D definitely more relaxed and easygoing?

10. Would your spouse (or closest friend) rate you as
    A definitely hard-driving and competitive?
    B probably hard-driving and competitive?
    C probably more relaxed and easygoing?
    D definitely more relaxed and easygoing?

11. Would your spouse (or closest friend) rate your general level of activity as
    A too slow—should be more active?
    B about average—busy much of the time?
    C too active—should slow down?
12. Would people you know well agree that you have less energy than most people?
   A Definitely yes
   B Probably yes
   C Probably no
   D Definitely no

13. How was your temper when you were younger?
   A Fiery and hard to control
   B Strong but controllable
   C No problem
   D I almost never got angry.

14. How often are there deadlines on your job?
   A Daily or more often
   B Weekly
   C Monthly or less often
   D Never

15. Do you ever set deadlines or quotas for yourself at work or at home?
   A No
   B Yes, but only occasionally
   C Yes, once a week or more

16. At work, do you ever keep two jobs moving forward at the same time by shifting back and forth rapidly from one to the other?
   A No, never
   B Yes, but only in emergencies
   C Yes, regularly

17. In the past three years, have you ever taken less than your allotted number of vacation days?
   A Yes
   B No
   C My type of job does not provide regular vacations.

18. How often do you bring your work home with you at night, or study materials related to your job?
   A Rarely or never
   B Once a week or less
   C More than once a week

19. When you are in a group, how often do the other people look to you for leadership?
   A Rarely
   B About as often as they look to others
   C More often than they look to others

20. In sense of responsibility, I am
   A much more responsible
   B a little more responsible
   C a little less responsible
   D much less responsible

21. I approach life in general
   A much more seriously
   B a little more seriously
   C a little less seriously
   D much less seriously
REFERENCES


