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A Comparative Look at Stress and Strain in Policemen

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This paper reports on selected findings from a large study of job stress and strain in 23 occupations. We will summarize the major findings about stress and strain among policemen compared to the 22 other occupations. Then we will examine the evidence from a large number of studies concerning one of these job stresses--namely low participation. Finally we will discuss in general terms how the facts and general principles might be applied to reduce stress and strain in police work.

A Comparative Study of Stress and Strain in Work

This study examines a variety of psychological stresses in the job environment and their impact on affective and physiological strains in the worker and on reported illnesses. Twenty-three jobs were selected to represent a variety of job stresses and a wide range of stress on each dimension. Care was taken to include jobs known to have high rates of illness such as air traffic controller and train dispatchers. Table I lists the occupational groups and the size of the sample in each occupation. The total sample consisted of 2,010 employed men. The mean age of the sample is about 39 years. The respondents, on the average, have a high school education, and have been in the same occupational position between one and five years. On the average they work about 45 hours per week and earn $17,379 (in 1973 when the data were gathered). All the respondents are males and practically all are white.

The sample of 111 policemen was obtained from four different departments, so they do not represent the pecularities of a single organization. These men are a little younger than the rest of the sample (30 years of age), a little lower in social economic status and have a lower mean income ($12,530).

A lengthy questionnaire was administered to all 2,010 men. We are grateful to Joseph Hurrell for collecting all of the data about policemen. The questionnaire measured 20 job stresses, 17 strains, and a variety of demographic personality variables. Most of the 23 multiple item measures of stress and strain had reliabilities of .75 to .85.

Main findings on job stresses. Compared to the other 22 occupations the policemen in this study were not an extreme group, but they were higher than average on some stresses and lower than average on other stresses. They were high on responsibility for other people, on the complexity of the work they did and on the important stress of nonparticipation. Although it was true for the average worker in this study that he felt he was getting paid a little less than he deserved, this was more true for the policemen. On the average they reported that they received only 81 percent of the pay they deserved to get. On two important job stresses, the policemen were lower than the other occupations: (1) job insecurity and (2) an under utilization of their best abilities on the job.

[1]This study was supported in part by the National Institute of Occupational Safety and Health.

TABLE I

Occupational Groups and Their Sample Sizes

Occupational Groups	N
Blue Collar[a]	
Forklift driver	46
Assembler, machine paced	79
Assembler, machine paced relief	27
Assembler, nonmachine paced	69
Machine tender	34
Continuous flow monitor	101
Delivery service courier	20
Tool and die maker	77
Blue/White Collar	
Electronic technician	93
Policeman	111
Train dispatcher	86
Blue collar supervisor	178
White collar supervisor	42
White Collar	
Air traffic controller, large airports	82
Air traffic controller, small airports	43
Programmer	90
Accountant	92
Engineer	110
Scientist	117
Professor	74
Administrative professor	25
Administrator	253
Family physician	104
Miscellaneous, gathered incidentally	57
Total	2010

[a]This ordering of occupational groups reflects--with some minor changes--an arrangement from lowest to highest Duncan SES score and therefore from lowest to highest socioeconomic status.

Table II-1

Occupational Groups and Their Sample Sizes

Occupational Groups	Abbreviations Used in Tables	N
Blue Collar[a]		
Forklift driver	Forklift drvr	46
Assembler, machine paced	Assemb mach	79
Assembler, machine paced relief	Assemb relief	27
Assembler, nonmachine paced	Assemb nomach	69
Machine tender	Mach tender	34
Continuous flow monitor	Contin flow	101
Delivery service courier	Courier	20
Tool and die maker	Tool and die	77
Blue/White Collar		
Electronic technician	Elec tech	93
Policeman	Policeman	111
Train dispatcher	Dispatcher	86
Blue collar supervisor	Sup blue coll	178
White collar supervisor	Sup whte coll	42
White Collar		
Air traffic controller, large airports	ATC, large	82
Air traffic controller, small airports	ATC, small	43
Programmer	Programmer	90
Accountant	Accountant	92
Engineer	Engineer	110
Scientist	Scientist	117
Professor	Professor	74
Administrative professor	Admin prof	25
Administrator	Administrator	253
Family physician	Physician	104
Miscellaneous, gathered incidentally	Miscellaneous	57
Total		2010

[a]This ordering of occupational groups reflects--with some minor changes--an arrangement from lowest to highest Duncan SES score and therefore from lowest to highest socioeconomic status.

Affective-strain in policemen. The policemen in this study were low on job dissatisfaction or, to emphasize the positive, they were higher on job satisfaction than the average occupation in this study. They were also lower than average on boredom. On our measures of anxiety, depression, and irritation they were about average.

Person-environment fit. Policemen have a better than average fit between the complexity of their work and the complexity they would like to have. The same is true for their responsibility for other people. The fit between the quantitative work load and the work load they would like to have is close to the average for other occupations. Whereas the typical occupation reports too much work load, the policemen average out at a nearly perfect fit between what they have and what they would like to have.[2] However, this average is very deceptive for there are only 11 out of 123 who report perfect fit; 55 report more work load than they would like to have and the other 55 report less work load than they would like to have.

Differences among police departments. The sample of policemen in this study was drawn from four different towns in California and there were some significant differences among them. For example, they differed on the goodness of fit between the policeman and his job with respect to quantitative work load and also with respect to role ambiguity (not knowning what is expected of them on the job). These findings are important because they show that the problems of stress and strain on the job are not insoluble; one department can do better than another.

What Stresses Cause Strain?

So far we have seen that policemen are high on some stresses and low on others; and we have noted that they tend to be low on affective strains including job dissatisfaction and boredom. Now we must raise a more fundamental question: whether any of these stresses are causal factors producing strain. In this study we can examine the correlates of strain, which do not prove a causal relation, and in the case of nonparticipation we can summarize a much broader body of research, including experimental studies, which definitely prove that low participation is a cause of strain.

Correlates of strain in policemen. Although half a dozen measures of job stress are correlated with one or more strains among policemen, two of these stresses stand out as having particularly strong and wide spread effects; low participation and the goodness of fit with respect to job complexity.

Participation correlates - .25 with job dissatisfaction; that is, those who have lower levels of participation have a higher job dissatisfaction. Similarly, participation correlates - .30 with boredom and - .24 with depression. Thus, low participation in decision making about one's job correlates significantly with a number of important affective strains.

Poor fit between the complexity of a man's work and the complexity he would like to have correlates .53 with dissatisfaction among policemen.

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[2] These results include data on 12 sargeants and captains as well as the 211 patrolmen.

Similarly poor fit with respect to complexity correlates .41 with boredom and .33 with depression. Here again we find wide spread and even stronger correlations between stess and affective strains in policemen.

Our general theory about the goodness of fit between a man and his job suggests that good fit should be associated with low strain and poor fit should be associated with high strain. If a man's work is too complex, it will cause strain because it over-taxes his abilities; if a man's work is too simple and repetitive, it will cause boredom. Thus we expect to find a U-shaped curve between the goodness of fit and the amount of strain; and this indeed is what we find in several of our studies conducted in various organizations and in different occupations. In the current study of 23 occupations the relationship between P-E fit on job complexity and affective depression is illustrated in Figure 1. As predicted by the theory, depression is lowest where there is no discrepancy between the complexity a man has on his job and the complexity he would like to have; but as the complexity becomes excessive (+1 and +2 in the figure) or insufficient (-1 and -2 in the figure), the depression increases.

Other studies on the main effects of low participation. In this brief summary we have tried to bring together results of a great many studies, conducted mostly by the Institute for Social Research in the United States, but also in Sweden, in Norway, in England, In Italy, in Australia, in Yugoslavia and in the Kibbutz in Israel. Figure 2 summarizes the effects of participation, although not all these effects have high participation to a variety of effects indicates the direction of causation; and in this case we can be pretty sure about which is cause and which is effect, at least for many of the dependant variables, because several of the studies are actual experiments in which the level of participation is experimentally varied and its results observed. Furthermore in several of the field studies there have been sophisticated multivariate analyses and/or longitudinal studies showing that participation at one point in time produces consequences at a later point in time. Consistent with our current study of policeman we note in Figure 2 that high participation produces a variety of good affective states. At the bottom of the table we note that participation also reduces several other stresses in the work environment. Finally it should be noted that participation not only has favorable effects on strain and on health but it also produces good working relations with others, positive attitudes towards work and high productivity, facts which are also important to keep in mind when we try to assess the overall desirability of increased participation.

But participation is no panacea, no patent medicine which will cure all ills. Despite the generally favorable affects, all of the studies which I have seen show that some people are not favorably affected by participation and, in the case of the more sophisticated studies, show the conditions under which participation has favorably effects and the conditions under which it has either no effects or occasionally unfavorable effects. Therefore it is necessary to understand these conditioning variables which modify the effects of participation before we can employ participation to improve health and well-being.

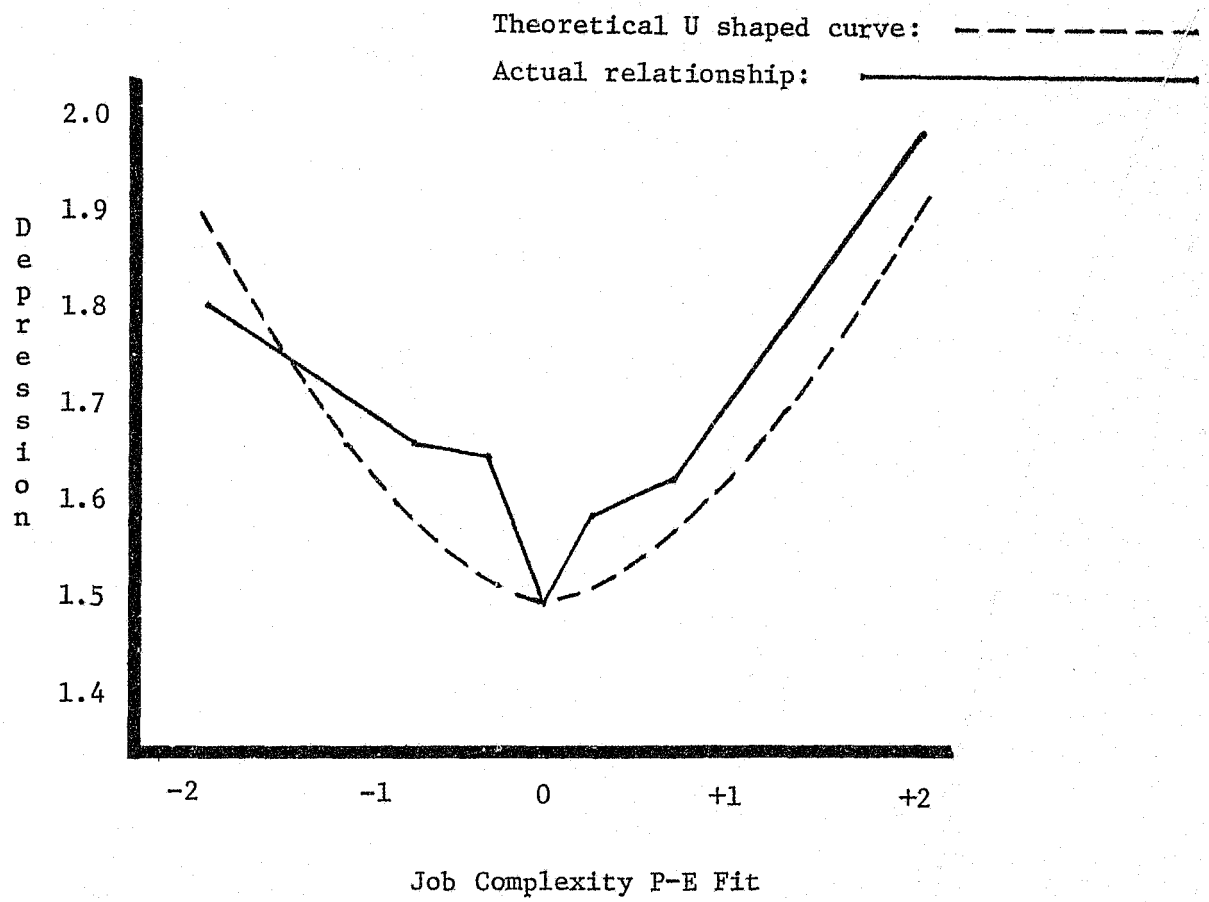

FIGURE 1. Theoretical and actual relationships between Job Complexity P-E Fit and Depression. The actual relationship has an eta value of .26 ($p < .002$) and is based on the random stratified sample.

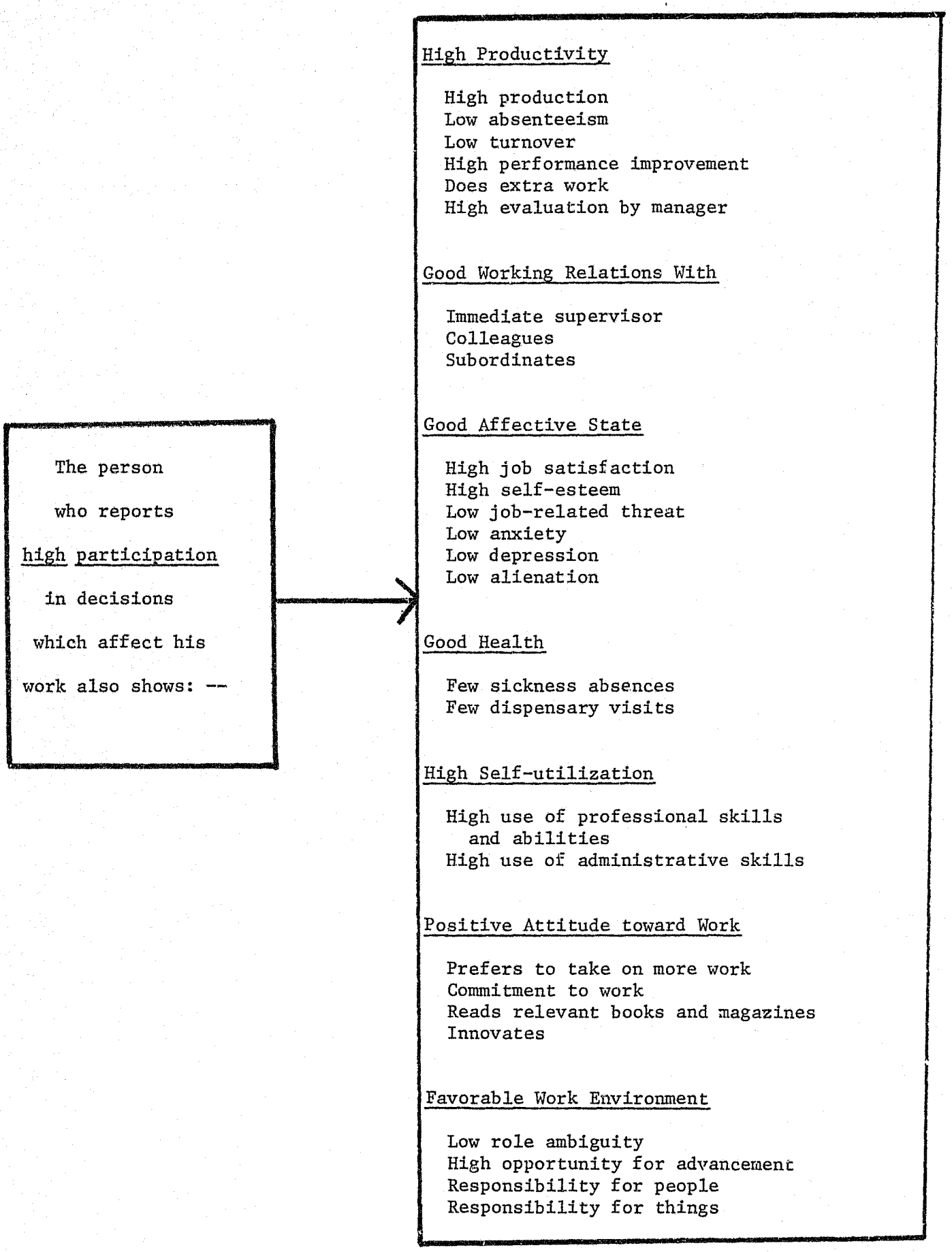

Figure 2. A summary of research findings on the effects of participation.

Figure 3 shows seven variables which have been found, in a variety of studies, to condition the effects of high participation on high productivity, high satisfaction, good relations, etc.

The horizontal arrow denotes the main effects of high participation which we have just examined in more detail in Figure 2; the seven vertical arrows show the conditioning effects which modify these main effects. A study in Norway showed that high participation had favorable effects but only when it was considered legitimate by the workers to participate in the decisions and only when they showed no resistance to the methods of making the decisions. Another study in America showed that workers were favorably affected by high participation especially if they were high on the need for independence and low in the authoritarian personality (i.e. the democratic personalities reacted more favorably toward participation). Still another study showed that the reactions of managers to experimental variations in participation depended very much on the previous relations with their own boss; if he had previously made threatening criticisms during an appraisal interview and if he had previously accorded them a low usual level of participation, then an experimental increase in the level of participation did not have favorable effects. Finally, a recent study in NASA showed the effects of participation were conditioned by good person-environment fit with respect to participation; i.e. participation had the most favorable effects when the men had the amount of participation which they wanted to have and it had less favorable effects when they had either too little or too much participation. I hasten to add here that almost none of the men wanted less participation than they had. It seems likely that this last finding describes the fundamental factor underlying several of the previously reported conditioning variables. For example, illegitimate participation means that the workers do not consider it right and proper and they do not want it. Similarly the measures of need for independence and of the authoritarian personality are indirect ways of measuring how much participation a person would like to have. Thus adjusting the level of participation accorded to a man so that it fits the level of participation which he would like to have will probably take account of most of the complex conditioning variables illustrated in Figure 3.

The Prevention of Stress and Strain

In thinking about the application of these research findings for the prevention of stress and strain and for the promotion of well-being and health, it is well to keep in mind the following three points. (1) Our study attempted to measure only those job stresses which occur in many of the occupations in our sample, so it probably omitted one of the special stresses of police work such as physical danger or hostile reactions from some members of the public. Thus our findings are probably correct as far as they go, but they do not tell the whole story. (2) In this research we were trying to discover stresses and to determine their effects; we were not trying to invent ways of reducing these stresses. Therefore the speculations which follow necessarily go beyond the research findings. (3) General knowledge is essential but not sufficient for specific application. A doctor who knows all the general illnesses and their causes still must make a specific diagnosis before prescribing the cure. Similarly, we would have to examine

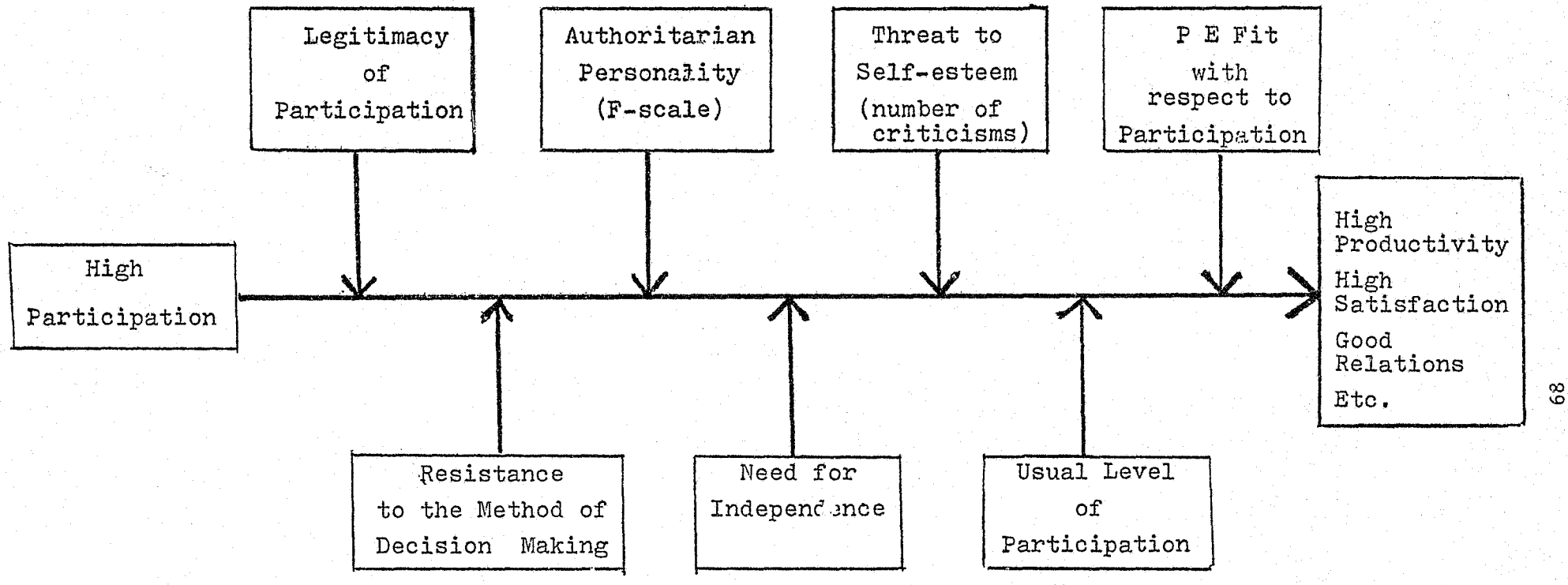

Figure 3. Conditioning variables which modify the effects of participation.

to prescribe a specific cure. Accordingly we will be concerned, in what follows, with three phases: (1) the early identification of strain and illness; (2) the diagnosis of the cause of strain; and (3) the planning of preventive action.

The use of participation. We have noted in our current study that policemen are somewhat lower than other occupations in participating in decisions which affect them. Our earlier research shows that several of these other occupations, even including those which are high on participation, still report that they do not have as much participation as they desire. We have also noted that in all 23 occupations low participations leads to affective strains such as job dissatisfaction and boredom. Other studies also show participation affects health, productivity, good relations with others, etc.; but these effects may be modified by conditioning variables in the person and in his job environment. So how can we use participation most effectively to increase health and well-being?

First, we need methods for the early indentification of states of health and well-being. It seems likely that the effects of stress and strain on illness represent a slow and cumulative process taking place over a period of years. Long before stress produces illness, however, its effects will show up in psychological strains. Monitoring these strains, perhaps by means of simple questionnaires such as we have used in our research, can provide an early warning of trouble to come and an opportunity to take remedial action. In some large departments with medical dispensaries it may also be possible to use medical records to monitor increases or decreases in illness rates or dispensary visits.

Given some evidence that there are high rates of strain and illness, it may also be necessary to obtain a good diagnosis. The role of job stress in producing strain and eventually illness may be diagnosed by the use of questionnaires such as we have employed in our research.

In planning for the prevention of strain and illness by utilizing participation, the main emphasis has to be on the appropriate use. This means that the plan for improving participation in any department must be adapted to the conditioning variables we have already examined in Figure 3. Participation will have desirable effects only to the extent that it meets the needs and conforms to the values of the men; if they don't want more participation or they consider it illegitimate, then it will not have favorable effects. We have also noted in Figure 3 that threats and criticisms from the boss will undermine the potential good effects of participation. To state the same thing positively, participation will have more favorable effect to the extent that the man receives social support from his immediate superior and feels that he can trust him. Any program from increasing participation has to be concerned with the problem of timing, for we have seen in Figure 3 that high participation has less favorable effects when the men are used to a low level of participation. If changes in participation are introduced too fast, therefore, they could be expected to have less positive effects, if not indeed negative effects. Although there has been no systematic research on it, I believe there is one more condition which is important for planning a program for participation: we must be concerned about the relevance and the importance of the decisions in which people participate. I believe that participation in

decision making and planning will have desirable effects only to the extent that these decisions are relevant to the man's job and that he considers them important. These conditions for the appropriate use of participation are complex but most of them can be taken into account by the simple expedient of determining specifically the discrepancies between the areas of decision making and the amount of participation which a man actually has on his job and those which he would like to have. This can be accomplished successfully by rather simple questionnaires such as we have utilized in our previous research.

Given that we have determined what kind of participation and how much participation would be optimal for which individuals and groups, what are the means for providing this? Here we are dealing with the techniques for democratic management and the successful ways of introducing them. There is a large body of literature on this topic--much too large to summarize here. Instead we shall briefly indicate the main topics. First and foremost, one can introduce more democratic procedures into an organization by training the supervisors in more participative methods of managing. Both research and experience have indicated that supervisory training at the lowest level only is not likely to be successful; what is needed is the training of all management from top to bottom. A second procedure that may often be needed is a change in the formal structure of authority in the organization; that is, it may be necessary to delegate more authority down the line including all the way down to the non-supervisory level. In some cases there are too many levels in the hierarchy, and more participation could be obtained at all levels if one level were removed. Finally, it should be mentioned that a better fit between the man and his job with respect to participation can be improved by taking account of this variable in the usual processes of selection, placement, and promotion in the organization.

Improving fit with respect to job complexity. We have found in our study that poor fit with regard to the complexity of his work is perhaps the most important stress for the policemen in our example. A further examination of the data shows that a large minority of these men wanted more complex work but the majority of men wanted less complex work. It is clear therefore than any general change in the complexity of work will improve the fit for some men but will worsen it for others. What is needed accordingly is an individualized program tailored to fit the needs of each individual.

Such a program must start with the identification of those men who are suffering from poor fit with respect to complexity and with determining whether their work is too simple or too complex. Here again the use of our research questionnaire provides a mode. It covers a variety of items about the complexity of the work including: whether there is a detailed job description or no set procedure; whether the man performs the same task using the same equipment and procedure every day or changes in the tasks and procedures occur almost daily; working with people versus working alone; having to interact with several different groups of people versus always in only one group (the former is known as "interfacing" in NASA); working on several tasks in different stages of completion versus finishing a single task before moving on to the next; etc. Similar items, chosen to be more appropriate for police work, could be added to a questionnaire. With such information in hand, I believe it would be possible to improve the fit for most of those men

men who were definitely misfitted. No doubt there would be some constraints to be overcome but I believe that substantial improvements in job adjustments could be achieved.

In conclusion, let me say that the research on stress and strain and health in working life is still in its beginning, but we have already obtained enough important findings to justify feasibility studies in which programs for reducing stress and strain and for improving health and well-being are carried out with a careful research evaluation of the outcomes.

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