

BIELEFELDER ARBEITEN ZUR SOZIALPSYCHOLOGIE

Nr.36

(Juni 1978)

Michael Frese:

Coping strategies in work and  
illness: A pilot study

Summary

In a cross-sectional study heart patients in a rehabilitation clinic were asked about their former job situation and their coping strategy toward the heart sickness. In a path-analytic framework various hypotheses about the relationship between the coping strategy "passivity" and the control and stress situation at work were tested (one important variable being person-environment-fit).

It was shown that a relationship between person-environment-fit and passivity does exist and it was argued that this is an effect of occupational socialization. Furthermore, stable attributions of control are related to passivity. The study can be interpreted as a possible confirmation of Seligman's theory of "learned helplessness".

The influence of the job on coping with coronary sickness: A pilot study<sup>1)</sup>

In the opinion of occupational socialization theorists, the entire personality is influenced by the individual's occupation and the conditions under which he has to work (e.g. VOLPERT 1975, MOORE 1969). This general hypothesis should hold true in more specific spheres of life. We were particularly interested in the reaction to illness, which has often been referred to as "illness-behavior". MECHANIC (1976) postulated two types of illness-behavior strategies: 1. Defense mechanisms, 2. Coping strategies. We shall be referring here to one particular coping strategy, namely passivity. Any approach to a challenge or stressor will be referred to as coping. Passivity is conceptualized as the inactive approach to challenges. FRESE has investigated this strategy in the context of occupational socialization (1977, 1978) where the topic in question was the controllability of working conditions.

Occupational control should be understood as the scope of activities which a person has at his disposal to carry out one's job and of influencing one's working conditions. Corresponding to SELIGMAN's theory of "learned helplessness" (1975) it was postulated that occupational uncontrollability contributes to increased passivity in the job and to a tendency of employing passive coping strategies in other spheres of life. This implies our advocacy of the hypothesis that experience of uncontrollability at work leads not only to a situation-specific "learned helplessness" (FRESE & GREIF 1978), but furthermore to a generalized learned helplessness and passivity. According to this model, passivity is not caused by stress alone but by the uncontrollability of stressors.

This control concept is closely related to the Person-Environment-Fit-Model (HARRISON 1976, FRENCH, RODGERS & COBB 1974), a concept which raises the question as to what extent certain demands of an individual's environment

---

1) I want to thank Dr.Dransfeld, Dipl.Psych.Hoffmann and Dipl.Psych.Kijanski as well as Mr.Eiler for their support at the rehabilitation center Wannsee in Berlin (West). Particular thanks are due to cand.phil.John, who worked in the framework of a practical period within this research. Finally I want to thank my colleagues cand.phil.Hawkins, Dr.Greif, Dr.Guski, Dipl.Psych. Mohr and Dipl.Psych.Semmer for their comments on this paper. All calculations were carried out with the program package SPSS (NIE et al. 1975) on the CD 6500 of the Technical University Berlin.

harmonize with his needs and wishes. The most important strategies in face of an objective or subjective disharmony between personal needs and environmental pressure on a person is, the more probable is such a misfit. A possible misfit can be reduced by the person however, if he has control (strategy 1). If the person does not have control he may reduce the misfit by illusory control (strategy 2). Finally the person can "accept" the misfit as not changeable if the environment cannot be controlled (strategy 3).

We confined this investigation to the population: coronary sick, which implies that it will be a conservative test for the hypothesis that uncontrollability at work evokes passive strategies of coping with illnesses:

1. Confinement to the coronary sick subjects limits the answer variation to a great degree (here type A behavior may play a great role) and thus reduces the statistical possibility of discovering systematic covariations.
2. Although it is generally accepted that certain working conditions can possibly evoke a coronary infarct, the illness behavior will in the most seldom of cases be attributed by the subjects to their working conditions. This is so, because the coronary infarct or coronary surgery is seen as a significant interruption in the life of the subjects and the cognitive difference between the work situation and the situation in the rehabilitation center is thus emphasized. This attributional bias against possible relationships between the working conditions and the coping strategy toward illness is further reinforced by the fact that, at the time of research, our subjects have been absent from work for an approximate average of 1,5 months. So a tendency to answer in the direction of the hypothesis can hardly be expected.

The relevance of this study may be seen in its possible preventive implications. As rehabilitation centers are often confronted with the appearance of post-operative or post-infarct depression (DOROSSIVES et al. 1976, FRIEDMAN 1976), it is of practical importance to undertake certain psychotherapeutic counterstrategies early. It may be that the selection of the new job after the therapy in the center will be influenced by the knowledge of possible effects of the job on strategies toward illness. Furthermore, showing that certain working conditions not only add to the risk of coronary infarct but also evoke disadvantageous coping strategies would be of great significance for the development of preventive measures at work.

Since the study described here yields only cross-sectional data, it is not possible to make causality statements about the influence of

working conditions on passivity towards sickness, but we can attempt to falsify certain hypotheses about the causality, e.g. the hypothesis that working conditions influence coping strategies. The following is a list of four mutually exclusive hypotheses:

1. Compensation: Within the research on leisure-activities (e.g. ULICH & ULICH 1977) two hypotheses in particular have been postulated: The "spill-over" effect of work into leisure-time (this corresponds to the hypothesis of generalization) and compensation during leisure-time. The latter could also prove to be true in our context: People who had to work under conditions of very low controllability and had jobs with little responsibility and few rewards are more likely to be open towards change. Therefore they are more active and attempt to use their wider scope of action in the clinic to their best advantage.
2. Generalization: This hypothesis suggests that the work-situation evokes one specific coping strategy and that this strategy is also applied in other spheres of life. This implies that working conditions allowing little control should lead to greater passivity of the coronary sick. This is our hypothesis, from which we start.
3. Selection: If a relationship between working conditions and passivity can be shown, it is possible that this relationship is a result of selection processes. Certain jobs where decisions seldom have to be made are chosen by people who, because of earlier experiences, favor passive coping strategies. These selection processes could then explain the relationship between passivity and occupational uncontrollability.
4. Discontinuity: It could of course be postulated that neither compensation nor generalization effects appear. This could be called discontinuity-hypothesis, according to which a zero-correlation would be expected between working-conditions and coping strategies.

Finally three other hypotheses can be postulated which are not to be regarded as alternatives to the other four hypotheses but, rather, as complementary:

5. Future perspective: Passivity could also result from the belief of being unable to make improvements in the future. We consider two aspects of the future perspective-hypothesis significant: a) the hope of achieving control over future events; b) the possibility of finding work again or of returning to the former profession.

6. Degree of sickness: Finally, it is to be expected that particularly people in very poor health are passive, because a sickness can only then be dealt with actively when its effects can be viewed as principally controllable.

7. In addition to these general hypotheses, we hypothesized that it is not the stressors at work which are decisive for the development of passive coping strategies, but the feeling of not being able to control the stressors. Here certain stable attributions of uncontrollability at work and of stable subjective attributions of uncontrollability on passivity is greater than the influence of stressors at work alone.

### The sample

The investigation was carried out in the time from the 22nd of August until the beginning of December 1977 on all newly admitted patients at the rehabilitation center Wannsee in Berlin (West) who had worked until they were taken ill.

Directly following admission and relevant tests done by the clinic, the patients were given a questionnaire which, completed, was returned to the nursing staff. The refusal quota was about 22%. The sample consists of 96 subjects (all persons unemployed directly prior to the illness were excluded from the sample) of which 7% were women and 93% men.

43% were white collar workers, 39% blue collar workers, 10% public officers, and 8% selfemployed. The reason for admission was, by 86% a coronary infarct, and by 14% coronary surgery. The average age (50 years old) and social position of the sample corresponds to the usual average of the clinic.

### The scales used

Since direct observation was not possible, the working conditions were ex post rated by items in a 5-point Likert-type scale format ranging from "does not apply at all" to "applies very much so". We tried to record the conditions as concretely as possible, i.e. the questions were clearly related to facts and not to opinions. An example: "Was it, at your place of work, specifically prescribed how your job was to be performed?" But even this type of question cannot completely exclude the possibility of subjective

distortions playing a significant role in the answering of the questions. Table 1 shows sample items and reliabilities of the scales. Some items were formulated similarly to items from UDRIS (1977) and GARDELL (1971). The following scales were used, the corresponding items being added up.

1. Occupational stress (which will be referred to in short as "stress") was composed of:

- a) Qualitative understimulation: This scale measures the degree to which the worker is enabled to use his cognitive abilities.
- b) Qualitative overstimulation: These items measure whether the work taxes the worker's intellectual capacity.
- c) Quantitative understimulation: Here, the items measure whether the subjects have enough work to do. Quantitative and qualitative understimulation are probably combined with feelings of monotony.
- d) Quantitative overstimulation: This scale measures under what degree of pressure the subjects have to work because of the sheer amount of work to be done.

Since these four scales correlate highly with each other (cf. table 2) and since, in the following analysis, the number of variables was to be reduced, these stressors were combined to one scale: stress (the uncorrected correlations of the individual scales can be seen from table 2).

The reliability estimates (internal consistencies) of the scales Qualitative and Quantitative Understimulation are not satisfactory but, since the scales present only small correlations in the scale Stress, the use of the scales is permissible (reliabilities are given in table 1).

2. Occupational control: This scale should measure, as objectively as possible, the subjects' scope of action at work.

3. Person-Environment-Misfit: These four items measure the subjective disharmony between individual needs and environmental demands resulting from the stressors: quantitative and qualitative under- and quantitative and qualitative overstimulation. Table 2 shows the correlations of the four items of this variable with the corresponding stressors. This variable will be referred to as "PEmisfit".

4. Job perspective: This variable is measured with one item offering 4 possible answers:

- i. "Do you believe that you will be unemployed?"
- ii. "Do you believe you will return to your former job?"
- iii. "Do you believe you will not return to your former job, but will re-

Table 1: Sample items of the scales and reliabilities

Scale (below sample item)	reliability estimate
<u>qualitative understimulation</u> (3 items) The work was not challenging	.47 <sup>2)</sup>
<u>qualitative overstimulation</u> (3 items) My work was very complicated	.70 <sup>2)</sup>
<u>quantitative understimulation</u> (2 items) I had often very little to do	.46 <sup>2)</sup>
<u>quantitative overstimulation</u> (4 items) One had so much to do that it just got out of hand	.87 <sup>2)</sup>
<u>occupational control</u> (6 items) Was your scope of action at work very large?	.79 <sup>2)</sup>
<u>PEmisfit</u> (4 items)	3)
My work was too complicated for me My work was too boring for me There was too little going on at my place of work My work wore me out too much	
<u>internal - external control</u> (4 items) <sup>4)</sup> My life is chiefly controlled by powerful others <sup>5)</sup>	.81 <sup>2)</sup>
<u>hope for control</u> (3 items) <sup>4)</sup> I can achieve quite a lot if I really stand up for it	.63 <sup>2)</sup>
<u>passivity</u> (13 items) Since I've been ill, I've no confidence in myself anymore	.87 <sup>1)</sup>

- 1) reliability estimate by split- half method (Lienert, 1969)  
 2) reliability estimate by internal consistency (Lienert, 1969)  
 3) no reliability estimate, because there is no theoretical explanation for high intercorrelations  
 4) Here the answer alternatives were: "This is not my opinion at all" to "This is exactly my opinion".  
 5) reversed scoring

Table 2: Intercorrelation of the Stress variables and PEmisfit

1. Quantitative understimulation					
2. Quantitative overstimulation	-.69 <sup>a</sup>				
3. Qualitative understimulation	.35 <sup>a</sup>	-.41 <sup>a</sup>			
4. Qualitative overstimulation	-.28 <sup>a</sup>	.42 <sup>a</sup>	-.43 <sup>a</sup>		
5. PEmisfit	-.08	.33	.20 <sup>b</sup>	.16	
6. Stress	-.21 <sup>b</sup>	.75 <sup>a</sup>	-.03	.67 <sup>a</sup>	.48 <sup>a</sup>
	1	2	3	4	5

a) p .01  
 b) p .05

main in your former profession?"

iv. "Do you believe you will receive a pension?"

This variable was transformed in four dummy variables, each subject receiving a "1" if he had checked the answer and a "0", if not.

5. Severity of sickness: Guarantee of the patients' anonymity prevented us having access to the medical records, but we were able to form a rough index by asking the question: "How good is your present state of health according to the information you have received from the doctors?" with 5 alternative answers ranging from very good to very bad. Since we must presume that not all patients are equally well informed an additional question was asked: "Have the doctors given you exact information about the state of your health?" 79% answered this question with "yes". In order to avoid all too subjective judgment of the severity of the sickness, only the informed patients were included in the analysis of this variable.

6. Internal-External control: These items were, to a great extent, identical to those used by LEVENSON (1974) and present an analogy to ROTTER's concept of internal-external control (ROTTER 1972). These items were selected according to their discrimination index which was computed in another study done by the author (FRESE 1978, MOHR & FRESE 1978).

7. Hope for control: This means the subjective hope of having control in the future. The scale was developed as part of another study (FRESE 1978, MOHR & FRESE 1978).

8. Passivity: This scale was developed especially for this investigation, it registers a passive strategy of coping with an illness. Presumably, this scale is closely related to depression (unfortunately this could not be verified within the scope of this study).

## Results

After presenting the results by means of a path analysis, we shall discuss each of the hypotheses.

Path analysis is a modern technique of presenting and analyzing the interrelationships of a large group of variables, by means of various regression analyses. Since excellent reviews of this method are available, detailed description of this method is not warranted (cf. BLALOCK 1971).



But the following characteristics of path analysis should be briefly noted:

1. If there is a direct influence of one variable upon the other, the path equals the correlation between these variables.
2. If there is an indirect influence, there is no direct path and the correlation is equal to the multiplication of the direct paths (i.e. the paths which run via other variables involved).
3. If a path between two variables is found, even though there exists no correlation, suppressor effects may be involved.
4. Various combinations of the above may be possible.

Although path analysis is in my opinion not capable of yielding a causal proof with cross-sectional data, it does necessitate the formulation of an explicit theoretical model of causality relationships. The variables are hypothesized in the following order of causality: 1. Stress; 2. Occupational control; 3. PEmisfit; 4. Job perspective; divided into four dummy variables; 5. Severity of sickness; 6. Internal-External control; 7. Hope for control; and, finally, 8. Passivity. (Table 3 shows the intercorrelation of these variables).

In the first step of the analysis, all paths<sup>1)</sup> (i.e. the corresponding standardized beta weights) were calculated in their order of causality. In a second step of analysis the paths were reduced so that the hypotheses could be tested.

Figure 1 shows the reduced model<sup>2)</sup>. None of the paths omitted in this second step are significant ( $p > 0.10$ ) and the paths shown in figure 1 differ only very slightly from the originally calculated paths.

It is evident from figure 1 that the following paths present no significant standardized regression-coefficients: the path from occupational control to passivity; the paths from severity of sickness to internal-external control, passivity and control anticipation, as well as the path from job perspective to hope for control.

---

1) The missing data within the summation-scales were substituted by the arithmetic mean. Missing data in other items reduced the number of subjects in the regression analyses to  $N = 94$ .

2) Path analysis is based on the linearity of the relationship between the variables. Except for the relationship between passivity and PEmisfit this assumption of linearity can be maintained.

Table 3: Intercorrelations of the variables

1. Occupational control										
2. PEmisfit	-.31 <sup>a</sup>									
3. Internal external control	.24 <sup>b</sup>	-.16								
4. hope for control	.07	-.01	.01							
5. passivity	-.21 <sup>b</sup>	.41 <sup>a</sup>	-.27 <sup>a</sup>	-.37 <sup>a</sup>						
6. Unemployment (dummy)	-.03	.12	-.18 <sup>b</sup>	-.05	.10					
7. Return to old job (dummy)	.14	-.20 <sup>b</sup>	.18 <sup>b</sup>	-.11	-.21 <sup>b</sup>	-.45 <sup>a</sup>				
8. Return to old profession (dummy)	-.15	.14	-.09	.07	.08	-.13	-.50 <sup>a</sup>			
9. Pensionist (dummy)	-.06	.02	-.02	.12	.16	-.13	-.50 <sup>a</sup>	-.15		
10. Severity of sickness <sup>1)</sup>	-.04	.09	-.15	-.11	.20 <sup>b</sup>	.01	-.09	.10	.03	
11. Stress	-.09	.48 <sup>a</sup>	-.01	.16	.19	.00	.16	.02	.21 <sup>b</sup>	-.05
	1	2	3	4	5	6	7	8	9	10

1)The correlations of this variable are based on N= 74 (only persons, who are well informed by their physicians)

a) p < .01  
b) p < .05

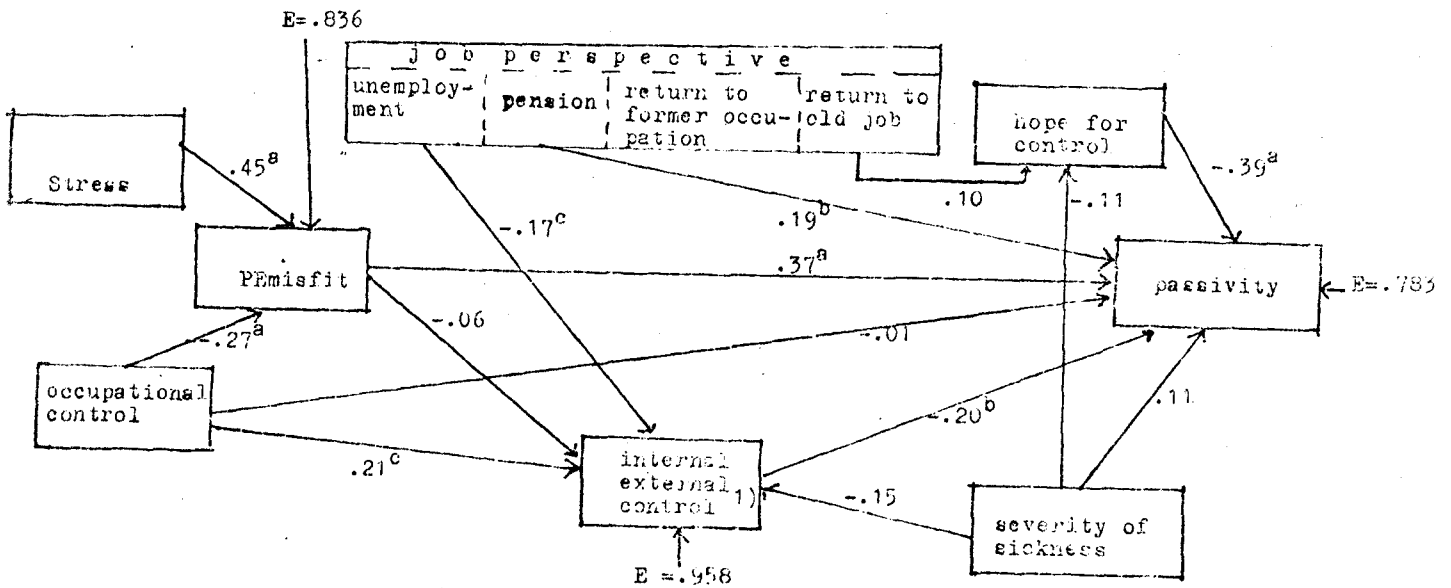


Figure 1: Path analysis according to the theoretical model a) p .01 b)p .05 c)p .10

1)The paths from severity of sickness are based on N =74, who are well informed by the physicians

In a further step of the analysis, the paths showing no significance were omitted and regression analyses were calculated anew. A relatively liberal significance criterium of .10 was used in order to avoid omitting important variables from the analysis.

Before discussing results of path analysis, a short discussion of the dummy-variables and their methodological treatment as well as the treatment of the variables stress and severity of sickness is important.

#### 1. The treatment of the dummy-variables

Because of its nominal scale status the variable "job perspective" was divided into the following four dummy-variables: "anticipated unemployment"; "anticipated return to the former place of work"; "anticipated return to the former occupation, but not the former place of work"; "anticipated pension".

It is not possible to use all four dummy-variables within one regression model, because possible artificial correlations between them may lead to a distortion of the outcomes of the whole regression analysis. Therefore only the one dummy-variable showing the highest predictive power in the regression analysis was taken as predictor for the criterion. So four regression analyses were computed for each criterion. In this way we got anticipated unemployment as the highest predictor of internal-external control; anticipated return was the highest predictor for hope for control (although not significant), and anticipated pension for passivity (cf. figure 1).

#### 2. Treatment of the variables stress and severity of sickness

Apparently, stress is a reliable predictor of PEmisfit, while also significantly correlated to passivity (cf. table 3), hence the path from stress to passivity was also calculated (including all other predictors except for severity of sickness). This path was 0.05. Obviously the effect of stress on passivity can be explained fully by the effects of PEmisfit.

Severity of sickness has no significant path to internal-external control, hope for control and passivity, although the correlation with passivity is significant. Apparently a substantial part of the effect of this variable can be explained by hope for control and internal-external control so that the significance of the correlation disappears in the path analysis. This variable was, therefore, not included in further path analyses. The fact that this variable is of low predictive

value is, in spite of our precautions to include only subjects who had been well informed by their doctors, almost certainly caused by low reliability and validity. So this result is more likely an artefact, therefore the hypothesis that severity of sickness influences passivity must not necessarily be rejected.

In a third step of analysis all significant paths were removed. Table 4 shows the simple correlations of the various variables as well as the direct causal effects<sup>1)</sup> (paths) and the indirect causal effects (paths via intermittant variables)<sup>2)</sup>. The noncausal effect results from subtracting the total causal effect from the correlation. It is evident from the table that the noncausal portion is very small, which means that the path analysis is well suited by the data, furthermore the newly computed paths correspond to those shown in figure 1. Evidently, the insignificant paths can be omitted without loss of information.

Table 4: Decomposition table of the path analysis after elimination of insignificant paths

Relationships between the variables: , , ,	simple correlations	causal effect			noncausal effect	multiple correlations R	R <sup>2</sup>
		direct	indirect	total			
PEmisfit/Stress	.48 <sup>a</sup>	.45 <sup>a</sup>	-	.45	.03	.55 <sup>a</sup>	.30
PEmisfit/occupational control	-.31 <sup>a</sup>	-.27 <sup>a</sup>	-	-.27	.04		
internal external control/occupational control	.24 <sup>b</sup>	.23 <sup>b</sup>	-	.23	.01	.29 <sup>b</sup>	.09
internal external control/unemployment	-.18 <sup>b</sup>	-.18(p=.08)	-	-.18	.00		
Pass/Stress	.19 <sup>b</sup>	-	.17	.17	.02		
Pass/Occupational control	-.21 <sup>b</sup>	-	-.14	-.14	.07		
Pass/PEmisfit	.41 <sup>a</sup>	.37 <sup>a</sup>	-	.37	.04		
Pass/unemployment	.10	-	.03	.03	.07	.62 <sup>a</sup>	.39
Pass/pension	.16(p=.06)	.19 <sup>b</sup>	-	.19	-.03		
Pass/internal external control	-.27 <sup>a</sup>	-.20 <sup>b</sup>	-	-.20	.07		
Pass/nope for control	-.37 <sup>a</sup>	-.39 <sup>a</sup>	-	-.39	-.02		

a) p < .01  
b) p < .05

- 1) "causal effect" is a terminus technicus of path analysis and does not signify that causality could be tested.
- 2) E.g. the indirect causal path from stress to passivity was computed by multiplying the paths from PEmisfit to passivity and from stress to PEmisfit (.45 x .37 = .17).

The multiple correlations and portions of the explained variance are given for each of the criteria PEmisfit, passivity, and internal-external control respectively. The multiple correlations here do not differ, incidentally, from the multiple correlations in which variables were used as predictors, even those who had no significant paths to the criteria. This means, omission of the significant paths does not lead to a loss of predictive power.

#### Discussion of the hypotheses

First, we want to discuss the four mutually exclusive hypotheses: Generalization from working condition to passivity, compensation, selection, and discontinuity between working conditions and passivity. It can be seen from table 4 and figure 1 that a relationship between working conditions and passivity clearly does exist. Although there is no direct relationship between the more objective scales stress and occupational control on the one and passivity on the other hand, stress as well as occupational control do have indirect influences on passivity, and occupational control does have a direct influence on internal-external control. PEmisfit has a substantially stronger influence on passivity, which agrees with the idea that subjective experience of fit between individual capacities and environmental demands is more important for the development of general coping strategies than the stressors. Since both, occupational control and PEmisfit, imply the aspect of control, the data support the hypothesis that subjectively experienced occupational uncontrollability contributes to passive strategies of coping with the illness.

The data enable us, therefore, to reject two hypotheses: the discontinuity-hypothesis, according to which there is no relationship between working conditions and coping strategies and the compensation-hypothesis which states that individuals who experience uncontrollability at work are particularly active in other spheres of life.

Whereas the hypothesis stating that the relationship between occupational uncontrollability and passivity is a result of a selection process cannot be rejected: According to this hypothesis individuals who are more passive are less interested in having a wide scope of action and therefore choose a job which allows them less control. Although the rejection of this hypothesis would only be possible with longitudinal data, it should be noted that the possibility of choosing a job is not as great as is often claimed.

Accordingly our data show that occupational mobility is very slight; most of the subjects have been at their respective place of work for a very long time. The average in our sample was 9 years.

The complementary hypotheses 5 and 6, i.e. the influence of the severity of the sickness and of the future perspectives on passivity will now be discussed.

As we have already mentioned our data show that the severity of sickness has no effect on hope for control, internal-external control, or passivity. But, as was mentioned earlier, this cannot be regarded as a final falsification of the hypothesis, because the question as to the severity of the sickness is of doubtful validity and reliability.

Future perspective proves in our data to be an important predictor of passivity. The hope for control in the future is one of the most important predictors in our path model. Furthermore, those persons expecting a pension after leaving the clinic are less passive. Hence the hypothesis that a negative future perspective is related to passivity can be regarded as confirmed, even though we found to our surprise that persons expecting unemployment were more active in their reaction to the sickness.

Finally the last hypothesis is to be discussed, which states that the influence of occupational uncontrollability and of stable subjective attributions of uncontrollability on passivity is greater than the influence of stressors at work. This can be seen relatively easily from our data: The four predictors which have to do with subjective general control and with occupational control, namely occupational control, PEmisfit, internal-external control and hope for control are each connected to passivity can be explained fully by the indirect causal effects. At the same time this fact indicates the fruitfulness of SELIGMAN's theory, according to which uncontrollability is the decisive variable for the development of passive coping strategies.

One possible alternative to our interpretation has not been mentioned yet: A general response set could have caused the relation between working conditions and passivity. One could hypothesize e.g. that passive people are more negative in their outlook (cf., e.g. BECK 1972) and therefore will generally answer the question more negatively than others.

Even though we cannot explicitly test this hypothesis, the following arguments speak against it:

1. According to this hypothesis, the variable severity of sickness should have had a significant path with passivity, because it would have been one of the most important questions to be answered negatively.
2. Passivity is the highest predictor for PEmisfit even though it explains only 17% of the variance ( $r^2$ ), while the predictors for passivity explain 39% of the variance (cf. table 4).
3. The pattern of answering the questions more negatively should be more uniform than it is in our data, if the hypothesis of response set were correct.

### Discussion

This study, which, because of its limited number of subjects, its cross-sectional design, and its lack of medical data, may only be regarded as a preliminary study, can give no final answer to the question of the effects of occupational socialization. Nevertheless it has yielded a plausible foundation for several hypotheses and has, on the whole, enabled us to confirm a certain theoretical model for this population.

One consequence of our findings is that in rehabilitation centers everything should be done to prevent the development of "helplessness-behavior" by confronting the patient with events he can control himself. Furthermore, it should be investigated whether clinic conditions contribute to the patient's uncontrollability and encourage the development of passive coping strategies.

More important is perhaps the consequence for the development of preventive strategies: Working conditions should be changed, so that they no longer facilitate the development of passive coping strategies but, rather, encourage a more active engagement in and beyond the sphere of work (cf. GARDELL 1977).

This study has shown that the hypotheses generated can be upheld in a cross-sectional study. However, large scale longitudinal studies are necessary to yield more trustworthy results in this field.

References

- BECK, A.T.: Depression. Philadelphia: Univ. of Pennsylvania Press 1971.
- BLALOCK, H.M. (Ed.): Causal models in the social sciences. Chicago: Aldine 1971
- DOROSSIEV, D., PASKOVA, V. & ZACHARIEV, Z.: Psychological problems of cardiac rehabilitation. In: STOCKSMEIER, U. (Ed.) Psychological approach to the rehabilitation of coronary patients. Berlin: Springer 1976.
- FRENCH, J.R.P. Jr., RODGERS, W. & COBB, S.: Adjustment as person-environment-fit. In: COELHO, G.V., HAMBURG, D.A. & ADAMS, J.E. (Eds.) Coping and adaptation. New York: Basic 1974.
- FRESE, M.: Psychische Störungen bei Arbeitern. Salzburg: Müller 1977.
- FRESE, M.: Partialisierte Handlung und Kontrolle: Zwei Themen der industriellen Psychopathologie. In: FRESE, M., GREIF, S. & SEMMER, N. (Eds.) Industrielle Psychopathologie. Bern/Stuttgart/Wien: Huber 1978.
- FRESE, M.: Arbeitslosigkeit, Depressivität und Kontrolle: Eine Studie mit Wiederholungsmessung. Bielefelder Arbeiten zur Sozialpsychologie, No. 29, 1978.
- FRESE, M. & GREIF, S.: Humanisierung der Arbeit und Stresskontrolle. In: FRESE, M., GREIF, S. & SEMMER, N. (Eds.) Industrielle Psychopathologie. Bern/Stuttgart/Wien: Huber 1978.
- GARDELL, B.: Produktionsteknik och Arbetsglädje. Stockholm: Personaladministrativa Rådet 1971.
- GARDELL, B.: Autonomy and participation at work. Human Relations, 30, 1977, 515-533.
- FRIEDMAN, F.H.: Psychosocial factors in coronary risk and rehabilitation. In: STOCKSMEIER, U. (Ed.) Psychological approach to the rehabilitation of coronary patients. Berlin: Springer 1976.
- V. HARRISON, R.: Person-environment fit and job stress. In: COOPER, C.L. & PAYNE, R. (Eds.) Stress at work. New York: Wiley 1978.
- LEVENSON, H.: Activism and powerful others: Distinction within the concept of internal-external control. Journal of Personality Assessment, 38, 1974, 377-383.
- LIENERT, G.A.: Testaufbau und Testanalyse. Weinheim: Beltz 1969<sup>3</sup>.
- MECHANIC, D.: Stress, illness, and illness behavior. Journal of Human Stress, 2, 1976, 2-6.
- MOHR, G. & FRESE, M.: Arbeitslosigkeit und Depression - unter besonderer Berücksichtigung einer empirischen Untersuchung zur Langzeitarbeitslosigkeit älterer Arbeiter. In: WACKER, A. (Ed.) Vom Schock zum Fatalismus? Frankfurt am Main: Campus 1978.
- MOORE, W.E.: Occupational socialization. In: GOSLIN, D.A. (Ed.) Handbook of Socialization theory and research. Chicago: Rand McNally 1969.



ROTTER, J.B., CHANCE, F.E. & PHARES, E.J.: An introduction to social learning theory. In: ROTTER, J.B., CHANCE, F.E. & PHARES, E.J. (Eds.) Application of a social learning theory of personality. New York: Holt, Rinehart & Winston 1972.

SELIGMAN, M.E.P.: Helplessness. San Francisco: Freeman 1975.

UDRIS, I.: Fragebogen zur Einschätzung von Arbeitsbeanspruchung. 4th Session of Schweizerische Tagung Psychologischer Forscher, Zürich 1977.

ULICH, E. & ULICH, H.: Über einige Zusammenhänge zwischen Arbeitsgestaltung und Freizeitverhalten. In: LEUENBERGER, T. & RUFFMANN, K.W. (Eds.) Bürokratie. Bern: Lang 1977.

VOLPERT, W.: Die Lohnarbeitswissenschaft und die Psychologie der Arbeitstätigkeit. In: GOSKURTH, P. & VOLPERT, W. (Eds.) Lohnarbeitspsychologie. Frankfurt am Main: Fischer 1975.

## BIELEFELDER ARBEITEN ZUR SOZIALPSYCHOLOGIE

(Psychologische Forschungsberichte, herausgegeben von H.D.Mummendey, Universität Bielefeld, Postfach 8640, 4800 Bielefeld 1; Selbstkostenpreis DM 1,50 pro Heft)

- Nr.14 H.D.Mummendey, R.Mielke, G.Maus & B.Hesener: Untersuchungen mit einem mehrdimensionalen Selbsteinschätzungsverfahren (1/77)
- Nr.15 R.Mielke: Zur Erfassung von Umweltmerkmalen im Ausbildungsbereich (2/77)
- Nr.16 M.Bornewasser: Die Konsistenzbeziehung zwischen Einstellungen und offenem Verhalten (2/77)
- Nr.17 H.D.Mummendey: Einstellungen (sets) bei der Erforschung der Beziehung zwischen Einstellungen (attitudes) und offenem Verhalten (3/77)
- Nr.18 H.D.Mummendey, B.Schiebel & U.Troske: Experimentelle Untersuchung der Stabilität instrumentell-aggressiven Verhaltens bei Meßwiederholungen in verschiedenen Zeitabständen (4/77)
- Nr.19 (wird nicht mehr aufgelegt und wurde ersetzt durch Nr.32)
- Nr.20 H.D.Mummendey, B.Schiebel & U.Troske: Die Wirkung von Modell-Aggression auf individuelle Verlaufsformen aggressiven Verhaltens (7/77)
- Nr.21 A.Mummendey & H.D.Mummendey: Begriff, Messung und Verhaltensrelevanz sozialer Einstellungen (8/77)
- Nr.22 H.D.Mummendey: Eine Untersuchung zur Differenziertheit des generellen und des situationsspezifischen Selbstbildes (9/77)
- Nr.23 L.P.Schardt: Die Anwendung psychologischer Testverfahren im Rahmen von betrieblichen Auswahlrichtlinien unter dem Gesichtspunkt gewerkschaftlicher Interessenvertretung (1.Teil) (11/77)
- Nr.24 dto. (2.Teil) (11/77)
- Nr.25 H.D.Mummendey, B.Schiebel, U.Troske & G.Sturm: Untersuchung der Spezifität/Generalität instrumentell-aggressiven Verhaltens (12/77)
- Nr.26 M.Bornewasser: Evaluation schulischer Lernprozesse: Drücken sich erworbene Einstellungen im offenen Verhalten aus? (12/77)
- Nr.27 H.D.Mummendey: Methoden und Probleme der Messung von Selbstkonzepten (1/78)
- Nr.28 R.Mielke: Einstellungen und Verhalten bei Lehrern unter Berücksichtigung von interner-externer Kontrolle und Merkmalen der Schulumwelt (1/78)
- Nr.29 M.Frese: Arbeitslosigkeit, Depressivität und Kontrolle: Eine Studie mit Wiederholungsmessung (1/78)
- Nr.30 H.D.Mummendey & E.Schloßstein: Ein Vergleich der subjektiven Landkarten zweier Nachbarländer (2/78)
- Nr.31 A.Mummendey: Aggression und Attribution (3/78)
- Nr.32 H.D.Mummendey & M.Isermann-Gerke: Selbstwahrnehmung als interpersonelle Wahrnehmung: Experimentelle Veränderung der Urteilsdifferenziertheit (4/78)
- Nr.33 H.D.Mummendey & G.Sturm: Selbstbildänderungen in der Retrospektive: I. Methode und deskriptive Ergebnisse (4/78)
- Nr.34 D.Brackwede: Eine Untersuchung zur Form des Zusammenhanges zwischen Self-Esteem und Beeinflußbarkeit in Konformitätsexperimenten (5/78)
- Nr.35 H.D.Mummendey: Modeling instrumental aggression with adults in a laboratory setting (6/78)
- Nr.36 M.Frese: Coping strategies in work and illness: A pilot study (6/78)