



Organizational Exit Pressures and Role Stress: Impact on Mental Health

Author(s): Richard H. Price and Robert Hooijberg

Source: *Journal of Organizational Behavior*, Vol. 13, No. 7, (Dec., 1992), pp. 641-651

Published by: John Wiley & Sons

Stable URL: <http://www.jstor.org/stable/2488386>

Accessed: 16/08/2008 13:47

---

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=jwiley>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

---

JSTOR is a not-for-profit organization founded in 1995 to build trusted digital archives for scholarship. We work with the scholarly community to preserve their work and the materials they rely upon, and to build a common research platform that promotes the discovery and use of these resources. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# Organizational exit pressures and role stress: Impact on mental health

RICHARD H. PRICE AND ROBERT HOOLJBERG

*University of Michigan, U.S.A.*

---

## Summary

Hypotheses regarding role stress, chronic burden and two forms of vulnerability to mental health symptoms are tested in a longitudinal sample of 590 caregivers working in group homes for the mentally ill. In addition, an organizational exit pressure hypothesis is offered. Measures of exit pressure are identified and incorporated into predictive models of stress and mental health. Exit pressures affect somatization directly and interact with role ambiguity to affect subsequent levels of anxiety and somatization. The results suggest that selection pressures in and out of social settings should be conceptualized as part of models of stress and mental health.

## Introduction

The relationship between stress and psychological well-being has been of interest to researchers concerned with understanding the fundamental nature of stress (Kessler, Price and Wortman, 1985; Pearlin, 1989) and epidemiological researchers concerned with identifying populations at risk for psychological disorder (Dohrenwend and Dohrenwend, 1985). More recently researchers interested in identifying social conditions that may reduce or prevent psychological distress have also turned to the study of stress and well-being (Heller, Price and Hogg, 1990; Price, House and Gordus, 1985).

Current models of stress tend to assume that individual distress is due to exposure to a particular stressful setting or relationship. However, such models omit selection forces (Buss, 1987) that may play a critical role in understanding stress and well-being. As Buss notes, 'social selections are decision nodes that direct us down one path while simultaneously preempting other paths. They determine the nature of the environments to which we are exposed and in which we must subsequently reside. Because these selections are often non-random, based on individual dispositions, propensities, and proclivities, the mechanism of selection provides a natural integrative concept linking personality psychology and social psychology' (p. 1216).

Social selection in and out of situations or organizational roles may occur for reasons other than personal proclivities or individual dispositions, however. Unique combinations of individual traits or needs and situational characteristics of organizations can, for example, increase pressures to leave the setting (Emmons, Diener and Larsen, 1986; Price, 1979). For example, if an individual lacks the required work skills or has a communication style that does not match his or her work environment, this may increase exit pressures.

Preparation of this article was supported by NIMH Grant #2P50MH38330 to the Michigan Prevention Research Center. The authors wish to thank Tom D'Aunno, Cathy Heaney, Louise Parker, and Lance Sandelands for their comments on an earlier draft. Correspondence concerning this article should be addressed to Richard H. Price, 2263 ISR, 426 Thompson St., Ann Arbor, MI, 48106-1248, U.S.A.

We argue that selection in and out of stressful organizational situations should be incorporated into theoretical models and empirical tests of hypotheses concerning the impact of stress on well-being. In the present paper we test more traditional hypotheses regarding stress and well-being and then introduce variables that predict pressures to leave the stressful setting. Models of stress that incorporate selection pressures broaden the range of phenomena that can be understood in the stress and coping paradigm. In what follows, we explicate and test several hypotheses regarding the role of stressors, burden, vulnerability, and support and propose a modified model of stress and well-being that takes into account social selection phenomena.

## Hypotheses regarding stress, support, personality and symptoms

Dohrenwend and Dohrenwend (1985) have offered a number of hypotheses regarding the role of stressors, protective social conditions, and personal dispositions in the development of psychological symptoms. The general framework with some elaborations is shown in Figure 1. These hypotheses are neither mutually exclusive nor exhaustive, but portray alternative roles for psychological stressors, social conditions, and personality predispositions in the development of symptoms.

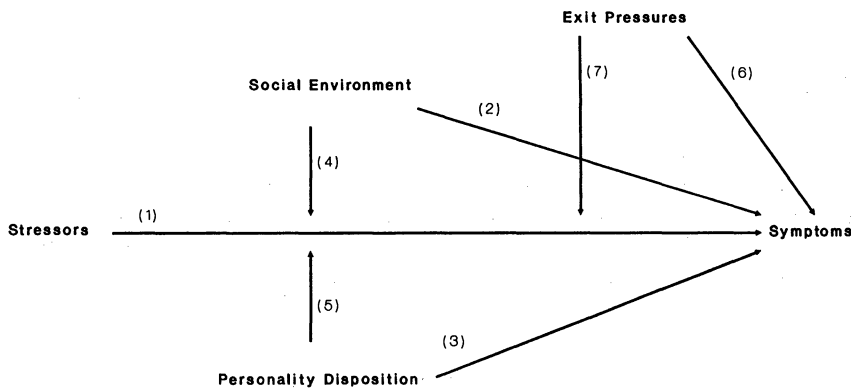


Figure 1. Alternative hypotheses concerning the role of stressors, support, personality and exit pressures in symptom development. Paths represent hypothesis for role stress and (1) chronic burden (2 or 3), additive burden (2 and 3), vulnerability/buffering (4), vulnerability/disposition (5), exit pressures (6), and the exit pressures/role stress interaction (7)

The first hypothesis (path 1) depicts the case where a stressor may act directly to produce psychological symptoms. Various forms of extreme life experiences such as a life in concentration camps or combat may produce stress effects, but other more common life events such as involuntary job loss, widowhood and divorce (Kessler *et al.* 1985) may also be involved. Another version of this hypothesis implicates more chronic, but nevertheless stressful, circumstances such as workplace stressors associated with role ambiguity (e.g. Kahn, Wolfe, Quinn, Snoek and Rosenthal, 1964; King and King, 1990). We refer to path 1 as the *role stress* hypothesis.

A second set of hypotheses described by Dohrenwend and Dohrenwend involves the effects of *chronic burden*. One version of the chronic burden hypothesis (path 2) suggests that properties of the social environment, such as low levels of social support from others (House and Kahn, 1985; Kessler and McLeod, 1985), represent a chronic burden that may place individuals at

risk for the development of symptoms. Another source of chronic burden (path 3) focuses not on the social environment, but instead on personality dispositions which may have a direct effect on symptoms by lowering the threshold for psychological disorder. A variety of personality dispositions have been identified as potential sources of chronic burden (Kernis, Brockner and Frankel, 1989; Lefcourt, Miller, Ware and Sherk, 1981; Peterson, Seligman and Vaillant, 1988). While any of these sources of chronic burden may constitute a significant contributor to the development of psychopathology, Dohrenwend and Dohrenwend (1985) also suggest an *additive burden* hypothesis (both paths 2 and 3) which involves both the social environment and personality dispositions combining in an additive fashion to produce psychological disorder.

A third major class of hypotheses linking stress and disorder identifies paths to *vulnerability*. This is a form of stress-diathesis hypothesis (Zubin and Spring, 1977) in which vulnerability is conferred by a unique combination of stressors and predisposing social or personal conditions. The version of the vulnerability hypothesis most familiar to stress researchers suggests that low levels of social support combined with high levels of stress make individuals particularly vulnerable to the development of symptoms (path 4). The obverse of this hypothesis suggests that high levels of social support in the presence of stressors may be protective and produce a 'buffering' effect (Cohen and Wills, 1985; House, Landis and Umberson, 1988).

An additional variant of the vulnerability hypothesis (path 5) suggests that it is not conditions in the social environment, but personality dispositions that combine with stressors to produce symptoms. A wide variety of personality dispositions have been identified in various versions of the vulnerability hypothesis (Cohen and Edwards, 1989). This hypothesis suggests that personality dispositions moderate the strength of the relationship between stressors and symptoms.

Finally, we offer an *organizational exit pressure* hypothesis. The hypothesis postulates that persons who remain in settings where there is poor congruence between their personal needs or abilities and the demands and resources of the setting will experience increased levels of distress and pressures to leave the setting. Leaving the setting may be an adaptive response (Wheaton, 1990), but for those who remain, either because of a lack of alternatives or because of commitment to the setting, exit pressures may negatively affect mental health. We hypothesize furthermore that exit pressures may combine with role stressors in the setting to produce high symptom levels.

Exit pressures of the kind we hypothesize can act on symptoms in several ways as depicted in Figure 1. First, exit pressures can have direct effects on symptoms for those who are experiencing such pressures but who are either unwilling or unable to leave the setting (path 6). This hypothesis suggests that for those who are 'trapped', either because of a lack of alternatives or a sense of obligation to remain in the setting, exit pressures can, by themselves, be aversive and increase symptom levels. Second, we hypothesize that exit pressures can interact with role stressors to exacerbate psychological distress (path 7). For example, individuals who perceive their role requirements to be ambiguous and who experience strong exit pressures but are unable to leave the work setting may experience unusually high levels of psychological distress.

We test hypotheses concerning the role of exit pressures in the stress-well-being relationship by identifying the characteristics of persons who have already left the setting as well as characteristics of the settings in which there have been high levels of attrition. Persons who remain in the setting but display these same characteristics should also be experiencing exit pressures even though they have not yet left the setting. With exit pressures identified in this way, we will be in a position to test hypotheses about the role of exit pressures in the stress process.

The present context for testing the hypotheses discussed above is a longitudinal survey of caregivers in the mental health system. These caregivers work in small community-based group homes for the severely mentally ill and developmentally disabled persons. Their work consists

of dressing, feeding, transporting, administering medication, and teaching basic life skills to severely disabled persons. The study of caregivers provides a particularly good context for the test of these hypotheses since caregivers are workers who experience relatively high levels of role stress (Cherniss, 1980; Moos, 1981). The caregiver role typically exposes workers to a variety of sources of stressful role ambiguity including confusing directives, unclear job descriptions and wide variations in team capacity to engage in problem-solving and mutual support. Such conditions expose caregivers to numerous sources of stress that may place them at risk for the development of psychological distress.

In the present study we test the hypotheses described above using measures that are particularly salient for caregivers and are relevant for life stress models that link work stressors to mental health outcomes. Role ambiguity has long been identified in the organizational literature as a pervasive source of work stress (Kahn *et al.*, 1964). Subsequent reviews of research (Jackson and Schuler, 1985; King and King, 1990) have confirmed the importance of role ambiguity in affecting subjective well-being. A voluminous literature exists on the role of social support in symptom development. Supervisor support in particular (Beehr, 1976; Beehr and Newman, 1978) has been regarded as potentially potent because supervisors command a wide range of informational, material, and affective resources for workers. Pessimistic personal disposition has been hypothesized to lead persons to make global, internal and stable causal attributions to negative events which in turn produce negative mental health effects (Scheier and Carver, 1985) and even long-term health effects (Peterson *et al.* 1988).

In addition, we test our exit pressure hypothesis by identifying those caregivers who have left their job after an initial wave of data collection. We then estimate a regression model predicting the individual and work setting characteristics of persons who leave the work setting. It is, we hypothesize, this unique combination of individual and organizational characteristics that creates exit pressures. The pattern variable reflecting the characteristics of leavers is then applied in prediction equations to those *remaining* in the work setting to test whether this combination of person and setting characteristics affects symptoms, either by itself, or in combination with other stressors.

## Methods

### *Sample, recruitment and data collection*

Participants were group home managers and direct care staff in group homes in 11 counties in Michigan. Eligible group homes included all those that provided special care to adult severely developmentally disabled and mentally ill clients. Respondents in the overall sample were 77 per cent female, average 13.4 years of education and averaged 30.5 years of age. Seventy-seven per cent of respondents in the overall sample were white, 36 per cent were married, and 47 per cent had an annual family income of less than \$15 000.

A multi-stage recruitment procedure was used to involve respondents. First administrators from 73 non-profit corporations who operated group homes were invited to orientation sessions outlining research project objectives. In all orientations assurances of confidentiality were provided and the importance of participation emphasized. The sample in this study is the randomly selected control group of group homes in a larger field experiment. Two waves of survey data are reported here. Data were collected from respondents in group homes using self-administered surveys that were sent to each staff member at the group home where they were employed. The interval between the two waves of data collection was approximately six months. A payment of \$5.00 was included with each survey form to compensate respondents for the time spent

filling out the survey. Of the 1284 surveys sent out at time 1, 963 were returned for a response rate of 75 per cent. Of the 963 control group respondents responding at time 1, 515 also responded at time 2, providing a response rate of 53 per cent.

### *Measures*

All measures in the present study are multi-item indexes constructed on the basis of factor analyses conducted at both survey waves. Items were retained in indexes only if a closely replicated factor structure was obtained at both survey waves. All indexes measuring stress, support, pessimism and symptoms were carefully screened for overlapping item content and items with similar content on two scales were removed from one of the scales.

#### **Role ambiguity**

Role ambiguity was measured by a four-item index asking respondents how often (1 = never, 7 = almost always) they had been asked to do things they felt were not part of their job, faced work situations where there were no clear guidelines, had been asked to do things that were too vague to know what had to be done, and were unclear what others expected of them (Cronbach alpha = 0.77).

#### **Supervisor support**

Supervisor support was measured by a five-item Likert scale asking how much (1 = not at all, 5 = a great deal) the respondent received useful information, care and concern, help in thinking through problems, help in getting materials, supplies and services that were needed, and praise and appreciation from his/her immediate supervisor in the last four weeks (Cronbach alpha = 0.88).

#### **Pessimism**

The measure of pessimism was based on items originally developed by Scheier and Carver (1985). The items asked respondents to agree or disagree (1 = strongly agree, 5 = strongly disagree) with items having pessimistic content stating, 'if something can go wrong it will', and 'I hardly ever expect things to go my way', and items with positive content stating, 'I always look on the bright side of things', and 'I am a believer in the idea that every cloud has a silver lining' (Cronbach alpha = 0.55).

#### **Psychological symptoms**

Chronic work stress and low levels of social support within group homes were expected to place respondents at risk for elevated symptom levels. Symptoms were measured using items from subscales of the SCL-90R (Derogatis, Rickels and Rock, 1976). *Anxiety* was measured using a six-item scale which asked respondents to report the degree to which they were bothered or distressed (1 = not at all, 5 = extremely) in the last week by nervousness, shakiness, suddenly being scared for no reason, feeling fearful, experiencing heart pounding or racing, having to avoid certain places or activities because they were frightening, and feeling tense or keyed-up (Cronbach alpha = 0.82). *Depression* was measured using an eight-item scale which asked to what degree the respondent was bothered by feeling of being trapped or caught, crying easily, feeling lonely, feeling no interest in things, feeling blue, feeling thoughts of ending their life, feeling low in energy or slowed down, or poor appetite in the last seven days (Cronbach alpha = 0.85). *Somatization* reflects psychological distress arising from perceptions of bodily disfunction and was assessed using a three-item scale in which respondents reported the degree to which they had been bothered in the last seven days by pains in the heart or chest, trouble getting their breath, or heavy feelings in their arms or legs (Cronbach alpha = 0.66).

### Control variables

In order to reduce the possibility that results might be affected by demographic or work role factors irrelevant to the hypotheses under consideration, the measures of anxiety, depression, and somatization were regressed on a number of control variables including, gender, marital status, number of minor children, ethnicity (minority, non-minority), family income, years of education, age, job title (supervisor or direct care worker) and job tenure (months in the job). Any control variable that was a significant predictor of a particular mental health outcome was included as a control variable in all regression equations estimated for that outcome. Gender proved to be a significant predictor for anxiety ( $\beta = 0.09$ ,  $p < 0.05$ ) and depression ( $\beta = 0.12$ ,  $p < 0.01$ ), as was age for depression ( $\beta = -0.12$ ,  $p < 0.001$ ).

## Results

In order to test our exit pressure hypothesis, we first identified individual and work setting characteristics that were associated with caregivers who left their job between time 1 and time 2. This pattern variable predicting leaving was then applied to the panel of respondents who remained in the work setting. To estimate a model characterizing exit pressures and predicting leaving between time 1 and 2, we employed Heckman's (1976, 1979) method for estimating systematic sample selection bias. Using baseline (time 1) measures of individual and home-level demographic characteristics and perceptions of the work environment, we developed probit equations (Aldrich and Nelson, 1984) to predict leaving before time 2 defined as a dichotomous variable. Variables predicting leaving were then combined into a composite variable reflecting exit pressures. The resulting exit pressure variable was then entered into our models estimating the effects of role ambiguity, support, and pessimism on symptoms for those remaining in their jobs. In its role as an additional variable in our prediction equations, the exit pressure variable provides an estimate of the effect of exit pressures on symptoms, both as a main effect and in interaction with role ambiguity.

Probit equations yielded information both about individual characteristics of leavers as well as aggregate home-level characteristics of the group homes that produced exit pressures. Leavers were more likely to have worked in homes with higher staff educational levels ( $p < 0.01$ ), fewer direct care workers ( $p < 0.001$ ), less experienced workers ( $p < 0.01$ ), where co-worker performance was seen as somewhat better ( $p < 0.05$ ), where workers saw their own social performance as poorer ( $p < 0.05$ ), and where workers in the home saw case managers as undermining their efforts ( $p < 0.01$ ). In addition, significant individual predictors of leaving included caregiver perceptions that, while they had been trained to deal with the overload and disagreements ( $p < 0.01$ ), group problem-solving processes at meetings were poorer ( $p < 0.01$ ) and that they were more likely to have received impolite, or insulting feedback from others ( $p < 0.01$ ). These results make it clear that leaving the work setting is associated with both individual characteristics and characteristics of the work setting.

Table 1 reports the zero-order correlations among all the major constructs investigated here at both survey waves, and also presents the means and standard deviations for the time 1 measures of the multi-item indexes used in the analyses.

### *Impact of stress, support, pessimism, and exit pressures on symptoms*

Longitudinal regression models were estimated predicting time 2 symptom levels from the time 1 main effects of role ambiguity, supervisor support, pessimism, and exit pressures. The models

Table 1. Means, standard deviations, internal consistency and zero order correlations of multi-item indexes for caregivers\*

Index	Number of items	M	S.D.	Alpha	1	2	3	4	5	6	7
1. Role ambiguity	4	2.89	1.17	0.77		-0.39	0.23	0.25	0.29	0.25	0.19
2. Supervisor support	5	3.26	1.07	0.88	-0.43		-0.20	-0.15	-0.17	-0.17	-0.01
3. Pessimism	4	2.88	0.84	0.55	0.18	-0.03		0.27	0.34	0.21	0.05
4. Anxiety	6	1.49	0.68	0.79	0.33	-0.18	0.19		0.79	0.64	0.12
5. Depression	8	1.69	0.76	0.85	0.36	-0.20	0.27	0.79		0.56	0.14
6. Somatization	3	1.25	0.57	0.66	0.22	-0.14	0.17	0.59	0.54		0.15
7. Exit pressure	—	0.26	0.13	—	0.28	-0.14	0.06	0.13	0.13	0.07	

\*Time one values of index means, S.D.s and alphas reported. Time 1 intercorrelations reported in lower diagonal, time 2 intercorrelations reported in upper diagonal. Correlations > 0.11,  $p < 0.01$ .

also included control variables that were significant predictors of symptoms and also time 1 symptom measures. Results of these analyses are shown in Table 2.<sup>1</sup>

Table 2. Longitudinal regression model of role ambiguity, support, pessimism and their interactions on mental health outcomes

Predictors	Anxiety <sub>T2</sub>	Symptoms Depression <sub>T2</sub>	Somatization <sub>T2</sub>
Anxiety <sub>T1</sub>	0.55*		
Depression <sub>T1</sub>		0.61*	
Somatization <sub>T1</sub>			0.47*
Gender	-0.00	0.01	
Age		-0.02	
Exit pressures (EP)	0.00	0.04	0.10†
Role ambiguity <sub>T1</sub> (RA)	0.13*	0.13*	0.02
Supervisor support <sub>T1</sub> (SS)	0.02	0.05	-0.03
Pessimism <sub>T1</sub> (P)	0.01	0.02	0.01
(RA × SS) <sub>T1</sub>	-0.02	0.01	0.03
(RA × P) <sub>T1</sub>	-0.05	-0.03	-0.08
(SS × P) <sub>T1</sub>	-0.04	-0.08	-0.08
(RA × EP) <sub>T1</sub>	0.09†	0.07	-0.8†
R <sup>2</sup>	0.36	0.44	0.26
R <sup>2</sup> Adjusted	0.35	0.43	0.25

\* $p < 0.001$ .

† $p < 0.05$ .

T1 = time 1; T2 = time 2.

While, as expected, baseline levels of symptoms are the strongest predictors of symptoms at follow-up, role ambiguity remains a significant longitudinal predictor of anxiety and depression net of baseline symptom levels and control variables, providing support for the role ambiguity hypothesis. Neither supervisor support nor pessimism had a significant impact

<sup>1</sup> We first regressed the symptoms on the significant controls and the main effects, and then in a second run, added the interaction terms. Because the beta-weights of the controls and main effects did not change from the first run to the second, we present the complete regression results in one table.



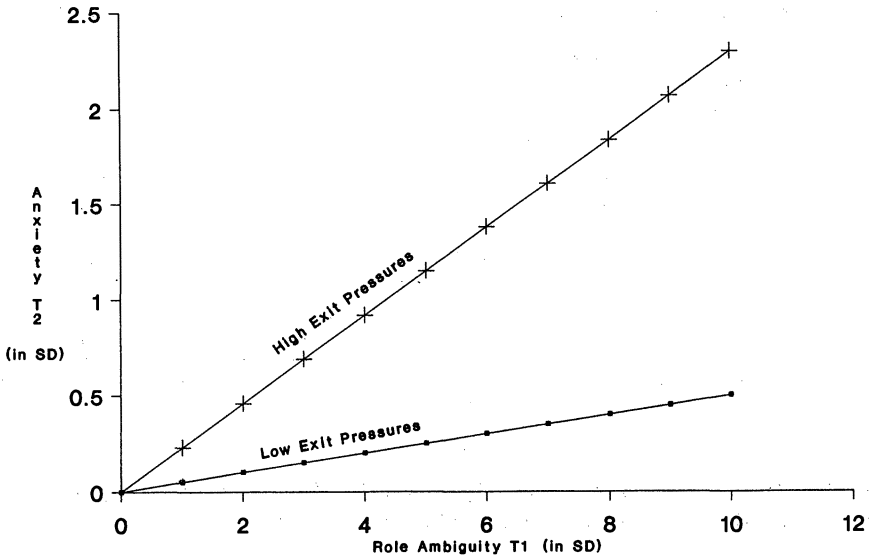


Figure 2. Interaction of exit pressures and role ambiguity for anxiety symptoms

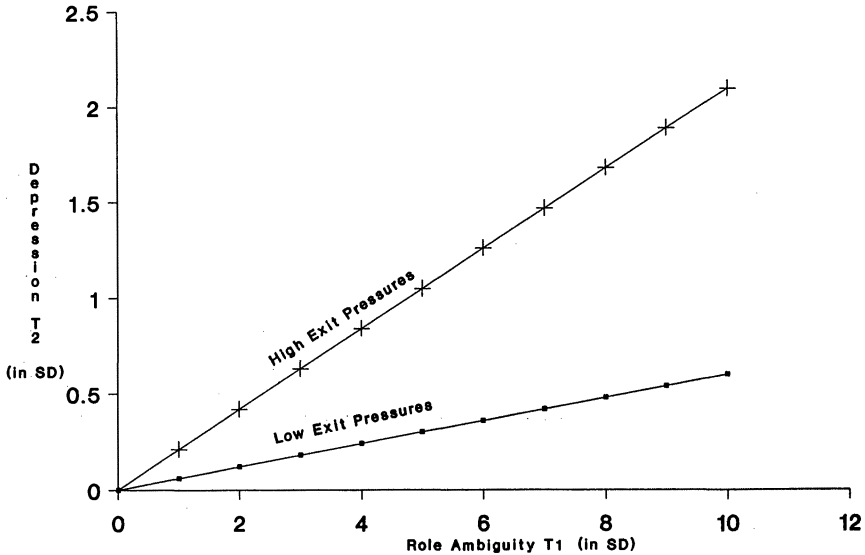


Figure 3. Interaction of exit pressures and role ambiguity for depression symptoms

on time 2 symptoms. Thus, no support was found for the chronic burden hypothesis. On the other hand, there is some support for the exit pressure hypothesis. Exit pressures are a significant predictor of somatization net of baseline symptom levels and control variables.

These data provide little support for the moderating effects of supervisor support or personality

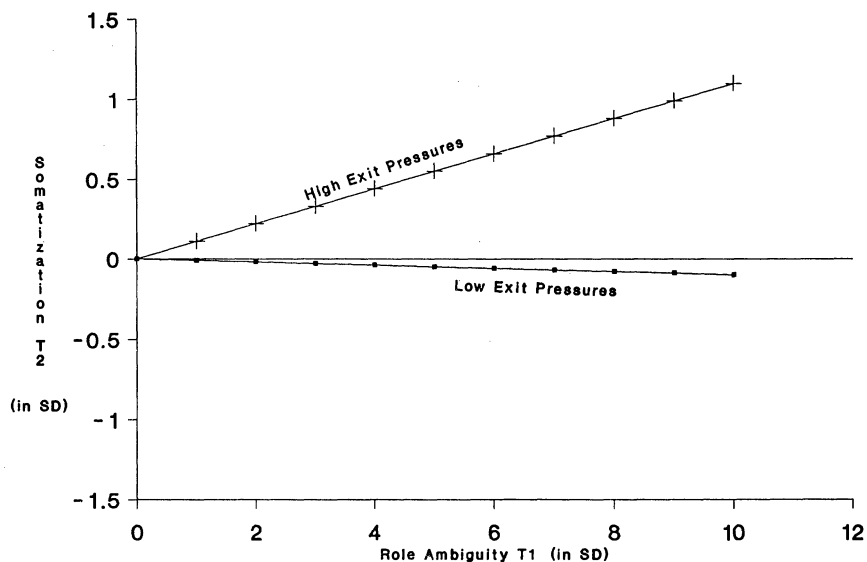


Figure 4. Interaction of exit pressures and role ambiguity for somatization symptoms

on the stress–symptom relationship. However, organizational exit pressures do appear to have a moderating effect on the relationship between the stress of role ambiguity and symptoms. Figures 2, 3 and 4 display the interactions between role ambiguity and exit pressures for all three symptom outcomes. The interactions are similar in form for all three outcomes. While caregivers who experience low exit pressures and higher levels of role ambiguity do not show elevated levels of anxiety, depression, and somatization, the effect of role ambiguity on symptoms is exacerbated for caregivers who experience high levels of exit pressures.

## Discussion

These results suggest that role ambiguity has a direct impact on anxiety and depression net of baseline symptom levels, providing support for the role stress hypothesis (path 1, Figure 1). In addition, exit pressures have an impact on somatization over and above baseline symptom levels providing some support for the direct effects of exit pressures (path 6, Figure 1).

The fact that support for each of these hypotheses was found with different symptom patterns raises important questions for further research. In general, role stresses are hypothesized to have general mental health impacts rather than impact on specific symptom patterns. Nevertheless, specific effects of stressors on particular symptoms are sometimes reported (Kessler *et al.* 1985). This suggests that future research on the stress–symptom relationship should employ outcome measures reflecting a variety of symptom patterns to allow the possibility of identifying similar symptom specific effects.

The interactions between role ambiguity and exit pressures shown in Figures 2, 3 and 4 provide support for the hypothesis that exit pressures can combine with role stressors to exacerbate psychological distress (path 7, Figure 1). Thus, those workers who perceive their role requirements to be ambiguous and, at the same time, experience exit pressures but do not leave the work setting, experience unusually high levels of psychological distress. The present results do not shed light on why workers might remain in the work setting under such circum-

stances. It is possible in the present sample that caregivers may remain because of a lack of alternative sources of employment or because of an especially strong commitment to the caregiver role. In any case, further research on the effect of work stressors on such 'trapped' workers seems warranted.

These results are also consistent with related lines of research in understanding the dynamics of role stress in the context of movement in and out of work roles and personal relationships. Wheaton (1990) has shown that the impact of changes from one setting to another or one relationship to another depends on the quality of the relationship or the magnitude of the stressors experienced in the prior setting or relationship. Wheaton concludes that 'role history' is a critical consideration in understanding role transitions. In cases where the past role history has been negative or stressful, loss of a previous role may actually produce beneficial effects on mental health if the new role involves fewer stressors or demands.

The implications of the present results for the general model of stress depicted in Figure 1 must be qualified since the number of stressors, supports and personality dispositions tested in the present sample was limited. It is possible that other sources of stress, support or personality characteristics might have provided evidence for some of the hypothesized relationships that were not observed in the present results.

On the other hand, the present results do suggest that a variety of personal and organizational characteristics may combine to constitute exit pressures that are not only stressful in themselves, but also may exacerbate the mental health effects of other stressors such as role ambiguity. When exit pressures result in workers leaving a stressful organizational setting, their effects on mental health may be merely transient. On the other hand, for workers unable or unwilling to leave the setting, the effects of exit pressures may be of considerably greater consequence.

We regard the present research, that of Wheaton (1990), and related work by Emmons *et al.* (1986) and Buss (1987), as reflecting a new emphasis on forces producing social selection in and out of settings in understanding the dynamic relationship between stress and well-being. Such hypotheses can be seen as complementary to current models in understanding the relationship between organizational stress and mental health.

## References

- Aldrich, J. H., and Nelson, F. D. (1984). *Linear Probability, Logit and Models*, Sage Publications, Newbury Park, CA.
- Beehr, T. A. (1976). 'Perceived situational moderators of the relationship between subjective role ambiguity and role strain', *Journal of Applied Psychology*, **61**, 35–40.
- Beehr, T. A. and Newman, J. E. (1978). 'Job stress, employee health, and organizational effectiveness: A facet analysis, model, and literature review', *Personnel Psychology*, **31**, 663–699.
- Buss, D. M. (1987). 'Selection, evocation, and manipulation', *Journal of Personality and Social Psychology*, **53**, 1214–1221.
- Cherniss, C. (1980). *Staff Burn-Out: Job Stress in the Human Services*, Sage Publications, Beverly Hills, CA.
- Cohen, S. and Edwards, J. R. (1989). 'Personality characteristics as moderators of the relationship between stress and disorder'. In Neufeld, R. W. J. (Ed.) *Advances in the Investigation of Psychological Stress*, Wiley, New York, pp. 235–283.
- Cohen, S. and Wills, T. A. (1985). 'Stress, social support, and the buffering hypothesis', *Psychological Bulletin*, **98**, 310–57.
- Derogatis, L. R., Rickels, K. and Rock, A. F. (1976). 'The SCL-90 and the MMPI: A step in the validation of a new self-report scale', *British Journal of Psychiatry*, **128**, 280–289.
- Dohrenwend, B. S. and Dohrenwend, B. P. (1985). 'Life stress and psychopathology'. In: Goldman, H. H. and Goldston, S. E. (Eds) *Preventing Stress-Related Psychiatric Disorders*, National Institute of Mental Health.

- Emmons, R. A. and Diener, E. (1986). 'Situation selection as a moderator of response consistency and stability', *Journal of Personality and Social Psychology*, **51**, 1013-1019.
- Emmons, R. A., Diener, E. and Larsen, R. J. (1986). 'Choice and avoidance of everyday situations and affect congruence: Two models of reciprocal interactionism', *Journal of Personality and Social Psychology*, **51**, 815-826.
- Furnham, A. and Schaeffer, R. (1984). 'Person-environment fit, job satisfaction and mental health', *Journal of Occupational Psychology*, **57**(4), 295-307.
- Heckman, J. J. (1976). 'The common structure of statistical models of truncation, sample selection and limited dependent variables and a sample estimator for such models', *Annals of Economic and Social Measurement*, **5**, 475-492.
- Heckman, J. J. (1979). 'Sample selection bias as a specification error', *Econometrica*, **45**, 153-161.
- Heller, K., Price, R. H. and Hogg, J. R. (1990). 'The role of social support in community and clinical intervention'. In: Sarason, B. R., Sarason, I. G. and Pierce, G. R. (Eds) *Social Support an Interactional View*, Wiley, New York, pp. 482-507.
- Hirschman, A. O. (1970). *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States*, Harvard University Press, Cambridge, MA.
- Holland, J. L. (1985). *Making Vocational Choices: A Theory of Careers*, 2nd edn, Prentice-Hall, Englewood Cliffs, NJ.
- House, J. S. and Kahn, R. L. (1985). 'Measures and concepts of social support'. In: Cohen, S. and Syme, S. L. (Eds) *Social Support and Health*, Academic Press, New York.
- House, J. S., Landis, K. R. and Umberson, D. (1988). 'Social relationships and health', *Science*, **241**, 540-545.
- Jackson, S. W. and Schuler, R. S. (1985). 'A meta-analysis and conceptual critique of research on role ambiguity and role conflict in work settings', *Organizational Behavior and Human Performance*, **10**, 72-87.
- Kahn, R. L., Wolfe, D. M., Quinn, R. P., Snoek, J. D. and Rosenthal, R. A. (1964). *Occupational Stress: Studies in Role Conflict and Ambiguity*, Wiley, New York.
- Kernis, M. H., Brockner, J. and Frankel, B. S. (1989). 'Self-esteem and reactions to failure: The mediating role of overgeneralization', *Journal of Personality and Social Psychology*, **57**, 707-714.
- Kessler, R. C. (1979). 'A strategy for studying differential vulnerability to the psychological consequences of stress', *Journal of Health and Social Behavior*, **20**, 100-108.
- Kessler, R. C. and McLeod, J. D. (1985). 'Social support and mental health in community samples'. In: Cohen, S. and Syme, S. L. (Eds) *Social Support and Health*, Academic Press, New York.
- Kessler, R., Price, R. H. and Wortman, C. (1985). 'Social factors in psychopathology: Stress, social support and coping processes', *Annual Review of Psychology*, **36**, 531-572.
- King, L. A. and King, D. W. (1990). 'Role conflict and role ambiguity: A critical assessment of construct validity', *Psychological Bulletin*, **107**, 48-64.
- Lefcourt, H. M., Miller, R. S., Ware, E. E. and Sherk, D. (1981). 'Locus of control as a modifier of the relationship between stressors and moods', *Journal of Personality and Social Psychology*, **41**, 357-369.
- Moos, R. H. (1981). *Work Environment Scale Manual*, Consulting Psychologists Press, Palo Alto, CA.
- Pearlin, L. I. (1989). 'Comment on the sociological study of stress', *Journal of Health and Social Behavior*, **30**(3), 261-268.
- Peterson, C., Seligman, M. E. P. and Vaillant, G. E. (1988). 'Pessimistic explanatory style is a risk factor for physical illness: A thirty-five-year longitudinal study', *Journal of Personality and Social Psychology*, **55**, 23-27.
- Price, R. H. (1979). 'The social ecology of treatment gain'. In: Goldstein, A. P. and Kanfer, F. (Eds) *Maximizing Treatment Gain*, Academic Press, New York.
- Price, R. H., House, J. S. and Gordus, J. (1985). 'Explaining work as an arena for prevention research: The Michigan Prevention Research Center', *Prevention in Human Services*, **3**(4), 101-116.
- Scheier, M. F. and Carver, C. S. (1985). 'Optimism, coping, and health: Assessment and implications of generalized outcome expectancies', *Health Psychology*, **4**, 219-247.
- Wheaton, B. (1990). 'Life transitions, role histories, and mental health', *American Sociological Review*, **55**, 209-223.
- Zubin, J. and Spring, B. (1977). 'Vulnerability: A new idea of schizophrenia', *Journal of Abnormal Psychology*, **86**, 103-126.