Modelling a Relationship between Role Stress & Locus of Control

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Work plays a central role in the lives of many people, and thus the impact of occupational stress is an important issue for both individual employees and the organizations in which they work. Stress experienced at work can have adverse outcomes for the well-being of individual employees and organization as a whole. The present study aims to investigate the causes of role stress among doctors working in government hospitals in Kashmir and to understand the influence of a personality construct "Locus of Control" on Role Stress. Findings of the study revealed that doctors with external locus of control and high internal locus of control are the serious sufferers of organizational role stress.

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Introduction

Research work over the past 20 years or more has shown that the experience of stress in the workplace has undesirable consequences both for the health and safety of individuals and for the well-being of their organizations. There might be varied situations which may lead to stress at workplace; for example, when the expectations are very high, work load is too much, role leads to isolation of individual from others, individual feels that his knowledge is insufficient for performing the role, the resources allocated are not sufficient as per the requirements of the work, lack of communication among the members of the organization, lack of growth in the job, etc. Also the changing nature of work, in the context of globalization and increased technology, has led to a sharp increase in occupational stress. High rates of mergers, acquisitions, increasing economic interdependence among countries due to globalization, technological development, and restructuring have changed the organizational work culture; which in turn have resulted in time pressure, excessive work demand, role conflicts and problematic customer relationships, all are the causes of role stress (Giga & Hoel, 2003).

Role stress has been defined in terms of a misfit between person's skills & abilities and the demands of his/her role. In other words, role stress occurs when divergence exists between what a person perceives to be the role expectations and what actually is occurring within the role. Individuals experience organizational stress when they have little or no control over their jobs or when demands exceed their abilities (Donovan & Kleiner, 1994). Pareek (1980) pioneered work on role by identifying as many as 10 different types of organisational role stresses, namely, Inter Role Distance (IRD), Role Stagnation (RS), Role Expectation Conflict (REC), Role Erosion (RE), Role Overload (RO), Role Isolation (RI), Personal Inadequacy (PI), Self-Role Distance (SRD),Role Ambiguity (RA0, Resource Inadequacy (RIn). These ten stressors proposed by Pareek (1986) serve as a framework for the present study. Based on these 10 role stressors, Pareek has devised a scale for role stress, called Organizational Role Stress Scale (ORS). ORS is used as an instrument for the present study.

Another variable in the present study is a personality construct "Locus of Control." It roughly divides people into two groups according to the tendency to ascribe their chances either to external or internal causes. Persons with an External LOC perceive the results of their actions not as a result of their own performance but as a result of good or bad luck, coincidence, destiny, not predictable or dependent by other people. Persons with an Internal LOC perceive reinforcements and events that follow one's own actions, as dependent on their own performance or personality. Internality and externality represent two ends of a continuum, not an either/or typology (Rotter, 1975).

The Rationale

A large number of studies have shown that the intensity and perception of role stress is not just a product of working conditions, but largely depends on the personality attributes of an individual. Numerous individual level variables have been examined as potential moderators. Beheer and Newman (1978) listed around 30 variables, which they felt were related to stress in organizations and noted that Role Conflict and Role Ambiguity were the most explored variables. A personality variable appearing on their list was Locus of Control. Furthermore, many researchers like Rotter (1996) and Bueno (2000) see Control as an important aspect of the stress construct. Taking a clue from the mentioned studies Locus of Control was included in the present investigation.

Literature Review

The present study explores the problem of role stress in the context of healthcare professionals. A large number of studies of role stress among healthcare professionals have been conducted in Western world (Cooper et al., 1989; Howie et al., 1989; Rout & Rout, 1993; Sutherland & Cooper, 1992; Rout & Rout, 1997). However, there is a dearth of such studies in India. Some occupations, by definition, are more stressful than the others. Doctors expe-

rience relatively high levels of occupational stress in comparison to other professionals (Wolfgang, 1988; Cooper et al., 1994). The simplest explanation of doctor's stress symptoms would seem to be sought in the practice of their profession, which has the obvious tendency to be stressful. Because specific to this profession is continuous contact with the disease, sufferings, distress, death, handling of forbidden parts of the body and the great temptation to overwork (Bates, 1982). The intensity of stress among doctors can also be noted in a statement "being a doctor is physically and emotionally quite demanding" (Josephine, 2008).

There is good evidence to show that medical practitioners experience appreciable stress (Burke & Richardson, 1990; British Medical Association, 1992), comparatively high rates of suicide (Gestal, 1987) and varying degree of morbidity and early retirement (McNamee et al., 1987; Richardson & Burke, 1991). McKevitt et al. (1995) listed doctors among the ten highest risk occupations for suicide; they have a suicide risk 72 per cent higher than the general population.

The main sources of stress among doctors have been identified as: problems with practice administration, interruptions, patient's expectations and demands, emergencies, constant time pressures and work/home conflict (Cooper et al., 1989; Howie et al., 1989; Morrell et al., 1986; Porter et al., 1985; Richardson & Burke, 1993), lack of clear direction concerning the organizational goals (Murphy, 1987) and higher clinical workloads (Deary et al, 1996). In addition, some of the studies have found that doctors experience stress also due to home visits, night calls, emergency calls, 24-hour responsibility for patient's lives and coping with phone calls (Rout & Rout, 1997). The sources of stress in medical practitioners vary with the type of medical practice (private vs. public) and specialty.

The sources of stress in medical practitioners vary with the type of medical practice (private vs. public) and specialty.

Number of individual and organizational constructs has been employed to understand the work place stress. Among individual characteristic constructs, job stress has been related with, for example, personality traits (Snyder & Ickes, 1985; McCrae, 1992; Goldberg, 1993; Deary & Blenkin, 1996; Matteson & Ivancevich, 1999), locus of control (Organ & Greene, 1974; Beheer & Newman, 1978; Singh & Rhoads, 1991; Von Emster & Harrison, 1998), psychological well-being (Greenhaus et al., 1987), to name a few.

Locus of Control was chosen as an independent variable for the present study. The research concerning locus of control has been rapidly evolving since Rotter's first article on the subject in 1966. Since then, numerous studies have been conducted regarding locus of control (Dailey, 1980; Kasperson, 1982; Knoop, 1981). Furnham and Steele (1993) state that locus of control is conceived of as a belief that a response will, or will not, influence the attainment of

reinforcement. Major literature reviews show that internals and externals differ in numerous ways, particularly in terms of their cognitive activity and environmental mastery. Research supports the notion that internality is associated with positive well-being both on and off the job. Studies have revealed that people with internal locus of control (ILOCs) have higher levels of perceived autonomy at work (Spector & O'Connell, 1994), are more motivated, involved and feel more able to participate in decision making than externals (Kimmons & Greenhaus, 1976).

Objectives of the present study

The present study aims to investigate the causes of role stress among doctors working in government hospitals in Kashmir and to understand the influence of a personality construct "Locus of Control" on Role Stress. The hypotheses are:

$H_{1:}$ There is a significant difference in the levels of organizational role stress between male and female doctors.

$H_{2:}$ Doctors having internal locus of control exhibit lower levels of role stress.

$H_{3:}$ Doctors having external locus of control (Others) exhibit higher levels of stress.

$H_{4:}$ Doctors having external locus of control (Chance) exhibit higher levels of stress.

Methodology

The current research is descriptive in nature. The research design of the present study comprises one independent variable (Locus of Control) and one dependent variable (Role Stress). Primary quantitative data by questionnaire method was generated for the purpose of the study to empirically test the hypotheses and fulfil the research objectives.

Measuring Role Stress (ORS): The organizational role stress (ORS) scale by Pareek (1986) is used in the present study to measure 10 role stressors. ORS is a 5- point scale (0 to 4) containing 5 items for each role stressor and a total of 50 statements. Thus, the total score on each role stressor range from 0-20.

Measuring Locus of Control: Loco inventory given by Levenson (1972), Pareek (1998) has been employed for collecting data for the present study. The Loco inventory is a 5-point scale. It has a total of 30 items, 10 items each for internality, externality (others), and externality (luck). Scores on each of the three dimensions of locus of control (internality, externality-O and externality-L) is totalled, this ranges from 0 to 40 for each.

Data Collection & Sample

The sampling method for the present study includes convenient sampling. Data collection was done over a period of two months from June, 2011 to first week of August 2011. The researcher visited the hospitals and handed over the questionnaire to the concerned doctors in person. In most of the occasions, questionnaires were filled in the presence of the researcher. While filling up the questionnaires, many doctors shared their work

experiences with the researcher. This helped the researcher to have a deeper insight into the problem/stress faced by government doctors.

Questionnaire was administered on 300 male and female doctors, approached through convenient sampling at 3 main government hospitals in Central Kashmir. 248 filled questionnaires were received, out of which only 176 were found complete in all respects. These were found fit for analysis, making it a response rate of 59%. Such response rate is considered to be satisfactory for this type of sampling frame. The profile of respondents is presented in Table 1

Table 1 Sampling Profile of Doctors

Demographics		Central Kashmir		Total
		No.	%age	
Gender	Male	96	54.5	176
	Female	80	45.5	
Specialization	Physicians	41	23.3	176
	Surgeons	26	14.8	
	Paediatricians	32	18.2	
	Gynaecologists	29	16.5	
	Anaesthetists	28	15.9	
	Dentists	20	11.4	

Results

To be able to draw valid inferences from the research, measures of variables should have validity and reliability (Cronbach, 1951; Nunnally, 1978). Validity of a measurement instrument refers to how well it captures what it is designed to measure (Rosenthal & Rosnow, 1984). Reliability deals with how consistently similar measures produce similar results (Rosenthal & Rosnow, 1984). A common measure of internal consistency of a measurement instrument is Cronbach's alpha (Cronbach, 1951). Coefficient alpha seems to be most popular because, unlike other measures (e.g., Spearman-Brown), it takes into account the effect of each item in estimating the overall reliability (Fried & Ferris, 1987). The scale is considered reliable in measuring the construct if the Cronbach's alpha value is greater than 0.7 (Nunnally, 1978; Leedy, 1997; Hair et al., 1998). Therefore, for the present study, the reliability of the different measures was estimated using Cronbach's coefficient alpha.

Organizational Role Stress (ORS): Table 2 provides the SPSS output (Cronbach alpha value) for the reliability statistics of ORS scale and ten dimensions of ORS.

Locus of Control (LOCO Inventory): Table 3 provides the SPSS output (Cronbach alpha value) for the reliability statistics of three dimensions (sub-scales) of LOCO inventory.

Table 2 Cronbach's Alpha Value: ORS & Its Dimensions

	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Cronbach's Alpha If Item Deleted	No. of Items
ORS	91.6374	1123.014	0.912	50
Inter Role Distance	91.5701	1321.712	0.921	05
Role Stagnation	92.5501	1231.141	0.921	05
Role Expectation Conflict	93.4625	1236.249	0.910	05
Role Erosion	94.0123	1298.293	0.899	05
Role Overload	92.3652	1291.879	0.923	05
Role Isolation	93.0524	1301.540	0.901	05
Personal Inadequacy	91.7332	1302.489	0.898	05
Self-Role Distance	92.6102	1298.891	0.932	05
Role Ambiguity	93.0352	1228.836	0.921	05
Resource Inadequacy	94.1044	1301.139	0.912	05

Table 3 Cronbach's Alpha Value: Loco Inventory

	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Cronbach's Alpha If Item Deleted	No. of Items
Internal LOC	19.87	16.311	0.832	10
External LOC Others	20.03	15.231	0.881	10
External LOC Chance	19.91	15.132	0.865	10

Factor Analysis

The collected data was subjected to factor analysis and the latent factors were identified based on factor loadings. Factor loadings of 0.4 or above are considered appropriate (Andy, 2005). Generally, Varimax rotation technique (with Kaiser Normalization) is used to clearly separate the factors or latent variables. In the present study all the items in case of ORS loaded cleanly in their corresponding factors. However, a few items were deleted from the LOCO inventory. The results of the exploratory factor analysis (EFA) for both LOCO inventory (LOCO) and ORS are described in table 4 and table 5 respectively.

The results of the factor analysis of LOCO inventory lead the researchers to delete a few items, which exhibited poor factor loadings. The deleted items in the case of internal locus of control were: I_3 and I_27. The deleted items in external locus of control (Others) included; E (O) _15 and E (O) _17. Also two items were deleted in the case of external locus of control (C) sub-scale. The items deleted were; E (C) _14, E (C) _24. So, only 24 items of loco inventory were retained for further analysis; 8 items corresponding to each sub-scale viz. ILOC, ELOC (O) and ELOC (C).

Table 4 Results of Exploratory Factor Analysis (LOCO Inventory)

	KMO	AVE	Factors emerged	Items retained	KMO	AVE	Factors emerged
Internal Locus of Control							
	0.714		2		0.756		1
I_1		0.613		√		0.622	
I_2		0.621		√		0.634	
I_3		0.302		×			
I_10		0.723		√		0.746	
I_16		0.521		√		0.601	
I_20		0.642		√		0.711	
I_23		0.628		√		0.622	
I_25		0.703		√		0.742	
I_27		0.312		×			
I_28		0.431		√		0.498	
External Locus of Control (O)							
	0.701		2		0.739		1
E (O)_3		0.698		√		0.729	
E (O)_5		0.632		√		0.689	
E (O)_6		0.689		√		0.732	
E (O)_11		0.432		√		0.499	
E (O)_15		0.201		×			
E (O)_17		0.322		×			
E (O)_19		0.527		√		0.579	
E (O)_22		0.513		√		0.523	
E (O)_29		0.623		√		0.689	
E (O)_30		0.411		√		0.518	
External Locus of Control (C)							
	0.683		2		0.733		1
E (C)_7		0.510		√		0.538	
E (C)_8		0.598		√		0.639	
E (C)_9		0.501		√		0.592	
E (C)_12		0.412		√		0.487	
E (C)_13		0.453		√		0.512	
E (C)_14		0.298		√			
E (C)_18		0.489		√		0.529	
E (C)_21		0.398		√		0.451	
E (C)_24		0.254		×			
E (C)_26		0.499		√		0.539	

√ = Item retained; × = Item deleted

Table 5 Results of Exploratory Factor Analysis (ORS)

Items Retained	Inter Role Distance	KMO	AVE	Factors emerged
√	IRD_1	0.721	0.592	
√	IRD_11		0.599	
√	IRD_21		0.701	
√	IRD_31		0.612	
√	IRD_41		0.720	
Role Stagnation				
√	RS_2	0.732	0.622	1
√	RS-12		0.613	
√	RS_22		0.704	
√	RS_32		0.698	
√	RS_42		0.703	
Role Expectation Conflict				
√	REC_3	0.734	0.609	1
√	REC_13		0.700	
√	REC_23		0.721	
√	REC_33		0.623	
√	REC_43		0.619	
Role Erosion				
√	RE_4	0.615	0.623	1
√	RE_14		0.619	
√	RE_24		0.543	
√	RE_34		0.472	
√	RE_44		0.619	
Role Overload				
√	RO_5	0.722	0.654	1
√	RO_15		0.610	
√	RO_25		0.698	
√	RO_35		0.594	
√	RO_45		0.721	
Role Isolation				
√	RI-6	0.719	0.689	1
√	RI_16		0.604	
√	RI_26		0.545	
√	RI_36		0.598	
√	RI_46		0.611	
Personal Inadequacy				
√	PI_7	0.716	0.639	1
√	PI_17		0.632	
√	PI_27		0.617	
√	PI_37		0.645	
√	PI_47		0.592	
Self-Role Distance				
√	SRD_8	0.720	0.678	1

√	SRD_18		0.712	
√	SRD_28		0.663	
√	SRD_38		0.542	
√	SRD_48		0.623	
Role Ambiguity				
√	RA_9	0.809	0.715	1
√	RA_19		0.798	
√	RA-29		0.812	
√	RA_39		0.721	
√	RA_49		0.719	
Resource Inadequacy		0.722		1
√	RIn_10		0.512	
√	RIn_20		0.623	
√	RIn-30		0.592	
√	RIn_40		0.719	
√	RIn_50		0.591	

Note: Dimension-wise factor analysis was carried out. All the items of the scale cleanly loaded to their corresponding factors.
√ = Item retained; × = Item deleted

The results of the factor analysis of LOCO inventory lead the researchers to delete a few items, which exhibited poor factor loadings. The deleted items in the case of internal locus of control were: I_3 and I_27. The deleted items in external locus of control (Others) included; E (O) _15 and E (O) _17. Also two items were deleted in the case of external locus of control (C) sub-scale. The items deleted were; E (C) _14, E (C) _24. So, only 24 items of loco inventory were retained for further analysis; 8 items corresponding to each sub-scale viz. ILOC, ELOC (O) and ELOC (C).

Descriptive Analysis

Findings of the present study revealed that doctors are experiencing organizational role stress (Table 6). The mean score of 108.33 for total ORS is quite high. The level of stress on inter role distance is highest (IRD=12.29), followed by resource inadequacy (RIn=11.73). Along with these two stressors, the level of stress on role overload (RO=11.53) and Role Stagnation (RS=11.07), is also on higher side.

The high score of ORS among doctors may be due to the nature of their work. Their day in the hospital starts with attending the patients, inspecting their respective wards, deliver lectures, handling administrative duties, and work during nights at least twice a week and then attend the demands of their family as well. Moreover, the profession of a doctor involves the treatment of ill and dying people. The job entails the incessant contact with disease, sufferings, death and threat of communication of deadly disease of patients to their nearer ones. This may also add on to their stress levels.

The high scores on inter role distance (IRD=12.29) points towards the fact that there is a conflict of job and family roles of doctors. Resource inadequacy (RIn)

Table 6 ORS Scores for Doctors

Stressors	Mean (N=334)	SD	Rank	Low Stress		Low Med Stress		High Med Stress		Very High Stress	
				No.	%age	No.	%age	No.	%age	No.	%age
IRD	12.29	3.80	1	21	12	20	11	84	48	51	29
RS	11.07	4.76	4	23	13	49	28	62	35	42	24
REC	10.06	4.71	10	41	23	73	41	53	30	09	05
RE	10.32	4.46	7	34	19	64	36	59	33	19	11
RO	11.53	4.08	3	19	11	42	24	81	46	34	19
RI	10.14	4.20	9	37	21	77	44	49	28	13	07
PI	10.43	4.47	6	31	18	80	45	38	22	27	15
SRD	10.44	4.65	5	29	16	65	37	43	24	39	22
RA	10.27	5.76	8	27	15	77	44	49	28	23	13
RIn	11.73	4.28	2	22	13	32	18	83	47	39	22
ORS	108.33	34.94		29	16	30	19	85	48	32	18

Low Stress = 0 -50, Low med Stress = 51 – 100, High Med Stress = 101 – 150, Very High Stress =151-200

emerged as the second most potent stressor with a mean score of 11.73. Doctors felt the inadequacy of resources in their respective hospitals for performing their work efficiently. Government hospitals lag behind in terms of modern equipments and technology to combat serious diseases. Role overload (RO) is also an important stressor among doctors with a mean score of 11.53. Doctors commented that "I have had enough and I am tired". The reason for heavy workloads among doctors is the inadequacy of staff in respective hospitals. Another noteworthy stressor is RS. Again scores on RS were found significantly higher among doctors (11.07). Doctors in disturbed ambience feel that they are stuck in the same role for a substantial period of time. This may be because of the lower speed of promotions in government hospitals.

In order to investigate further, the ORS score on various stressors have been classified in four categories; namely, low stress group (0-5), medium stress group (6-10), medium high stress group (11-15), and the very high stress group (16-20). A sizable percentage of respondents (66%) have been suffering from either medium high or very high stress. The high standard deviation score (34.94) indicates the large spread of scores from the mean. This implies these doctors do not experience uniform level of stress.

Analysis Based on Gender

Table 7 shows stress scores and their significant differences between male and female doctors.

On an average, female doctors experience more stress (mean=115.45) than male doctors (mean =102.40). The difference in overall stress levels between male and female doctors was found to be significant, t = -2.502, p=0.013, which is less than 0.05. As regards specific stressors, IRD, REC, RE, SRD and RIn emerges as dominant stressors for both

the groups. No significant differences emerged on the above mentioned stressors. However, other stressors on which significant differences have been observed are RS (t=-2.235, p=0.027); RO (t= -2.806, p=0.006); RI (t= -3.474, p=0.001); PI (t= -2.117, p=0.036) and RA (t= -2.843, p=0.005).

Table 7 Comparative ORS Scores as Per Gender

Stressors	Male		Female		t-value	P-value Sig (2-tailed)
	Mean	SD	Mean	SD		
IRD	12.19	3.56	12.41	4.09	-3.720	0.711
RS	10.35	4.81	11.95	4.59	-2.235	0.027
REC	9.51	4.77	10.72	4.58	-1.712	0.089
RE	10.09	4.26	10.60	4.71	-0.747	0.456
RO	10.76	3.86	12.46	4.17	-2.806	0.006
RI	9.16	3.90	11.31	4.28	-3.474	0.001
PI	9.79	4.29	11.21	4.59	-2.117	0.036
SRD	10.03	4.21	10.95	5.11	-1.306	0.193
RA	9.16	5.53	11.60	5.78	-2.843	0.005
RIn	11.33	3.84	12.22	4.74	-1.377	0.170
ORS	102.40	34.15	115.45	34.76	-2.502	**0.013**

The analysis in this section unveils the significant difference in overall stress. Thus, the hypothesis (H_1) stating that there is a significant difference in stress levels between male and female doctors failed to be rejected.

Relational Analysis

Table 8 shows the correlation between organizational role stress (ORS), internal locus of control (I), External locus of control (O) and External locus of

Table 8 Correlation between ORS and LOC

		ORS	Internal LOC	External LOC Others	External LOC Chance
ORS	Pearson Correlation	1			
	Sig. (1-tailed)N	176			
Internal	Pearson Correlation	-0.367	1		
loc	Sig. (1-tailed)	0.042*	176		
	N	176			
Ext loc	Pearson Correlation	-0.139	0.089	1	
Others	Sig. (1-tailed)	0.532	0.172	176	
N	176	176			
Ext loc	Pearson Correlation	0.246**	-0.04	0.685**	1
Chance	Sig. (1-tailed)	0.009	90.04	0.001	176
	N	176	8176	176	

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

control (C)Correlation (r) between ORS and Internal locus of control is -0.367 and it is significant at 0.05 level. This indicates that as internal locus of control increases role stress has a tendency to decrease. For externality (O), r= -0.139. This correlation is not significant. In the case of externality (C), r = 0.246 and this correlation is positive and significant at 0.09 level. This indicates that as externality increases, stress also increases.

As internal locus of control increases role stress has a tendency to decrease.

We may conclude from the above relational analysis that doctors having internal locus of control have lower levels of stress. While as, doctors with external locus of control (Chance) have higher levels of stress. External locus of control (Others) failed to show any significant relationship. The analysis reveals that doctors with internal LOC exhibit lower stress levels. While as doctors with ELOC (O) did not show any significant correlations. However, doctors with external LOC (C) exhibit higher stress levels. Thus, hypotheses ($H_{2)}$ and ($H_{4)}$ are supported, while, hypothesis H_3 is not supported.

Discussion

The results of the study revealed that doctors are the serious sufferers of organizational role stress. This finding is supported by the numerous researches which revealed that symptoms of stress and depression are high among doctors (Firth-Cozens, 1987; Hsu & Marshal, 1987; Burke & Richardson, 1990; Harrington, 1990; Rees & Cooper, 1992; Cooper et al., 1994). The stressor which emerged as the most potent in the present study was Inter Role Distance (i.e. conflict between home and work life). This is in line with the findings of the previous studies conducted by Sekaran (1983); Verbrugge (1986) and Jain et al. (2002). Analysis of role stress on the basis of gender revealed that female doctors were more stressed than their male counterparts. A substantial number of studies support this finding, for example, Cartwright (1987); Swanson & Power (1999); Newburry-Birch & Kamali (2001), Bergman et al. (2003) & Pamaki et al. (2007). Relational analysis revealed that doctors with internal locus of control exhibit higher levels of stress. This finding is supported by the previous studies, for example, Singh & Rhoads (1991); Kalvers & Fogarty (2005). Further, findings of the study indicated that people with external locus of control experience higher levels of stress. This is in line with the previous studies (Lester, 1982; Mc Intyre, 1984; Halpin et al., 1985; Glogow, 1986; Kalvers & Fogarty, 2005). These studies noted that people with external locus of control report higher levels of stress, more burnout and lower self-esteem.

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