

Consequences of Feedback Environment in Human Service Organizations

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Pousette, A. & Jacobsson, J. Consequences of feedback environment in human service organizations. *Göteborg Psychological Reports*, 1999, 29, No. 7. This paper investigates the consequences of feedback on role ambiguity and work attitudes in human service work. Questionnaires including measures of positive and negative feedback from different sources, role ambiguity, job satisfaction and organizational commitment were developed. Survey data were obtained from 604 human service workers in three different Swedish organizations: public insurance, social rehabilitation and a psychiatric hospital. Two latent factors of feedback were identified using confirmatory factor analysis: positive feedback and negative feedback. Positive and negative feedback were related to role ambiguity in all three samples simultaneously. Positive feedback was found to reduce role ambiguity, while negative feedback contributed to role ambiguity. In the psychiatric hospital sample, positive and negative feedback were related to role ambiguity, job satisfaction and organizational commitment in three alternative structural equation models. As expected, role ambiguity was strongly related to job satisfaction and organizational commitment. However, there was no support for a direct relationship between the feedback factors and job satisfaction or organizational commitment. Instead the relationships between feedback and work attitudes were mediated by role ambiguity. The implications for future research as well as for management in human service work are discussed.

Keywords: feedback, role ambiguity, job satisfaction, organizational commitment, human service organizations, structural equation models.

In human service work, quality in the service delivery process is highly dependent on how the relation between client and employee develops. It is in this relationship the services actually are produced. Several circumstances contribute to the development of a good working relation. Hasenfeld (1983) says “when staff feel positively toward their

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work, have a sense of control over it, and feel able to express themselves through it, they are more likely to impart these attitudes to their clients who constitute the most important component of the job. When staff members feel alienated from their work, they are also likely to feel alienated from their clients and to regard relationships with them as unrewarding.”(p.198). So, even if commitment and job satisfaction are important in all jobs, these attitudes toward work may be especially important in human service work. Earlier research has found that human service workers’ attitudes are a function of organization and job task characteristics. Characteristics of the organization, especially leadership and organizations age, are the strongest predictors of commitment and satisfaction are best predicted by job task characteristics such as role ambiguity and skill variety (Glisson and Durick, 1988). However, an important job task characteristic, feedback, has not been considered enough as a predictor of attitudes in human service work. In this paper, feedback is defined as performance-related information available to individuals in work settings. The amount and type of feedback information that is available is referred to as the feedback environment (Herold and Parsons, 1985). The aim of the present study is to investigate how that feedback environment affects attitudes toward work in organizations which, according to Hasenfeld (1983), can be labelled Human Service Organizations (HSO).

Feedback > Job satisfaction and Commitment

Previous research gives mixed support for feedback as a predictor of attitudes towards work. Many studies have used the Job Characteristics Model developed by Hackman and Oldham (1975, 1980) as a theoretical framework. In their theory, feedback is one of five core job characteristics associated with good personal and work outcome including job satisfaction. Numerous studies have been performed using the Job Diagnostic Survey and the feedback scale is consistently correlated with satisfaction (Fried, 1991). However, in a recent study by Dodd and Ganster (1996) where autonomy, variety and feedback were objectively manipulated, feedback showed no effect on satisfaction. On the other hand, in the longitudinal study conducted by Pearson (1991), feedback had a significant influence on job satisfaction. Furthermore, a field experiment conducted by Tziner and Latham (1989) revealed increased work satisfaction and organizational commitment when a goal-setting and feedback programme was introduced, but it is not possible to draw the conclusion that this effect emanates from feedback only.

There is some evidence that feedback affects commitment, but the outcomes vary dependent on work context. Thus, Steers (1977) found that feedback was related to commitment among scientists and engineers, but not among hospital employees. Thus, based on previous research, it is

still unclear whether feedback is related to job satisfaction and commitment.

Feedback > Role ambiguity>Job satisfaction and Commitment

Role ambiguity is a strong predictor of job satisfaction (Abramis, 1994, Glisson and Durick, 1988). Also organizational commitment has been found to be affected by role ambiguity among human service workers (Glisson and Durick, 1988; Welsch and LaVan, 1981). Furthermore, researchers have found a relationship between feedback and role ambiguity (Herold, Liden & Leatherwood, 1987, Peiro, González-Romá and Lloret, 1994; Sawyer, 1992; Teas, 1983; Vredenburg and Trinkaus, 1983). So, even though previous studies lend support to the hypothesis that feedback affects attitudes towards work, there is also a possibility that the uncertainty-reducing effect of feedback is the link between feedback and work attitudes. This would imply an indirect relationship between feedback and work attitudes, through the intervening influence of role ambiguity. An indirect relationship of this kind was found by Peiro *et al.* (1994) among nurses and physicians and also by Sawyer (1992) among mental-health workers. Consequently, there is also support for the alternative hypothesis that feedback only indirectly affects attitudes toward work with role ambiguity as a mediating variable.

Sources of Feedback in Human Service Organizations

Feedback emanates from different sources in the work environment. According to Ilgen, Fisher and Taylor (1979), sources of feedback can be classified into three categories. These include other individuals that evaluate the recipient's behaviour, the task environment (the job itself) and finally the individual's self-judgement of their performance. Herold, Liden and Leatherwood identified five major sources of feedback and found that some sources provide more feedback than others do. Thus, the most frequent source was the individual's own feelings and ideas, followed by task, supervisor, co-workers and the organization.

Human Service Organizations (HSO) share some characteristics that may have implications for the feedback environment. In human service work there commonly is a high uncertainty about the outcome of the transformation techniques that are used and an ambiguity in terms of goals (Hasenfeld, 1983). This implies that feedback in HSOs may be an important resource for clarifying goals and finding appropriate working methods. On the other hand, the goal ambiguity may result in difficulties for the feedback givers to evaluate performance, and thus make agents to hesitate giving feedback resulting in a scarcity of feedback.

The most obvious characteristic of human service work is that the work process concerns other human beings; the "raw materials", as well as the "products", are clients. The core production process is carried out in a client-employee relationship and this fact has an effect on the workers' opportunity to obtain feedback from different sources. The opportunity for management to closely supervise the production process and provide feedback in HSOs is limited. Workers in the human services, even those not claiming professional status, exercise considerable discretion (Lipsky, 1980). Management can thus be expected to be a less salient source of feedback in HSO. Instead, employees have to rely on sources closer to the core production process. In human service the client can react and participate in the work (Hasenfeld, 1992) and communicate feedback information to the human service worker. The client can thus be expected to be a frequent source of feedback. The other part in the core production process is the employee. Earlier studies have shown that employee's self observations of the work results is the most frequent source of feedback in different jobs (Herold, Liden and Leatherwood (1987). Another important source of feedback, especially when the work is performed in teams, is the fellow workers.

Positive and Negative Feedback

Earlier research on the consequences of feedback on role ambiguity, satisfaction and commitment in organizations has not considered one important attribute of feedback, the sign. Feedback can be positive (communicating doing a good job) or negative (communicating criticism about work performance). Herold and Greller (1977) showed that this distinction is important, as positive and negative feedback are not end points on the same dimension. Instead, positive and negative feedback appear to be fairly independent factors and needs to be assessed independently from each other (Herold and Parsons, 1985).

Ilgen, Fisher and Taylor (1979) conclude that positive feedback is generally more accurately perceived than negative feedback. The reason for this is that negative feedback may be denied by the recipient because of an unwillingness to accept this knowledge. The sign of feedback also affects the behaviour and feelings of superiors when giving feedback to their subordinates. Supervisors distort the message by making the ratings less negative for poor performers, anticipating that workers perceive negative feedback as unpleasant and believing that subordinates like them less when giving negative feedback (Fisher 1979). Waung and Highhouse (1997) report similar findings. The authors conclude that fear of interpersonal conflict is a major reason for the distortion. Negative feedback therefore appears to be more problematic than positive feedback in organizations and can be expected to have different consequences than positive feedback. For instance, only

negative feedback, but not positive feedback, affected customer service performance in a study by Waldersee and Luthans (1994). They also found that both positive feedback and negative feedback affected supervisor satisfaction negatively. However, there is also evidence that the sign of feedback does not matter; when action is taken to provide augmented external feedback (feedback interventions), feedback sign has no significant effect on performance (Kluger and DeNisi, 1996). In this study we intend to investigate the consequences of both positive and negative feedback.

The Present Study

To our knowledge, no previous study has separately examined the consequences of positive and negative feedback on role ambiguity, job satisfaction and organizational commitment in human service work. We therefore address the following questions: Does feedback have consequences for human service workers' attitudes towards the job? Does feedback affect work attitudes directly, or is there a mediated, indirect relationship through role ambiguity? Are the consequences for role ambiguity and attitudes towards work the same for positive and negative feedback? A Structural Equation Modelling (SEM) approach is used to develop measures of positive and negative feedback, and to test alternative models for the relationships between latent variables.

Methods

Sample

Data were collected from three Swedish human service organizations. The first sample comprised 268 employees in 10 local branches of the Social Insurance Office. The second sample was 115 employees at eight units for rehabilitation of children and youths with social and psychological problems. The third sample was 788 employees at a psychiatric hospital. The Social Insurance Office administers sickness benefit, parental benefit, pensions and occupational rehabilitation within the Swedish public social insurance system. This organization is mainly "people processing" in Hasenfeld's (1983) terminology. For example, it determines whether clients are justified for getting cash benefits during illness, or whether a person should be granted premature retirement. The Social Rehabilitation Organization provides treatment for youths with social and psychological problems. The rehabilitation is carried out on units where the clients live for several months. The clients are placed at the institution by the social authorities in order to achieve a change in

behaviour and values. This organization can be labelled “people changing” (Hasenfeld, 1983). The psychiatric hospital takes care of psychiatric patients with a wide spectrum of psychiatric diagnosis. In Hasenfeld’s terminology we can find sections which both are “people sustaining” (e.g. psychogeriatrics) and “people changing” (e.g. general psychiatric care).

Questionnaires were administered to all the employees, totally 1171 individuals, who answered it anonymously. The response rate was 82 per cent in sample 1 (Social Insurance Office), 70 per cent in sample 2 (Social Rehabilitation Units) and 54 per cent in sample 3 (Psychiatric Hospital). Among the personnel answering the questionnaires, there were several people with occupations that were not directly associated with clients, e.g. secretaries and administrators. While this study focused on the special conditions associated with human service work, only those people working directly with clients were retained. This led to a final sample size of $N=189$ in Sample 1, $N=80$ in Sample 2 and $N=335$ in Sample 3.

Table 1
Descriptive Characteristics of the Three Samples

Sample	<i>N</i>	Percent managers	Percent males	Mean age (years)	Mean employment time (years)
Social Insurance Office	189	12	23	43.9	18.3
Social Rehabilitation	80	19	29	41.6	8.5
Psychiatric Hospital	335	12	23	44.1	17.1

Table 1 describes the final samples with regard to amount of managers, sex, age and employment time. The most frequent occupations were in Sample 1: application officers ($n=100$), senior application officers ($n=65$), in Sample 2: treatment assistants ($n=65$), in Sample 3: psychiatric assistant nurses ($n=135$), psychiatric nurses ($n=71$), social workers ($n=34$), psychiatrists ($n=29$) and psychologists ($n=22$).

Procedure

Questionnaires were distributed through top level managers together with an introductory letter. The employees received the questionnaires from their own manager. They completed it during normal working hours and mailed it to the researchers at the university. After one week, a reminder was administered in the same way. No one except the researchers had access to the individual answers and the personnel were

informed of this. The results were reported back to the organizations for the total organization and for departments/ units.

Measures

For the purpose of this study, 20 items about feedback frequency, role ambiguity, job satisfaction and commitment were included in questionnaires to the personnel in the three organizations. In addition, 12 background questions were asked.

Feedback. Subjects were asked to rate how frequently four sources of positive and negative feedback respectively provided information about job performance. The questions were "How often do you get to know that you do your job well, from the following sources?" and "How often do you get to know that you do your job insufficiently well, from the following sources?" The sources were supervisors, co-workers, clients and self (the individual's own observations, feelings and thoughts about the job). The scale consisted of seven points (0-6) where each point was labelled with a time span: never (0), several times a year (1), once a month (2), several times every month (3), once a week (4), several times every week (5) and every day (6).

Role Ambiguity. This concept was assessed using the six-item Role Ambiguity Questionnaire developed by Rizzo, House and Lirtzman (1970) and psychometrically evaluated (coefficient alpha=.86) by Breugh (1980). A seven-point response scale was used, with the end points labelled as very true (1) and very false (7). In the present study, the scale had a reliability coefficient alpha of .86, .83 and .81 in the three samples respectively.

Job Satisfaction. Two items from the General Work Satisfaction Questionnaire (GWSQ) developed by Rubenowitz (1989) were used, with one additional item covering feelings towards the job. The items are reported in Appendix A. All the items had five fixed response alternatives. The scale, which was included only in the questionnaire to the psychiatric personnel, had a reliability coefficient alpha of .74.

Organizational Commitment. Three items from the GWSQ (Rubenowitz, 1989) were used to assess organizational commitment. These items assess the commitment to the results of the department, the working group and the individual's own work and the conceptual meanings are fairly close to the affective commitment dimension of Meyer, Allen and Smith (1993). The items are reported in Appendix A. All the items had five fixed response alternatives. The scale, which was included only in the questionnaire to the psychiatric personnel, had a reliability coefficient alpha of .84.

Analysis

Structural Equation Modelling was used for the analysis. For modelling, AMOS 3.6 was used (Arbuckle, 1997). To investigate the consequences of positive and negative feedback, this study is conducted in three steps. Initially measures of positive and negative feedback were developed and tested for measurement properties using a Confirmatory Factor Analyses approach (Figure 1). In the second step positive and negative feedback factors were examined in relation to role ambiguity, using a latent regression model (Figure 2). The regression model was fitted simultaneously to all three samples using multiple group analysis. In the third step, a number of alternative path models with relationships between latent variables were applied to the observations involving relations between positive and negative feedback, role ambiguity, job satisfaction and organizational commitment (Figure 3).

The first model (Model A) investigates whether a higher order factor can account for common variance in the latent variables, thus reflecting individual differences, e.g. in job performance, as an underlying structure for feedback, role ambiguity and organizational attitudes. The second path model (Model B) is a completely mediated model that involves indirect relationships from the feedback constructs to job satisfaction (JS) and organizational commitment (OC), with role ambiguity (RA) as an intervening variable. The third model (Model C) consists of both indirect (mediated through RA) and direct relationships from feedback to JS and OC.

The amount of internal non-response was in the range from 1 to 11 percent. In survey research, internal non-response on items is a common problem, which must be dealt with before computing the covariance matrix. Widely used methods are listwise or pairwise deletion of missing values, and replacement of missing data by variable mean. However, the method of full-information maximum likelihood (FIML) has great advantages over other methods (Wothke, in press) and in this study the AMOS implementation of FIML was used. A consequence of using FIML is that chi-square statistic for testing goodness of fit is not so easily available, neither are statistics that regularly are used to evaluate a model, such as goodness of fit index (GFI), comparative fit index (CFI) or root mean square of approximation (RMSEA), computed. Instead the estimated models have to be compared to some baseline model. The difference in the Function of log likelihood between two models can be evaluated as chi-square statistics with difference in number of estimated parameters as degrees of freedom (Arbuckle, 1997). Comparisons have been done between alternative models. For evaluating overall model fit, the saturated model (estimating all covariances and means) has been used as the baseline model.

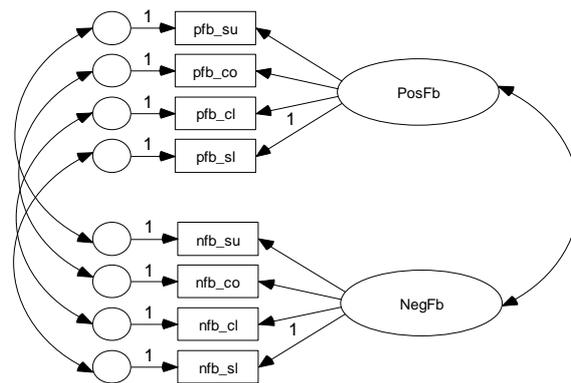


Figure 1. CFA model for feedback variables with two latent variables. PosFb= positive feedback. NegFb= negative feedback. pfb= positive feedback; nfb= negative feedback; su= superior; co= co-workers; cl= clients; sl= self.

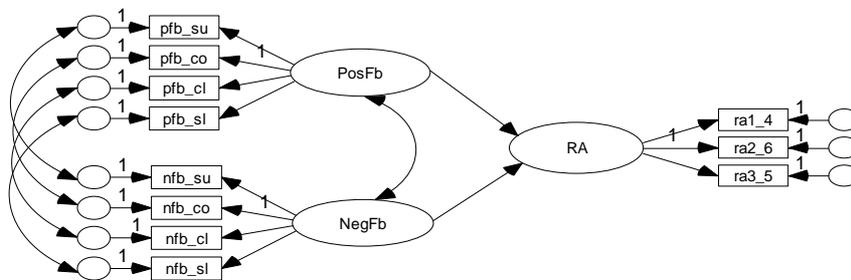


Figure 2. Latent multiple regression model for prediction of role ambiguity. PosFb= positive feedback. NegFb= negative feedback. pfb= positive feedback; nfb= negative feedback; su= superior; co= co-workers; cl= clients; sl= self; RA= role ambiguity; ra1_4= parcel of ra1 and ra4; ra2_6= parcel of ra2 and ra6; ra3_5= parcel of ra3 and ra5.

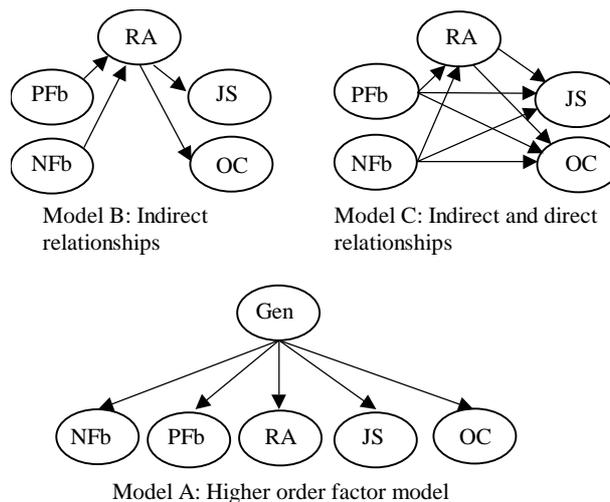


Figure 3. Three alternative models for the relationship between feedback constructs including positive (PFb) and negative (NFb) feedback, role ambiguity (RA), job satisfaction (JS) and organisational commitment (OC).

Results

Positive feedback was received more frequently than negative feedback, and closer sources provided feedback more frequently than distant sources. Appendix A shows descriptive statistics for the study variables in the three samples.

Step 1: Measurement Properties for Positive and Negative Feedback.

In the first step of this study, measurement properties were tested for the feedback constructs using confirmatory factor analyses. A model with two latent variables (positive and negative feedback) was fitted to the three samples simultaneously (Figure 1). Each latent feedback factor had four indicators representing different sources of feedback in the work environment. From a theoretical point source specific variance is expected, in addition to the positive and negative latent variables. Therefore free covariances between residuals of positive and negative feedback from the same source were allowed in the model. Positive and negative factors are assumed to be oblique in the model, thus covariance between the factors are estimated freely. Using a procedure described by Gustafsson (1997) differences in parameter estimates were tested for invariance over the samples. Starting with all parameters constrained over the three samples a sequence of models has been fitted that relaxes a set of parameters gradually in each model. The results are summarised in Table 2.

In Model 1 all parameter are constrained over samples. Model 2 relaxes the mean of the latent variables in all samples except one where the mean is constrained to zero for identification purposes. A considerable improvement in model fit was obtained, indicating significant mean differences between the samples on the factor level. In Model 3 constraints on intercepts of manifest variables are relaxed. The fit improved significantly, but the change per degrees of freedom (df) was smaller than when relaxing the mean of the latent variables. Model 4 removes constraints on error variance over the samples, and a substantial change per df indicates differences in indicators' error variance between the samples. Model 5 relaxes constraints on covariances between the residuals. A small but significant improvement in fit occurred, indicating some differences between the samples concerning the covariance between corresponding sources of positive and negative feedback. In Model 6 the variance in the latent variables are allowed to be free. This caused no significant improvement in fit, indicating that the variance of the latent variables are invariant over the samples. In Model 7 covariances between the latent variables are relaxed. The improvement in fit was minor. Positive and negative

Table 2

A Two Factor Model of Positive and Negative Feedback. Test of Invariance of Parameter Estimates Over Three Samples. Change Is in Relation to Previous Model Unless Otherwise Stated

Model	Function of log likelihood	Number of parameters estimated	Change Chi-square	Change df	Change p-value	Change per df
1. All parameters constrained over samples	6671.7	29				
2. No constraints on mean of latent variables	6613.4	33	58.3	4	<.001	14.58
3. No constraints on intercepts of manifest variables	6523.3	45	90.1	12	<.001	7.51
4. No constraints on error variances of manifest variables	6382.7	61	140.6	16	<.001	8.79
5. No constraints on covariance between residuals of manifest variables	6364.4	69	18.3	8	<.05	2.29
6. No constraints on variance of latent variables	6356.8	73	7.6	4	<i>ns</i>	1.90
7. No constraints on covariance between latent variables	6353.9	75	2.9	2	<i>ns</i>	1.45
8. No constraints on factor loadings	6334.0	87	19.9	12	<i>ns</i>	1.66
9. Saturated model. Change compared to Model 7.	6224.7	132	129.2	57	<.001	2.27

feedback were consistently related to each other ($r=.17$ to $.34$ depending on the sample), but the difference between the samples was not significant. Model 8 relaxes constraints on factor loadings. No significant improvement was found, indicating that the factor loadings were invariant over the three samples. Finally, Model 7 has been evaluated against the saturated model, which yields the ordinary chi-square goodness of fit test. The test statistics was highly significant (chi-square

=129.2, $df=57$, $p<.001$). However the change per df (2.27) were acceptably low (Arbuckle, 1997) and we therefore accepted the model. We can draw the conclusion that the hypothesised two factor model with two latent variables representing positive and negative feedback is acceptable and that the factor structure is stable. Thus we accepted Model 7 as the measurement model for the further modelling. Parameter estimates are presented in Table 3.

Table 3

Parameter Estimates for Model 7, All Parameters Free Except Factor Loadings That Are Constrained to Equality Over Samples

Manifest variable	Unstandardized loading			Standardized loading		
	B	S.E. B	C.R. B	Social Insurance	Social Re-habilitation	Psychiatric Hospital
pfb_su	.70	.08	8.5	.54	.48	.47
pfb_co	1	-	-	.59	.73	.68
pfb_cl	1.02	.11	9.7	.54	.56	.68
pfb_sl	.87	.09	9.4	.44	.62	.61
nfb_su	.44	.04	10.3	.50	.52	.50
nfb_co	1	-	-	.66	.77	.85
nfb_cl	1.01	.08	12.2	.76	.53	.65
nfb_sl	1.14	.09	12.1	.56	.68	.66

Note. pfb= positive feedback; nfb= negative feedback; su= superior; co= co-workers; cl= clients; sl= self.

Under certain conditions estimates of differences in latent variable means between groups can be obtained. A prerequisite is, however, invariance of factor loadings (Gustafsson, 1997). While this condition was fulfilled, means were estimated from Model 7 but with constraints on intercepts. The means of the psychiatry sample were constrained to zero. Table 4 shows the result. Significant differences were found both for positive and negative feedback. Compared to the psychiatry sample, the Social Insurance personnel had less positive feedback and the Social Service personnel had more negative feedback. Thus we conclude that the latent variables discriminates between samples.

Latent variables have by definition no errors, and thus a perfect reliability. However, it may be convenient to use the unweighted sum of scores as an indicator for feedback in future research. Thus, we present the reliability for the constructs of positive and negative feedback.

Confirmatory factor analysis provides all information needed to calculate the coefficient of reliability for a construct (Gustafsson and Stahl, 1997). Table 4 shows the calculated reliability for positive and negative feedback. The reliability was somewhat low, but still acceptable in all three samples.

Table 4
Mean, Variance and Reliability of Latent Positive and Negative Variables in Three Samples

Latent variable and sample	Mean ^a b	S.E of Mean	C.R.	Variance ^a	S.E of Variance	C.R.	Reliability ^c
<i>Positive feedback:</i>							
Social Insurance	-.61	.12	5.30	.81	.17	4.74	.60
Social Rehabilitation	-.22	.14	-1.64 ^d	.73	.19	3.84	.68
Psychiatric Hospital	0	-	-	1.11	.17	6.37	.71
<i>Negative feedback:</i>							
Social Insurance	-.09	.08	1.10 ^d	.44	.08	5.67	.70
Social Rehabilitation	.55	.12	4.60	.64	.15	4.27	.70
Psychiatric Hospital	0	-	-	.73	.09	8.12	.76

^aEstimated from Model 7 with intercepts and factor loadings constrained to be equal for all samples. ^bMean in relation to the Psychiatric Hospital sample. ^cCalculated from parameters estimated from Model 7 with factor loadings constrained to be equal for all samples. ^dNot significant.

Step 2: Multiple Regression Model

In step two, the two latent feedback constructs were related to the latent variable role ambiguity in a multiple regression, multiple group model (Figure 2). Indicators of role ambiguity were the six items from the Rizzo-scale. The items were parcelled to three indicators, with two items in each parcel as described by Kishton and Widaman (1994). The items were randomly assigned to one of the three parcels. All parcels met the criteria for internal consistency and unidimensionality.

The model is summarised in Table 5. Positive feedback was negatively related to role ambiguity in all three samples. Regression coefficients

were significant in all samples. Negative feedback was positively related to role ambiguity and the regression coefficient was significant in two samples but not in the Social Insurance sample. The explained variance in role ambiguity was between 15% and 38%, depending on the sample.

Table 5
Parameter Estimates of Multiple Regression Model for Prediction of Role Ambiguity, With Simultaneous Estimation in Three Samples

Variable	Sample	Unstandardized estimate			Standardized estimate	Model R ²
		B	S.E of B	C.R.	Beta	
<i>Positive Feedback:</i>	Social Insurance	-.44	.13	3.42	-.38	
	Social Re-habilitation	-.76	.21	3.67	-.58	
	Psychiatric Hospital	-.52	.10	5.27	-.43	
<i>Negative Feedback:</i>	Social Insurance	.21	.14	1.51 ^a	.15	.15
	Social Re-habilitation	.60	.20	2.99	.46	.38
	Psychiatric Hospital	.32	.10	3.18	.23	.18

^aNot significant.

Step3: Structural Models

In step three, three alternative models were evaluated against each other (Figure 3).

Measures of model fit for each of the three models are presented in Table 6. The models were evaluated in the order from most parsimonious to more complicated.

Model A was a higher order factor model, with one general factor explaining the variation in the five first order factors. This model is the most parsimonious model and is set up as a baseline model.

Model B included indirect relationships from the feedback variables to job satisfaction and organizational commitment, mediated by role ambiguity. This model, estimating only one more parameter, had a considerable better fit. The change in log likelihood was 37,6. Thus, this model is to be preferred over Model A (Table 1).

Model C included both indirect and direct relationships from the feedback constructs to job satisfaction and organizational commitment. Compared with Model B, Model C did not have a significantly better fit (difference in log likelihood=0.9, $df=4$, *ns*). After examining the parameter estimates in Model C, it was also found that all direct path coefficients from feedback variables to job satisfaction and organizational commitment were non-significant.

Table 6

Comparison of Model Fit for Each of Three Alternative Models and Comparison to the Saturated Model. Change Is in Relation to Previous Model Unless Other Stated

Model	Minimum of log likelihood	Number of parameters estimated	Change Chi-square	Change df	Change p-value	Change / df
Higher order factor model	5111.5	60				
Indirect path model	5073.9	61	37,6	1	<.001	37,6
Direct and indirect path model	5073.0	65	0,9	4	<i>ns</i>	0,22
Saturated model. (change compared to Model B).	4858.0	170	215,9	109	<.001	1,98

The model comparisons thus reveal that Model B represents the data most effectively and most parsimoniously. There was thus no support for direct relationships from feedback to job satisfaction and organizational commitment, but for indirect relationships with role ambiguity as a intervening variable. Neither there was support for a common underlying structure as in Model A.

Evaluating the model fit of model B against the saturated model showed a highly significant difference (change in log likelihood=215,9, $df=109$ $p<.001$). However the change per df was 1,98 and this is fully acceptable (Arbuckle, 1997).

Figure 4 presents the path diagram of Model B and shows the standardized path coefficients. Positive feedback and evaluative feedback were found to reduce role ambiguity, while negative feedback contributed to RA. Role ambiguity affected both organizational commitment and job satisfaction negatively. The influence of feedback on job attitudes was completely mediated by role ambiguity.

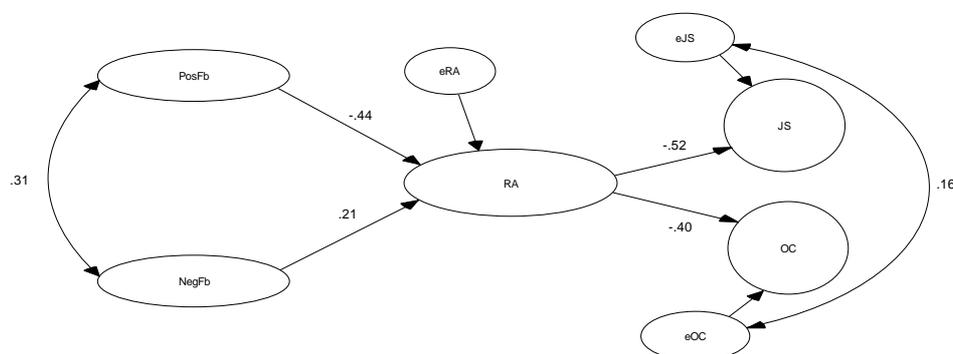


Figure 4. Final structural path model for relationship between Positive feedback (PosFb), Negative feedback (NegFb), role ambiguity (RA), job satisfaction (JS) and organisational commitment (OC). Estimated parameters are standardized.

Discussion

The confirmatory factor analysis showed that sources of positive and negative feedback could be fitted to two latent factors representing positive feedback and negative feedback. The computed reliability of the constructs was satisfactory. Furthermore these factors showed factor loadings that were invariant over three samples; the constructs thus seem satisfactorily stable over different organizational contexts. This made it possible to estimate differences in factor means between the samples. For positive feedback the highest mean was found at the psychiatric hospital and the lowest mean among the Social Insurance personnel. The psychiatric hospital is a caring culture, with a high degree of teamwork and a supportive attitude towards the patients. In this environment it is reasonable to expect a high amount of positive feedback. In contrast, the Social Insurance Organization personnel work on individual cases and much of the work follows standardized procedures, so the lower amount of positive feedback makes sense. Concerning negative feedback, the mean was highest for the social rehabilitation personnel. Here the personnel work in a therapeutic milieu characterised by openness and direct communication as well as the use of disciplinary methods. In this environment we could expect a high amount of negative feedback from all sources. In summary the mean of the different samples varied in an expected way. This supports the discriminant validity of the measures of feedback.

The confirmatory factor analysis supports the assumption that positive and negative feedback are separate constructs. This stresses the importance of regarding feedback sign in feedback research, as has

already been noted by Herold and Greller (1977). In the regression model predicting role ambiguity it was found that positive and negative feedback had quite different influence on role ambiguity. In fact, the consequences were found to be opposite. Positive feedback reduced role ambiguity and negative feedback contributed to role ambiguity. These relations are hardly surprising because positive feedback communicates confirmation of the adequacy of existing work methods and goals. On the other hand, negative feedback communicates that performance has been ineffective, and this induces insecurity about the direction and means of work.

Comparisons between the structural models showed that the higher order factor model was not acceptable. This implies that a single underlying source, such as individual differences in performance, does not account for the empirical relations, this is obviously a too simplified model. Neither was there support for the model which examined direct relationship between feedback and work related attitudes. Instead, the model including indirect relationships was supported. Thus, feedback seems to affect job satisfaction and organizational commitment indirectly, through the mediating effect of role ambiguity. The presence of an indirect relationship confirms the results reported by Peiro *et al.* (1994) and Sawyer (1992). However, the indirect relationship through role ambiguity may also explain associations between feedback and satisfaction in the studies based on the job characteristic model of Hackman and Oldham (1975, 1980). The results of the present study indicate that role ambiguity should be regarded as an important job characteristic in human service work.

The ambiguity reducing potential of positive feedback is also important because role ambiguity causes psychological strain and also plays an important part in the origin of the special kind of stress present in human service work, burnout (Lee and Ashforth, 1996, O'Driscoll and Cooper, 1996). Positive feedback should therefore be regarded as a valuable resource at work. What can managers do to increase the access to positive feedback in human service work? It is not easy for managers in HSOs to provide adequate feedback, because the core work process is often performed out of sight for the manager. As Lipsky (1980) notes, human service jobs are freer from supervisory scrutiny than most jobs. The nature of human service work is autonomous and cannot be closely supervised without disturbing the work process. Considering the conditions for production in HSO, the main sources of feedback will always be found in the client-worker relationship, and it is mainly the professional workers' own observations and judgements that have to be strengthened in order to increase the amount of feedback available. This may be accomplished by means of professional supervision/guidance by more experienced colleagues. It is also important to enhance the access to client feedback by involving the client in the evaluation procedure.

Self-feedback is different from other feedback sources in that it does not emanate from external sources. It is an intrinsic process that relies on the workers' observations compared with an internal framework of references, work and professionally related standards. So, for self-feedback the worker needs guidance on what is expected from co-workers and management. In other words, workers need role clarity to be able to navigate on their own. To improve the opportunity for self-feedback, there appear to be a need to strengthen the connection between the individuals' work and the organizational goals. Means for accomplishing such a connection may be the development of evaluation procedures. However, evaluation must be employed in ways that do not damage the substantive goals of the organization or inhibit fair and humane interaction with clients (Karlsson, 1992; Sarri, 1982).

Do our findings suggest that negative feedback should be avoided at work? The implication of the results is that criticism interferes with the certainty about what is a proper job and that increased role ambiguity is an unpleasant experience. But negative feedback does not necessarily induce negative feelings about the job, only when uncertainty is induced. On the other hand, negative feedback may also have favourable effects. Negative feedback has a significant role in learning and improvement (Waldersee and Luthans, 1994). Negative feedback puts existing work methods in question and thus has the potential to invoke ideas on how to find more effective ways to perform the job. A necessary condition is, however, that the feedback message is accompanied with guidelines on how to improve. Furthermore, a good working climate is characterised by open communication and this involves openness also when it comes to criticism. Trying to avoid negative feedback probably has an injurious effect on the communication climate (Argyris, 1990). The balance between positive and negative feedback should definitely be in favour of positive feedback, which is already the case in the organizations we studied. In managerial literature, the general advice is regularly to recognise personnel doing a good job and, when delivering criticism, to do so without delay and with focus on the task (Blanchard and Johnson, 1982).

Given the cross-sectional design of the study, it is necessary to be cautious about the nature of the relationships reported in this study. What we have shown is that feedback has relevance in predicting important work related variables, but we cannot present proofs of causal relationships. However, the suggested structure of relationship between the studied variables replicates observations in several samples and is also consistent with earlier research. This makes the causal relationship between feedback, role ambiguity, job satisfaction and organizational commitment at least plausible. There is a need for longitudinal designs and experimental studies to shed light on the questions of causality. Other threats to the conclusions in this study are the possibilities of additional paths and variables affecting the structure. One possibility

that we can not rule out is that role ambiguity can affect the frequency of feedback, thus implying mutual relations. In fact, it is quite reasonable to suppose that uncertainty about work results triggers a feedback-seeking process (Ashford 1986). Other important constructs not included in this study are goal-setting variables. To evaluate the influence of feedback-seeking behaviour and goal setting, these concepts should be part of future research on the subject. Another subject that needs attention in future research is the possible interaction between positive and negative feedback. Under conditions with a high amount of positive feedback it is reasonable to believe that negative feedback should be less insecurity producing. A topic for future studies is the content of feedback, e.g. whether the feedback is specific and gives guidance on how to improve performance. This kind of information may be important when determine the consequences of negative feedback.

To summarise, positive and negative feedback are separate constructs and affect role ambiguity in different ways. Positive feedback is associated with lower role ambiguity, while negative feedback is associated with higher ambiguity. The result of this study stresses the importance of regarding both positive and negative feedback in organizational research. When feedback affects role ambiguity, it also affects work attitudes, but feedback in itself seems to have no direct influence on employees' attitudes towards work. Further investigations are needed to explore the special conditions for feedback in human service organizations.

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APPENDIX A

Descriptive statistics of study variables from three sample (ra= Role Ambiguity; js= Job Satisfaction; oc= Organisational Commitment).

Item	Social Insurance	Social Rehabilitation	Psychiatric Hospital
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
pfb_su: Positive feedback from superior	1.67 (1.13)	1.85 (1.30)	1.98 (1.56)
pfb_co: Positive feedback from coworker	2.43 (1.57)	3.22 (1.18)	3.06 (1.50)
pfb_cl: Positive feedback from client	2.61 (1.69)	2.69 (1.53)	3.56 (1.58)
pfb_sl: Positive feedback from self	4.03 (1.78)	3.62 (1.20)	3.91 (1.49)
nfb_su: Negative feedback from superior	.49 (.57)	.61 (.67)	.45 (.81)
nfb_co: Negative feedback from coworker	.86 (1.14)	1.28 (1.10)	.77 (1.03)
nfb_cl: Negative feedback from client	.98 (.94)	2.28 (1.68)	1.31 (1.38)
nfb_sl: Negative feedback from self	1.67 (1.45)	2.63 (1.38)	1.78 (1.53)
ra1: Certain about authority	2.23 (1.33)	2.49 (1.60)	2.12 (1.44)
ra2: Clear planned goals and objectives	2.45 (1.38)	3.16 (1.50)	3.06 (1.76)
ra3: Know how to divide time properly	3.04 (1.59)	3.88 (1.55)	2.77 (1.52)
ra4: Know responsibilities	1.65 (.89)	2.12 (1.31)	1.77 (1.21)
ra5: Know exactly what is expected	2.49 (1.40)	2.99 (1.35)	2.77 (1.63)
ra6: Explanation clear of what has to be done	3.04 (1.66)	3.72 (1.74)	3.48 (1.86)
js1: Likes the work			4.19 (.82)
js2: Enjoys working for the company			4.14 (.77)
js3: Feels happy at the thought of the work			3.94 (.78)
oc1: Committed to the results of own work			4.46 (.72)
oc2: Committed to the results of the working group			4.32 (.77)
oc3: Committed to the results of the department			4.26 (.89)

Note. ra1-ra6 reversed scored so 7=high role ambiguity.