

How Does Gainsharing Work?: Some Preliminary Answers Following Application in a Service Organization

Susan C. Hanlon
University of Akron

Robert R. Taylor
Memphis State University

This study examined the effects of a gainsharing program on communication behaviors, communication outcomes, and quality-of-worklife variables. Pre- and post-tests were administered to 228 permanent, part-time, operational employees at an experimental site where gainsharing was implemented, and 343 similar employees at a control site where gainsharing was not implemented. Contrary to previous findings, significant changes occurred in some communication variables but not in any quality-of-worklife variables. The results support a cognitive model of the effects of gainsharing focusing on intervening changes in employee behavior and attitudes.

Gainsharing has a well-documented and rather lengthy history of productivity enhancement in many different situations (Bullock & Lawler, 1984; Graham-Moore & Ross, 1990). However, practitioners and academicians alike are often at a loss to explain exactly how or why successful gainsharing plans work. Is it because gainsharing facilitates employee participation and therefore improves attitudinal variables such as commitment and job satisfaction? Or is gainsharing effective because it provides additional financial rewards and often a more direct link between pay and performance? Or perhaps the explanation lies in the effect gainsharing has on work group communication and consequent employee job-related knowledge and ability. A fruitful explanation is not as simple as any of these, but rather is likely to encompass a complex set of rela-

tionships between gainsharing components (bonus formulas and participation mechanisms), worker behaviors and attitudes, and financial rewards.

The objective of this study was to respond to the need for empirical research on how gainsharing works by examining intervening effects between multiple variables during the early stages or "implementation" phase of a gainsharing program. Considering the general lack of previous research on this aspect of gainsharing, this is an interesting and significant study. Further, it is usually agreed that it is difficult to draw conclusions from existing gainsharing research because so much of it has been conducted without the use of before and after measurements, control groups, and /or statistical analysis beyond descriptive statistics (Hammer, 1988; Heneman, 1979; Lawler, 1988, 1986; Schuster, 1984; White, 1979). All of these issues have been addressed in the research reported here.

Gainsharing

Gainsharing programs consist of two components: (1) a management-labor philosophy of participative management or cooperation operationalized by mechanisms such as suggestion systems and elected committees of workers; and (2) a group-based bonus formula based upon productivity gains (Frost, Wakely, & Ruh, 1974; Lesieur, 1958; Mohrman, Ledford, & Demming, 1987; O'Dell, 1987; Schuster, 1984). Even though interest in gainsharing has reached high levels among practicing human-resource and operations managers in the past five to ten years (O'Dell, 1987; Perry, 1988), it is interesting to note that references to gainsharing are found in the work of Henry R. Towne as early as 1889 (Wren, 1987). One of the most well-known forms of gainsharing is the Scanlon Plan developed in the 1930's as a means of rescuing financially desperate firms.

Today the use of gainsharing is no longer confined to crisis situations, but is increasingly observed in cases of healthy, effective organizations seeking to increase productivity and quality of work life simultaneously. As expected in the case of an intervention with as long a history as gainsharing, there are many accepted forms of gainsharing plans, and also some confusion among interested practitioners and academicians as to what actually constitutes a gainsharing plan. The most basic requirement of a gainsharing system is that bonus payments are based upon the criterion of documented productivity improvements within a specified work group. The benefit of gainsharing over a program such as profit-sharing

is that it creates a stronger link between pay and performance by not allowing savings or improvements in one department to be offset by a lack of diligence in others (Towne, 1989), as often occurs with profit-sharing.

Basically all gainsharing plans are oriented toward bonuses for improvement but vary along three basic dimensions: (1) design process, (2) bonus formula characteristics, and (3) participation mechanism characteristics. Generally, gainsharing plans vary in whether they are self-designed by organization incumbents or designed primarily by outside consultants. They also vary in the extent to which they are "tailor-made" or "canned" plans and in the degree of participation that the eventual users of the plan have in both the design process and the initial decision to implement gainsharing.

Bonus formulas vary in level of complexity as well as their flexibility in the face of business conditions that may precipitate formula changes. Gainsharing programs such as the Scanlon Plan have rather complex formulas based upon a relationship between labor costs and sales value of production. Alternately, programs such as Improshare (Fein, 1981) have very simple formulas. Interested readers are referred to Graham-Moore and Ross (1990) for in-depth and "user-friendly" explanations of generic gainsharing bonus formulas. Finally, gainsharing plans vary in level of structure and formality of the participation mechanisms. Participation mechanisms can vary from being a rather complex committee system to a rather simple suggestion system. Indeed, some gainsharing plans such as Improshare do not include any type of participation mechanism, although some authors (Kreitner, 1991) question whether such incentive systems without participation are correctly classified as gainsharing plans.

THEORETICAL FRAMEWORK

There is no widely accepted comprehensive theoretical framework for explaining how the gainsharing process operates. Many existing theories offer no more explanation for how gainsharing works other than to vaguely propose that the use of gainsharing improves quality-of-worklife variables (attitudinal or affective variables such as employee job satisfaction, commitment, intention to turnover, etc.), and that this leads to productivity improvements (Frost *et al.*, 1974; Goodman, 1973; McGregor, 1958, 1960; Mohrman *et al.*, 1987). Simply stated, these theories tell us that gainsharing leads to better attitudes, which lead to increased productivity, which results in monetary payments, which enhance attitudes and thus

productivity even more. Consequently, many intermediary or intervening effects that occur during the gainsharing process, on which changes in satisfaction, commitment, trust, etc. are contingent, have been virtually ignored in gainsharing research.

More rigorous frameworks have been developed recently (Hammer, 1988; Hanlon & Taylor, 1991). A major difference between these frameworks and earlier ones is they propose that productivity improvements often observed and reported following the implementation of gainsharing are not due solely to changes in relatively stable affective variables, but also in part to changes in less stable and more cognitive variables. In other words, the gainsharing process is probably best explained by considering changes in both what employees know about their jobs and the organization (cognitions) and how they feel about their work and the organization (attitudes). Following this line of thought leads to examination of organizational and work group communication behaviors and outcomes as a vehicle through which changes in employees' job-related cognitions would occur and can be observed.

The general hypothesis then becomes that when gainsharing is implemented, the content, extent, and climate of work group (and bonus group) and organizational communication will change in ways that will enable the work group to perform their jobs better according to criterion that will ultimately result in a group bonus. Further, it is likely that changes in employee cognitions, as evidenced by changes in communication behaviors and outcomes, will be as significant if not more significant than changes in employee attitudes and feelings as evidenced by changes in quality-of-worklife variables.

Hypotheses

The purpose of this study was to examine the infrequently tested hypothesis that gainsharing participation affects organizational communication and to establish support or nonsupport for previously tested hypotheses that gainsharing participation affects QWL variables such as employee satisfaction, commitment, intention to quit, internal work motivation, cooperative behavior, and attitudes towards gainsharing. The following research hypotheses were tested in the current study:

Hypothesis 1: Participants in gainsharing will report higher occurrences of positive communication behaviors such as those exhibited by supervisors, co-workers, the formal administrative organization, and also

those pertaining to individual and group idea communication than will nonparticipants.

Hypothesis 2: Participants in gainsharing will report more positive assessments of communication outcomes such as communication climate and information adequacy, and they will also report higher levels of understanding of gainsharing concepts and identification with the firm than will nonparticipants.

Hypothesis 3: Participants in gainsharing will report higher levels of QWL variables such as job satisfaction, pay satisfaction, commitment, and cooperative behavior, more positive attitudes towards gainsharing, and lower levels of intention to quit than will nonparticipants.

Given the time period of the study, which was the first six months following implementation of a gainsharing plan and the emphasis on sequential, or intervening effects, the authors had varying expectations as to the likelihood of the resulting support for each hypothesis. Strongest support was expected for H1, because changes in communication behaviors were thought to be the first thing to change in response to the structure of the reward system. Since communication outcomes are dependent upon communication behaviors, a somewhat weaker expectation was held that changes would occur in these variables. Finally, since QWL variables are the most stable in the model, the lowest expectations were held of observing changes in these variables, even though this is not what previous gainsharing research has tended to support.

RESEARCH METHOD

Testing of the hypotheses occurred in a quasi-experimental study of a gainsharing plan adopted by Federal Express Corporation (FEC) at a regional sorting and distribution facility. A non-equivalent, control group design with pretest and posttest was used. The sample consisted of 571 permanent, part-time, hourly FEC operational employees. The primary job responsibility of these employees was to sort packages and documents and load them onto trucks and planes. Pretests and posttests were administered to employees at the experimental site ($n = 228$) where the gainsharing plan was implemented, and at the control site ($n = 343$) where a gainsharing plan was not implemented. Elapsed time between the pre- and posttest measures was approximately six months. Surveys were administered to all subjects by the authors on FEC premises and all respondents were paid for the time required.

Gainsharing participation was the only independent variable which served as the treatment in the study. The dependent variables were specific communication behaviors (tested in H1), communication behaviors (tested in H2), and quality-of-worklife variables (tested in H3). Communication behaviors are defined as that part of the communication process which can be observed by organizational members when attempts to communicate with them are made (Alexander & Penley, 1979). Communication outcomes are the beliefs or perceptions that organizational members have regarding the consequences or outcomes of superiors', peers', or the formal organizations' attempts to communicate with them (Alexander & Penley, 1979). Quality-of-worklife variables are those variables such as commitment, job satisfaction, identification with the firm, etc. which represent the degree to which the organization and the individual are successful in creating a mutually beneficial work environment. All the dependent variables were measured using seven point Likert scales that had been used previously and the reliabilities and norms of the scales have been reported in the literature (See Note 1 for a list of scales used to measure the dependent variables.)

Analysis

The purpose of the data analysis and hypotheses testing of this study was to determine the effect of an experimental treatment (participation in gainsharing) in contrast to a control condition (no participation in gainsharing), primarily through the comparison of the posttest scores of the two groups. Examination of the data, before hypotheses testing, indicated that there were significant differences between the control and experimental groups at the time of the pretest. To control for the initial differences, and arrive at a more valid estimate of the effect of gainsharing on the experimental group, MANCOVA (multivariate analysis of covariance) was selected as the method of testing for posttest differences (Cook & Campbell, 1979). Using the pretest responses as covariates in multivariate analysis of variance corrected for the initial differences by serving as points of reference for adjustment or correction of posttest means as though there had been no differences between the groups at the time of the pretest. All tests of statistical significance were conducted at the .05 significance level.

RESULTS

Scale Reliability

As a means of assessing the reliability of the scales used in the study, all of which had been used in previous published studies, estimates of coefficient alpha (Cronbach, 1951) were calculated for each scale. All the scales had the minimum acceptable coefficient alpha of .70 (Nunnally, 1978), with many reaching levels of .80 to greater than .90. All individual scale items met the reliability requirement of item-to-total correlations greater than or equal to .35 (Saxe & Weitz, 1982).

Hypotheses Testing

The hypotheses tested in this study suggested that gainsharing participation would favorably affect communication and quality-of-worklife variables. The results of MANCOVA with corrected means for each hypothesis presented in Tables 1, 2, and 3 partially supported the hypotheses. Multivariate test results indicated there was a significant effect of gainsharing participation on communication behaviors and no effect on communication outcomes or quality-of-worklife variables. The corrected means of posttest responses of the experimental group, pertaining to their observations of communication behaviors, were significantly higher than control group members' responses. Univariate tests of the dependent variables indicated that group idea communication was significant as $p < .05$. Experimental group members reported higher levels of group idea communication than did control group members. The results of the multivariate tests provided support for hypothesis 1. The results did not support hypothesis 2 or hypothesis 3.

DISCUSSION

Effects on Communication Behaviors

The finding that communication behaviors in the aggregate were more favorable for gainsharing participants than for nonparticipants was supportive of the general notion that one of the "hows" of gainsharing is that it is operationalized by changing how organizational members communicate with each other. As indicated by the content of specific

Table 1

Corrected means and MANCOVA results for posttest differences between experimental and control groups pertaining to hypothesis 1

Dependent Variable	Group		Univariate F
	Experimental	Control	
Supervisory Communication	5.11	5.19	0.14
Peer Communication	4.43	4.52	0.19
Organizational Communication	5.29	5.49	0.96
Individual Idea Communication	4.57	4.57	0.01
Group Idea Communication	5.47	4.84	5.86*

* $p < .01$

Note: Multivariate test of the main effect of group membership was significant at $p < .05$

Note: The corrected means are the posttest observed means adjusted for the effect of the pretest scores. Multivariate tests of the effects of the pretest scores were significant at $p < .001$

Table 2**Corrected means and MANCOVA results for posttest differences between experimental and control groups pertaining to hypothesis 2**

Dependent Variable	Group		Univariate F
	Experimental	Control	
Communication Climate	4.90	5.17	2.16
Information Adequacy	0.62	0.69	0.09
Gainsharing Concepts	5.10	5.13	0.02
Identification	5.19	6.00	0.24

Note: Multivariate test of the main effect of group membership was significant at $p < .05$

Note: The corrected means are the posttest observed means adjusted for the effect of the pretest scores. Multivariate tests of the effects of the pretest scores were significant at $p < .001$

Table 3**Corrected means and MANCOVA results for posttest differences between experimental and control groups pertaining to hypothesis 3**

Dependent Variable	Group		Univariate F
	Experimental	Control	
Internal Motivation	5.03	5.16	0.69
Job Satisfaction	4.07	4.24	1.41
Pay Satisfaction	4.30	4.90	4.57*
Intention to Turnover	2.33	2.56	0.61
Organizational Commitment	4.46	4.53	0.31*
Alienative Commitment	2.16	1.86	1.51
Attitude towards gainsharing	13.23	15.36	8.64**

* $p < .05$ ** $p < .01$

Note: Multivariate test of the main effect of group membership was significant at $p < .05$

Note: The corrected means are the posttest observed means adjusted for the effect of the pretest scores. Multivariate tests of the effects of the pretest scores were significant at $p < .001$

Table 4**Monthly Gainsharing Bonus Payouts**

	Nov	Dec	Jan	Feb	Mar	Apr
Total dollars in bonus pool	15,350	20,600	15,850	13,400	26,001	18,186
Retained by FEC (10%)	1,535	2,060	1,585	1,340	2,600	1,818
Added to employees' social fund (5%)	768	1,030	792	670	1,300	909
Available for bonus check (85%)	13,047	17,510	13,473	11,390	22,101	15,459
Employees in plan	336	336	336	336	336	315
No. of days worked	15	13	15	15	18	7
\$ Payout per employee	38	52	40	34	66	49*
Percent Change		+ 36	- 24	- 15	+ 94	+ 91*

Total savings from gainsharing	\$109,387.00
Total retained by FEC	\$ 10,938.00
Total added to employee fund	\$ 5,469.00
Total paid out in bonus checks	\$ 92,979.00
Total bonus per employee	279.00
Average monthly bonus per employee	\$ 46.60

* Reflects amount the bonus would be if it were paid after 7 days of contributions to the bonus pool. If performance continued at this rate, it would result in a 91% increase in the amount of the monthly bonus

communication behavior scale items, gainsharing participants perceived that they received useful and accurate information, had frank discussions about work situations, were encouraged to discuss job-related problems, and talked about ideas for improving their work methods and environment more often than nonparticipants. Participants also had more favorable perceptions than nonparticipants about how often communications with the formal organization encouraged participation and were useful, accurate, sincere, and team-oriented. It appears that when a reward system which focused on varying pay according to varying group performance was implemented, it led employees and management to think more explicitly and talk to each other more about the task-related problems that needed to be solved in order for a group bonus to be realized.

Effects on Communication Outcomes and Quality-of-Worklife Variables

The results of this study provided no evidence that changes occurred in communication outcomes or quality-of-worklife variables. Previous studies have provided evidence to support the hypothesized effects (Bullock & Lawler, 1984; Graham-Moore & Ross, 1983; Mohrman et al., 1987; Schuster, 1983, 1984; White, 1979). Some possible sources of explanation for the inconsistent findings in this instance will be considered.

One likely reason for the lack of support for previous research findings is that they simply do not hold up to tests within a more rigorous research design and use of more powerful statistical analysis. Indeed, Hammer (1988) cautioned against drawing any conclusions from the empirical gainsharing literature because most of it is methodologically inadequate and not theory-driven.

The absence of hypothesized changes to communication outcomes and quality-of-worklife variables leads us to question an explanation of how gainsharing works that is based solely upon changes in affective variables such as commitment and satisfaction. Certainly this is a valid position when definite improvements in productivity did occur during the same time period in which there were not changes in quality-of-worklife variables, as in this study. (See Table 4) Our results indicate that the changes observed by previous researchers may have been due to factors other than gainsharing. In the least, those changes were time-lagged effects and are not the type of changes managers should expect in the early stages of a

gainsharing program.

Further, the insignificant changes in communication outcomes, which are dependent upon communication behaviors, and quality-of-worklife variables indicate that it takes longer than six months for employees to learn enough about and internalize the concepts inherent in gainsharing. This is consistent with White's (1979) finding that Scanlon Plan success was highly correlated with the number of years a company had a Scanlon Plan. The average duration of successful plans studied by White was six years, while other authors cite successful plans of five and ten years duration (Mohrman et al., 1987; Schuster, 1983, 1984). Previous research has offered managers no evidence of how long it should take for gainsharing to be fully implemented.

A note of interest here is that, although not statistically significant, the experimental group did have more favorable attitudes toward gainsharing and higher levels of understanding of gainsharing concepts than the control group at the time of the posttest. Another trend in the data indicated that gainsharing was beginning to take hold. Posttest measures of variables related to fundamental gainsharing concepts such as information sharing and variable, contingent pay were actually lower for the experimental group than for the experimental group. Information adequacy (Table 2) and pay satisfaction (Table 3) were both noticeably lower for the experimental group. Perhaps once they began using gainsharing, experimental group members had heightened sensitivity and expectations related to the job-related information they received and monthly variations in their pay (Table 4). In other words, once management began to ask employees to contribute productivity improvement suggestions and employees' pay was contingent upon these contributions, employees became more demanding regarding the information needed to make feasible suggestions.

Ceiling Effects and Gamma Changes

Two kinds of measurement error may also explain the apparent lack of hypothesized effects of gainsharing on some of the study variables: (1) ceiling effects, and (2) gamma changes. A ceiling effect is one in which attitudes and perceptions are so high or favorable ("at the ceiling") at the time of the pretest that there is little or no room for improvement over the course of the experiment. In this case, responses to nearly all of the pretest variables were favorable to highly favorable among both the exper-

imental and control groups. The reason the ceiling effect existed in this case is due to the positive Federal Express culture. Federal Express Corporation is known as a desirable firm to work for in the United States and may even be characterized as a "glamorous" company on the basis of its positive and highly visible public image as an innovative, successful, and people-oriented organization. It could simply be that FEC was viewed by employees as a very good place to work from the first day of employment, and that significant room for actual improvement did not exist. It is somewhat ironic, but often true, that the most innovative and effective organizations are the firms that implement human-resource interventions designed to improve an already positive work environment. Lawler (1988) has made this observation along with noting the likelihood for disappointing empirical results in these situations.

"Gamma changes" (Golembiewski et al., 1976; Millsap & Hartog, 1988) are shifts in the meaning or conceptualization of the construct being measured that occurs during an intervention. From the time of the pretest to the posttest new FEC employees may have changed their conceptualizations of what it means to be committed to FEC. This would occur as a result of entering a strong culture and organizational socialization influences. If this was the situation their responses to scale items may have actually been the same at both times, but in reality they were responses to two different and unique items. This is most likely to occur in the case of new employees. These phenomena have been proposed as possible explanations for an apparent lack of significant results in previous gainsharing research conducted in a high involvement, high profile organization (Mohrman et al., 1987).

Implications for Gainsharing Research

The results of this study are supportive of the application of cognitive models of participative effects to gainsharing research. Changes in communication behaviors that were observed indicate that information sharing and idea generation are important components of the gainsharing process. This is consistent with cognitive models that consider information crucial, and predict that increases in productivity will be stronger where employees have good information about the task and changes that must be made (Miller & Monge, 1986). In this study the experimental group appeared to encounter higher levels of both information sharing and productivity.

Cognitive models also predict that immediate increases in satisfaction as a result of participation will not occur. Rather, it is expected that eventually satisfaction will increase in response to knowledge of favorable results. The results of this study are also consistent with this prediction to the extent that there were not changes in job satisfaction or other quality-of-worklife variables. Instead it is predicted that satisfaction eventually will increase as bonuses received by participants become more consistent, and more contingency between suggestion making/idea communication and group change implementation is established. Application of cognitive models to gainsharing research prescribes that less attention be paid to simple participation as an explanation of how the gainsharing process works. More attention should be given to the transfer of information and knowledge throughout the organization as a possible explanation.

Managerial Implications

The most significant implication of this study for managers involved in this gainsharing program and managers in other firms in the future is that patience is required to achieve high levels of success with gainsharing. Indeed, to even get the intervention fully implemented may require more than six months. Also, managers should realize that even though the intervention may appear to be totally implemented due to changes in productivity and the resulting bonus distributions, many of the valuable behavioral, attitudinal, and perceptual changes necessary for gainsharing to become institutionalized will lag the more obvious and more measurable changes.

REFERENCES

- Alexander, E. R., III and Penley, L. E. (1980). A note on the importance of how one measures organizational communication. Paper presented at the annual meeting of the Academy of Management, August.
- Bullock, R. J. and Lawler, E. E., III (1984). Gainsharing: A few questions, and fewer answers. *Human Resource Management*, 23, 23-40.
- Cammann, D. T., Fichman, M., Jenkins, G. D., Jr., & Klesh, J. R. (1983). Assessing the attitudes and perceptions of organizational members. In S.E. Seashore, E.E. Lawler, III, P.H. Mirvis, and C. Cammann (eds.), *Assessing organizational change*. New York: John Wiley & Sons.

- Cook, L. and Campbell, D. T. (1979). *Quasi-Experimentation*. Chicago: Rand McNally College Publishing Co.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334.
- Dennis, H. (1975). The construction of a managerial "communication climate" inventory for use in complex organizations. Paper presented at the International Communication Association Meeting, Chicago.
- Fein, M. (1981). *Improshare: An alternative to traditional managing*. Norcross, GA.: Institute of Industrial Engineers.
- Frost, C. F., Wakely, J. H., & Ruh, R. H. (1974) *The Scanlon plan for organization development: Identity, participation, and equity*. East Lansing, MI: Michigan State University Press.
- Goldhaber, G. M., Dennis, H. S., III, Richetto, G. M. and Wiio, O. A. (1984). *Information strategies*. Norwood, N.J.: Ablex Publishing.
- Golembiewski, R. T., Billingsley, K., and Yeager, S. (1976). Measuring change and persistence in human affairs: Types of change generated by OD designs. *Journal of Applied Behavioral Science*, 12, 133-157.
- Goodman, P. (1973). The Scanlon Plan: A need for conceptual and empirical models. Paper presented at the meeting of the American Psychological Association, August.
- Graham-Moore, B. E. and Ross, T. L. (1990). *Gainsharing: Plans for improving performance*. Washington, D.C.: Bureau of National Affairs.
- Graham-Moore, B. E., & Ross, T. L. (1983). *Productivity gainsharing: How employee incentive programs can improve business performance*. Englewood Cliffs, N.J.: Prentice-Hall, Inc.
- Hammer, T. H. (1988). New developments in profit sharing, gainsharing, and employee ownership. In J.P. Campbell, R.J. Campbell & Assoc. (Eds.), *Productivity in organizations*. San Francisco: Jossey-Bass.
- Hanlon, S. C. & Taylor, R. R. (1991). An examination of changes in work group communication behaviors following installation of a gainsharing plan. *Group and Organization Studies*, 16, 238-267.
- Hawkins, B. and Penley, L.E. (1978). The relationship of communication performance and satisfaction. Paper presented at the annual meeting of the Academy of Management, San Francisco.
- Heneman, J., Jr. (1979). Research roundup: Worker participation and productivity. *The Personnel Administrator*, April, 65-78
- Kreitner, R. (1991). Review of Gainsharing: Plans for improving performance. *Academy of Management Review*, 16, 475-476.

- Lawler, E. E., III (1988). Gainsharing theory and research: Findings and future research. *Research in Organizational Change Development*, Vol. 2, Greenwich, Connecticut: JAI Press.
- Lesieur, F. (Ed.) (1958). *The Scanlon plan: A frontier in labor-management cooperation*. Cambridge: M.I.T. Press.
- McGregor, D. (1958). The Scanlon plan through a psychologist's eyes. In F.G. Lesieur (Ed.). *The Scanlon plan: A frontier in labor-management cooperation*. Cambridge, MA: M.I.T. Press.
- McGregor, D. (1960). *The human side of enterprise*. New York: McGraw-Hill.
- Miller, K. I., & Monge, P. R. (1986). Participation, satisfaction, and productivity: A meta-analytic review. *Academy of Management Journal*, 29, 727-752.
- Millsap, R. E. and Hartog, S. B. (1988). Alpha, beta, and gamma change in evaluation research: A structural equation approach. *Journal of Applied Psychology*, 73, 574-584.
- Mohrman, A. M., Jr., Ledford, G. E., & Demming, S. (1987). *Gainsharing: Congruence with high-involvement organization design*. Working paper G 87-10 (191). Los Angeles: Center for Effective Organizations at the School of Business Administration, University of Southern California.
- Nunnally, J. C. (1978). *Psychometric Theory*, 2nd ed. New York: McGraw-Hill Book Company.
- O'Dell, C. (1987). *People, performance, and pay*. Houston: American Productivity Center.
- Penley, L. E. and Gould, S. (1988). Etzioni's model of organizational involvement: A perspective for understanding commitment to organizations. *Journal of Organizational Behavior*, 9, 43-59.
- Saxe, R., and Weitz, B. A. (1982). The SOCO scale: A measure of the customer orientation of salespeople. *Journal of Marketing Research*, 19, 343-351.
- Schuster, M. H. (1983). Forty years of Scanlon plan research: A review of the descriptive and empirical literature. In C. Crouch and F.A. Heller (Eds.), *International yearbook of organizational democracy*, Vol. 1, 53-71.
- Schuster, M. H. (1984). The Scanlon plan: A longitudinal analysis. *Journal of Applied Behavioral Science*, 20, 23-38.
- Towne, H. R. (1889). Gainsharing. *Transactions, A.S.M.E.*, 10, cited in Wren, D. *The evolution of management thought*, 3rd ed., p. 91.

White, J. K. (1979). The Scanlon plan: Causes and correlates of success. *Academy of Management Journal*, 22, 292-312.

Wren, D. (1987). *The evolution of management thought*. New York: John Wiley and Sons.

Author Notes

(1) Communication Behaviors scale items were selected from a communication scale developed by Hawkins and Penley (1978), idea communication scale developed by Hawkins and Penley (1978), and the Dennis Communication Climate Survey (Dennis, 1975, 1974). Five additional items were developed specifically for this study.

(2) Communication Outcomes scale items were selected from the Hawkins & Penley (1978) scale, the Dennis Communication Climate Survey, the ICA Communication Climate Survey (Goldhaber, Dennis, Richetto, & Wüo, 1984), a knowledge of gainsharing scale developed by R.J. Bullock and previously used by Mohrman *et al.* (1987), and the Moral Commitment Scale (Penley & Gould, 1988).

(3) Scale items to measure the QWL variables were selected from an attitude toward gainsharing scale (Mohrman *et al.*, 1987), and a cooperativeness scale (Mohrman *et al.*, 1987), a pay expectancies scale developed by Goodman & Moore (1976), the Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1983), the Organizational Commitment Questionnaire (Porter & Smith, 1970), an alienative commitment scale developed by Penley and Gould (1988), a calculative commitment scale (Penley & Gould, 1988), and several outcome measures developed specifically for this study.

Susan. C. Hanlon
Department of Management
College of Business Administration
The University of Akron
Akron, OH 44325-4801
(216) 972-7685

Robert R. Taylor
Management Department
Fogelman College of Business and Economics
Memphis State University
Memphis, TN 38152
(901) 678-4551