

## Organizational Behavior Modification Goes to Russia: Replicating an Experimental Analysis Across Cultures and Tasks

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### **Abstract:**

This study examined whether organizational behavior modification interventions that produced improvements in performance related behaviors among U.S. workers in a retail sales setting could be replicated among ethnic Russian workers in a textile mill. Procedures used by Luthans and his colleagues (Luthans, Paul & Baker, 1981; Luthans, Paul & Taylor, 1985) to identify, categorize, operationalize, measure, and change functional and dysfunctional performance-related behaviors among retail workers in the U.S. served as a model for replicating these dimensions of the U.S. intervention among textile workers in Russia. Supervisors of a sample of workers (N = 33) in the largest textile mill in Russia were trained to contingently administer social rewards (attention and praise) and positive feedback. They administered these rewards when they observed their workers engaged in identified functional performance-related behaviors dealing with specific procedures, repairs, and interpersonal relations that contributed to the production of quality fabric. In addition, corrective feedback was given for dysfunctional behaviors that detracted from producing quality fabric. Among the Russian workers, frequencies of observed functional behaviors rose from baseline to intervention and frequencies of dysfunctional behavior fell from baseline to the intervention within an A-B-A reversal design. No reversal in frequencies of the behaviors occurred following withdrawal of the intervention. Implications of the study are discussed in terms of extending the generality of the intervention across functional and dysfunctional behaviors associated with different task types and across different cultures.

### **Article:**

Improved levels of behavior and performance have been achieved across a variety of settings with interventions guided by organizational behavior modification (we use this term, but organizational behavior management or performance management could also be used, see: Andrasik, 1989; Luthans & Kreitner, 1975, 1985; Merwin, Thomason & Sanford, 1989; O'Hara, Johnson & Beehr, 1985). Organizational behavior management (OBM) and organizational behavior modification (O.B. Mod.) concern the systematic application of behavior technologies to improve performance of individuals and groups in organizations. Both models involve application of principles of behavior derived from basic research in the field of behavior analysis. Although there exists a body of research and essays concerning the utility of behavioral technology in other areas of the world (see Mexican Journal of Behavior Analysis, The Scandinavian Journal of Behavior Theory, and Behavioral Journal of Japan), most of the research and other written material concerning organizational behavior in general (Adler, 1991) and OBM and O.B. Mod. in particular has focused on North American employees working in North American organizations.

Increasing internationalization of all aspects of management (see Hodgetts & Luthans, 1991), has prompted urgent calls for cross-cultural research in human resource management (Arvey, Bhagat & Sales, 1991; Dowling & Schuler, 1990; Marquardt & Engel, 1993). A fundamental question to be addressed is the generalizability of O.B. Mod. intervention effects when O.B. Mod. interventions are replicated across cultural settings (Adler, 1983, 1991). The sine qua non of cross-cultural studies is replicating effects of interventions among people in distinctively and verifiably different cultures. The face validity and literature (Kiezun, 1991; Lawrence &

Vlachoutsicos, 1990; Puffer, 1992) of distinctively and verifiably different cultures represented by cultural differences between the U.S. and Russian people and work settings is great enough to satisfy this initial condition.

In this study, essential elements of two experiments conducted in the U.S. (Luthans, Paul & Baker, 1981; Luthans, Paul & Taylor, 1985) were replicated in an intervention with a sample of workers in the largest textile mill in Russia. The central research question was whether an O.B. Mod. intervention in the tradition of Luthans and his colleagues would increase and decrease, respectively, the frequency of functional and dysfunctional performance-related behaviors among Russian workers as the original intervention had in two U.S. studies (Luthans, Paul & Baker, 1981; Luthans, Paul & Taylor, 1985). However, achieving successful effects in this case was deemed to be more important than simply showing that O.B. Mod. intervention effects are or are not culture specific.

The replication was conducted in Russia where there is a desperate need of modern management techniques to help meet important challenges that lie ahead. For example, a majority of 1,000 heads of Russian enterprises recently expressed doubts about their ability to effectively motivate their employees (Ivancevich, DeFrank & Gregory, 1992). Nevertheless, results of the few studies that employed questionnaires and interviews to evaluate Russian managers suggest they are more effective than has been assumed in the popular media (Lawrence & Vlachoutsicos, 1990; McCarty & Puffer, 1992). Also, as part of a larger study at the same research site as this study, we found that both extrinsic rewards and O.B. Mod. interventions had significant positive effects on the Russian workers' production of quality fabric. On the other hand, a participative intervention (group input on job design characteristics) was associated with reduced performance levels (Welsh, Luthans & Sommer, 1993). These results support the position that extrinsic rewards and O.B. Mod. type programs are not only compatible with quality performance improvement (Mawhinney, 1992), but that they are also not culture specific. In spite of considerable cultural differences between American and Russian workers, their managers, and organization types (e.g., see Kiezun, 1991; Lawrence & Vlachoutsicos, 1990; Puffer, 1992), the procedures, behavior change principles, and effectiveness of O.B. Mod. interventions achieved among U.S. workers can be replicated among Russian workers.

The specific purposes of this study were the following: (a) to replicate the basic elements of two O.B. Mod. type studies previously conducted in the U.S. (Luthans, Paul & Baker, 1981; Luthans, Paul & Taylor, 1985); and (b) to determine whether similar effects on functional and dysfunctional behaviors could be produced in a sample of Russian textile mill workers by replicating essential elements of the U.S. intervention process in the Russian factory.

## **METHOD**

### ***Selling of the Study***

The study was conducted at the largest textile mill in Russia. The mill employed about 8,000 employees at the time of the study, late Spring of 1990. This was after Gorbachev's perestroika (economic and political restructuring) had been implemented, but before the break-up of the Soviet Union. The factory is located in Tver (formerly Kalinin), about 96 miles northwest of Moscow. The first author was in residence at the research setting before, during, and after the study and supervised the entire research process. She was assisted, when necessary, by foreign language and economics students from Tver State University. The Russian students served as translators and were trained to serve as observers during the study.

### ***Subjects***

Thirty-three workers randomly selected from the weaving operation participated in the experiment. They averaged 35 years of age and 11.3 years of education (including trade schools). They were all ethnic Russian men. All participants had completed standard orientation and training programs for their particular jobs and averaged 14.5 years experience on the job.

An English translation of their job title from Russian was "workers over the weavers." Each of these worker subjects assisted, but did not supervise (in the traditional sense of the term supervise), two women weavers who operated production equipment. Importantly, however, the weavers performed highly repetitive, mundane machine operations, while the job of the subjects' in the study (the "workers") consisted of a number of key performance-related behaviors. These behaviors included setting up the machines, making the transition during shift changes, monitoring the machines, performing maintenance and repairs, assisting the weavers as needed, changing rolls of cloth, and communicating with supervisors and managers.

### *The Design of the Study*

A within-subjects A-B-A experimental design (see Crowell & Anderson, 1982; Hersen & Barlow, 1976; Komaki, 1977; Luthans & Davis, 1982; Sidman, 1960) was employed to evaluate the validity, reliability, and generality of data concerning the replicated intervention's effects on behavior of Russian workers. Frequencies of functional and dysfunctional performance-related behaviors were observed and recorded by trained observers for two weeks. These data composed the baseline (A) of the A-B-A "reversal" design. During the next two weeks the O.B. Mod. type intervention was implemented while observation and recording of behavior frequency data continued. These data composed the intervention phase, B, of the A-B-A design. During the final two weeks of the study, observation and recording of behavior frequency data continued, while the intervention program was terminated at the beginning of this two week time interval. Data from the final two weeks composed the post-intervention baseline data, or second A, of the A-B-A design.

### *The Behavioral Management Intervention*

Organizational behavior management (OBM) is not monolithic (cf. Daniels, 1989; Frederiksen, 1982; Luthans & Kreitner, 1975, 1985; Mager & Pipe, 1970; Mawhinney, 1984; Miller, 1978; O'Brien, Dickinson & Rosow, 1982; Scott & Podsakoff, 1985). Every variation of OBM, however, shares a core behavior theory and approach to research methods associated with the work of B. F. Skinner (Mawhinney, 1992). Thus, OBM is a paradigm that includes variations on a theme. The variation exemplified in this study is one developed by Luthans and his colleagues which is called organizational behavior modification or O.B. Mod. (Luthans & Kreitner, 1975, 1985; Luthans, Paul & Baker, 1981; Luthans, Paul & Taylor, 1985).

Specifically, the O.B. Mod. intervention in this study consisted of the on-site researcher training supervisors to contingently administer, on a variable schedule, social rewards (attention and praise) and positive feedback when they observed workers in the study exhibit the identified functional behaviors, and to provide corrective feedback when they observed their workers to exhibit the identified dysfunctional behaviors. The on-site researcher monitored and provided one-on-one follow-up and support throughout the study to make sure the supervisors did what they were instructed to do. Although no specific data were kept, the on-site researcher directly observed and was very confident that the supervisors were carrying out their assignments.

### *The Dependent Measures*

Functional and dysfunctional performance-related behaviors were empirically identified and their observed frequencies served as dependent variables. A variety of sources were utilized to identify performance-related behaviors within the following three phased steps: (a) examination of written job rules, equivalent to job descriptions in the U.S., (b) direct observations in the naturalistic setting to confirm validity of job descriptions, and (c) input from factory managerial personnel and workers to expand or refine the numbers, categories and operationalizations of functional and dysfunctional behavioral measures. More functional behaviors were identified because they largely came from the job descriptions. These behaviors were reaffirmed and put into observable behavioral terms by managers and workers. The dysfunctional behaviors, on the other hand, largely came from the workers and involved behaviors related to cleanliness, such as whether workers' hands were kept free of dirt and grease since cleanliness was related to quality of the fabric produced.

From this process, the following categories of workers' observable functional performance-related behaviors were identified:

1. *Checking Looms.* This behavior included systematically surveying all weaving looms in the worker's assigned area and examining looms on an individual basis to insure proper working order.
2. *Repairs.* All behavior involved in getting an idle weaving loom back to proper running condition.
3. *Quality Control.* All behavior included in monitoring fabric quality such as inspecting thread or checking material for flaws.
4. *Changing Rolls.* Included here was removing a filled fabric roll from the loom and putting on an empty roll to again begin the weaving process,
5. *Threading.* Behavior here included rethreading existing spools and replacing empty thread spools with new spools, and knotting the new thread spools to the ends.
6. *Helping Weavers and Coworkers.* Any behavior assisting weavers and coworkers in the weaving process.
7. *Getting Material and Equipment.* Any behavior involved in getting materials, tools, or supplies needed to continue the production process.
8. *Changing Shifts.* All behavior involved in assisting supervisors and workers coming on or going off a shift for a smooth transition with no production stoppages.

The dysfunctional behaviors (the class or group of directly observable worker behaviors that detracted from performance) were identified in simplified form in this study as follows:

1. *Absent from the Work Site.* This class of behavior is related to the worker not being in his assigned area. He may be at the restroom or visiting with a friend in another department.
2. *Idle Time.* This category included behavior that obviously did not contribute to the requirements/goals of the factory, such as socializing with coworkers, sleeping, smoking, or just standing/sitting around.
3. *Dirty Hands.* This class of behavior is associated with soiling the fabric in any way that would flaw the quality standards established.

### *Procedures*

Forms containing instructions (in Russian) on which observers recorded behaviors were brought in by the on-site researcher because of the scarcity of paper and copiers on-site. The derived functional and dysfunctional behaviors were then listed (in Russian) on these observational forms. The format of the forms followed that used in the 03. Mod. studies that were replicated (Luthans, Paul & Baker, 1981; Luthans, Paul & Taylor, 1985). A form was filled out for each worker by the observer assigned to that worker. In addition to the behavior checklist, the form contained the following information; observer name, worker name, department, work shift time, date, worker identification number, and observation times.

Observers recorded the observed behavior frequencies by placing a check mark in the appropriate box containing the time and the specific behavior observed. One observation per worker was collected at a particular moment in each half hour of each eight hour working day. The observer could check either a functional or a dysfunctional behavior or a category called miscellaneous if it was neither. Although there were more functional behaviors than dysfunctional on the form, it should be noted that the dysfunctional behaviors were more comprehensive (for example, the category idle time had a number of behaviors). The on-site researcher did not find nor do the data indicate that a rise in one behavior occurred at the expense of the other. Thus, in the eight hour shift, there were 16 total observations made of each worker's daily activities. To avoid errors in systematic measurement, the observational data was obtained at varied times throughout each half hour observation period. The constraints that produced the 16 observation periods as the number actually made by the observer for each shift included the physical layout of the building, the worker's assigned location, observer transportation barriers, and the time of the work shift.

### *Trained Observers*

The observers used in the study were upper-level economics students from the local university. These observers were trained by and worked under the day-to-day direction of the on-site researcher.

Observer training took place in two-hour sessions for three days prior to the start of the study. Follow-up training also occurred in meeting rooms and one-on-one at the factory throughout the study. It was common for the on-site researcher, student assistants and translators to hold ad hoc meetings with the observers throughout the study to answer questions and facilitate the process.

The observer training consisted of explaining the nature and importance of random sampling of workers' behavior over time. The importance of taking random routes around the factory floor when making observations was also emphasized. Watching and questioning the observers during the data gathering confirmed that they were taking various routes. During the training, shift supervisors familiarized the observers with the building and the nature of the work performed by individual workers assigned to them. The observers were instructed to be as unobtrusive as possible when gathering the data. However, the workers wore uniforms, while the observers were dressed in the fashion of typical Russian students. To overcome this intrusiveness, the observers were trained to appear at random times and quickly spot and record the worker's behavior immediately. The observers entered from one door, but then took a random direction to minimize the chance of cuing the workers that they were observing. Also, the factory floor was very large and the entrance some distance and typically not within sight of most workers participating in the study. Further, observers were instructed not to enter as a group. An entire recording episode took less than a minute once the observer arrived at the worker's assigned work area.

At the end of the two week intervention period the supervisors were instructed by the on-site researcher to cease giving social rewards and feedback to their workers. The trained observers, on the other hand, were given no indication of this change. Observers continued to obtain the behavioral measures as unobtrusively as possible for the two weeks following the intervention while the supervisors were supposed to refrain from administering social rewards and feedback to their workers.

Observers were debriefed and the objectives of the study were explained to them in detail only upon completion of all three phases of the A-B-A sequence. Care was taken to insure that observers were blind to the study's three phases, as well as the occurrence and nature of the intervention the target workers received. When questioned about this information (i.e., three phases and nature of the intervention) during debriefings, observers indicated no awareness of any of the phases, the intervention, or the nature of it.

#### *Reliability Checks*

Random interrater agreement checks were performed to estimate reliability of the behavior observational data. Two days were randomly selected. On each day selected, three observers simultaneously completed the behavior observation forms for each of the 33 workers. All observers used the prescribed observational methods employed in the study during the reliability checks. The reliability coefficient was calculated by dividing the number of inter-rater agreements (all three had to agree) by the total number of observations made or:

$$\frac{\text{Agreements}}{\text{Total number of joint observations}}$$

The total number of joint observations is 33 workers x 16 observation periods x 2 days. This approach to reliability assessment yielded a 95.5 percent rate of agreement among the observers for their behavioral observations.

## **RESULTS**

Figure 1 graphically presents the daily average frequency of functional behaviors observed per worker for the three experimental periods. Figure 2 presents the data for the dysfunctional behaviors. There were 11 observation periods within each phase of the study. This number represents a normal 5-day work week, a rotating Saturday work-shift across the three shifts (days, swing, graveyard), plus time off for a national holiday. Each daily observation data point represents the pooled mean—the average across all 33 workers of the observed frequency of functional (Figure 1) or dysfunctional (Figure 2) behaviors. The sum of daily measures for Figures 1 and 2 may not always equal 16 (the number of observation periods) due to the category of

miscellaneous behavior that was coded as neither functional nor dysfunctional in this study. The raw data listing the observed frequencies for each worker for each day of the study are provided in Appendix A (functional behavior) and Appendix B (dysfunctional behavior).

FIGURE 1. Frequency of functional behavior by experimental period

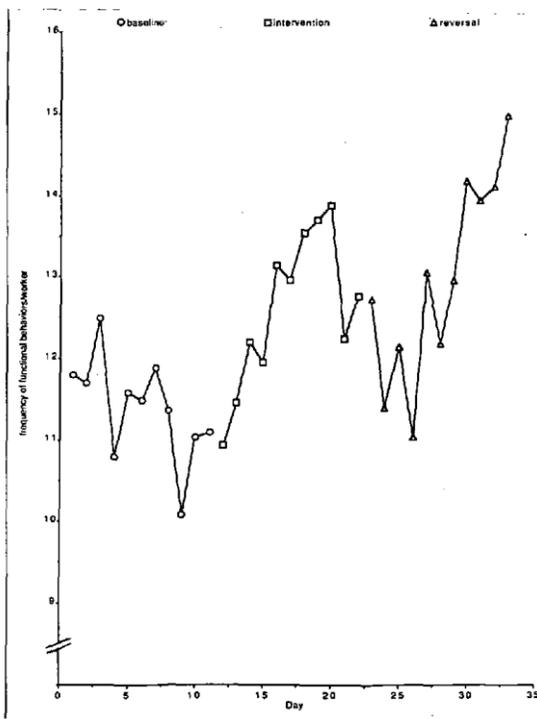
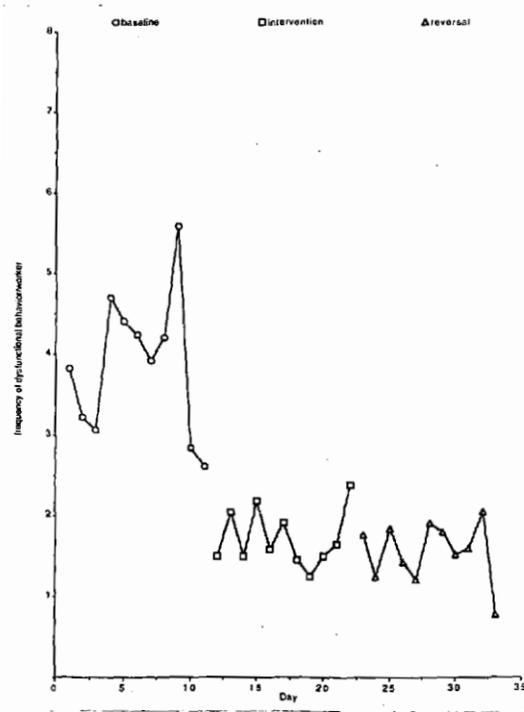


FIGURE 2. Frequency of dysfunctional behavior by experimental period



### Functional Behavior

Figure 1 shows that the daily mean frequency of functional behaviors per worker steadily increased immediately upon introduction of the intervention. This improvement trend persisted throughout the intervention period except for a drop in the frequency of functional behavior at the end. At the end of the intervention period, the subjects had just returned to work after a holiday. It is possible that after three days off, the subjects had a slight regression before "getting back on track/to normal." It is worth noting, however, that this decreased level of functional behavior still exceeded baseline levels.

Daily mean frequencies of functional behaviors declined throughout the first week following termination of the intervention. However, this pattern did not last in that functional behavior frequency increased during the second week of the withdrawal period. The reversal that began in the first week following termination of the intervention did not continue. For a variety of possible reasons discussed below, functional behavior frequency rose steadily after this initial decline in frequency.

### Dysfunctional Behavior

Figure 2 indicates that upon introduction of the intervention the average daily frequency of dysfunctional behavior per worker immediately and dramatically decreased. In addition, variation of dysfunctional behavior decreased during the intervention. As with the functional behaviors there was a small decrement at the end of the intervention period after subjects returned from the extended holiday. Finally, the frequency of dysfunctional behaviors remained unchanged upon withdrawal of the behavioral intervention.

In summary, there are three major Findings. First, the introduction of an O.B. Mod. intervention led to an increase in functional behavior and a decrease in dysfunctional behavior among the workers in this study. Second, the impact was more immediate and distinctive for eliminating undesired behaviors than for increasing

desired behaviors. Third, both the functional and dysfunctional behaviors failed to reverse after the withdrawal of the intervention.

### *DISCUSSION*

This study replicated interventions from two previous studies in the U.S. by Luthans and his colleagues among Russian workers in a large textile mill. The purpose was to learn whether effects of the U.S. interventions could also be replicated across cultures, i.e., from the U.S. to Russia. The most unambiguous demonstration of such a replication would be an increase in functional and a decrease in dysfunctional performance-related behavior among Russian factory workers upon introduction of the intervention, and a return to pre-intervention levels of the two behavior frequencies following termination of the intervention. The results indicate that the O.B. Mod. intervention corresponded with a desirable change in the frequency of both functional and dysfunctional performance-related behaviors. Whether these changes were produced by the intervention is problematic because of the failure to find reversals.

Even though the visual interpretation indicated that the replicated O.B. Mod. intervention had a desirable impact when measured from baseline to intervention, there was not a change in behavior frequencies from intervention to post-intervention. Absence of a reversal following termination of the replicated O.B. Mod. intervention occurred in one of the previous studies (Luthans et al., 1981) with U.S. employees, that served as a model for procedures utilized in this study. Miller (1973) provides one explanation for these results by noting that, "If the original environment had a consequence that was too weak to initiate a behavioral change but that is strong enough to maintain such a response once initiated, the behavior should not be expected to revert" (p. 535). Coworkers in this setting may have provided social reinforcers that created such an effect. There is both theoretical (Mawhinney & Ford, 1977; Mawhinney & Gowen, 1990) and empirical evidence (Gowen & Jennings, 1990) suggesting that social rewards and sanctions from peers can significantly support or suppress the level of performance-related behaviors. The observed individual and group norms of camaraderie in this particular factory (Welsh, Luthans & Sommer, 1993) and Russians' strong communal cultural values in general (Lawrence & Vlachoutsicos, 1990) would support such an interpretation.

Supervision has been depicted as a reciprocally causal phenomenon (Davis & Luthans, 1979; Mawhinney & Ford, 1977) in which mutually rewarding behaviors, once instigated by an intervention such as the one utilized in the present study, can maintain the level of both superior and subordinate behavior after the initial "cause" of interactions has ceased (i.e., the intervention). For example, in a laboratory study of mutual reinforcement with leader-follower dyads Rao and Mawhinney (1991) had to impose a response cost procedure to reduce the rate of a superiors' noncontingent administration of reinforcers to his subordinate. According to this alternative explanation, the intervention in this Russian study could have altered the way functional and dysfunctional behaviors among the workers were related to the supervisors' behaviors, thus making them "intrinsically" rewarding of attention by the supervisors (Agnew & Redmon, 1992). According to this line of reasoning, the supervisors were instructed to refrain from applying the social reinforcing and feedback behaviors as called for by the intervention. However, while these supervisors' behaviors were suppressed, their "intrinsically" rewarding value was undiminished. That is, the instructions to refrain from engaging in the behaviors that were previously supported by the intervention were now mildly punished by these instructions, and thus later returned to have a positive impact on the workers' behaviors. Such an interpretation fits the observed data. But it was not supported by direct observation or the debriefing by the on-site researcher. The supervisors were determined by the on-site researcher to have ceased providing the intervention. However, because the subjects were on a variable schedule and because there was deliberately not a clear-cut announced withdrawal of the intervention, the workers may not have been able to distinguish the return to baseline condition.

Yet another explanation of the frequencies continuing at high levels for the functional behaviors and low levels for the dysfunctional behaviors during the post-intervention period could be that the observers, even though they were carefully trained to be as unobtrusive as possible, were still present during the post-intervention period gathering observational data, and thus influenced the subjects. However, this interpretation could be countered by the fact that there were lower (in the case of the functional) and higher (in the case of

dysfunctional) frequencies of behaviors recorded during the original baseline periods by the same observers. Also, during the last phase the workers should have been less rather than more sensitive to the presence of observers.

For whatever reasons, absence of clear reversals weakens the arguments that the intervention was the sole "cause" of increased (decreased) behavior frequencies. The partial reversal in the case of functional performance-related behaviors, on the other hand, provides some support for the argument. Further support for a causal conclusion was provided by the strong changes in both behaviors coinciding with the intervention. Thus, we have beginning or tentative evidence that effects of the U.S. interventions can be replicated among Russian workers.

Besides the behavioral frequencies not returning to baseline levels in the post-intervention phase, because of the realistic constraints operating in this Russian setting, the study was limited by its relatively short duration. Longer pre-intervention, intervention and post-intervention phases of the experiment would have strengthened the confidence one could place in the results. The longer periods would have permitted better judgments concerning the stability of behavior frequencies in each phase.

This study responded to calls for testing whether O.B. Mod, type interventions and their effects can be generalized to cultures other than the U.S. in addition to extending the generality of O.B. Mod. type interventions to Russian workers, the generality of this particular type of O.B. Mod. intervention was extended to another task setting. Specifically, this study generalized from functional and dysfunctional behaviors by salespeople in U.S. retail settings to functional and dysfunctional behaviors among workers in a Russian textile factory.

Although the present study solely focused on the behavioral changes of the Russian workers, the ultimate goal of this or any behavioral change intervention is to have a positive impact on performance (Luthans & Kreitner, 1975, 1985). As noted in the introductory comments, as part of a larger study at the same research site we analyzed the impact that various interventions had on measures of performance (Welsh, Luthans & Sommer, 1993). Relevant to the present study was the highly significant positive relationship we found in that study between the functional behaviors and the hard performance measure of quality fabric produced. In other words, this finding provides evidence that the functional behaviors as identified and measured in this study contributed to the actual performance of these Russian workers.

Whether effectiveness of other largely U.S.-based human resource management techniques will be replicated in Russia remains to be determined. That the class of interventions associated with organizational behavior modification are likely to be useful in meeting the challenges faced by Russian workers and managers is given initial support by the results of this study.

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APPENDIX B. Raw Data for Frequency of Dysfunctional Behaviors

	BASELINE										INTERVENTION										WITHDRAWAL													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
1	5	3	0	8	5	4	7	3	0	4	3	3	1	2	4	1	2	1	1	0	5	0	0	1	1	1	1	2	0	2	1	1		
2	5	2	5	5	0	8	5	5	5	4	3	2	1	0	1	1	2	1	1	2	0	1	1	2	1	1	1	1	1	1	2	1		
3	5	5	4	9	8	8	6	6	3	2	3	2	2	0	4	1	1	1	1	2	0	1	2	2	1	0	1	1	2	1	2	0		
4	2	1	1	1	2	2	2	1	1	1	2	0	2	0	2	0	1	1	1	3	0	1	1	2	1	1	1	1	1	1	1	1		
5	3	1	2	2	2	2	3	1	2	1	2	1	0	1	1	1	0	1	1	2	0	1	2	1	1	1	0	2	1	1	2	1		
6	2	2	2	3	2	3	3	4	2	4	4	1	1	0	2	1	0	1	0	1	1	2	1	1	1	1	1	1	1	1	1	1		
7	3	3	2	4	4	2	3	3	3	1	3	1	1	0	2	1	1	1	0	1	1	4	1	2	1	0	2	1	1	1	1	1		
8	5	3	3	2	5	1	3	8	5	5	2	2	1	1	2	0	1	2	1	2	1	1	1	1	1	1	2	2	1	0	2	1		
9	4	4	3	3	2	2	3	4	4	2	2	1	2	1	1	1	2	2	1	2	0	1	2	1	1	1	1	1	1	1	2	1		
10	4	2	3	5	5	4	4	3	3	2	3	1	2	0	0	0	1	0	1	2	1	1	1	1	1	1	1	1	1	2	1	2	1	
11	3	1	3	4	5	6	5	3	4	3	3	1	1	1	1	6	2	0	1	0	0	1	2	2	0	1	1	1	1	1	1	1		
12	5	4	2	3	5	3	2	3	5	2	2	2	1	2	1	2	2	2	2	3	2	1	1	3	3	1	2	1	1	3	0	0		
13	4	4	3	3	3	3	3	2	5	3	2	2	3	2	3	1	3	1	2	2	1	2	2	1	1	1	1	1	1	1	3	0	0	
14	0	0	1	2	2	2	3	3	4	2	1	2	2	2	1	2	2	2	1	2	2	1	2	2	1	2	2	1	4	2	2	3	1	
15	6	5	5	3	4	3	3	2	5	4	3	2	3	1	2	1	2	2	1	1	1	1	0	2	3	2	1	5	2	2	4	0	1	
16	3	4	4	2	2	3	2	4	3	2	1	1	3	1	1	1	2	1	0	1	2	2	1	0	2	2	2	2	3	2	3	1	1	
17	2	2	2	3	1	3	2	4	1	1	1	1	1	2	2	0	3	3	3	1	1	2	1	1	1	1	1	2	1	2	1	2	1	
18	5	3	3	4	5	2	3	3	3	3	3	2	4	7	1	3	0	1	1	2	2	2	2	2	3	2	1	1	2	0	3	2	0	
19	0	2	4	4	5	7	2	2	4	2	2	2	2	1	1	1	5	3	1	2	2	2	1	1	3	2	2	2	2	4	1	1	1	
20	4	3	2	4	4	2	2	3	3	2	1	2	2	2	1	1	2	2	2	1	1	2	2	2	2	2	1	1	2	3	2	1	1	0
21	5	2	5	3	4	5	3	5	4	0	1	0	6	0	0	0	0	1	2	2	2	3	2	5	3	1	3	1	3	1	4	1	1	
22	4	4	2	4	4	3	4	4	2	3	1	2	0	2	2	2	5	1	5	1	2	2	2	1	3	2	1	1	2	2	4	1	2	
23	2	3	4	2	4	5	1	3	10	5	3	1	2	2	2	2	2	1	1	1	1	2	2	4	1	1	2	3	2	2	1	2	2	
24	4	4	3	3	3	3	2	3	10	3	1	1	2	2	4	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
25	2	3	1	3	5	8	3	5	3	4	2	1	1	2	4	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
26	3	3	1	8	3	5	4	4	3	2	1	3	2	4	1	2	7	1	1	2	2	4	0	1	1	2	2	2	1	3	2	1	2	
27	3	3	3	1	3	7	1	4	2	3	3	2	0	1	1	2	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	
28	2	4	3	8	3	1	2	1	2	3	2	2	1	2	2	2	2	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	
29	3	2	4	11	9	3	10	7	10	8	5	1	1	2	1	2	2	1	1	1	1	0	3	1	1	1	1	1	1	1	1	1	1	
30	3	2	2	12	12	10	7	8	10	4	1	1	2	1	1	8	3	3	0	8	2	1	1	2	2	1	3	2	2	2	2	2		
31	6	2	3	8	3	5	2	8	3	5	5	1	3	1	4	2	2	1	1	2	4	2	1	1	1	1	1	1	1	1	1	1	1	
32	3	5	6	11	10	11	9	10	15	4	7	3	3	4	7	8	2	0	0	1	1	11	8	1	2	2	3	3	3	1	2	2		
33	5	4	7	10	8	10	6	7	8	6	5	8	4	5	6	2	2	1	2	1	2	1	3	3	1	2	2	1	4	1	2	3	3	