A stages of change perspective on managers' motivation to learn in a leadership development context

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Abstract

Purpose – The purpose of this paper is to examine the applicability of Prochaska and colleagues' "stages of change model," which has generated substantial support in the therapeutic literature as a useful framework for understanding the dynamics of motivation to change problem behaviors, in a leadership development context.

Design/methodology/approach – A group of over 70 supervisors/managers was studied over a period of nine months as they participated in a company-sponsored leadership development effort.

Findings – Results provide initial evidence that the stages of change model has the potential for being reliably and validly assessed in a leadership development context. Participants' stage scores related in meaningful ways to relevant criteria such as job attitudes, perceptions of personal leadership areas needing improvement, and evaluations of actual development module content and presentation over a nine-month period.

Research limitations/implications – Participants were drawn from only one organization and this was the first major leadership development effort undertaken by this organization.

Practical implications – Study results provide support for the appropriateness of applying the stages of change model and its measurement in a leadership development context. Results demonstrate that the stages of change model appears to offer useful and pragmatic insight into motivation to learn and on improving the effectiveness of leadership development activities.

Originality/value – The present study is unique in that makes use of a stages of change model to empirically examine differential patterns of relationships between participants' stages of change and their organizational attitudes, leadership developmental needs, and longitudinal reactions to the development effort.

Keywords Learning, Leadership development, Training, Managers, Leadership

Paper type Research paper

Increasingly, leadership development efforts are expected to play key roles in organizations' attempts to enhance their competitiveness and transform themselves and their cultures (Armenakis *et al.*, 1999; Tichy and Cohen, 1997). For example, the management and leadership development efforts of general electric are cited as keys to its competitiveness (Tichy and Sherman, 1993). More and more, leaders and managers have to be prepared to perform in team-based, global, fast-changing environments and organizations have a vested interest in preparing them to do so (Goldstein and Ford, 2002). Clearly, organizations have a keen interest in making sure that development efforts are as effective as possible.

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Motivation to learn is recognized as playing an important role in the ultimate success of training and development activities (Baldwin *et al.*, 1991; Tannenbaum and Yukl, 1992). Generally, motivation to learn is conceptualized as exerting its influence through a participant's decision-making process regarding the direction, focus, and level of their effort to participate in the developmental activity (Noe *et al.*, 1997). In short, people are more likely to learn and apply that learning when they are motivated to do so. After reviewing the literature, Colquitt *et al.* (2000, p. 681) concluded "there is a robust positive relationship between motivation to learn and learning outcomes".

Kirkpatrick's (1994) classification of learning outcomes into reaction, learning, behavior, and results has proven very useful for both training practitioners and researchers (Goldstein and Ford, 2002). Reaction refers to evaluations the participants make of the training/development program itself. Satisfaction with the instructor, materials, course structure and process are examples of reactions (Goldstein and Ford, 2002). Kraiger *et al.* (1993) have divided the learning outcome into three subcategories: cognitive (e.g. acquiring new knowledge), skill based (e.g. mastering a new behavior), and affective (e.g. improved self-efficacy). The behavior outcome refers to training- or development-specific job performance. Finally, results refer to the influence of the training on organizational-level outcomes such as costs, turnover, and productivity.

In theoretical conceptualizations of the training process (Colquitt *et al.*, 2000; Goldstein and Ford, 2002), trainee learning motivation and ability (particularly cognitive), along with situational variables, are treated as predictors of trainee learning and reactions to the training. These learning outcomes, in turn, are assumed to predict learning transfer and performance. Research generally supports this theoretical framework. Most notably, in their meta-analysis of 106 research studies, Colquitt *et al.* (2000) reported that motivation to learn explained significant variance in all measured learning outcomes even after accounting for cognitive ability. They reported significant meta-analytic path coefficients from learning motivation to cognitive learning (0.39), skill acquisition (0.22), post-training self-efficacy (0.22), and reactions to the training (0.45). In turn, skill acquisition and post-training self-efficacy had significant paths with knowledge transfer (0.59 and 0.27 respectfully) and knowledge transfer had a significant path coefficient of 0.59 with job performance.

Despite the statistical strength of the relationships between learning motivation and training outcomes, we suggest that understanding motivation to learn might be enriched by approaching it from yet another theoretical framework offered by the change management literature. Since, the decision to actively participate in a developmental activity implies a desire or willingness for personal change, a focus on the dynamics of willingness to change provides an alternative perspective on motivation to learn. Such a perspective may help with three issues facing the motivation to learn literature. First, while significant, the magnitude of the relationship between learning motivation and training outcomes is oftentimes modest. For example, Baldwin *et al.* (1991), Colquitt and Simmering (1998) and Mathieu *et al.* (1992) reported that pre-training motivation explained only 2 percent of the incremental variance in participants' post-training learning. In the results from Colquitt *et al.* (2000) reported above, learning motivation accounted for between 5 and 15 percent of the variance in learning outcomes. Perhaps, a theoretical expansion of learning motivation beyond traditional motivational conceptualizations to include willingness for personal change could improve its predictive powers.

Second, in their meta-analysis, Colquitt *et al.* (2000) found that the influences of organizational climate and the individual characteristics of *locus* of control, conscientiousness, anxiety, and age on training outcomes were only partially mediated through learning motivation. This led them to ask, "If the effects of individual and situational characteristics are not fully mediated by self-efficacy, valence, job/career variables, and motivation to learn, what are the other intervening mechanisms?" (p. 701). Change willingness might be one such mechanism.

Finally, Cronbach and Snow (1977) discussed the importance of an aptitude-treatment interaction which emphasizes the matching of instructional model with trainee aptitude. Baldwin and Ford (1988) posited that a match was also needed with trainee personality (personality-treatment interaction). Since, learning motivation is an important factor in the success of training and development programs, it follows that efforts must be made to tailor training to the motivations of the individuals and engage in pretraining interventions designed to improve motivation (Goldstein and Ford, 2002). Much of the literature on personal and organizational change emphasizes just such interventions and should prove useful in guiding training and instructional design decisions. Therefore, a change willingness/readiness approach might suggest the importance of a developmental readiness-treatment interaction.

With organizations continuing to spend significant amounts of resources on their training and development programs (Thompson *et al.*, 2002), it seems prudent to consider theoretical approaches from disciplines outside traditional training and development theory that might yield new insights into motivation to learn. Cole *et al.* (2004) have demonstrated that a theory focusing on the motivational dynamics of diverse stages of personal change readiness, developed and championed by Prochaska (1979), offers a unique and potentially useful framework from which to explore the motivation of participants to engage in developmental change by active involvement in a development program. Prochaska's work was originally developed in the context of psychotherapy and therapeutic efforts to encourage positive change such as smoking cessation and condom use. Recent work has extended Prochaska's model to organizational phenomena, including readiness for organizational change (Cunningham *et al.*, 2002; Prochaska *et al.*, 2001b).

Cole *et al.* (2004) utilized the Prochaska's model to develop and test a stage-based approach to measuring motivation that could be applied to specific university courses. They found that the stages of change approach predicted training outcomes even after controlling for a traditional measure of motivation to learn. Building off these extensions, we argue that there are insightful parallels to be drawn between readiness for change in therapeutic settings and college classrooms and readiness for personal leadership development.

To examine the applicability of Prochaska's stages of change model (Prochaska *et al.*, 1992, for a review) for understanding managers' motivation to learn in an organizational developmental context, we studied a group of over 70 supervisors and managers over a period of nine months as they participated in a company-sponsored leadership development effort. Based on a review of the stages of change model, we articulate and test five hypotheses concerning the relationship between the stages and participants' learning motivation, readiness for development, organizational attitudes,

perceptions of their need for development, and attitudinal reactions to the program content and delivery.

Prochaska's stages of change model

In an attempt to understand the successes and failures of both self-mediated and psychotherapeutically-facilitated efforts to intentionally change problem behaviors such as smoking and overeating, Prochaska (1979) emphasized the role of motivation to change and articulated a "transtheoretical model of change" incorporating motivational, cognitive, social learning, and relapse prevention theories. In an early study guided by this change model, DiClemente and Prochaska (1982) compared the experiences of individuals who had stopped smoking on their own with individuals participating in treatment programs. Interestingly, they found strong evidence across both samples for progression through distinct stages of change marked by different motivations, concerns, and intervention requirements. These findings led to a series of studies whose results were articulated in a stages of change model (DiClemente and Prochaska, 1982; Prochaska and DiClemente, 1982, 1983) that provides a framework for categorizing stages of change readiness and motivations and ultimately the interventions appropriate to support progress at each stage.

In the first stage of the model, precontemplation, individuals are either naively unaware of the need for change or actively resist awareness of the need (Prochaska and DiClemente, 1982) and have no intentions of changing in the foreseeable future (Prochaska *et al.*, 1992). In the second stage, contemplation, individuals are aware of a need for change and are seriously considering changing but have not yet committed to it (Prochaska *et al.*, 1992). At the third stage, preparation, individuals are intending to take action very soon or have already initiated initial actions. At the fourth stage, called "action," contemplation and preparation gives way to actual initiation of change behaviors. In the fifth and final maintenance stage, motivation is focused on the prevention of relapse to the pre-change set of behaviors (McConnaughy *et al.*, 1989; Prochaska *et al.*, 1992). Using the decisional balance inventory (Velicer *et al.*, 1985), Prochaska *et al.* (1994) demonstrated that the stages were related to the relative weighting of the perceived pros and cons of the change. In precontemplation, the cons dominated but started to deteriorate at higher stages with the pros dominating at the action stage.

The stages of change model has received an extraordinary amount of empirical evidence supporting its ability to predict behavior change across a variety of problem behaviors. In an integrative study investigating the generalizability of the stages of change model, Prochaska *et al.* (1994) examined a wide range of personal change behaviors across a variety of samples. In all, they examined 12 behaviors: smoking cessation, quitting cocaine, weight control, reducing dietary fat, reducing adolescent delinquent behaviors, practicing safe sex, condom use, sunscreen use, avoiding radon gas exposure, exercise acquisition, mammography testing, and physicians' preventive practices with smokers. The authors purposefully chose a wide variety of problems that differed in many ways, including their frequency of occurrence, legality of the behavior, the visibility of the behavior (i.e. public vs private setting), and social acceptance of the action. In addition, some changes involved ceasing problem behaviors (e.g. smoking and cocaine use) while others involve practicing safe behaviors

(e.g. condom use and mammography testing). The researchers found the stages of change model was confirmed across each sample.

Since, its introduction, the stages of change model has generated research results with pragmatic implications for understanding and reacting appropriately to the different types of readiness and willingness for change associated with each stage. In essence, this research suggests that "efficient self-change depends on doing the right things (processes) at the right time (stages)" (Prochaska *et al.*, 1992, p. 1110). For example, in the Prochaska *et al.* (1994) study of 12 different behaviors, the researchers, based on the respondents' change stage, were able to accurately and reliably predict the decisional processes and types of techniques that facilitated individuals to make progress.

Not surprisingly, the stages of change model has started finding its way into organizational research. Prochaska *et al.* (2001b) provide a good overview of much of this work. In their study of a large-scale change effort in a hospital, Cunningham *et al.* (2002) provide preliminary support that both individual (e.g. self-efficacy) and job characteristics (e.g. decision latitude) variables were positively related to change readiness, as operationalized by the stages of change, and readiness was positively related to subsequent participation in the change activities.

Prochaska *et al.* (2001a, b) have summarized the fundamental processes that can be used to motivate organizational change and their appropriate application to match readiness stages. Specifically, they argue that consciousness raising (increasing awareness of the problem or need for change), dramatic relief (creating fear of not changing or excitement for changing), and environmental reevaluation (creating an appreciation of the social and work environment advantages of the change) are most appropriate when individuals are in precontemplation. To move individuals from the precontemplation to contemplation stages, they suggest that efforts should focus on reducing perceptions of the cons for change and increasing perceptions of the pros. Self-reevaluation in order to create an appreciation of the positive benefits of the change for self identity, happiness, and success is deemed most appropriate for the contemplation stage. To move from contemplation to preparation, they suggest the importance of taking small behavioral steps. Self-liberation strategies focused on increasing efficacy regarding successfully changing best match the preparation stage. Finally, more behavioral, skill, reinforcement, and action-oriented change processes seem best suited for the action and maintenance phases. Specifically, they judge reinforcement, helping relationships through social support, counter-conditioning (replacing old ways with new behaviors and cognitions), and stimulus control (changing the environment to facilitate new behaviors and inhibit the old) as most appropriate for the action and maintenance stages.

As demonstrated by Cole *et al.* (2004) in college classrooms, the stages of change model appears to also be highly applicable to management learning contexts. In particular, they provide results suggesting that action sentiments are most consistent with traditional treatments of learning motivation. In other words, learning motivation assumes an awareness of a need for change. The stages of change approach augments that assumption by emphasizing the importance of awareness that accompanies movement from precontemplation to contemplation. It seems likely that potential participants in a management development activity would have differential degrees of awareness of the need for, and desires to participate in, such development.

Furthermore, if participants' stages of readiness were assessed reliably, more precise tailoring of developmental content and approaches to match the stage needs of participants would be facilitated. The study described here is a first attempt to apply the stages of change model to a company-sponsored leadership development context.

Hypotheses

If the stages of change model offers a valid approach to understanding pre-training motivational sentiments, then it should demonstrate appropriate convergent and discriminant validity and relate in predictable ways with other organizational and training relevant variables. Specifically, in the present study, we propose that the stages of change should relate in meaningful ways to participants' developmental readiness, learning motivation, organizational attitudes, perceived developmental needs, and reactions to the developmental program content and delivery.

In the remainder of this paper, we limit our focus to three of the five change stages: precontemplation, contemplation and action. Preparation is oftentimes treated and measured more as a transition phase between precontemplation and contemplation rather than a distinct stage. Prochaska *et al.* (1992) have suggested that preparation sentiments are inferred from scores on contemplation and action scales, and, therefore, do not explicitly measure preparation. We also felt the omission of the maintenance stage was appropriate since the focus of leadership development is generally on acquiring new skills and abilities rather than providing support and encouragement for those already acquired and practiced. This omission is consistent with the empirical decisions made by others (Cole *et al.*, 2004; Lam *et al.*, 1988).

Readiness for developmental change

Prochaska *et al.* (2001b), clearly equate progression through the stages of change with increased readiness for change. For example, Prochaska *et al.* (2005) use the stage model to assess emotional readiness to adopt a child. Cunningham *et al.* (2002) go so far as to measure readiness with items directly assessing each of the five stages of change. Outside the stages of change context, the concept of readiness for change has enjoyed a great deal of attention in the organizational sciences. Armenakis *et al.* (1999, 1993) outlined the role of readiness in precluding resistance and encouraging change acceptance and institutionalization. In addition, they have outlined ways that organizations can increase readiness. Armenakis *et al.* (1999) argue that readiness for change is the result of five sentiments: change is needed, the particular change being considered is appropriate, the change is doable (efficacy), the organization is committed to the change, and the change has personally-relevant benefits. These sentiments are of a different sort and more extensive than those addressed in the stages of change model, which typically focus broadly on the balance of pros and cons. However, we would expect that the stages of change would relate to readiness as assessed from the Armenakis *et al.* (1999, 1993) perspective. Specifically:

H1. Precontemplation will negatively correlate with readiness for developmental change and contemplation and action will positively correlate.

Learning orientation

Learning orientation is an individual disposition that is associated with a predisposition to want to learn and increase competence (Colquitt and Simmering, 1998). In the context

of a development effort, one would expect that learning orientation would encourage constant contemplation of opportunities for development and involvement in such activities. In fact, Colquitt and Simmering (1998) found that learning orientation predicted motivation to learn in a classroom setting, even after controlling for training expectancy and valence. Therefore, we expect the following:

H2. Learning orientation will correlate negatively with precontemplation and positively with contemplation and action.

Organizational attitudes

Perceived organizational support refers to employees' feelings that the organization values them and cares about their well-being (Eisenberger *et al.*, 1986). Affective commitment refers to the emotional identification with the organization and its values and culture (Meyer and Allen, 1984). Social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) suggest that such positive feelings about the organization encourage reciprocity on the part of the employee. One form of reciprocity might include support for development activities provided by the organization. Therefore, we expect that participants with more positive attitudes toward their organization (i.e. affective commitment and perceived organizational support) will be more predisposed to consider (contemplate) and ultimately embrace developmental opportunities afforded them by the organization. On the other hand, individuals who hold negative organizational attitudes are more likely to be skeptical of the motives behind any developmental offering. Therefore, we offer the following hypothesis:

H3. Perceived organizational support and affective organizational commitment will correlate negatively with precontemplation and positively with contemplation of the developmental opportunity.

Developmental needs

By definition, the extent to which a person feels they have developmental needs directly corresponds to their precontemplation and contemplation sentiments regarding a developmental opportunity. In effect, awareness of need requires contemplation. Therefore, any measurement of the stages of change should demonstrate convergent and discriminant validity such that:

H4. Precontemplation will correspond to lower levels of felt developmental needs while contemplation will correspond to higher levels of felt needs.

Reactions to the development program

If the stages of change approach is to contribute to our understanding of the development process, it must relate to important development outcomes. In Kirkpatrick's (1994) classification of learning outcomes, participant reaction toward the development program is an important first-level contributor to other outcomes. We expect that participants' stages of change sentiments relative to the leadership development program will explain variance in their reactions to the program, particularly satisfaction with the instructional content and delivery of specific development modules. As noted by Alliger *et al.* (1997), positive reactions to a training situation are important because satisfaction might have substantial influence on other training outcomes such as attendance, performance, or "word-of-mouth" advertising

that might impact future participants' involvement. In their study of college classes, Cole *et al.* (2004) found that students in the precontemplation stage were absent more often and less satisfied at the end of the class than others. Individuals who are recipients of developmental activities that they feel are unneeded or unwanted might easily become resentful and critical of the program content and delivery. Therefore, we would expect precontemplation to relate negatively with the participants' reactions to the program. Likewise, if a person is contemplating change or actively involved in it, they are more likely to have positive reactions to the development effort:

H5. Precontemplation will correlate negatively with evaluations of the development program content and delivery, while contemplation and action will correlate positively.

Method

Research setting and sample

We conducted our study in a large manufacturing division of a multinational corporation. All division operations occupied one large campus in the southeastern USA. At the request of the division's top management team, a long-term leadership development program was created and implemented by the business school from a nearby university. The program was designed to be delivered in approximately nine one-day modules (each module offered three separate times to facilitate participant scheduling) over a nine-month period. Modules covered topics such as self-awareness, corporate strategy, finance, change management, communication, and quality control. This was the first such developmental effort engaged in by the division.

While not formally mandated, division executives strongly encouraged participation by all supervisors ($N = 35$), managers ($N = 39$), and select engineering staff with project management duties ($N = 8$). Therefore, the sample for the present study consisted of approximately 82 eligible program participants encouraged to attend one of the three session offerings of the first development module. It is possible that participants felt little choice regarding attending the development sessions. Since, realized choice is associated with greater motivation to learn (Baldwin *et al.*, 1991), it might be argued that a no-choice option serves the present research best since participants are likely to have a greater range of motivation for the development program. Of those attending the first module, 74 volunteered to participate in the data collection efforts. Because of the relatively small sample and to further encourage participation and ensure anonymity, no demographic data were collected.

Data collection

The research reported here was conducted over a span of nine months and covered the nine distinct developmental modules. During this period, participants were given the opportunity to provide data on several occasions. All data were anonymous. To be able to match participants' responses over time, participants were asked to develop their own personal code that they could supply with each submission of data. Participants could also choose to turn in information without supplying a code.

On the initial developmental module session date, and prior to any presentation of developmental content, all attendees were asked to complete a questionnaire that included our measure of the stages of change and items regarding their perceived need for training in certain areas, their dispositions, and organizational attitudes.

A cover letter explaining the purpose of the survey, assurances of anonymity, and the request that they develop and use a personal code was also provided.

We also collected data in the form of evaluations at the end of each of the nine training sessions conducted during the period covered by the study. Participants were asked to provide an evaluation of both the content and delivery (instructor) of the module material. Participants were encouraged to write their code on the evaluation forms.

Measures

Unless otherwise noted, all measures employed statements to which respondents were asked to indicate the degree to which they agreed with them on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). All measures, with the exception of the developmental module evaluations were collected immediately prior to the presentation of the initial developmental module.

Stages of change scale (SOCS). To develop a measure that discretely captured the stages of change for the leadership development context, we were guided by validated measures from the therapeutic literature. We wanted a scale that would provide separate measures for each change stage. Accordingly, we chose to modify 12 items previously validated by Lam *et al.* (1991) and McConnaughy *et al.* (1989). Following previous convention (Lam *et al.*, 1988), our stages of change scale (SOCS) did not include items for either the preparation or maintenance stages.

A principal-components analysis with varimax rotation was used to examine the underlying dimensionality of the SOCS. Based on the scree plot, eigenvalues-greater-than one, and factor loadings (>0.45), results of the principle-components analysis suggested three underlying factors were present in the scale, explaining 64.6 percent of the variance. Shown in Table I, the three factors closely matched those of Prochaska and colleagues' conceptualization of the stages of change model. Based on these results, the items representing each stage were averaged together (items 11, 19, and 20 were reverse scored) to create scale scores. Factor 1, action, consisted of five items and had a coefficient α reliability of 0.86. Factor 2, contemplation, was made up of three items and had a coefficient α reliability of 0.75. Factor 3, precontemplation, consisted of four items and had a coefficient α reliability of 0.72.

To be consistent with Prochaska's (1979) theory, the SOCS stage scores should exhibit a simplex structure, whereby adjacent stage scores correlate more strongly than non-adjacent scale scores. In addition, precontemplation sentiments would be expected to correlate negatively with the other more change-supportive stages. The correlations among the three scales supported the simplex structure assumption. Specifically, precontemplation was negatively correlated with contemplation ($r = -0.55$, $p < 0.01$) but was not correlated with action ($r = -0.08$, ns). As expected, contemplation was positively correlated with action ($r = 0.31$, $p < 0.01$). This pattern of relationships is consistent with that exhibited in the original studies measuring the stages reported by McConnaughy *et al.* (1983, 1989) and supports the validity of our SOCS.

Change readiness. We assessed change readiness using a six-item scale based on the work of Armenakis *et al.* (1993). Paralleling the theoretical foundations of motivation to learn, their change readiness concept is derived from expectancy theory, and suggests that readiness depends on a perceived need for change (two items: e.g. "My leadership

Scales and items	Eigen-value	Variance explained	Factor I	Factor II	Factor III
Precontemplation	3.35	27.9			
1. As far as I am concerned, I do not have any leadership development needs					−0.739
11. I am hoping this leadership development program will help me to better understand myself[a]					0.634
19. Maybe this leadership development program will be able to help me become a better leader[a]					0.598
20. I hope that I get some good advice from this leadership development program[a]					0.584
Contemplation	2.51	21.0			
14. I have some leadership challenges and I really think I should work on them				0.729	
5. It might be worthwhile to work on improving my leadership skills				0.726	
2. I think I might be ready for some leadership self-improvement				0.710	
Action	1.9	15.7			
6. I have been working on improving my leadership skills			0.880		
21. I am actively working on my leadership shortcomings			0.837		
3. I am doing something about my leadership shortcomings that have been bothering me			0.790		
9. I am really working hard to improve my leadership skills and approach			0.779		
12. Even though I am not always successful in changing, I am at least working on improving my leadership skills			0.679		

Notes: [a]Items were reverse scored. Scales were computed as the average of their items

Table I.
Results from the principal-components analysis

skills need improving"), efficacy with regard to making the change (two items: e.g. "If I try, I can become a better leader"), and assessment of the personal valence of change (two items: e.g. "Becoming a better leader is important to me"). Internal consistency for this scale was 0.87.

Learning orientation. Six items from VandeWalle's (1996) learning orientation scale (e.g. "I often look for opportunities to develop new skills and knowledge") included in his goal orientation inventory were used to assess learning orientation. Internal consistency for the scale was 0.81.

Perceived organizational support. Participants were asked to indicate their agreement with 16 items from Eisenberger's perceived organizational support scale (Eisenberger *et al.*, 1986) (e.g. "The company regards my best interests when it makes decisions that affect me" and "Help is available from my organization when I have a problem"). The internal consistency for this scale was 0.94.

Affective organizational commitment. Commitment was measured with the affective commitment scale, used in research by Meyer and Allen (1984; Allen and Meyer, 1990).

Researchers using the affective commitment scale have reported that its items (e.g. "I feel a strong sense of belonging to the company") form a single factor with high reliability (Allen and Meyer, 1990). Internal consistency for this scale was 0.83.

Developmental needs. Participants were asked to indicate how much personal improvement they needed to make with regard to 24 specific leadership areas that were grouped into six distinct leadership skill domains (four items per domain). Participants responded using a five-point scale (1 = hardly any improvement needed; 5 = very great improvement needed). Scale scores for each leadership skill domain were created by averaging participants' responses. The six leadership skill domain scales were: managing conflict ($\alpha = 0.91$), budgeting ($\alpha = 0.92$), quality management ($\alpha = 0.86$), visionary leadership ($\alpha = 0.87$), teambuilding ($\alpha = 0.72$), and stress management ($\alpha = 0.73$).

Developmental module evaluations. Scales were developed to evaluate the content and instruction of each of the training modules conducted during the nine month study. A team of two instructors conducted one training module (change management) but a separate evaluation covering both content and instructor was conducted for each instructor of this module. One instructor (instructor 1) conducted three of the modules. All other instructors participated in only one module each. The content evaluation of each module was assessed by a scale created using three items (e.g. "I can use this information" and "I would recommend these seminars"). The instructor evaluation of each module was assessed using six items addressing the instructors' knowledge, communication skills, preparedness and organization, and motivational skill (e.g. "The instructor communicated well with the class" and "The instructor created interest and stimulated thinking").

Controls. Because our variables are attitudinal and collected using a common method, inflation in the relationships among them due to common method and dispositional-based response tendencies becomes a particular concern (Spector and Brannick, 1995). Therefore, we measured three dispositional variables to use as controls in the analyses: positive ($\alpha = 0.90$) and negative ($\alpha = 0.90$) emotionality (Tellegen, 1982, 1985) and self-deception ($\alpha = 0.69$, Paulhus, 1991).

Data analysis strategy

Our first four hypotheses involved investigating the relationships between participants' SOCS scores and other attitudinal variables. To combat common method concerns, partial correlations were examined, controlling for positive and negative emotionality and self-deception. Finally, to examine the relationships between the SOCS and the attitudinal outcomes of training that were the focus of *H5*, simple correlation coefficients between participants' stage scale scores and their reactions were investigated.

Results

The relationships between our measures of the precontemplation, contemplation, and action stages and the criterion variables for *H1-H4* were assessed using third-order partial correlations. The results of these analyses are shown in Table II.

Hypothesis 1

As shown in Table II and consistent with *H1*, all three stage scores were correlated to the change readiness measure. Precontemplation sentiments were negatively

	Stages of change scales		
	Precontemplation	Contemplation	Action
Change readiness	-0.60^{**}	0.70^{**}	0.28^{**}
Learning goal orientation	0.09	0.10	0.33^{**}
Organizational attitudes			
Perceived organizational support	−0.17	0.18	0.14
Affective organizational commitment	-0.23^{*}	0.21^{*}	0.06
Perceived developmental needs			
Managing conflict	-0.37^{**}	0.44^{**}	0.11
Budgeting	-0.40^{**}	0.39^{**}	−0.02
Quality management	-0.47^{**}	0.38^{**}	−0.06
Visionary leadership	-0.20^{*}	0.34^{**}	0.05
Team building	-0.30^{**}	0.35^{**}	−0.03
Stress management	−0.09	0.19	0.14

Notes: $^{*}p < 0.05$; $^{**}p < 0.01$. Ns range from 68 to 69. [a]After controlling for positive and negative emotionality and self-deception

Table II.
Partial correlations[a] between stages of change and learning orientations, organizational attitudes, and perceived developmental needs

correlated with being ready to change ($r_{12.345} = -0.60$, $p < 0.01$). In contrast, readiness was positively correlated with contemplation ($r_{12.345} = 0.70$, $p < 0.01$), and action ($r_{12.345} = 0.28$, $p < 0.01$) scores.

Hypothesis 2

Contrary to *H2*, learning orientation was not associated with either precontemplation or contemplation; however, it was related to action sentiments ($r_{12.345} = 0.33, p < 0.01$). Thus, people who have a learning orientation may be more likely to have already moved beyond contemplation and into action, particularly with regard to their own leadership development, even before a formal development activity is offered.

Hypothesis 3

Consistent with *H3*, perceived organizational support was marginally negatively related to precontemplation ($r_{12.345} = -0.17$, $p < 0.10$) and positively with contemplation ($r_{12.345} = 0.18$, $p < 0.10$) scores. Stronger relationships were found between affective commitment and precontemplation ($r_{12.345} = -0.23$, $p < 0.05$) and contemplation ($r_{12.345} = 0.21$, $p < 0.05$). Neither organizational attitude was associated with action scores. It appears that positive organizational attitudes may, indeed, encourage more contemplation of developmental opportunities offered by the organization.

Hypothesis 4

Consistent with *H4*, precontemplation scores exhibited negative relationships ($p < 0.05$) with perceived developmental need for five of the six developmental areas. Only stress management was not related to precontemplation. Similarly, contemplation scores exhibited positive correlations ($p < 0.01$) with the same five development need areas. As hypothesized, regardless of statistical significance, the precontemplation scale had negative partial correlations with the perception of all need areas (average $r_{12.345} = -0.31$) while contemplation had positive correlations (average $r_{12.345} = 0.35$) with all. None of the six developmental needs were related to action scores.

This is entirely consistent with expectations created by stages of change perspective on motivation for development: precontemplative sentiments are associated with less perceived need for change while contemplation sentiments are associated with higher needs for change. Furthermore, action sentiments suggest individuals are currently hard at work to improve, and, therefore, they may feel further changes are not needed.

Hypothesis 5

Development modules were constructed and, for nine consecutive months, a development module was offered to eligible company employees. At the end of each development session, participants were asked to evaluate the module's content and the instructor providing the training. In regard to participants' evaluations, *H5* predicted that participants' initial scores on the SOCS will be associated with subsequent judgments concerning development modules' adequacy and instructors' competence.

Correlations between the SOCS and participants' content and instructor evaluations for the nine developmental modules are reported in Table III. Zero-order correlations were examined out of a consideration for statistical power. Had we chosen partial correlation analysis, additional cases would have been excluded from the analysis resulting in an even smaller sample size and further loss of statistical power. Using Fisher's z_r, we compared the magnitude of the zero-order correlations reported in Table III with correlations obtained after controlling for participants' emotionality and self-deception. In every instance, Fisher's z_r indicated there were no statistically

Variables	*N*	Stages of change scales: Precontemplation	Contemplation	Action
Content evaluations				
Session 1 (self-awareness)	59	−0.09	−0.14	−0.11
Session 2 (strategic analysis)	37	−0.16	0.19	−0.07
Session 3 (strategic controls)	36	−0.12	0.16	−0.04
Session 4 (quality management)	39	−0.45***	0.44***	0.04
Session 5a (change management)	34	−0.24*	0.26*	0.23*
Session 5b (change management)	31	−0.34**	0.28*	0.23
Session 6 (communication)	37	−0.16	0.17	0.24*
Session 7 (financial measures)	21	−0.34*	0.28	0.18
Session 8 (team building)	35	−0.39**	0.45***	0.48***
Session 9 (stress management)	30	−0.35**	0.33**	0.21
Instructor evaluations				
Session 1, instructor 1	60	−0.01	−0.06	−0.02
Session 2, instructor 2	37	−0.23*	0.24*	−0.09
Session 3, instructor 3	36	0.06	0.07	0.07
Session 4, instructor 4	39	−0.30**	0.40***	−0.07
Session 5a, instructor 1	34	−0.08	0.30**	0.27*
Session 5b, instructor 5	31	−0.06	0.01	0.11
Session 6, instructor 6	37	0.07	−0.07	0.14
Session 7, instructor 7	21	0.02	0.21	0.07
Session 8, instructor 1	35	−0.11	0.18	−0.01
Session 9, instructor 8	30	−0.13	0.22	−0.11

Notes: *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

Table III.
Correlations between stages of change and development module evaluations

significant differences between the correlations' magnitudes. Because our initial sample size was further diminished because several original participants failed to provide identification codes on their module evaluations, we tested for statistical significance at the 0.01, 0.05, and 0.10 levels.

The pattern of results shown in Table III is clear and consistent with *H5*: precontemplation is associated with negative perceptions of module content and instruction while contemplation is associated with positive perceptions. Precontemplation scores exhibited negative correlations ($p < 0.10$) with the content ratings of six of the ten content evaluations and two of the ten instructor ratings. Contemplation scores were positively correlated ($p < 0.10$) with content evaluations of five modules and three of the instructor ratings. Only the content evaluation of the team building module (session 8) was strongly ($p < 0.01$) correlated with action scores. Two additional content evaluations and one instructor rating were moderately ($p < 0.10$) related to action scores.

Discussion

Study contributions

This study provides some initial evidence that the use of "... one of the most influential models in the area of health behavior change within the last 20 years" (Morera *et al.*, 1998, p. 39) has the potential for being reliably and validly assessed in a leadership development context and offers insight into other attitudes bearing on motivation to learn and reactions to development experiences. Upon modification of the stages of change items to correspond with a leadership development context, results indicated the items loaded onto one of three factors consistent with Prochaska's initial conceptualization. In addition the SOCS scales had high-internal consistency and participants' precontemplation and contemplation scale-scores exhibited acceptable discriminant and convergent validity with regard to the most of criterion variables. In sum, the SOCS shows promise as a measure that can be reliably and validly used in development contexts.

In general, the pattern of relationships among the variables was consistent with our hypotheses. More specifically, participants' precontemplation scores were negatively associated with criterion measures of change readiness, affective organizational commitment, leadership improvement areas, and ratings of the program. It is important to note at this point that even those relationships that were non-significant were generally in the expected direction (this point is particularly noteworthy given that, with the low-sample size and corresponding low-statistical power, correlations as high as 0.34 were only marginally significant). These results imply that precontemplation sentiments are associated with lower organizational commitment, lower perceived developmental needs, and more negative evaluations of actual developmental content and instructors. Conversely, participants' contemplation sentiments were associated with greater organizational commitment, perceived developmental needs, and more positive evaluations of actual developmental content and instructors.

These results provide credence to warnings from the therapeutic world that precontemplation and contemplation refer to different motivations for change and that change efforts must be tailored to each (Prochaska *et al.*, 1992). Based on participants' reactions to the diverse developmental modules offered during the span of this study,

it is clear that greater precontemplation sentiments led to harsher evaluations while greater contemplation sentiments led to more favorable ones. This would suggest that the leadership development program was geared primarily to meet the needs of contemplators. The majority of the material presented was conceptual in nature and related to information participants could use to work on improving their leadership behaviors. The content generally assumed that participants would value it and little effort was made to "sell" the content as important and needed. Luckily, contemplation sentiments dominated in the program participants. But what if they had not?

Our research suggests an extension to Cronbach and Snow's (1977) aptitude-treatment interaction and Baldwin and Ford's (1988) personality-treatment interaction. Aptitude-treatment argues that instruction should be tailored to individual aptitude. Personality-treatment makes the same argument for tailoring for personality. Similarly, our work suggests the importance of developmental readiness-treatment interaction.

The stages of change model would suggest that interventions designed for contemplators will not work on precontemplators. Therefore, the first step is to get all members of the audience to move to the contemplation stage. What this means is that providers of leadership development opportunities should make sure those opportunities occur after participants are ready for them. How can precontemplators be moved to contemplators? The key is raising awareness of a need for change and development (Prochaska *et al.*, 1992). This implies that the first step of any leadership development effort should involve consciousness raising and diagnosis of the need for change through special workshops or other preparatory initiatives. While current contemplators may feel such efforts are "not needed" and become frustrated with waiting for the development they desire, at least the whole development program will not be a wasted effort in terms of those with precontemplation sentiments. Such is the kind of insight that we feel the stages of change model has to offer the management learning community.

One can also conclude that this study suggests the importance to leadership development efforts of an organization that promotes self-evaluation, performance standards, and an aligned performance management system. We found that sentiments such as perceived organizational support and affective commitment likely to stem from such organizational activities would make precontemplation sentiments difficult and would instead promote constant contemplation and action. The importance of considering organizational support for change is exemplified in Levesque *et al.*'s (2001) research assessing the stages of change at the organizational level with regard to involvement in continuous quality improvement among Veterans Heath Administration hospitals. One interesting finding from their work was that hospitals characterized as being in the action or maintenance stages sent more participants to a quality-related training program those in prior stages.

Contrary to our expectations, we did not find a relationship between participants' learning orientation and precontemplation or contemplation. Instead, learning orientation was related only to the action stage. Seemingly, those with a learning orientation are likely to already taking action with regard to their own development. It is interesting to note that this pattern of relationship mirrors the relationships between the stages and motivation to learn reported by Cole *et al.* (2004) and adds additional support to the idea that the stages of change add a unique perspective on readiness and willingness to embrace a developmental offering.

Study limitations and future research opportunities

Admittedly, the present study has limitations. One of the most basic limitations is the small sample size. This problem was exacerbated when we used participants' longitudinal evaluations as the criteria, since sample sizes were reduced further because many participants failed to provide an identification code on their evaluation forms. As a result of the low-statistical power of our analyses, the significant results obtained provide conservative evidence of the underlying relationships.

Another significant shortcoming of the present research is that participants were drawn from only one organization and one developmental effort. This was the first major leadership development effort undertaken by this organization. The results might be different in an organization with more developmental history. In organizations engaged in such efforts over time, one would expect that reactions will also be biased by assessments and perceptions of prior activities. The development effort we studied also cast a rather large net with regard to participants. Participants were drawn from the population of managers and supervisors without regard for performance. Not surprisingly, we found a range of readiness stage scores. This range would likely be restricted for development efforts targeted only to "high potential" candidates or efforts targeted to low performers. One might expect higher contemplation and action scores from high-potential candidates and higher precontemplation scores from low performers. High performers or high-potential employees are likely to have high-achievement motives which should incline them to greater awareness of improvement opportunities (Harris and Feild, 1992). Low performers are more likely to be unaware of a need for improvement or make external attributions to explain their poor performance to avoid ego-damaging dissonance. If the above assumptions are true, they suggest that different developmental strategies would be required for high versus low performers. Unfortunately, the present study did not allow us to differentiate participants by performance. Future research would benefit from such differentiation.

The developmental effort we studied relied solely on traditional classroom training. There are many more approaches to leadership development that deserve attention (Goldstein and Ford, 2002). In fact, in the realm of leadership development, classroom training is increasingly regarded as least influential while actual experience (e.g. on-the-job training) is considered the most influential (McCall, 2004). An advantage of actual experience as a developmental tool, with regard to the stages of change model, might be its utility across the stages of change. Experiential trials and difficulties might develop the awareness of needs for change in precontemplators. In addition, the experience might provide the motivation to improve for those in contemplation and the platform for practice for those in the action stage.

Our inability to collect actual development performance data are another weakness. The literature (Colquitt *et al.*, 2000; Goldstein and Ford, 2002; Kirkpatrick, 1994) identifies four training/developmental outcomes: learning, reactions, knowledge transfer, and job performance. In the present study, we were only able to assess the most subjective of these outcomes, reactions to the training. Clearly, learning, transfer, and job performance are key outcomes of any leadership development program. While we would expect that these outcomes would be lowest for precontemplators and highest for contemplators and those in the action stages, data are needed to make such

an assessment and future research would benefit from objective performance data collected longitudinally.

Another potential weakness concerns the exclusive use of self-report data. Although some have questioned the influence of common-method variance (Crampton and Wagner, 1994; Harrison *et al.*, 1996) and Spector (1994) has noted that cross-sectional designs can be useful during the early stages of concept development, we cannot rule out the possibility that common-method variance influenced the reported correlations between participants' SOCS-scores and their learning orientations, organizational attitudes, and perceptions of their developmental need areas. It should be borne in mind, however, that the focus of the current study was on the pattern of relationships between different variables, and not just their magnitude. Collection of other training outcomes as suggested earlier would also help with common methods problems, assuming alternative assessments to self-reports are employed as a part of the training and development activities.

A final weakness of the study is the lack of reported demographic information. This has made it impossible to determine if there are significant differences due to sex, ethnicity, education, age, etc. We recognize the importance of such information; however, given the confidentiality arrangements made with the company we could not collect it. We recommend the inclusion of demographic information by future researchers to further our understanding of the stages of change model in leadership and other organizational contexts.

Despite these limitations, the present investigation is unique in that makes use of a "stages of change" model, derived from the therapeutic literature, to empirically examine differential patterns of relationships between the stages of change and participants' organizational attitudes, leadership developmental needs, and longitudinal reactions to the development effort. Consistent with Cole *et al.* (2004), our study provides support for the appropriateness of applying the stages of change model and its measurement in a management development context. We feel such application has the potential for guiding pragmatic efforts to tailor development programs and pre-development readiness/awareness efforts to meet the diverse needs of management participants with diverse stage sentiments and corresponding motivations.

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