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Construct validation of a Theory X/Y behavior scale

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Abstract

Purpose – This paper aims to discuss the historical importance and current relevance of Douglas McGregor's Theory X and Y, and to suggest that the paucity of related empirical research is, in part, attributable to the lack of validated measures. The present research seeks to describe the development and construct validation of a measure pertinent to Theory X/Y behaviors.

Design/methodology/approach – Surveys completed by 512 working adults provide the present data. A total of 26 initial Theory X/Y behavior items are reduced to 13 through factor analysis. Convergent and discriminant validities are examined through correlational and regression analyses with measures of proximal, distal, and unrelated constructs. Test re-test reliability is assessed using longitudinal panel data from a subset of respondents.

Findings – The results provide evidence of the construct validity of the new measure.

Research limitations/implications – Respondents are relatively young and drawn from one region of the USA. Future research should collect multi-source and multi-level data.

Practical implications – The 13-item scale may be useful as a diagnostic tool for individual and organizational development.

Originality/value – This paper represents the first research endeavor that focuses on construct-validating a measure of managerial X/Y behaviors, as distinct from attitudes. The scale can be used in substantive research, including a more robust test of McGregor's theorizing.

Keywords Management theory, Leadership, Organizational behaviour

Paper type Research paper

In his remarkable article and subsequent book, both entitled "the human side of enterprise," McGregor (1957, 1960) advanced one of the most important and influential theories in the history of management and organizational behavior (Bedeian and Wren, 2001; Cramer and Dearlove, 2006; Miner, 2003). According to McGregor's Theory X and Theory Y, the assumptions that a manager holds about the nature of his/her employees tend to be self-fulfilling. Consequently, the manager who holds the pessimistic Theory X mind-set, or cosmology as McGregor labeled it – namely, that employees are basically lazy, untrustworthy, lack ambition, and offer little in the way of useful ideas – will manage in such a controlling and commanding fashion that these beliefs are



“brought to life” by employee behaviors. And, per McGregor’s supreme sense of irony, the manager will subsequently turn to a colleague and righteously lament that “nowadays you can’t hire good workers.” The assumptions undergirding Theory Y are the converse of Theory X – namely that employees: can be motivated to work hard and find work enjoyable; are capable of self-direction and self-control; often seek to grow and accept responsibility; and can be the source of many useful ideas.

Unfortunately, McGregor neither attempted to measure his constructs, nor conduct any research that directly tested the validity of his theory (Miner, 2002). Instead, he delineated the kinds of practices which managers with a more optimistic (Theory Y) mindset might be expected to engage in, such as participatory leadership, delegation, job enrichment, management by objectives, and performance appraisals. For instance, in *Leadership and Motivation* (McGregor, 1966), two chapters were devoted to the Scanlon plan along with other types of management initiatives. In our view, this approach actually diminished the impact of McGregor’s theorizing. Rather than viewing Theory X and Theory Y as reflecting fundamental individual differences in attitudes leading to variations in leadership behavior, Theory X/Y became conflated with specific management practices, often studied at the organizational level. More problematically, these management practices were often ineffective when implemented in organizations characterized by a Theory X mindset, because employees viewed them as manipulative ploys (Heil *et al.*, 2000; McGregor, 1966, 1967).

There is a long history of management and organizational behavior thought that has been explicitly grounded in the prescriptions of Theory Y. Such prominent works as Maslow’s (1965) *Eupsychian Management*, Blake and Mouton’s (1964) *Managerial Grid*, and Lawler’s (1986, 1992) *High Involvement Management* and *Ultimate Advantage* all cite McGregor and prescribe practices that follow directly from McGregor’s theorizing. McGregor has also been credited with contributing to the zeitgeist that fostered Herzberg *et al.*’s (1959) motivator-hygiene theory and Likert’s (1967) Systems I through IV – see Carson, 2005. Regarding the importance of McGregor’s work, Gardner and Schermerhorn (2004, pp. 270-71) put it most eloquently:

Douglas McGregor’s message endures like a timeless melody, well worth listening to over and over again . . . [He pursued] high performance not by manipulating people [with carrots and sticks] but by respecting them . . . His respect for innate human capacities – talent, willingness to accept responsibility, creativity, and capacity for personal growth, is well evidenced by many practices in our best-run organizations . . . self-directed work teams, employee involvement groups, job enrichment . . . and more [and reflect] the essence of Theory Y assumptions McGregor espoused almost a half-century ago.

McGregor’s Theory X/Y strongly influenced later research and practice with regard to sub-fields in management and organizational behavior. For example, Theory Y’s humanistic and optimistic view of employees served as a foundation for many of the principles of organizational development (Argyris, 1971; Bennis, 1969; Friedlander and Brown, 1977). Indeed, Argyris (1971) explicitly made the connection in the title and subtitle, of *Management and Organizational Development: The Path from XA to YB*. He proposed that organizations needed to be transformed from the pattern of behaviors and dynamics associated with a Theory X (Pattern A) to a pattern associated with Theory Y (Pattern B). Similarly, McGregor’s work has been influential in leadership theory, particularly transformational leadership (Bennis, 2003; Pastor and Mayo, 2008;

Yukl, 1989) and the models that emphasize fostering employee commitment and engagement rather than control (Truss *et al.*, 1997).

However, we believe that McGregor's Theory X/Y is more than a historical curiosity. It continues to be prominently featured in management and organizational behavior text books, and research that invokes McGregor's theorizing continues to be conducted (e.g. Larsson *et al.*, 2007; Neuliep, 1990, 1996; Pastor and Mayo, 2008), presumably reflecting an appreciation of McGregor's fundamental premise – namely, that a more positive approach to managing human behavior in organizations has a constructive payoff. Additionally, it has been argued that concomitant with the growth in knowledge-based, learning oriented organizations in the twenty-first century, Theory Y behaviors are increasingly likely to be more effective than Theory X behaviors in leading today's organizations (Forrester, 2000; Kochan *et al.*, 2003; Schein, 2004).

Yet, despite its influence and potential practical value, relatively little research has actually been conducted that tests the substantive validity of McGregor's theorizing. We attribute the paucity of research to the virtual absence of construct valid measures of the central variables, the attitudinal mindsets of managers (as distinct from specific management techniques). From 1957 when McGregor first articulated his theory until 2007 there have been at least fourteen attempts to measure Theory X and Y managerial assumptions/attitudes and/or behaviors toward employees. Notwithstanding this prior activity, we believe that the present research to develop and construct-validate a measure of Theory X/Y behaviors is contributory for three primary reasons. First, Theory X/Y scales should provide some evidence pertinent to psychometric properties; however, the majority of past efforts have not done this. Second, Theory X/Y attitudes about people and attitudes towards managerial behaviors represent distinct constructs that occupy different locations in McGregor's nomological network. Yet several measurement attempts have combined attitudinal and behavioral statements. Third, to be useful for academic research a measure should be in the public domain. In six instances Theory X/Y scales were created and included as student activities in organizational behavior text books, in all cases without evidence as to reliability or validity (Baron and Paulus, 1991; Costley and Todd, 1987; Gordon, 1999; Greenberg, 1999; Mainiero and Tromley, 1993; Osland *et al.*, 2001). Relatedly, three measure were available on web sites, but without psychometric or validity evidence (Chapman, 2002; Scanlon Leadership Network, n.d.; Swenson, n.d.). The scales developed by Fiman (1973), Michaelsen (1973) and Spautz (1975), although accompanied by some psychometric and validity evidence, combined attitudes and behaviors. Miles (1964) developed four items assessing attitudes towards participative leadership behaviors and found differences across managerial levels. However, he did not report reliability data. The scale prepared by Teleometrics International Inc (1995) is only available on a commercial basis. In summary, there has been limited attention to construct validation to date which has – in our opinion – constrained the conduct (and subsequent publication) of substantive research regarding McGregor's theorizing.

Recently, Kopelman *et al.* (2008) developed and found support for the construct validity of a measure of Theory X/Y attitudes. The present research seeks to contribute to substantive research and practice by developing and validating a measure pertinent to Theory X/Y behaviors. More specifically, we examine attitudes toward Theory X and Theory Y related leadership and management behaviors.

A full explication of McGregor's theorizing would include several panels of variables: managerial assumptions/attitudes about employees; managerial attitudes towards particular managerial behaviors; actual managerial behaviors; employee perceptions of and attitudes toward managerial behaviors; employee attitudinal self-perceptions; and employee work behaviors and job performance. Clearly, a measure of attitudes about X/Y managerial behaviors should be a more proximate predictor of employee work behaviors and job performance, compared to a measure of managerial X/Y attitudes about employees, and, if incorporated in research, should permit a more comprehensive test of McGregor's theorizing.

Further, a behavior-oriented X/Y scale might offer other advantages. Although based on self-report data, it may be less susceptible to social desirability and self-presentation biases. In this regard, there is evidence that the vast majority of managers see themselves as closer to Theory Y than Theory X in their attitudes (Fiman, 1973; Heil *et al.*, 2000). Indeed, Heil *et al.* (2000, p. 27) noted: "If you were to ask managers which operating model shaped their choices and policies, most would say they believe in the tenets of Theory Y". In light of the general tendency for raters to see themselves as Y managers, this argues for the utility of measuring attitudes toward X/Y behaviors as well as X/Y attitudes towards employees. (For brevity, hereafter we use the term managerial X/Y behaviors to reference managerial attitudes toward X/Y behaviors.) Additionally, assessment of managerial X/Y behaviors, in contrast to unobservable managerial X/Y attitudes may facilitate collection of data from a manager's peers or subordinates as they would be asked to describe managerial behavior rather than making inferences about underlying attitudes. A measure of managerial X/Y behaviors would likely have value for practitioners as a potential predictor of managerial performance, as a diagnostic tool, and as a basis for management training.

Method

Sample

We distributed surveys to students enrolled in undergraduate and graduate business courses in three Eastern universities and asked those who were currently employed to complete the surveys on an anonymous and voluntary basis. We received 512 useable surveys, a response rate of approximately 75 per cent. We eliminated respondents who did not report at least one year of work experience, leaving us with 494 participants. Their mean age was 27.8 years (SD = 6.6), and they had a mean tenure with their current employer of 3.2 years (SD = 3.0). Regarding the employment experience of respondents, the mean tenure of 3.2 years is comparable to the median tenure of private sector wage and salary workers in the USA (3.6 years) as reported by the US Bureau of Labor Statistics (US Department of Labor, 2006). The mean salary was \$54,247 (SD = \$45,780), and 53 per cent had managerial experience. The majority of respondents were female (52 per cent), and were employed in the for-profit sector (81.0 per cent) with 34.0 per cent employed in banking or finance, 20.6 per cent in miscellaneous professional services and 9.3 per cent in travel and entertainment services. Participants worked in organizations with varying sizes: 26 per cent worked in organizations with fewer than 25 employees and 26 per cent worked in organizations with more than 5,000. In order to assess test re-test reliability, we distributed a second round of surveys to a sub-sample of respondents approximately two to three weeks

after the initial distribution. Based on seven biographic items (age category, sex, length of employment, industry classification, sector, approximate salary, and size of organization), we were able to match 102 individuals' time 1 and time 2 responses and accordingly could calculate the test re-test reliabilities for all measures.

Measures

Biographic information was collected on age (by categories: 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, and 50 +), sex, salary, sector (profit or not-for-profit), industry, length of employment with current employer, number of employees in organization (by categories: < 25, 25-99, 100-249, 250-499, 500-999, 1,000-4,999, 5,000-10,000, and > 10,000). Participants also reported whether they had ever been a manager.

We incorporated scales and items that would allow us to examine relationships among variables in our theorized nomological network to determine whether there was evidence of convergent and discriminant validity with respect to our proposed measure of X/Y behaviors. We posited a strong relationship between X/Y behaviors and the proximal variable of X/Y attitudes; a moderate relationship between X/Y behaviors and the more distal variable of generalized faith in people; and no relationships between X/Y behaviors and opinions about fast food and leisure time activities.

X/Y behaviors were assessed by 26 items (shown in Table I) which were adapted from a variety of sources: 15 items from Costley and Todd (1987), four items from Miles (1964), three items from Gordon (1999), two from Osland *et al.* (2001), and one item each from Greenberg (1999), and Baron and Paulus (1991). The 26 items consisted of 14 items that were reflective of a Theory Y perspective (e.g. "Employees should participate in establishing individual performance goals") and 12 reflective of a Theory X perspective (e.g. "You need to constantly check up on employees to ensure they are working as required"). All items were scored with a five-point Likert-type response format (from 1 = strongly disagree to 5 = strongly agree). The Theory X items were reverse-coded such that higher scores reflected greater agreement with behaviors consonant with Theory Y. Cronbach alpha was 0.79 for the first administration and 0.81 for the second administration. Test re-test reliability was 0.66.

Theory X/Y attitudes were assessed by 26 items. Of the items, 13 were reflective of a Theory X mindset (e.g. "Most employees will try to do as little work as possible," and 13 reflected a Theory Y mindset (e.g. "The average person can be trusted." Ten items were drawn from Swenson (n.d.), seven from the Scanlon Leadership Network(n.d.), three from Baron and Paulus (1991), four from Fiman (1973), and two from Gordon (1999). The same five-point Likert response options were used, and Theory X items were reverse scored such that higher scores reflected agreement with Theory Y. Cronbach alphas for the first and second administrations were 0.79, and 0.83, respectively. Test re-test reliability was 0.78. The 26 X/Y attitude items are provided in Table II.

Faith in people was assessed by five items from Rosenberg (1957). There were two forced choice items and three agree-disagree statements (e.g. "No one is going to care much what happens to you, when you get right down"). Each response which indicated faith in people were scored 1 (and those that did not, 0) and then summed such that high scores indicated higher faith in people. Cronbach alphas were 0.49 and 0.58, for the first and second administrations, respectively. The test-rest correlation was 0.74. The Faith in people items appear in Table III.

No.	Type	Statement	Factor 1		Factor 2	
			S1	S2	S1	S2
1.	X	Work behaviors should be controlled by breaking down jobs into specialized elements	0.12	0.01	0.58	0.41
2.	Y	<i>Mutual responsibility and shared objectives should be emphasized</i>	0.66	0.52	0.12	-0.04
3.	X	Employees should adhere to established methods of production	0.32	0.29	0.38	0.47
4.	X	Equipment should be designed so that the worker's pace is more or less controlled	0.17	0.07	0.52	0.44
5.	Y	Managers should pass along to their employees most of the information they receive concerning their department	0.48	0.52	-0.08	-0.14
6.	Y	Employees should be encouraged to use ingenuity in adapting job procedures	0.41	0.42	-0.04	-0.04
7.	X	<i>The amount of information given to employees should be carefully limited and controlled</i>	-0.37	-0.23	0.53	0.61
8.	Y	Organizational structures should be decentralized	0.18	0.13	0.12	0.03
9.	Y	<i>High standards of performance should be expected of all employees</i>	0.58	0.50	-0.19	-0.03
10.	Y	Minimal external controls should be used; rather there should be a high degree of self - direction	0.29	0.19	0.07	0.04
11.	Y	Discussion at all levels should be encouraged in order to obtain cooperation	0.65	0.49	-0.07	0.02
12.	X	Budgetary controls should be used to ensure employees do not deviate from established protocols	0.31	0.17	0.42	0.43
13.	Y	<i>Company objectives and sub-objectives should be communicated to all employees</i>	0.74	0.61	0.04	-0.17
14.	Y	Organizational authority should be widely delegated	0.21	0.26	0.15	0.03
15.	X	<i>The amount of responsibility given to employees should be limited and controlled</i>	-0.23	-0.13	0.60	0.51
16.	X	<i>You need to constantly check up on employees to ensure they are working as required</i>	-0.08	-0.06	0.58	0.60
17.	X	<i>It is important to continually remind people to meet deadlines</i>	0.09	0.14	0.58	0.60
18.	Y	<i>Employees should participate in establishing individual performance goals</i>	0.60	0.58	-0.05	-0.02
19.	Y	<i>Employees should be encouraged to participate in decision-making within their own departments</i>	0.58	0.65	-0.21	-0.02
20.	Y	<i>Jobs should be enriched in terms of adding more meaningful tasks</i>	0.64	0.65	-0.09	-0.08
21.	Y	<i>Employees should be encouraged to share their ideas and suggestions</i>	0.76	0.74	0.01	-0.08
22.	X	Managers should withhold unfavorable organizational news because employees only want to hear good news	-0.45	-0.40	0.39	0.46
23.	X	A manager should never admit that he or she is wrong when the subordinate was correct	-0.41	-0.46	0.38	0.22
24.	X	Employees should not be allowed to set standards of performance, or they will be set too low	-0.22	-0.28	0.46	0.40
25.	X	<i>If anything is to get done, the manager has to make the decision</i>	-0.13	-0.18	0.58	0.54
26.	Y	<i>Establishing a trusting relationship between manager and workers is a good way to motivate employees</i>	0.71	0.65	0.01	0.06

Notes: S1 = Subsample 1, S2 = Subsample 2. Type: X = Items that consonant with a Theory X perspective; Y = Items consonant with a Theory Y perspective. X items were reverse coded. The sample ($n = 494$) was randomly divided into two equal sub-samples for exploratory factor principal component analysis with Varimax rotation with a two-factor solution imposed. Item loadings are provided for each sub-sample. Items with factor loadings > 0.50 in both subsamples were retained to form a shorter 13-item theory X/Y behavior scale (and appear in italic)

Table I.
Theory X/Y behavior
items and exploratory
factor loadings

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No.	Type	Statement
1.	X	Most people will try to do as little work as possible
2.	Y	Employees prefer opportunity to security
3.	X	Most employees must be closely supervised to get them to perform up to expectations
4.	Y	Employees possess imagination and creativity
5.	X	Most employees actually prefer to be told exactly what to do rather than having to figure it out for themselves
6.	Y	The average person can be trusted
7.	X	Most people will not use their own initiative or do things that they have not been specifically assigned to do
8.	Y	Money is not the major motivator of human behavior in the industrial setting
9.	X	Most employees have little ambition
10.	Y	Employees enjoy meaningful work
11.	X	Employees generally do not have much to contribute when asked to participate in making decisions or solving problems
12.	Y	The average person can and will exercise self-direction and self-control
13.	X	It is just basic human nature – people just naturally dislike work
14.	Y	Employees' ideas often result in the development of useful suggestions
15.	X	Most employees will not exercise self-control and self-motivation – managers must do this for them
16.	Y	Employees have considerable ambition
17.	X	Most employees can't be trusted
18.	Y	Most people do want responsibility
19.	X	Most employees prefer to have someone else set their goals and objectives
20.	Y	For most people, work is as natural as play or recreation
21.	X	Most people work to eat and pay their bills rather than because they need to solve problems and be creative
22.	Y	Most employees prefer supervising themselves rather than close supervision
23.	X	Most people are lazy and do not want to work
24.	Y	Most employees would prefer increased responsibility to increased job security
25.	X	Most employees do not care much about the organization's goals
26.	Y	Most people are imaginative and creative, but they may not show it because of limitations imposed by supervision and the job

Table II.
Theory XY attitude items

No.	Statements	Response options	
1.	Some people say that most people can be trusted. Others say you cannot be too careful in your dealings with other people. How do you feel about it?	Most people can be trusted	You cannot be too careful
2.	Would you say that most people are more inclined to help others, or more inclined to look out for themselves?	To help others	To look out for themselves
3.	If you do not watch yourself, people will take advantage of you	Agree	Disagree
4.	No one is going to care much what happens to you, when you get right down to it	Agree	Disagree
5.	Human nature is fundamentally cooperative	Agree	Disagree

Table III.
Faith in people items

Source: From Rosenberg (1957)

Fast food opinion was assessed by five items developed by the authors to measure opinions about fast food meals. (e.g. “On the whole, I would say that a meal consisting of a McDonald’s hamburger, fries and soda is an ideal meal”). The rationale for creating this measure was to incorporate a construct which we expected to be unrelated to X/Y behaviors. The same five-point Likert response options were used, with scores coded so that higher scores indicate a more favorable view of fast food. Cronbach alphas were 0.71 and 0.71. Test re-test reliability was 0.59.

Leisure time activities were assessed by three items developed by the authors with two items asking how many hours the respondent spent each week watching television and reading books (response options: 0-4, 5-10, and > 10) and one item asking about the frequency of attending movies per year (with response options of up to twice, 3-8, and more than eight times). These items were developed to assess behaviors that we expected to be unrelated to Theory X/Y behaviors. Given that the three leisure time activities competed for an individual’s (finite) time and energy the activities were not seen as comprising a single underlying construct; indeed, had the three items been treated as an index the internal consistency reliability (Cronbach alpha) would have been unacceptably low, at 0.32. Consequently, for the purpose of establishing evidence of discriminant validity, the X/Y behavior scale was related to each of the three items separately. Test re-test reliabilities were: leisure – movies, $r = 0.86$, leisure – TV, $r = 0.70$, and leisure – reading, $r = 0.75$.

Results

Basic statistics and correlations among the variables are shown in Table IV. We examined the underlying structure of the 26-item X/Y behavior scale using exploratory factor analysis (EFA). We randomly divided our participants into two sub-samples of 247 cases in order to determine if the factor structure was replicated. While there are no clear guidelines for the number of cases needed for EFA, each of two sub-samples exceeded the rules of thumb of five cases per item (e.g. Hatcher, 1994; Bryant and Yarnold, 1995) and of 200 cases in total (Gorsuch, 1983).

We first factor analyzed each of the two sub-samples using principal component analysis with Varimax rotation with an eigenvalue criterion of 1.0 for extraction of factors. Seven factors emerged in each of the two sub-samples, accounting for 56.8 per cent and 52.9 per cent of the variance. Examination of the scree plots suggested a two-factor solution in each sub-sample, with variances explained of 33.1 per cent (21.3 per cent, 11.8 per cent) and 28.8 per cent (18.6 per cent, 10.2 per cent). To develop a shorter scale, we conducted a second set of EFAs using principal component analysis with Varimax rotation in which a two-factor solution was imposed. Items loading 0.50 or higher on the same factor in both sub-samples were retained, yielding eight Theory Y and five Theory X items (marked in bold in Table I).

Cronbach alpha for the 13-item X/Y behavior scale was 0.77 for both administrations. The test-retest correlation was 0.65. The 13 excluded X/Y behavior items were treated as a conceptually identical measure and included in the analysis that follows. Accordingly, it might be noted that Cronbach alphas for the 13 excluded items were 0.50 and 0.51 for the two administrations. Test re-test reliability was 0.51.

Correlations between the 13-item X/Y behavior scale and conceptually identical, proximally related, distally related, and unrelated variables were entirely consistent with the theorized nomological network. More specifically correlations were 0.60, 0.43,

Table IV.
Descriptive statistics,
reliability coefficients,
and correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	27.80	6.55	-	0.05	0.12	0.46***	0.11	0.01	0.10	0.14	0.08	-0.21*	-0.06	-0.07	-0.07
2. Sex	1.47	0.50	0.00	-	0.14	0.12	-0.24*	-0.25*	-0.18	-0.30**	-0.14	-0.05	0.02	-0.17	-0.22*
3. Salary	54.2	45.8	0.33***	0.10*	-	0.17	0.05	0.06	0.04	-0.04	0.03	0.22	0.10	0.01	-0.11
4. Tenure	3.16	2.97	0.50***	-0.01	0.22***	-	0.01	-0.01	0.03	0.15	0.03	-0.20	0.01	0.06	0.18
5. X/Y Beh (26 items)	3.56	0.38	0.17***	-0.13**	0.19***	0.10*	(0.79)	0.95***	0.91***	0.63***	0.09	-0.10	-0.17	-0.13	-0.36***
6. X/Y Beh (13 items)	3.77	0.47	0.19***	-0.16***	0.20***	0.14**	0.92***	(0.77)	0.72***	0.61***	0.07	-0.15	-0.16	-0.16	-0.40***
7. X/Y Beh (excluded)	3.35	0.36	0.11*	-0.08	0.14***	0.01	0.86***	0.60***	(0.50)	0.55***	0.09	-0.01	-0.15	-0.08	-0.24*
8. X/Y Att	3.24	0.38	0.13***	-0.17***	0.04	0.14	0.41***	0.43***	0.32***	(0.79)	0.36***	-0.11	-0.09	-0.05	-0.28**
9. Faith in people	2.13	1.29	0.15***	-0.04	0.01	0.14**	0.16***	0.19***	0.10*	0.37***	(0.49)	0.20	0.06	0.16	-0.09
10. Fast food	1.51	0.69	0.01	0.03	-0.04	0.08	-0.16***	-0.15***	-0.14**	-0.01	0.03	(0.71)	-0.11	0.13	0.01
11. Movies	2.12	0.68	-0.10*	0.02	0.01	-0.09	-0.08	-0.05	-0.11*	-0.06	-0.14**	-0.01	-	0.28**	-0.01
12. TV	1.82	0.75	0.03	0.13**	0.01	0.01	-0.06	-0.04	-0.07	-0.04	-0.07	-0.05	0.14**	-	0.15
13. Reading	1.47	0.64	0.03	0.07	0.11*	0.05	0.04	0.04	0.01	0.05	0.04	-0.04	0.10*	0.16***	-

Notes: * $p < 0.05$, two-tailed; ** $p < 0.01$, two-tailed; *** $p < 0.001$, two-tailed. Means, standard deviations, and intercorrelations are shown for the first administration below the reliability diagonal: $N=476$ to 494, except for salary ($n=397$). For the second administration Intercorrelations are shown above the reliability diagonal. $N=94$ to 102, except for salary ($n=77$). Age was expressed as the midpoint of each range (20-24, 25-29, 30-34, 35-39, 40-44, 45-49, > 50) with the value of 55 for the range (> 50). Salary in \$000's; Beh = Behaviors; Att = Attitudes. Excluded = the 13 items not retained in the 13-item X/Y behavior scale. Categorical variable: Sex (1 = female; 2 = male). Cronbach alphas for the first administration appear on diagonals in parentheses

0.19, and -0.02 (mean of unrelated variables) – see Table IV. These relationships held after we controlled for the potential effects of age, sex, salary, and job tenure by entering these variables in step one in a series of hierarchical regressions. Specifically, the corresponding Betas were 0.61, 0.40, 0.16, and 0.01 (mean of unrelated variables) – see Table V.

Managers were more Y oriented than non-managers with respect to the 13-item X/Y behavior scale ($m = 3.83$, $SD = 0.49$ versus $m = 3.70$, $SD = 0.44$, $d = 0.25$, $p < 0.01$). However, managers did not report attitudes that were more Y oriented than non-managers ($m = 3.26$ versus $m = 3.21$, $d = 0.13$, $p = 0.15$).

Women were more Y oriented than men with respect to both X/Y behaviors ($m = 3.84$, $SD = 0.45$ versus $m = 3.69$, $SD = 0.48$, $d = 0.32$, $p < 0.001$) and attitudes ($m = 3.30$, $SD = 0.38$ versus $m = 3.17$, $d = 0.33$, $p < 0.001$). These results are consistent with the often noted phenomenon of women engaging in more transformational and participative leadership practices than men (Eagly *et al.*, 2003).

Discussion and conclusion

Summarizing results, on performing EFAs, a 13-item Theory X/Y Behavior scale emerged that demonstrated good psychometric properties. Internal consistency reliability estimates (Cronbach alphas) were 0.77 for both administrations, exceeding the conventional benchmark of 0.70 (Nunnally, 1978) and test re-test reliability was 0.65. The pattern of associations was in conformance with the a priori nomological network. Correlations between the 13-item X/Y behavior scale with measures of conceptually identical, proximal, distal, and unrelated variables were: 0.60, 0.43, 0.19, and -0.02 (on average), respectively. In addition, the differences with respect to sex were consistent with prior research involving related constructs. The reliability of the 13-item X/Y Behavior scale was almost as high as the 26-item pool of X/Y behavior items (0.77 versus 0.79); the Spearman-Brown prophecy formula would have estimated that a doubling of scale length would have resulted in an alpha of 0.87. Further, the pattern of associations remained virtually unchanged after controlling for four demographic variables.

The content of our X/Y behavior scale also corresponds closely to recent normative, prescriptive pieces that argue for empowerment, participation, and positive organizational behavior. For example, Coleman (1996) explicitly noted the importance of eight of the 13 behaviors, including encouraging employees to: take initiative, share their ideas, and take responsibility for their performance; and encouraging managers to: share information, delegate authority, and collaborate in building trust.

The X/Y behavior scale could be useful for theoretical research. Field studies that use valid measures of managerial X/Y attitudes and behaviors, along with measures of employee attitudes and work behaviors, and individual and group-level performance data would provide a solid basis for drawing inferences about the substantive validity of McGregor's theorizing.

With regard to practice, the 13-item X/Y behavior scale might be used for self-diagnostic purposes. Indeed, Heil *et al.* (2000) argue that McGregor's most important concern was that managers should question their assumptions and beliefs about managing. If managers were provided with their X/Y attitude and behavior scores, as well as the average scores of other managers – and ideally, the average

Table V.
Hierarchical regression of
13-item Theory X/y
behavior scale on
proximally, distally, and
unrelated constructs

13-item X/Y behavior scale as independent variable	Same Behaviors 13 items excluded	Proximal X/Y attitudes	Dependent variables					Leisure – reading
			Distal Faith in people	Fast food	Leisure – movies	Unrelated Leisure – TV	Leisure – TV	
Step 2								
Age	0.05	0.02	0.10	-0.02	-0.15*	0.07	-0.04	
Sex	0.01	-0.11*	-0.02	0.00	0.03	0.13*	0.05	
Salary	0.02	-0.07	-0.07	-0.03	0.06	-0.03	0.08	
Tenure	-0.08	0.12*	0.06	0.11	-0.01	0.02	0.10	
X/Y behaviors (13 items)	0.61***	0.40***	0.16***	-0.15**	-0.02	-0.01	0.06	
ΔR^2 (second step)	0.34	0.21	0.02	0.02	0.00	0.00	0.00	
ΔF (second step)	0.52***	0.27***	0.02**	0.02**	0.00	0.00	0.00	
Total R^2 (first step)	0.04	0.06	0.02	0.01	0.02	0.02	0.02	
Total R^2 (second step)	0.38	0.15	0.05	0.03	0.02	0.02	0.03	
Total F (second step)	47.44***	20.65***	3.93**	1.19*	1.91	1.75	2.06	
DF (second step)	5, 388	5, 388	5, 386	5, 374	5, 387	5, 384	5, 387	

Notes: * $p < 0.05$, two-tailed; ** $p < 0.01$, two-tailed; *** $p < 0.001$, two-tailed. In each case, age, sex, salary, and tenure were entered Step 1 and the 13-item X/Y behavior scale was added in Step 2. The results of the Step 1 regressions, including betas of age, sex, salary, and tenure, are not shown for space reasons

scores of high-performing managers – this might provoke some useful introspection. If completed by employees and sent anonymously to an independent party, the instrument might be useful for diagnostic purposes as a first step in the process of organizational development. Because X/Y behavior items, in comparison to attitudinal items, may be less prone to a social desirability bias, their use for self-assessment and development purposes may be beneficial. Further, behavioral items translate attitudinal statements into practical terms that are useful for individual and organizational developmental intervention.

From a practitioner perspective, a benefit of a Theory X/Y diagnostic measure is that McGregor's concepts have broadly penetrated the management lexicon and may have considerable face validity and resonate with managers. Bennis 40 years ago was convinced:

... that the popularity of McGregor's, *The Human Side of Enterprise*, was based on his rare empathy for a vast audience of managers who are wistful for an alternative to the mechanistic concept of authority, (i.e. he outlined a vivid utopia of more authentic human relationships than most organizational practices today allow.) (Bennis, 1969, p. 22).

Theory X/Y continues to be seen as relevant to issues related to leadership and organizational development, and a measure of X/Y behaviors might facilitate substantive research in a number of areas. For example, Pastor and Mayo (2008) suggest that it is better to try to change X/Y assumptions/attitudes than X/Y behaviors. To be sure, this would accomplish what Argyris (2002) referred to as double-loop learning, where behavior is changed by altering governing values. Yet Schein (1975) asserted that most managers may be unable to change their assumptions, and that even if their assumptions did change, managerial behaviors might not. It is now possible to test whether it is more fruitful for leadership development programs to attempt to change:

- assumptions alone;
- managerial behaviors alone; or
- assumptions and managerial behaviors combined.

Similarly, questions related to the relationships between Theory X/Y and outcomes such as employee well-being might be explored using our measure along with a measure of attitudes (see Larsson *et al.*, 2007; Quick and Quick, 2004). It might be fruitful to examine relationships between managerial behaviors and ethical evaluations (see, Neuliep, 1990, 1996). While McGregor suggested that Theory Y attitudes would generally lead to improved organizational performance, even he acknowledged that this would not always be the case. The use of our scale might enable researchers to explore the conditions under which Theory Y produced better results and when it did not (Bobic and Davis, 2003) and to assess Theory X/Y orientation as a moderator of relationships between specific practices (such as Scanlon plans) and outcomes.

As is the case in most research endeavors, there are a number of limitations and possible weaknesses that should be considered. First, the X/Y behavior items pertain to the endorsement of specific managerial practices. In a sense these items reflect attitudes about behaviors, not actual managerial behaviors, *per se*. We recognize that endorsed behaviors are often discrepant from self-reports of enacted behaviors, which in turn are often veridically inaccurate (Argyris and Schon, 1974). Future research,

ideally, should collect multi-source and multi-level data pertinent to enacted as well as espoused behaviors. The network of relationships should also be expanded to include other leadership and in-role/extra-role performance constructs (such as, for example, the Multifactor Leadership Questionnaire (Bass and Avolio, 1990).

Second, we recognize that all data in the present research were collected from a common source and method, which could lead to overstatement or understatement of our results (Podsakoff *et al.*, 2003). However, characteristics of our design likely mitigated some sources of bias. Responses were anonymous, X- and Y-phrased items were mixed within sections of the questionnaire, and the wording of X and Y items were not mirrors of each other. Empirically there was evidence that biasing effects were minimal. As noted above, managers scored higher than non-managers on X/Y behaviors but there was no difference on X/Y attitudes. Likewise a post hoc analysis indicated that respondents in the for-profit sector scored higher than their non-profit/government counterparts on X/Y attitudes ($d = 0.35, p < 0.01$) but lower than their counterparts with regard to X/Y behaviors ($d = 0.29, p < 0.05$). This inversion suggests that such potential sources of bias as social desirability, consistency, and implicit theories were not controlling. Moreover, examining X/Y behavior scores at Time 1 and scores on identical, similar, distal, and unrelated measures at Time 2 yielded a pattern of results similar to that obtained with contemporaneous data.

Third, the reverse scoring of X behaviors would appear to assume a continuum. Conceptually, strong disagreement with a Theory X behavior may not be tantamount to complete endorsement of a corresponding and parallel Theory Y behavior. To disagree with the practice of limiting the responsibility of employees does not necessarily equate to endorsing job enrichment. Yet, the 13 items that survived show good internal consistency and Cronbach alpha was reduced when subscales were created comprised only of X or Y behaviors.

Fourth, the present sample was relatively young with a mean age of roughly 28 years (35 per cent of participants were between 20 and 24 years old versus the 10 per cent of the employed labor force who were in that age group in the USA (US Department of Labor, 2008). Accordingly, in order to examine the generalizability of the present results, associations were examined separately for respondents:

- above and below median job tenure;
- with and without managerial experience; and
- younger and older than the median age.

With regard to the two categories of job tenure, correlations on average differed by 0.09, and the pattern of correlations across the nomological network was nearly identical in both categories. Likewise the mean difference in correlations for long and short tenure groups was 0.07 with the pattern of correlations being very similar. The mean differences in correlations among younger and older respondents, was also 0.07, again with a very similar pattern of correlations. Thus, there is evidence that the present results are not an artifact of the composition of the present sample.

In conclusion, in light of the importance of McGregor's theorizing about individual differences in managerial attitudes and behavior, we believe that it is time to develop measures of both attitudes and behaviors, thereby permitting a thorough test of substantive validity. Theory X and Theory Y have long been compelling ideas. After 50 years it is perhaps time to see if McGregor was correct.

References

- Argyris, C. (1971), *Management and Organizational Development: The Path from XA to YB*, McGraw-Hill, New York, NY.
- Argyris, C. (2002), "Double-loop learning, teaching, and research", *Academy of Management Learning and Education*, Vol. 1 No. 2, pp. 206-18.
- Argyris, C. and Schon, D. (1974), *Theory in Practice: Increasing Professional Effectiveness*, Jossey-Bass, San Francisco, CA.
- Baron, R.A. and Paulus, P.B. (1991), *Understanding Human Relations: A Practical Guide to People at Work*, Allyn and Bacon, New York, NY.
- Bass, B.M. and Avolio, B.J. (1990), *Transformational Leadership Development: Manual for the Multifactor Leadership Questionnaire*, Consulting Psychologist Press, Palo Alto, CA.
- Bedeian, A.G. and Wren, D.A. (2001), "Most influential management books of the 20th century", *Organizational Dynamics*, Vol. 29 No. 3, pp. 221-5.
- Bennis, W.G. (1969), *Organization Development: Its Nature, Origins, and Prospects*, Addison-Wesley Publishing, Reading, MA.
- Bennis, W.G. (2003), *On Becoming a Leader*, rev ed., Perseus, Cambridge, MA.
- Blake, R.R. and Mouton, J.S. (1964), *The Managerial Grid*, Gulf Publishing, Houston, TX.
- Bobic, M.P. and Davis, W.E. (2003), "A kind word for Theory X: or why so many newfangled management techniques quickly fail", *Journal of Public Administration Research and Theory*, Vol. 13 No. 3, pp. 239-64.
- Bryant, F.B. and Yarnold, P.R. (1995), "Principal-components analysis and exploratory and confirmatory factor analysis", in Grimm, L.G. and Yarnold, P.R. (Eds), *Reading and Understanding Multivariate Statistics*, American Psychological Association, Washington, DC.
- Carson, C.M. (2005), "A historical view of Douglas McGregor's Theory Y", *Management Decision*, Vol. 43 No. 3, pp. 450-60.
- Chapman, A. (2002), "X-Y theory questionnaire, available at: www.businessballs.com/McGregorxytheorytest.pdf (accessed 19 June 2009).
- Coleman, H.J. (1996), "Why employee empowerment is not just a fad", *Leadership & Organization Development Journal*, Vol. 17 No. 4, pp. 29-36.
- Costley, D.L. and Todd, R. (1987), *Human Relations in Organizations*, 3rd ed., West Publishing Company, St Paul, MN.
- Crainier, S. and Dearlove, D. (2006), "The short history of great business ideas", *Business Strategy Review*, Vol. 17 No. 3, pp. 10-18.
- Eagly, A.H., Johannesen-Schmidt, M.C. and van Engen, M. (2003), "Transformational, transactional, and *laissez-faire* leadership styles: a meta-analysis comparing women and men", *Psychological Bulletin*, Vol. 129 No. 4, pp. 569-91.
- Fiman, B.G. (1973), "An investigation of the relationships among supervisory attitudes, behaviors, and outputs: an examination of McGregor's Theory Y", *Personnel Psychology*, Vol. 26 No. 1, pp. 95-105.
- Forrester, R. (2000), "Empowerment: rejuvenating a potent idea", *Academy of Management Executive*, Vol. 14 No. 3, pp. 67-80.
- Friedlander, F. and Brown, L.D. (1977), "Research on organization development: a synthesis and some implications", in Burke, W.W. (Ed.), *Current Issues and Strategies in Organization Development*, Human Science Press, New York, NY.

- Gardner, W. and Schermerhorn, J.R. Jr (2004), "Unleashing individual potential performance gains through positive organizational behavior and authentic leadership", *Organizational Dynamics*, Vol. 33 No. 3, pp. 270-81.
- Gordon, J.R. (1999), *Organizational Behavior: A Diagnostic Approach*, Prentice-Hall, Upper Saddle River, NJ.
- Gorsuch, R.L. (1983), *Factor Analysis*, Lawrence Erlbaum, Hillsdale, NJ.
- Greenberg, J. (1999), *Managing Behavior in Organizations*, Prentice Hall, Upper Saddle River, NJ.
- Hatcher, L. (1994), *A Step-by-Step Approach to Using the SAS System for Factor Analysis and Structural Equation Modeling*, SAS Institute, Cary, NC.
- Heil, G., Bennis, W. and Stephens, D.C. (2000), *Douglas McGregor, Revisited: Managing the Human Side of the Enterprise*, John Wiley and Sons, New York, NY.
- Herzberg, F., Mausner, B. and Snyderman, B.B. (1959), *The Motivation to Work*, John Wiley & Sons, New York, NY.
- Kochan, T.A., Orlikowski, W. and Cutcher-Gershenfeld, J. (2003), "Beyond McGregor's Theory Y: human capital and knowledge-based work in the twenty-first-century organization", in Kochan, T.A. and Schmalensee, R.L. (Eds), *Management: Inventing and Delivering its Future*, MIT Press, Cambridge, MA, pp. 85-113.
- Kopelman, R.E., Prottas, D.J. and Davis, A.L. (2008), "Douglas McGregor's Theory X and Y: toward a construct-valid measure", *Journal of Managerial Issues*, Vol. 20 No. 2, pp. 255-71.
- Larsson, J., Vinberg, S. and Wiklund, H. (2007), "Leadership, quality and health: using McGregor's X and Y theory for analyzing values in relation to methodologies and outcomes", *Total Quality Management and Business Excellence*, Vol. 18 No. 10, pp. 1147-68.
- Lawler, E.E. III (1986), *High-Involvement Management*, Jossey-Bass, San Francisco, CA.
- Lawler, E.E. III (1992), *The Ultimate Advantage*, Jossey-Bass, San Francisco, CA.
- Likert, R. (1967), *The Human Organization: Its Management and Value*, McGraw-Hill, New York, NY.
- McGregor, D.M. (1957), "The human side of enterprise", *The Management Review*, Vol. 46 No. 11, pp. 22-8.
- McGregor, D.M. (1960), *The Human Side of Enterprise*, McGraw-Hill, New York, NY.
- McGregor, D.M. (1966), *Leadership and Motivation*, MIT Press, Cambridge, MA.
- McGregor, D.M. (1967), *The Professional Manager*, McGraw-Hill, New York, NY.
- Mainiero, L.A. and Tromley, C.L. (1993), *Developing Managerial Skills in Organizational Behavior*, Prentice-Hall, Englewood Cliffs, NJ.
- Maslow, A.H. (1965), *Eupsychian Management: A Journal*, Irwin, Homewood, IL.
- Michaelsen, L.K. (1973), "Leader orientation, leader behavior, group effectiveness and situational favorability: an empirical extension of the contingency model", *Organizational Behavior and Human Performance*, Vol. 9 No. 2, pp. 226-45.
- Miles, R.E. (1964), "Conflicting elements in managerial ideologies", *Industrial Relations*, Vol. 4 No. 1, pp. 77-91.
- Miner, J.B. (2002), *Organizational Behavior: Foundations, Theories, and Analyses*, Oxford University Press, New York, NY.
- Miner, J.B. (2003), "The rated importance, scientific validity, and practical usefulness of organizational behavior theories: a quantitative review", *Academy of Management Learning and Education*, Vol. 2 No. 3, pp. 250-68.

-
- Neuliep, J.W. (1990), "The use of deception as a compliance-gaining strategy", *Human Communication Research*, Vol. 16 No. 3, pp. 409-21.
- Neuliep, J.W. (1996), "The influence of Theory X and Y management style on the perception of ethical behavior in organizations", *Journal of Social Behavior and Personality*, Vol. 11 No. 2, pp. 301-11.
- Nunnally, J.C. (1978), *Psychometric Theory*, 2nd ed., McGraw-Hill, New York, NY.
- Osland, J.S., Kolb, D.A. and Rubin, I.M. (2001), *Organizational Behavior: An Experiential Approach*, Prentice-Hall, Upper Saddle River, NJ.
- Pastor, J.C. and Mayo, M. (2008), "Transformational leadership among Spanish upper echelons. The role of managerial values and goal orientation", *Leadership & Organization Development Journal*, Vol. 29 No. 4, pp. 340-58.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J-Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.
- Quick, J.C. and Quick, J.D. (2004), "Healthy, happy, productive work: a leadership challenge", *Organizational Dynamics*, Vol. 33 No. 4, pp. 329-37.
- Rosenberg, M. (1957), *Occupations and Values*, The Free Press, Glencoe, IL.
- Scanlon Leadership Network (n.d.), *Test Your Leadership Assumptions*, available at: www.scanlonleader.org/Scanlon/ScanlonWebSite/aboutus/ScanlonLeadership/leaderasstest.html (accessed 3 January, 2003).
- Schein, E. (1975), "In defense of Theory Y", *Organizational Dynamics*, Vol. 4 No. 1, pp. 17-30.
- Schein, E.H. (2004), *Organizational Culture and Leadership*, Jossey-Bass, San Francisco, CA.
- Spautz, M.E. (1975), "A new scale for Theories X and Y", *Australian Journal of Psychology*, Vol. 27 No. 2, pp. 127-41.
- Swenson, D. (n.d.), *McGregor's Theory X-Y Test*, available at: www.css.edu/users/dswenson/web/theoryxytest.html (accessed 3 January 2003).
- Teleometrics International, Inc (1995), *Managerial Philosophy Scale*, Teleometrics International, Waco, TX.
- US Department of Labor (2006), *Employee Tenure Summary, USDL 06-1563*, Department of Labor, Washington, DC.
- US Department of Labor (2008), *Current Population Employee Tenure Summer*, US Department of Labor, Washington, DC, available at: www.bls.gov/cps/demographics.htm#age (accessed 20 August 2008).
- Truss, C., Gratton, L., Hope-Hailey, V., McGovern, P. and Stiles, P. (1997), "Soft and hard models of human resource management: a reappraisal", *Journal of Management Studies*, Vol. 34 No. 1, pp. 53-73.
- Yukl, G. (1989), "Managerial leadership: a review of theory and research", *Journal of Management*, Vol. 15 No. 2, pp. 251-89.

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